

bushland news



Issue 119 **Spring** 2021 *Time of Djilba and Kambarang in the Noongar calendar.*

Permanent protection for Beeliar Wetlands



Photo – Isabella Streckhardt



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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This publication is available in alternative formats on request. Current and archived issues of *Bushland News* are available at pws.dbca.wa.gov.au/bushlandnews

Next issue

Summer Bushland News

Summer *Bushland News* contributions should be sent to [Urban Nature](#) by **1 December 2021**. *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.

Permanent protection for Beeliar Wetlands By Cho Lamb and Catherine Prideaux

Permanent protection of the Beeliar Wetlands was finalised in August with legislation passing the Legislative Council, fulfilling a key election commitment by the McGowan Government. Passing of the Metropolitan Region Scheme (Beeliar Wetlands) Bill 2021 rezones 34ha of the wetlands from Primary Regional Roads reserve to a Parks and Recreation reserve, preventing future road development through the area. The scheme amendment also further strengthens its status as an A-Class Conservation Park, a classification given to the wetlands in May 2020 which grants the highest level of environmental protection.

On the recent passing of the bill, Minister for Planning Rita Saffioti said, "It's been a long battle, but today we can say that our Government has permanently protected the Beeliar Wetlands."

Strong community action and involvement since initial protests surrounded the controversial Perth Freight Link project has flowed through to rehabilitation of the cleared area.

Phoebe Corke from Save Beeliar Wetlands said, "An awful lot of people protested for the first time to stop the road going through. This has empowered people to be involved in community issues going forward."



Cover photo: Members of the community groups represented by the Rehabilitating Roe 8 Advisory Committee celebrate a successful planting event at Turtle Corner (north of Bibra Lake), one of the management areas being rehabilitated within the corridor that was cleared for the proposed extension of Roe Highway. Photo – Isabella Streckhardt.

A huge public outcry resulted from a proposal by the State Government in 2014 to extend Roe Highway through North Lake and Bibra Lake in the Beeliar Wetlands, and subsequent clearing of vegetation within the road corridor. In response, the incoming McGowan Government ceased all work on the project in 2017 and committed to protection of the area's environmental values. Photo – Gngarra at commons.wikimedia.org.

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Members of the Cockburn Community Wildlife Corridor (CCWC) working hard at their fortnightly hand weeding session. This area of the corridor has been exclusively hand weeded over the last three years with great results. Photo – Isabella Streckhardt.

“The clearing was a blow for the community, not a mortal wound. The thousands of people involved in rehabilitating the site are like the nurses helping the wound to heal.”

On-ground works to restore the diverse ecosystems within the corridor commenced in 2018, with restoration work guided by the [Rehabilitating Roe 8 Management Plan](#). The plan aims to restore seven different target ecosystems including banksia woodlands and wet forest ecosystems. Maximising community engagement is key to the delivery of the plan, which aims to repair not only the ecology of the area but also social connection with the land by ensuring the community is involved in both decision making and hands-on implementation of the project.

Community member Felicity Bairstow said, “Doing weed control as soon as we could allowed the wetland vegetation to come back easily. It has been more difficult in the upland areas although watering has helped. A lot of the seed bank was present and we have the topsoil and fringing vegetation which will help to repopulate the species we can’t grow ourselves. The rehabilitation area known as S7 has been hand weeded and has had success in the diversity and survival rates in the herb layer.”

Implementation of the plan will continue until 2028, with works overseen by an advisory committee of members from community groups including Save Beeliiar Wetlands, Cockburn Community Wildlife Corridor, Coolbellup Community Association as well as Noongar Traditional Owners, the Wildflower Society, educational institutions, and State Government representatives.

Over the past four years, achievements by the Rehabilitating Roe 8 project include:

- Over 216,000 plants installed
- Weed mapping and control through the corridor
- Fauna and vegetation monitoring
- Feral animal control
- Signage and fencing installed
- Installation of bat boxes
- Partnerships with research organisations
- Community events, workshops and conferences
- Involvement of school groups in planting
- Preparation of a draft Path Network Plan

A recent Aboriginal archaeological and heritage survey has also recognised the site as having potential for revealing new detail and insights into Aboriginal history.

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Students from Spearwood Primary School planted native seedlings to help rehabilitate a cleared area of the corridor at a planting event on 26 July. Photo – Isabella Streckhardt.

Rehabilitating Roe 8 update

By Isabella Streckhardt

More than 87,000 native seedlings were planted across the wildlife corridor this winter, a record for Rehabilitating Roe 8.

Of these, 3,500 were planted by volunteers including local schools and community groups, like passionate members of the Murdoch University Roots and Shoots guild club.

Revegetation works included the 'Turtle Corner' site at Bibra Lake. This area is in a registered Aboriginal site and Aboriginal elders and monitors conducted heritage monitoring during planting works. Great effort, everyone!

Rehabilitating Roe 8 is trialling a new type of biodegradable cardboard tree guard. Murdoch University students will research how seedling growth and survival rates across the corridor compare between those without guards and others using the plastic and cardboard models.

Keep up to date on all things Rehabilitating Roe 8 by visiting our [website](#) or subscribing to the bi-monthly [e-newsletter](#).

The former road corridor now forms part of the Beeliiar Regional Park managed by the Department of Biodiversity, Conservation and Attractions (DBCA) and the City of Cockburn.

In January 2021 the re-elected McGowan Government also committed to investing \$3 million to further protect the Beeliiar Wetlands. Planning is now underway to enhance the area of North Lake around the corridor through the installation of low-key recreational infrastructure, pathways, a boardwalk, and additional revegetation and weed management. Consultation with the community will commence in the near future, once initial concept plans have been developed.



Rehabilitating Roe 8 is trialling new biodegradable cardboard tree guards, some of which were decorated by local kids with inspirational drawings and messages. Photo – Penny Graham.

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30 years of Bushland News *By Anna Wisoloth*

This issue marks 30 years of *Bushland News* – no mean feat for a newsletter that has survived a number of transitions across different agencies. Originally named *Ecoplan News*, the first issue was published in spring 1991. The newsletter was launched as part of System 6 – Ecoplan, a joint venture between the Environmental Protection Authority (EPA) and the voluntary conservation movement. Ecoplan sought to recognise and encourage the involvement of community groups and schools in helping look after urban bushland and reserves recommended for conservation, as nominated in the EPA's System 6 Red Book. Margo O'Byrne, then community involvement coordinator at the EPA, was the driving force behind Ecoplan and the Urban Nature program it evolved into after it was transferred across to the Department of Conservation and Land Management.

Formed in 2003, Urban Nature was born out of a commitment by the State Government to establish an urban bushland advisory service to support community groups and private landowners, encourage new conservation endeavours, and promote best practice in bushland management by providing advice, training and assistance. Urban Nature continued production of the newsletter and in 2007 the newsletter's name was changed to *Bushland News*.

The newsletter has evolved over the decades with a name change, the addition of new sections, a lengthier format, a few redesigns, and a switch from printed mail-out newsletter to electronic publication.

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Over three decades and 119 issues, the newsletter has undergone a considerable evolution from its original green and white monochrome print version of a pre-internet era, to the more colourful online version of today replete with hyperlinks to information and resources. One thing has not changed – community involvement in bushland conservation has always been at the heart of Bushland News.

A big thank you to all who have worked on *Bushland News* and *Ecoplan News* over the years: editors Margo O'Byrne, Rod Hughes, Jill Griffiths (née Harris), Jon Elder, Cath Drake, Colma Keating, Erin Gisborne, Lesley Dean, Nicole Crook, Jo Tregonning, Rebecca Ong, and Julia Cullity, past and present staff at DBCA's Urban Nature, and all those who have assisted with production, proofing and publication, in particular Alison Blackwell (Ali B Design) for her graphic design work over many years. A special thanks to all our wonderful *Bushland News* contributors for offering your articles, photos, story ideas and events. You help make *Bushland News* a vibrant, interesting, and useful source of news and information to help our communities care for urban bushland.

When this current issue was coming together, an unintentional theme developed with a number of articles centring around environmental projects partnered with schools. I thought this a rather fitting theme for the 30th anniversary edition of *Bushland News*, as we take a moment to reflect on our past, that we should also look to the future. Young people are increasingly aware of the challenges that face our environment and have so much at stake to protect the planet they will inherit. In a [recent global survey](#), Generation Z ranked climate change and protecting the environment as their top concern. It is uplifting to see the incoming generation turning their concerns into positive action as we help foster their sense of environmental stewardship. I think the future will be in good hands.

Paganoni mapping



*The end of winter and beginning of spring are perfect times for bushland surveys. The Friends of Paganoni (Leonie Stubbs, left and Erica Dearle, right) with assistance from Megan Young, an Edith Cowan University student (middle), and Urban Nature weed mapped a section of Paganoni Swamp Reserve where a prescribed burn was undertaken in 2019 for fire mitigation. For Megan, who is with DBCA on a three-month work placement, it was a chance to learn the techniques and ever temperamental technology for weed mapping. She also quickly discovered that any weed mapping with the Friends of Paganoni always involves some satisfying weed pulling. In this instance, we could not help but pull out this small infestation of pigface, *Carpobrotus edulis*. Photos – Grazyna Paczkowska.*



Want to delve through the archives?

Past issues of [Bushland News](#) and [Ecoplan News](#) are available to view online.

Water monitoring at Greater Brixton Street Wetlands

By Jasmine Rutherford and Grazyna Paczkowska

The Greater Brixton Street Wetlands comprise a complex series of seasonally inundated areas including claypans, waterlogged flats and damplands. The wetland vegetation has adapted to require seasonal flooding for its long-term survival. Wetlands develop in soils that often contain naturally high concentrations of salt (sodium chloride), metals and nutrients. Understanding the hydrological processes and functions of the wetlands provides information on water quality tolerances for flora and fauna, which is important under the current drying climate.

DBCA is conducting a [water monitoring study](#) to improve understanding of the hydrological function of the wetlands.

This winter, Urban Nature assisted DBCA Senior Research Scientist Dr Jasmine Rutherford in the field for one of the routine water monitoring activities, including physico-chemical measurements of groundwater and surface water. The Friends of Brixton Street Wetlands are also helping out with the study by monitoring the water depth gauges.

The research is looking at how quickly water in aquifers and claypans rise and fall following winter rainfall and the start of spring. This helps us assess if an elevated water table is a threat or a benefit to wetlands storing water for longer periods of time. It also increases our knowledge of how the current and future changes in rainfall patterns may affect soil texture and chemistry. Answering these questions is vital for the development of actions and plans for future management of this important reserve.



The surface water depth is measured using permanently installed gauges across Greater Brixton Street Wetlands. Photo – Grazyna Paczkowska.



Left: Sampling one of the three groundwater bores at Greater Brixton Street Wetlands. The red coloured groundwater in the bailer shows the presence of dissolved metals such as iron. Right: Sampling surface water using a water quality meter that measures parameters including dissolved oxygen, salinity and pH. Photos – Grazyna Paczkowska.



Nut grass (*Cyperus rotundus*) By Anna Wisolith

Despite its common name, nut grass, *Cyperus rotundus* is not a grass but a sedge, belonging to the Cyperaceae family. Other common names include coco-grass, purple nut sedge, and Java grass. Nut grass has a creeping network of underground stems (rhizomes) that swell at intervals into small tubers, each of which can produce a new plant. These round, hard tubers are often referred to as 'nuts', hence the name nut grass.

Nut grass is a weed in more than 90 countries and impacts many different crops, earning it the title of world's worst invasive weed – though it is not the worst weed in Australia. It favours soils of moderate to high fertility and moderate moisture, however nut grass can be found growing in almost every soil type except saline soils.

Description

Nut grass is 15–60cm tall, with smooth, upright, unbranched stems, triangular in cross-section. There are up to 20 grass-like leaves per plant, which are up to 20cm long. The leaves are bright to dark green, glossy, narrow (2–6mm wide), coarsely textured with small serrations, and with a prominent mid-vein on the underside. The leaves arise near the base of the plant and grow in three rows.

The inflorescence consists of a flowering stalk with 2–4 leafy bracts underneath 3–9 loose clusters of flower spikelets that are reddish-brown or purplish-brown, narrow and flattened. Nut grass flowers in April to July, though little viable seed is produced and propagation is almost exclusively via tubers.

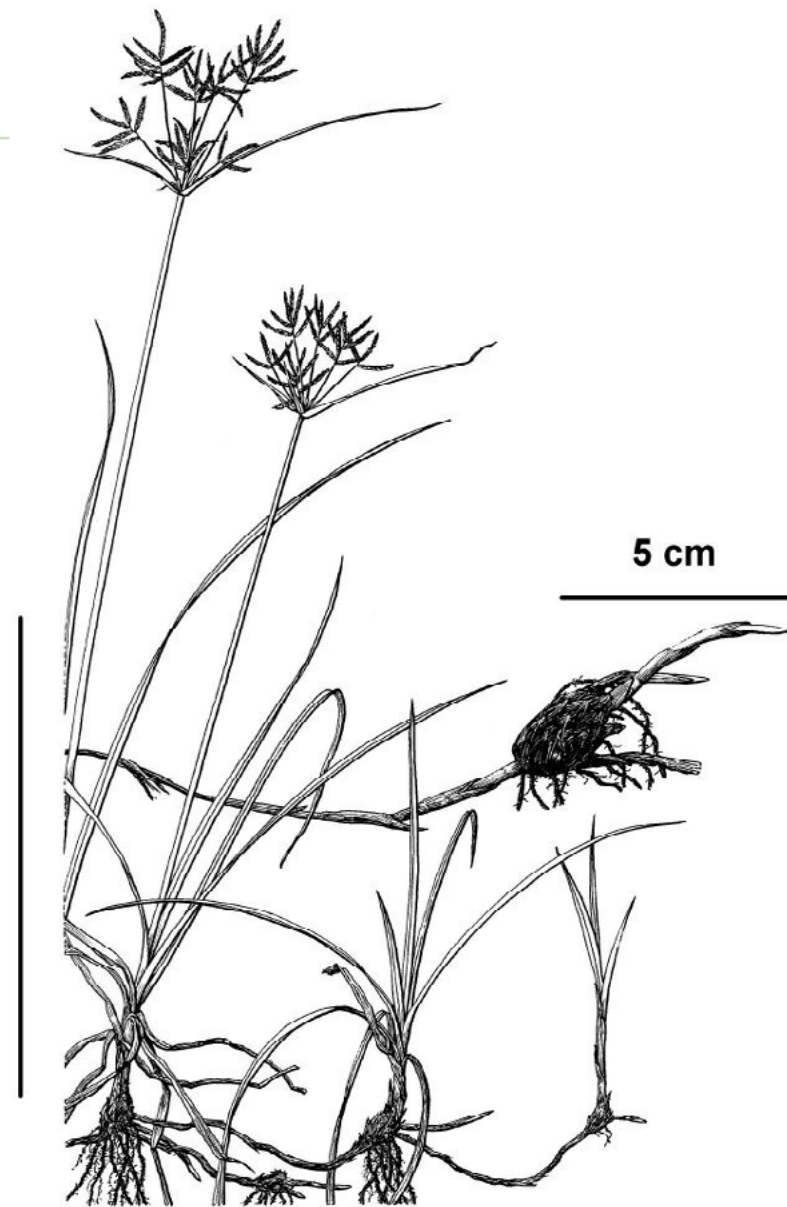
Individual plants form a basal bulb which contains the growing point, allowing the plant to regrow even if the leaves are cut off at the soil surface. The extensive root system can grow up to 1.2 metres below the soil. Tubers are produced at intervals along creeping underground rhizomes, and more than six tubers may be produced per chain. The tubers are dark brown to black, ovoid or ellipsoid in shape, and 10–25mm long.

Cyperus rotundus may be confused with several other *Cyperus* species that have a similar inflorescence and grass-like leaves. These include weed species such as *C. congestus*, *C. eragrostis*, *C. polystachyos* and *C. tenuiflorus*, and Western Australian native species *C. gymnocaulos* and *C. vaginatus*. To be certain which species you have, you may need to [collect a specimen](#) (with an appropriate collecting licence) for [identification by the Western Australian Herbarium](#). Sedges can be difficult to identify and collected plant specimens should include mature (fruiting) inflorescences, rootstock, and a length of rhizome.

Origin and distribution

Nut grass has been used by humans since remote pre-history as a food, medicine, insect repellent, and perfume. This long history of use may have contributed to its widespread range globally, as nut grass can now be found in most regions of the world – favouring tropical and subtropical climates. Nut grass has also been introduced through ship ballasts, contaminated seed and crops, and nursery stock.

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This illustration of *Cyperus rotundus* shows its habit with underground creeping rhizomes and a chain of tubers with daughter plants. Cropped image – Ian Clarke © 2021 [CC BY-NC-SA 4.0](#).

The exact origin of nut grass is unclear. Some authorities claim it is indigenous only to India, while others believe its origin includes parts of Africa, Asia, and even northern and eastern Australia. Though sometimes considered indigenous to parts of Australia, this is likely because it has been a problematic agricultural weed since the first European settlers, and consensus now seems to be that *Cyperus rotundus* is an introduced species in Australia. It is certainly an introduction into southern Australia, where its earliest known reference as a weed is from the 1858 Report of the Sydney Botanic Gardens. It is now a weed of cultivation, horticulture, and disturbed sites across mainland Australia.

On the Swan Coastal Plain, nut grass can be found growing from Perth northwards, particularly in lawns, gardens, and disturbed sites. It grows best in moist, fertile soils such as along waterways and in wetlands. Although considered more a weed of cultivation than of bushland, nut grass is regarded as an environmental weed in Western Australia.

Impact and dispersal

Although a relatively small plant, nut grass is highly competitive for resources, and has allelopathic properties, producing and leaching phytotoxins into the soil which are harmful to other plants. It can displace native plants, reducing the availability of food or shelter for native animals.

Nut grass is notoriously difficult to control once established in an area. It can grow rapidly in hot weather and high light levels, with the plant's basal bulb sending out new rhizomes just two to three weeks after the shoot has emerged. These new rhizomes spread laterally and form additional

bulbs which can produce hundreds of daughter plants and eventually large, dense colonies may be formed. Growth of nut grass is limited by dense shade and temperatures below 20°C.

The plant's tubers and bulbs are shielded from extremes of heat, cold, drought or flooding, allowing it to survive and regrow once conditions are suitable. Dormant tubers usually persist for three to four years in the soil but can remain viable for up to ten years under ideal conditions. Dormancy of the tubers is broken by a chilling period, or by soil cultivation.

Management

As nut grass is so difficult to control once established, emphasis should be placed on early detection and management of new weed incursions.

Small or isolated plants can be hand weeded, though it is important to ensure that all tubers and rhizomes are removed. Manual removal of larger infestations is not recommended, as successfully digging out all viable tubers would cause extensive soil disturbance. Hand weeding is also likely to worsen an infestation, since breaking the tuber chains encourages dormant tubers to sprout, creating new daughter plants.

For larger infestations, [spot spray with glyphosate](#) at the label rate before the fifth leaf stage (September to February). Nut grass responds differently to glyphosate depending on the growth stage, and after the fifth leaf stage the herbicide is ineffective as it will not be translocated to the tubers. Repeated applications are usually necessary for effective control.

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Cyperus rotundus spreads vegetatively and can rapidly form large, dense colonies under ideal conditions. With its hardy, adaptive nature, nut grass is considered one of the most difficult weeds to control and eradicate. Photo – Forest & Kim Starr. [CC BY 4.0](#).

More information

Dwyer J (2016) *Cyperus rotundus* L.: an ancient food staple but now designated the world's worst weed.

In [20th Australasian Weeds Conference](#). Perth, Western Australia, (pp. 251–254).

Coleman M, Kristiansen P, Sindel B, Fyfe C (2018) Nutgrass (*Cyperus rotundus*): Weed management guide for Australian vegetable production [School of Environmental and Rural Science](#), University of New England, Armidale.

First Miyawaki forest planted in Western Australia *By Grey Coupland*

A Miyawaki forest, or tiny forest, was planted on 22 July 2021 at a northern Perth school as part of a growing international movement to green our urban landscapes. The children in Years 5 and 6 at South Padbury Primary School planted the forest, the first Miyawaki forest at a school in Australia, and the first forest of its kind in Western Australia. The forest was planted through a university research and outreach program devised and led by Dr Grey Coupland (Research Fellow at the Harry Butler Institute, Murdoch University). The program will teach the children not only about practical scientific methods, the Miyawaki method and planting the forest, but also provides lessons to children from Year 1 to 6 on urban sustainability issues and climate change.

Miyawaki forests are tiny forests that are tennis court sized or smaller. These forests are the brainchild of Japanese botanist Professor Akira Miyawaki, and are becoming increasingly popular globally to green urban landscapes and to increase urban biodiversity. Importantly, these forests can be planted in small pockets of the environment, using degraded or unused areas of the urban landscape, to not only create wildlife corridors and biodiversity hotspots, but also to help mitigate the urban heat island effect and improve human health and wellbeing. As such, these tiny forests can really punch above their tiny size in terms of their ability to become the hero for urban rewilding and to create more liveable urban environments.

Tiny forests contain over 30 different locally native plant species, which are planted in a dense arrangement (3 to 4 plants per metre square). Intensive soil preparation takes place prior to planting, with nutrients added in the form of compost and manure, as well as microbiota from compost tea. Anecdotally these forests grow up to 20 times faster than traditionally planted forests and contain up to 100 times the biodiversity.

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Miyawaki forests offer hands-on environmental action that can engage children and allow them to act as citizen scientists. Year 5 and 6 students planted 350 plants from 26 locally native species in the Miyawaki forest at South Padbury Primary School. Photo – Jesse Bartlett.



Miyawaki forests can be planted to fit the shape of any unused area of land, or can be shaped to have a specific meaning. The pathway through the forest at South Padbury Primary is boomerang shaped to pay tribute to Australia's indigenous culture. This aerial photograph was taken on Open Night at the school, with the forest lit up with fairy lights. Grey Coupland gave talks in the forest during the Open Night to share information about the forest and project with parents and caregivers. Photo – Justin McDonald.

The forest at South Padbury Primary school contains 26 different species that are local natives to the area, selected based on a survey of the nearby Hepburn Heights Conservation Area. The species in the forest include banksias, acacias and eucalypts, as well as smaller species such as *Conostylis*. These plants will form four layers within the forest according to the Miyawaki technique – canopy, tree, sub-tree and shrub layers. In total 350 plants were planted by the children over a 100m² area.

The school forest was a community effort, with compost for the forest soil created over many months using coffee grounds from a local coffee shop, fruit and vegetable waste donated by a local supermarket, the students' recess and lunch scraps, and brought to school by children from their homes.



Students had lessons on Miyawaki forests and the technique behind planting them. Then they got their hands dirty planting their very own forest right in the school grounds. They will be monitoring the forest every month over the next few years as it grows. Photo – Jesse Bartlett.

Children in Years 4, 5 and 6 will be acting as citizen scientists, conducting monthly monitoring of the forests for at least the first two years. They will assess plant survival, plant growth rates, animal diversity and temperature regimes inside and outside the forest. The children are using the [MyPestGuide Reporter app](#), from the Department of Primary Industries and Regional Development, to create a log of the species they observe. Dr Coupland will assist the children with their monitoring, and will also be conducting a dedicated science project alongside the children, investigating soil microbial activity, soil physical and chemical characteristics, and soil biodiversity using eDNA (environmental DNA). All the information will be used to assess the benefits of the Miyawaki method, and how well it can be adapted to the Australian environment and Australian plant species, in particular the plants of south-western Australia. This is important as the plants in the south-west are interesting and unique, and form part of a recognised global biodiversity hotspot.

Biodiversity is under threat globally and within Australia. Action is needed at national and local levels to mitigate this biodiversity crisis. At the local level, however, we can often feel powerless to act. The beauty of Miyawaki forests is that they can offer bite-sized local environmental action that can empower and engage communities, and at the same time provide real environment outcomes.

The forest planted at South Padbury Primary is the first of many forests Grey has planned for other Perth schools and the wider community. For more information on this project, please contact [Grey Coupland](#) at the Harry Butler Institute, Murdoch University. The Miyawaki forest project can be followed via [Instagram](#).



Grey Coupland (pictured) from the Harry Butler Institute has plans to plant many more Miyawaki forests across the Perth urban landscape, partnering with schools, NGOs and other organisations. Photo – Jesse Bartlett.

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Moth species not recorded in 100 years discovered at Perth school By Jennifer Beer

Edited reprint with thanks to John Curtin College of the Arts

A moth species that hasn't been recorded in the Perth area for more than 100 years was recently discovered at John Curtin College of the Arts on an endangered eucalypt.

David Blyth, head groundskeeper at John Curtin College of the Arts made the discovery, which is only the second recorded finding in the Perth area, the previous dating back to 1920.

"Last year the college's Roots and Shoots Club and home economics department worked with the environmental community organisation, APACE to establish a native/edible garden and in the process we planted a threatened [Eucalyptus argutifolia](#) called 'Jane' in its own planter box," David said.

"Recently I saw that the eucalypt was being attacked by a caterpillar that I had never seen before.

"We submitted caterpillar samples through the DPIRD My Pest Guide Report and when the caterpillars pupated they were identified as [Pataeta carbo](#)."

Cameron Brumley, entomology diagnostician with the Department of Primary Industries and Regional Development curates the Department's large insect reference collection and confirmed that the *Pataeta carbo* moths have not been recorded in the general Perth area in more than 100 years.



David Blyth, head groundskeeper at John Curtin College of the Arts standing beside the Eucalyptus argutifolia tree where he discovered the Pataeta carbo caterpillars feeding. Photo – Jasmine Mavaddat.

"The moths have been databased and added to the collection, and indeed they were the first new additions for the species for quite some time," Cameron said.

"There is only one other representative from the Perth area, and that dates back to approximately 1920.

"While it is quite a widespread species, it is always great to have fresh material to expand the collection, as it also serves as a store of biodiversity and biosecurity knowledge for the state."

David works with students across the college sharing his knowledge about sustainability and biodiversity.

"I am really passionate about educating the students about conservation, and I regularly hold walking tours to teach them about the endemic species on the grounds," David said.

David's latest project has been working with students from the Design and Technologies Department on STEM hydroponics and aquaponics projects in a new outdoor classroom initiative.

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Top: Pataeta carbo caterpillars are green while in their growing stage (left) and become red and darken in colour when they are getting ready to pupate (right). Photos – David Blyth. Above: A few of the Pataeta carbo moths were added to the insect reference collection at the Department of Primary Industries and Regional Development. Photo – Cameron Brumley.

Give your feedback on draft Native vegetation policy



The State Government invites your review of the [Consultation draft: Native vegetation policy for Western Australia](#), welcoming submissions from individuals, organisations and businesses. Your feedback will help modernise the policies and practices used to protect and manage the State's native vegetation.

Feedback shared by more than 1,000 organisations and individuals during last year's public consultation on the Native Vegetation in Western Australia issues paper was used to help inform this new draft policy.

The policy promotes a whole-of-government approach to protect and enhance native vegetation and biodiversity values while sequestering carbon and supporting the economy. It supports better mapping and monitoring, and advocates for the involvement of local stakeholders in regionalised policymaking so that the great diversity of native vegetation, along with its threats and competing priorities can be considered.

Implementation of the policy will improve clarity and certainty for stakeholders, the body of information available for decision-making, and collaboration between

public, private, and community sectors to achieve better outcomes.

"The policy will lay foundations for enduring reforms to ensure native vegetation is managed strategically, transparently and with a clear view to the future," said Environment Minister Amber-Jade Sanderson.

Feedback on the draft policy is sought from all interested parties and will inform a final policy for consideration by the State Government. Submissions will be collated and analysed by the Department of Water and Environmental Regulation.

You can [review the draft policy](#), [make a submission](#), and view the [summary report](#) and [feedback submissions](#) for last year's issues paper.

Consultation is open until 25 October 2021.

Contact

Native Vegetation Strategy

website wa.gov.au/nativeveg

email nvs@dwer.wa.gov.au

phone 6364 7000

Participants Required



for Research Study on Tick Bites in Australia.

If you have a tick attached to you now, have been bitten by a tick within the past 72 hours or get a tick bite in the future, you may be able to assist our researchers on the Troublesome Ticks Project.



How you can help

Although we know that diseases can be transmitted through Australian tick bites, there is much debate as to what is causing the debilitating symptom complexes attributed to ticks (DSCATT) seen in some patients. Your participation in our study will provide valuable information which may assist us in detecting the causes of DSCATT. Any reasonable out-of-pocket expenses will be reimbursed.

Participation includes:

- Removal of the attached tick
- Enrolment via our study portal and completion of some questions
- A blood sample and simple skin biopsy
- Follow-up blood tests and health questionnaire.

Interested?

If you are interested in participating, please ask the medical staff at your local clinic or hospital to enrol you in our study now.

For more information, please contact our Project Officer on 1300 817070, email DSCATT@ricketslab.org.au or head to the website: tickstudy.murdoch.edu.au



This study has been approved by the Murdoch University Human Research Ethics Committee (permit 2019/124), the Northern Sydney Local Health District (permit 2019_ETH12032) and the ARC Lifeblood (permit 2019-20), CRICOS provider code: 001251 | MCO0004789 | Photo credit: Stephen Doggett

1300 817070

tickstudy.murdoch.edu.au



DBCA's Biodiversity and Conservation Science team at the launch of the Florabase 3 project. Seated (front): Olga Nazarova. Seated (middle, L-R): Julia Percy-Bower, John Huisman. Standing (L-R): Elisa Wood-Ward, Rob Davis, Shelley James, Ben Richardson, Margaret Byrne, Skye Coffey, Amy Curtis, Terry Macfarlane, Supreema Sinha, Kelly Shepherd. Photo – Emily Ward.

Florabase 3 launched during National Science Week

By Tara Mathews

On Wednesday 18 August, as part of National Science Week, DBCA's Director General Mark Webb officially launched [Florabase 3](#) – an amazing online resource from the Western Australian Herbarium.

Florabase 3 celebrates our incredible botanical diversity with images and descriptions of plants and interactive identification keys. It also now provides information about Western Australia's fungi and seaweeds.

The Herbarium specimen collection and associated data, disseminated through Florabase 3, informs

flora management by industry and facilitates enhanced knowledge of our incredible flora in the broader community. The Herbarium's records can map a species' distribution, and allow assessments regarding their conservation status or the need for further study. In many ways, the collection underpins much of the conservation work undertaken by Biodiversity and Conservation Science staff and volunteers.

The new features of Florabase 3 include greater access to specimen data, improved mapping, and an enhanced search capability.

Vale Elisabeth Buters (20/08/1926 – 21/07/2021)

From the Friends of Brixton Street Wetlands

On Wednesday 21 July 2021 we lost a beautiful lady, Elisabeth Buters, who for many years was a dedicated, hard-working volunteer who contributed so much to the Brixton Street Wetlands. Elisabeth was one of the founding members of the Friends group and was very passionate about the environment, bushland and flora.



She spent many hours photographing flora in areas of bushland and wetlands and then sometime later she compiled photos in five albums with correct names and species. Elisabeth the librarian came through in this amazing work. We then had in the early days beautiful photos in albums to use for displays and education (our first herbarium).

Elisabeth also had a great interest in the watsonia plant and spent many hours studying the plant, how it grew and the best methods to clear it from Brixton Street, all this information in many notepads. Much time was spent weeding watsonia and other weeds with tools her husband Nick Buters produced for the Friends group, made out of recycled mower blades and wood, tools that the group still use today because they are superior to anything else around.

Years gone by it was hard work dragging bags of weeds and rubbish out of the wetlands and Elisabeth did well as she was a tiny lady. Elisabeth, a sweet and gentle lady who knew the names of every flower in the Brixton Street Wetlands has now gone to work on another 'PATCH'.

We will always remember your contribution, enthusiasm and commitment.



Historic step to protect Western Australia's native forests

Karri trees at Boranup Forest. Photo – Mark Brundrett.

Western Australia's native forests will be protected with an end to logging from 2024, when the upcoming Forest Management Plan 2024–33 comes into effect. The historic decision by the State Government will protect 400,000 hectares of karri, jarrah and wandoo forests otherwise at risk of being logged, conserving in total nearly two million hectares of native forests for future generations.

Immediate protection of around 9,000 hectares of high conservation-value karri will be put in place, and other high value forest areas will be recommended to receive national park status.

From 2024, timber taken from our native forests will be limited to forest management activities that

improve forest health and clearing for approved mining operations.

The protection of Western Australia's forests is vital for maintaining biodiversity, forest health, and carbon capture and storage.

"The McGowan Government is committed to preserving our beautiful South-West forests for future generations by ending large-scale commercial logging from 2024," said Environment and Climate Action Minister Amber-Jade Sanderson.

"This will not only ensure this important asset can be enjoyed for its beauty, Aboriginal cultural heritage, and ecotourism for years to come, but it is an important step in the fight against climate change.

"WA's South-West native forests are storing approximately 600 million tonnes of carbon dioxide equivalent, or roughly 116 years' worth of annual emissions for every car in Western Australia."

Investment of \$350 million over the next ten years will be used to expand Western Australia's softwood timber plantations, to create and support sustainable jobs, as well as supply softwood timber for industry.

Development of the next Forest Management Plan 2024–33 will now formally commence, informed by extensive [consultation with stakeholders](#). The new plan will lay out how Western Australia's south-west forests will be managed to protect biodiversity conservation values while balancing diverse uses of Aboriginal cultural heritage, tourism and recreation, and economic development.

Biosecurity Group and landowners finding success with HOGGONE® feral pig control system

By Donna Stewart

The [Leschenault Biosecurity Group](#), based in Western Australia's south-west, has incorporated HOGGONE®, a relatively new feral pig control system as an important component of their feral pig management program. The group was among the first in Western Australia to use this system, and since trialling it in late 2020, now routinely utilises this system to assist landowners controlling feral pigs on their property.

Leschenault Biosecurity Group project officer, Kate Duzevich says, "This system provides a control option well suited to much of our area, where shooting and conventional baiting/trapping programs can be logistically challenging and risky. From our experience, if pigs are present, once they are comfortable, they will feed repeatedly at night which establishes a behavioural pattern, 'training'



This surveillance photo shows feral pigs, including a piglet, approaching and eating bait from the HOGGONE bait boxes. Photo – Leschenault Biosecurity Group.

the animals over a period of time to pre-empt feed and become comfortable with the presence of the bait boxes, which they eventually learn to open autonomously."

The system uses HOGGONE® meSN® Sodium Nitrate baits and patented bait boxes. The bait is an approved food preservative in low doses. It is considered a humane form of feral pig control, eliminating pigs quickly as they lack an enzyme present in other fauna, causing them to expire from a lack of oxygen to the brain within 1–3 hours of ingestion. The carcasses of affected pigs pose no threat to scavenging fauna and the bait is in target specific boxes that prevent other fauna from accessing the bait.

The group has found it to be an excellent feral pig management alternative, because:

- it is very effective, fast acting and humane
- there is very low threat of off-target damage
- it does not require formal training or qualifications to purchase or use
- it is safe for operators (when used according to manufacturer's instructions)
- it is relatively low cost (bait boxes can be shared).

Contact

Leschenault Biosecurity Group

email info@lbginc.org.au

phone 0477 049 967



Clockwise from top left: Two participating landowners setting up a HOGGONE bait box. Pig path to rooting site, where the bait boxes were set up. Leschenault Biosecurity Group staff member, Shania Willison sets up a bait box at rooting site. Photos – Leschenault Biosecurity Group.

The Leschenault Biosecurity Group conducted its first trial of this system on private property in Mumballup, within the Shire of Donnybrook-Balingup, working collaboratively with two property owners. According to group team member, Terry Mondy, "Over the past several months we've learned much about the use of this system. We have also found a big positive with our surveillance evidence showing that when the adult pigs open the boxes, the accompanying piglets will also eat, increasing our chance of successes in getting all of the pigs in a group, not leaving piglets behind."

To learn more about the HOGGONE® Feral Pig Management System and process, visit the [Leschenault Biosecurity Group website](#).

The battle against European wasps: Game on ends with game won!

By Jodie Gysen

The Department of Primary Industries and Regional Development (DPIRD) has won its biggest battle against the European wasp, with just 14 European wasp nests detected and destroyed during the 2020–21 season – the lowest number in 12 years.

This is a huge win for DPIRD's [European wasp surveillance program](#), which has been waging war for 44 years to prevent the European wasp from establishing in Western Australia.

The program's continued success is something that has never been achieved in any other Australian state or territory, maybe even throughout the world.

Establishment of the European wasp would have a devastating impact on Western Australia. They have been known to disrupt whole ecosystems, invade beehives, ruin grape and stone fruit crops, and ruin outdoor lifestyles.

Finding only 14 nests in 2020–21 was an incredible outcome for the program, which faced its greatest challenge in 2018–19 when the season ended with 166 nests detected. This was the largest number of nests found during the program.

What is even more incredible was that all 14 nests were new wasp incursions, meaning DPIRD had managed to find and kill every nest in 2019–20.

Without detection and control, one European wasp nest can in the next season lead to 10 new nests.

This success is the result of DPIRD ramping up its surveillance program in 2019, with additional resourcing and strong collaboration from local government, other departments and the community.

Over three years DPIRD deployed more than 3,000 surveillance traps each season, and surveillance staff traversed thousands of hectares. Finding nests involved trekking and four wheel-driving through thick bushland and rough terrain to locate hidden underground nests with entrances the size of a 20-cent piece – an incredible feat.

Additionally, when the wasps started moving into impassable bushland areas, which would have made it impossible to find and destroy nests, DPIRD piloted a baiting program in 2019–20. The program posed negligible risk to non-target species but had a huge impact on the European wasp population.

The result was unprecedented. In 2020–21 there were no nests detected in the prior hotspot areas across the Perth Hills, including Martin, Orange Grove, Kalamunda, and Mundaring.

European wasps have been driven back from both the brink of the bush, and the brink of establishment.



DPIRD Technical Officer Marc Widmer and Chief Plant Biosecurity Officer Sonya Broughton with European wasp traps and nest. European wasp nests are found mostly underground and can grow to an enormous size like this example located in Thornlie during the European wasp surveillance program. Photo – DPIRD.

European wasp queens will continue to arrive in Western Australia during the warmer months from the eastern states, mainly on vehicles and freight, and will continue to seed new nests. However, with a strong and effective surveillance program, DPIRD will continue to ensure the ongoing detection and eradication of new incursions across Western Australia.

Contact

DPIRD Pest and Disease Information Service

email padis@dpird.wa.gov.au

phone 9368 3080

Please send us your regional report (400 words) and one or two photos by Wednesday 1 December 2021. Text may be edited in response to volume of submitted reports.

Caring for our rivers – Canning River Knowledge Exchange Event

By Ingrid Sieler

Rivers and their catchments have always been integral to life on the Swan Coastal Plain and today they continue to provide a cultural and social connection, ecosystem services and economic benefit to millions of Western Australians. In August, a group of about 20 land managers, researchers, and community volunteers came together to share their knowledge about Djarlgarro Beelias (Canning River), to learn about new work to care and manage our waterways, exchange perspectives, celebrate achievements, compare problems and find solutions to them.

As the rain poured down outside, Sharon Wood-Kenney welcomed us to country and spoke of her connection to the river and special times spent with family on its banks. We listened intently as Sharon and her colleagues Gail Barrow and Dr Cristina Ramalho from the University of Western Australia presented their work on the Clean Air and Urban Landscapes (CAUL) Hub project, [Noongar Water Knowledge](#) in the urban Djarlgarro Beelias catchment. Later, Associate Professor Tod Jones from Curtin University introduced the Reconnecting to Rivers catchment project centred around Blackadder Creek. It was apparent that these two culturally focused projects can ignite new opportunities and support more comprehensive ways of working with First Nations people and the broader community.

Participants received an update from DBCA on their recent research, monitoring and on-ground projects along the Canning and Southern Rivers and we learned about the next round of the [Community Rivercare Program](#). Together with the Swan Canning River Recovery 3 (SCRR3) project, these grant programs provide important and sometimes significant funds for restoration work.

Shenaye Hummerston’s overview of the 20 individual SCRR3 projects, led by Perth NRM, highlighted the successful [living stream](#) at Nurdi Park. Amy Krupa, CEO of SERCUL, described the project in detail, and we learned how many organisations and groups worked together to rapidly plan and implement it.

This event was delivered as part of the SCRR3 project funded by the Australian Government. For further information about the SCRR3 events please contact Stakeholder Engagement Manager [Ingrid Sieler](#).

Contact

Ingrid Sieler

Perth NRM

email ingrid.siel@perthnrm.com



Cristina and Gail from UWA, with Vanessa from Curtin University at the Canning River Knowledge Exchange Event. Photo – Ingrid Sieler.



Shenaye Hummerston of Perth NRM presenting at Canning River Knowledge Exchange Event. Photo – Ingrid Sieler.

Flora, fauna, fungi and the Friends of Wireless Hill By Aruni Jayasekera

Wireless Hill Reserve in Ardross is about 40ha of natural bushland bordered by suburbia. It is valued by the local community, but only a few very dedicated folks belong to the [Friends of Wireless Hill](#) group which has been operating since 1987. We organise voluntary bushcare activities fortnightly, planting days and wildflower walks annually, whilst the City of Melville bush crew does bigger repair jobs.

Originally, the hill was associated with the Beeliiar people and their elder Yagan. The site was cleared in 1911 to establish the radio station, hence the name Wireless Hill. Since then, the bush largely regenerated itself from seeds of native plants in the surrounding bush, which are now the suburbs of Booragoon, Ardross, Alfred Cove and Applecross. Being a Bush Forever site and Threatened Ecological Community (Banksia Woodlands of the Swan Coastal Plain), it's protected under State and Commonwealth environmental laws. It has rich biodiversity,



Carousel spider orchid (Caladenia arenicola).
Photo – Aruni Jayasekera.

being home to an array of spectacular flora including several terrestrial orchid species, fascinating fauna and some fantastic fungi.

Banksias, hakeas and kangaroo paws along with jarrah, marri and sheoak trees, and many other plants at Wireless Hill provide food for the birds and bees. Flocks of black cockatoos regularly feed there. Carnaby's cockatoos and forest red-tailed black cockatoos love the constant supply of honky nuts. On and off we see migratory birds like the rainbow bee-eaters paying visits. It's mesmerising to watch and listen to the birdlife, and we recently found out that two species of bats are inhabiting the bat boxes installed by the council. I was so privileged to see a quail a couple of times on the north-side. Because it was so quick, I couldn't really identify the species, but think it's a painted button-quail.

Wireless Hill is also home to many species of invertebrates. In a first-ever survey last spring, 30 volunteers joined a specialist to sample, identify and document these fascinating creatures at three sites. It was a fantastic citizen-science project funded by the Federal Communities Environment Program and organised by our Grants Officer/Treasurer Margaret Mathews.

With the amount of winter rains received this year, many fungi were observed during July to August. Because most of them were mycorrhizal, it was good to know that associated vegetation is healthy.

I accidentally stumbled on a patch of *Clavulina vinaceocervina* (flesh-coloured coral fungus) and was excited to report it as the first record for Wireless Hill.

This year, our annual wildflower walk on Sunday 5 September attracted big crowds. All appreciated the informative guided walks lead by knowledgeable members of the Friends group and the Murdoch Branch of the Wildflower Society. So many oohs and ahs were heard when spotting the spectacular spider orchids. We get many requests for guided tours these days, but it is hard to fit in all. We now have a [Facebook page](#) and the latest information is available for interested public.

In May, just before the big rains, we planted 400 seedlings. Rain is good for the bush, but the weeds are also thriving so our work is cut out for us this spring. We really appreciate help from the community to remove some problematic weeds. Please join our Gladi Grab on Sunday 24 October (see entry in the [What's on](#) calendar for details).

Recently, our Convenor Graham Jenke invited local Member of Parliament Kim Giddens for a tour at Wireless Hill with the Friends group. She was very impressed with our bushcare work.

On a sad note, our long-time member, Alison Crofts passed away recently. She was a tower of strength, and we are working towards getting a seat on the Wildflower Walk to remember her 25 years of support.



Top: A forest red-tailed black cockatoo, one of the many bird species that visits Wireless Hill Reserve. Above: After the record-breaking rains received this winter, many fungi were observed at Wireless Hill Reserve, including the first record for the site of flesh-coloured coral fungus (Clavulina vinaceocervina). Photos – Aruni Jayasekera.

Contact

Aruni Jayasekera

Friends of Wireless Hill

email aruni.jayasekera@gmail.com

Funding success for Blue Gum Lake Reserve community project

By Kate Goodman

[Project Robin Hood](#) is a participatory budgeting program run by the City of Melville that provides a funding pool for community ideas, projects or events that bring people together and build better neighbourhoods. Ideas are pitched by submitting an online application and then projects are voted on by the community to decide which are funded.

A community project proposed by Brentwood Primary School has been successfully funded through round 5 of Project Robin Hood, receiving \$19,798 for the installation of interactive signs at Blue Gum Lake Reserve. Students and staff from Brentwood Primary School will install the new signs, which will celebrate the local flora and fauna, provide information to help visitors learn about the wildlife, and give Blue Gum Lake Reserve a much-needed makeover. The aim is to increase the signage around the lake without it imposing on the surrounding nature. The students will research the flora and fauna around the reserve, create informative and entertaining videos on the species they discover, and then share the videos via QR codes attached to signposts distributed around the lake. The signs will also include local Aboriginal names of native plants and animals within the reserve for cultural awareness.

It is heartwarming that this project has been funded. Teachers, students and parents from Brentwood Primary School also assisted the



Brentwood Primary School principal Donna Bridge with students Alex, Charlotte, Eeseose, Dewi, Joshua and teacher Michelle Pyzik. The school will use funding received from Project Robin Hood to create and install interactive flora and fauna signs at Blue Gum Lake Reserve. Photo – City of Melville.

[Friends of Booragoon and Blue Gum Lakes](#) with our Blue Gum Lakebed Revegetation initiative. The connections made with SERCUL, Wirambi Landcare and our Friends group have played an important part in the development of this project.

Contact

Kate Goodman

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Photo – Stephanie Murphy.

Record bushwalk for the Friends of Warwick Bushland

By Karen Clarke

Sunday 22 August was a great day for the [Friends of Warwick Bushland](#) with a record 65 people attending our guided bushwalk. Run as a joint event with the [Urban Bushland Council](#), 30 of their members joined numerous locals in a special walk focusing on the orchids and wildflowers of Warwick Bushland. Led by orchid expert Dr Mark Brundrett, Tim Hodgkins and Karen Clarke, three groups were guided to key points along the Jarrah Walk Trail where the large number of visitors could safely view the wildflowers without risk of trampling them.

Orchid enthusiasts and other interested visitors were impressed by the diversity of orchids they were able to see, including greenhood, jug, fire, donkey, spider and sun orchids as well as a host of other local wildflowers. A delicious home-baked afternoon tea delighted walkers on their return. The warm weather was perfect, and many people commented on the good condition of the bushland.

A spring flora and fauna walk is scheduled for [Sunday 24 October](#) if you are interested in attending the next guided bushwalk at Warwick Conservation Reserve.

Wadjup-Gabbilju *By Susan Harris*

The [Wadjup-Gabbilju](#) foreshore group periodically hosts public walks that showcase and share knowledge on the history and ecology of Wadjup and Gabbilju, two estuarine parts of the Djarlgarro Beeliar (Canning River). The next walk, River Talks II, is on Sunday 3 October to the relatively unknown Bush Forever treasure Yagan Reserve at the head of Bull Creek inlet. The two River Talks were supported by grant funding through the Perth NRM Swan Canning River Recovery Program stage three, funded by the Australian Government.

According to settler Henry Bull, there were two streams that entered the inlet in the 1830s. He established himself alongside the larger of the streams. On the walk we'll see the mouth of 'Bull's Creek'.

Wadjup-Gabbilju is a group of volunteers registered with the City of Canning to clean the walk's interpretive signs, and do the landscaping

and maintenance of the sites surrounding the signs. We began planting at the trailhead alongside the Yagan Reserve viewing platform in 2014 and our group was officially formed in 2015/2016.

The suite of silver signs, gleaming like textbooks nestled in the foreshore's vegetation, had the input of 1,000 people and a heritage interpretation consultant over half a dozen careful years beginning in 2006. The consultant's project footwork was largely self-funded in her pursuit of truth, in nailing the fascinating history of the estuary's Convict Fence, and in ensuring a highly inclusive and quality job.

The 7km Wadjup-Gabbilju foreshore trail runs beside the wonderful estuary of Wadjup (the traditional name for the Canning River flats) to Gabbilju. Gabbilju refers to Bull Creek and its wetlands.

Since the group's inception, the average temperature in Australia has been rising. Most of our work is carting bottles of water to our new plants during the warm rainless months. We might be alongside the Canning River but many of our 19 sites are a few metres up the bank deprived of groundwater seeps by hijacking bores, perched on dry structureless sand 'reclaimed' from the river floor washed by tides over thousands of years.

It must have been relatively quick work to damage the valuable edge of the Canning Estuary in the 1960s, but it is a long job to repair it. The United Nations has declared 2021–30 to be *The UN Decade of Ecological Restoration*, and we will certainly be doing our best. We are encouraged by our findings of three bird species that are first records for our foreshore lists (spotless crane, black-tailed godwit and whimbrel), and a western swamp skink (*Lissolepis luctuosa*), which is highly valued in Yagan Reserve but now at our next site along the foreshore!

Contact

Susan Harris

Wadjup-Gabbilju

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Our best planter/weeder keeping on top of things at the Gabbilju wetlands trailhead site. Banksia littoralis behind. Photo – Susan Harris.



One of the interpretive trail signs at the jetty in Bull Creek inlet. Photo – Susan Harris.



Sun lighting up the head of Bull Creek inlet. Bull Creek flows in from the left behind the paperbarks. Picture taken from Yagan Reserve wetlands viewing-platform. Photo – Susan Harris.

The Woodlupine seed project

By Andrew Crawford, Trevor Phoebe, Karena Joyce, Tammy Quarman, Cody Funnell, Sukhpreet Kaur, Jett Ferguson, and Jaslyn Toop

Seed conservation is an important recovery action that is used to help prevent species from becoming extinct. DBCA's Western Australian Seed Centre (WASC) in Kensington is a facility that collects and stores seed of the State's conservation significant plant species, ready for use in recovery actions such as translocation – the establishment of new populations back into the wild. It can be difficult to collect enough seed from the wild due to a paucity of plants, often combined with low seed production. To boost seed stocks, seed production areas can be established.

Woodlupine Primary School is a small, independent school located in the foothills of the Perth metropolitan area. In 2019 the school was seeking a meaningful way of becoming involved with conservation. The school's principal, Trevor Phoebe, heard about the work being carried out by the Australian Seed Bank partnership around Australia and approached them with the idea of developing a school-based conservation project. This approach put him in touch with the WASC and led to the development of the seed conservation project, resulting in the establishment of a seed production area in the school grounds.

A principal's perspective – Trevor Phoebe

At Woodlupine Primary School we have recognised the global significance of living a more sustainable lifestyle. Across the school, students are provided with many opportunities to learn about and engage in sustainable activities to develop environmental awareness and global stewardship. Our partnership with the Western Australian Seed Centre enables our students to participate in an authentic long-term sustainability project with State Government scientists – protecting Western Australia's biodiversity. This venture led to our participation in the Millennium Kids project, a related and significant project that encourages students to become change agents both now and in the future.

We actively model the benefits of sustainability to the whole community. Our school has publicly committed to reducing the amount of lawn that we maintain. As well as being an introduced species, lawns are water intensive and financially costly. Replacing small areas of lawn with indigenous plant species encourages insect and bird life, which not only supports biodiversity, but saves fertiliser, water, and mowing costs – a much more financially sustainable approach that we promote in our school in the belief that community members will mirror our approach to the benefit of the State.

As we continue with our whole-school approach to sustainability, we have delivered a strong message to our community and beyond that sustainability is a key component of the culture of this school and a vital component of 21st century schools.



Left to right: Jett Ferguson, Karena Joyce (teacher), Tammy Quarman (gardener), Cody Funnell, Jaslyn Toop and Sukhpreet Kaur with showy everlasting flowers (*Schoenia filifolia* subsp. *subulifolia*). Photo – Jett Ferguson.

Continued next page ...

The students' perspective

My name is Cody, some of my fellow Year 6 students and I at Woodlupine Primary School are gravely concerned about the fact that Western Australia's diverse ecosystems and bushland is gradually being cleared, and the effects of climate change is just making the effect on bushland areas so much worse.

At one time our bushland areas were a flourishing wonderland of biodiversity with a large array of flora and fauna. Now they are a biodiversity hotspot due to the increasing number of plant extinctions.

However, despite this devastating change, multitudes of people are trying to make a difference, and among them is my great school, Woodlupine Primary. Woodlupine Primary School has many enthusiastic students regrowing and documenting the progress of endangered plants, namely [Darwinia squarrosa](#), [Schoenia filifolia subsp. subulifolia](#) and [Ptilotus pyramidatus](#), with the amazing support of the WASC, and as a result, these wonderful plants are being saved from extinction and growing in numbers!

– Cody Funnell

My name is Sukhpreet and I am one of the students collaborating with Dr Crawford to save three native endangered plant species from disappearing from planet Earth forever (i.e., going extinct).



Sukhpreet Kaur monitoring *Schoenia filifolia subsp. subulifolia*. Photo – Karena Joyce.



Schoenia filifolia subsp. subulifolia plants flowering in the seed orchard at Woodlupine Primary. Photo – Andrew Crawford.



Schoenia filifolia subsp. subulifolia drawing by Sukhpreet Kaur.

In the Seed Bank Project, I am looking after the *Schoenia filifolia subsp. subulifolia* (showy everlasting). I have been going out and documenting the plants' growth. One thing that I have noticed while I was documenting is that they only flower or open when it is nice and sunny, when it is rainy, they close.

The showy everlasting plants at our school have grown from self-sown seeds which means the seeds were not planted by humans. The seeds seeded themselves from the original plants.

I am so very grateful that I am part of the Seed Bank Project.

– Sukhpreet Kaur

My name is Jett, and I am one of the students collaborating with Dr Crawford in the WA Seed Centre Project. In the Seed Bank Project, we are growing three endangered species of plants (another is on the way). I am looking after the *Darwinia squarrosa* (fringed mountain bell).

I have been documenting and looking after these plants daily with the help of our gardener Tammy. We have been weeding the beds, documenting the insects/pests that have been visiting them, seeing if any plants have died and/or are dying and recording their growth.

The Year 6s at Woodlupine Primary School have recently gone on an excursion to the Western Australian Herbarium and Seed Bank, where I found out that the most recent species that Dr Crawford is studying is the darwinia that I am looking after, which is really amazing.

– Jett Ferguson



Darwinia squarrosa flower. Photo – Andrew Crawford.

The students' perspective

My name is Jaslyn and I am one of the students who is helping Dr Crawford save endangered native plants from the bush.

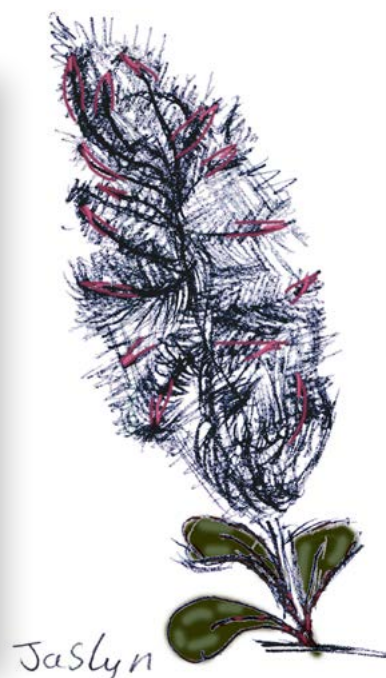
The native plant I am saving is *Ptilotus pyramidatus* (pyramid mulla-mulla). The seedlings were planted on the 3rd of June 2020, and I have been recording and documenting the growth of the plants and looking after them. Some of them have already started to flower. There are a lot of weeds in the bed and so I have been pulling them out.



Jaslyn Toop monitoring *Ptilotus pyramidatus*.
Photo – Karena Joyce.

I am very grateful that I have had the opportunity to be a part of the Seed Bank Project and appreciative of the help that my teacher Ms Joyce, our gardener Tammy, and the other students doing the project have given me. I hope future generations get to enjoy this plant and hope more people continue to save endangered native plant species, so that they can be replanted into bushland areas.

– Jaslyn Toop



Ptilotus pyramidatus plant flowering.
Photo – Andrew Crawford.

Ptilotus pyramidatus drawing
by Jaslyn Toop.

Since its establishment in 2019, the seed production area at Woodlupine Primary school has trialled the growth of five conservation significant plant species. In its first year, three species were trialled, and we were able to collect seed from all species planted. Despite the small scale of the plantings, the amount of seed harvested added significant quantities to WASC's seed stocks. Seed collected for one of the species, *Schoenia filifolia* subsp. *subulifolia*, facilitated a direct seeded translocation trial for the species. The latest addition to the planting is *Darwinia squarrosa*, a species normally found in the peaks of the Stirling Range National Park. Will these plants successfully produce seed? Only time will tell. In the meantime, these dedicated students are finding that small, local conservation actions can have a meaningful impact on species in the wild.

Contacts

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DBCA

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Trevor Phoebe


Woodlupine Primary School

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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@iinet.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

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 Karrinyup. 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


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


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


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


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


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 jgumme@live.com.au


Sundays 8am–10am

 **Bushcare activities** every Sunday with Friends of **Shenton Park** Bushland. Contact: Dani 0420 334 601 bojel@iinet.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


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.friendsofclackclaremont.org

Sundays 9am–11am

 **Bushcare activities** with **Cottesloe** Coastcare. First Sunday of each month. Contact: Robyn 9384 7668, info@cottesloecoastcare.org [website](http://www.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


Sundays 9am

 **Bushcare activities** with the Friends of **Sapphire Cove** Nature Reserve, Halls Head. Last Sunday of each month. Contact: Barry 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 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://www.wildlifecentre.com.au/register)

Sundays

 **Wilson Wetlands** Action Group undertakes regular **work mornings** throughout the year on Sunday mornings. Contact: 0407 135 412 wilsonwetland@gmail.com

Registration/contact details

Birdlife WA All walks are free, no need to book. Call 9383 7749 Monday–Friday 9.30am–12.30pm.

AGLG Armadale Gosnells Landcare Group. Look for the AGLG sign at the meeting point, BYO gloves and dress for the weather. Morning tea provided. Call 0413 883 565 or check [Facebook](https://www.facebook.com/aglg)

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
- Mondays**
 **Plant learners' group** with **Eastern Hills** Branch of the **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
- Mondays**
 **Propagation group** with **Eastern Hills** Branch of the **Wildflower Society** meets twice a month to share knowledge about propagating native plants. Contact: Sandy 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 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** Branch of the **Wildflower Society** meets fortnightly to prepare seeds for propagation. Contact: June 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 [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@bqpa.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 [website](#)
-  **Thursdays and Fridays 9am–4pm**
Wetland, Bushcare and **nursery** activities with The **Wetlands Centre, Cockburn**. Contact: Danielle 9417 8460 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
-  **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 murdoch.secretary@wildflowersocietywa.org.au [Facebook](#)
- Fridays 8am**
 **Bushcare activities** at **Piney Lakes**. Volunteers need a site induction. Contact: 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
- Fridays 7pm**
 **Talks** with **Eastern Hills** Branch of the **Wildflower Society**. Fourth Friday each month, Octagonal Hall, 52 McGlewe Rd, Glen Forrest. \$2 entry, visitors welcome. Contact: eastern.hills.branch@wildflowersocietywa.org.au, [Facebook](#) [website](#)
- 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 [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.












October














-  **7 Thursday 5pm–6:30pm**
Curious Critters & Botanicals workshop at **Beechboro Public Library**. Learn how to attract wildlife into your home garden by incorporating native plants. For ages 14+. [Register](#).
-  **7 Thursday 6pm–7pm**
Get Energy Smart at Home workshop. Frank Konecny Community Centre, **Parmelia**. [Register](#).
-  **9 Saturday 8am–10am**
Bushwalk with Whadjuk Noongar Elder Neville Collard at **Wandoo Heights Nature Reserve**. Learn about the cultural significance, history and uses of the area including flora and fauna. For adults and children 10+. [Registrations essential](#).
-  **9 Saturday 8am–11am**
Birdwalk at **Whiteman Park**, Whiteman. [BirdLife](#).
-  **9 Saturday 9am–11am**
Become a Bushland Birder, a workshop with BirdLife Australia. Learn about local native birds, how to identify them, and how to survey them. Warrandyte Park Clubrooms, **Craigie**. [Registrations essential](#).
-  **9 Saturday 12 noon–3pm**
Bushwalk organised by Teatro Latinx at **Koondoola Regional Bushland**. [Registrations essential](#).
-  **9 Saturday 6pm–9pm**
Search for the Queen of Sheba Orchid, a documentary screening. Learn about the importance of pollination for the survival of the South Western Australia native orchids. Dante Alighieri Society Western Australia, **Tuart Hill**. [Tickets](#) \$20.
-  **10 Sunday 9am–12 noon**
Planting at **Mary Carroll Park**. Gosnells. [AGLG](#).
-  **10 Sunday 10am–11am**
Spring walk in **Inglewood Triangle bushland reserve** with the [Friends of Inglewood Triangle](#).
-  **10 Sunday 3:30pm–6:45pm**
Dr Dolittle Goes Bush, a 2km walk to a Bibbulmun Track campsite to interact and learn about native animals from Kanyana Wildlife Rehabilitation Centre. Ideal for kids 5–12 years. \$20 adults, \$40 for kids. [Bookings](#) close 9 October.













Learn about the Western Australian magpie in a talk by Lizzie Speechley and Sarah Walsh, on [Tuesday 19 October](#). Photo – UWA.

-  **16 Saturday 8:30am–11:30am**
Birdwalk at **Forrestdale Lake**. [BirdLife](#).
-  **16 Saturday 9am–4pm**
Weeding day at **Jarrahdale Heritage Park**. Lunch provided. [Register](#).
-  **16 Saturday 10am–11am**
Spring walk in **Inglewood Triangle bushland reserve** with the [Friends of Inglewood Triangle](#).
-  **16 Saturday 10am–12 noon**
Sustainability in Action, a workshop by Ecoburbia. **North Fremantle Community Hall**. Free for residents of City of Fremantle, Town of East Fremantle and City of Melville. [Register](#).
-  **16 Saturday 2pm–4pm**
Nature discovery walk at the **Roe 8 corridor, Coolbellup**. A leisurely walk with artist and biodiversity educator Angela Rossen with pauses to draw, photograph, or write. [Registrations essential](#).
-  **17 Sunday 8am–2pm**
Encounter the birds of the jarrah forest on a 16km **Bibbulmun birds walk** in **the hills east of Armadale** with Viv Read, amateur ornithologist, volunteer and experienced bushwalker from BirdLife WA. [Tickets](#) \$45.
-  **18 Monday 10am–2pm**
Native orchid workshop. Learn to create a model WA native orchid of your choice from paint, clay, paper and other materials. Technology Park Function Centre, **Bentley**. [Tickets](#) \$150.

-  **19 Tuesday 6pm–7:30pm**
The Western Australian Magpie, a talk by Sarah Walsh and Lizzie Speechley, two UWA post-graduate students who are part of the Western Magpie Research Project. Piney Lakes Environmental Education Centre, **Winthrop**. [Register](#).
-  **20 Wednesday 8am–8:45am**
30 years of Bush Heritage, part of the [spring webinar](#) series. [Register](#).
-  **21 Thursday 8am–11am**
Birdwalk at **Lake Claremont**, Swanbourne. [BirdLife](#).
-  **21 Thursday 6:30pm–8pm**
Spooky Night Stalk at **Canning River Regional Park**, Wilson. [Registrations essential](#).
-  **23 Saturday 8am–10am**
Bird monitoring at **Roe 8 Bushland, Hamilton Hill**. Get involved in this citizen science project by observing and recording which birds frequent different sections of the corridor. [Register](#).
-  **23 Saturday 8am–11am**
Birdwalk at **Yangebup Lake**, Cockburn. [BirdLife](#).
-  **23 Saturday 8:30am**
Black cockatoos of Bungendore Park. Join BirdLife WA for a walk and talk through Bungendore Park, Bedforddale. [Register](#).
-  **23 Saturday 8:30am–9:30am**
Composting in small garden and homes, a workshop by Robyn Brown from Waste is My Resource. **Kelmscott Community Garden**. [Register](#).
-  **23 Saturday 10:30am–12:30pm**
Botanical Drawing workshop with Una Bell. For adults and young people aged 14+. **Bullsbrook Public Library**. [Registrations essential](#).
-  **24 Sunday 8:30am–12:30pm**
Gladi Grab at Wireless Hill Park, Ardross. Meet at the Friends of Wireless Hill Notice Board. BYO gardening gloves and water bottle, and wear protective clothing (hat, long-sleeves, closed shoes and eyewear). A coffee van will be on site from 9.30am–11am to buy morning tea. Contact Aruni aruni.jayasekera@gmail.com or Barbara 0402 128 755.
-  **24 Sunday 9am–12 noon**
Luca's Legacy annual clean-up event. Help keep our waterways clean from discarded fishing line and other litter which threatens dolphins, seabirds and other wildlife. John Tonkin College Marine Centre, **Dawesville**.







-  **24 Sunday 8:30am–12:30pm**
Rewilding the Derbarl Yerrigan with Dr Noel Nannup OAM.
 **Storytelling and planting** at Malgamongup (Bardon Park), Maylands. [Register](#).
-  **24 Sunday 9am–12 noon**
Planting along the **Canning River** at Jacqueline Drive, Thornlie. [AGLG](#).
-  **24 Sunday 10am–11am**
Spring walk in **Inglewood Triangle bushland reserve** with the [Friends of Inglewood Triangle](#).
-  **24 Sunday 1pm–3pm**
Flora and fauna walk at **Warwick Conservation Reserve**. [Friends of Warwick Bushland](#).
-  **24 Sunday 1:30pm–4:30pm**
Native & Waterwise Garden Design workshop with Gaia Permaculture. **WA Museum Boola Bardip**. [Tickets](#) \$28.59.
-  **25 Monday 5:30pm–6:30pm**
Fire Safety & Biodiversity workshop. Learn how fire affects the landscape and how best to manage your property and garden against fire risks. **Ellenbrook Library**. [Registrations essential](#).
-  **28 Thursday 5pm–6:30pm**
Curious Critters & Botanicals workshop at **Guildford Town Hall**. Learn how to attract wildlife into your home garden by incorporating native plants. For ages 14+. [Register](#).
-  **30 Saturday 9am–10am**
Birdwalk at **Canning River Regional Park**, Wilson. [Registrations essential](#).
-  **30 Saturday 9am–10:30am**
Creating a Waterwise Garden workshop with Shane Hunter. **Kelmscott Community Garden**. [Tickets](#) \$10.
-  **30 Saturday 9am–11am**
Guided Aboriginal Walk through the **Roe 8 bushland, Bibra Lake** during the season of Kambarang with local Noongar guide Marissa Verma. [Registrations essential](#).
-  **30 Saturday 9am–12 noon**
Flow: a listening walk through the **Len Howard Conservation Park wetlands**. [Tickets](#) \$5.
-  **31 Sunday 8am–11am**
Birdwalk at **Len Howard Conservation Park**, Mandurah. [BirdLife](#).

November






-  **4 Thursday 2pm–4pm**
Botanical drawing workshop with artist Jenessa King at Yagan Mia (Wireless Hill Reserve), **Ardross**. [Tickets](#) \$20.
-  **6 Saturday 9am–12 noon**
Flow: a listening walk through the **Len Howard Conservation Park wetlands**. [Tickets](#) \$5.
-  **7 Sunday 8am–12 noon**
Birdwalk at **John Forrest National Park**, Mundaring. [BirdLife](#).
-  **7 Sunday 9am–12:30pm**
Friends of Kings Park Native Plant Sale. A list of species on sale will be available on the Friends of Kings Park [website](#) a few weeks before the event. [Exhibition Ground](#), Kings Park.
-  **7 Sunday 11am–4pm**
Wildlife Show event with wildlife and nature exhibits, hands-on activities, community mural painting, food stalls and coffee. **Herdsmen Lake Discovery Centre**, Wembley. [Tickets](#) \$10 per person, \$30 per family or free for Friends of the WA Gould League.
-  **7 Sunday 1:30pm–4:30pm**
Native & Waterwise Garden Design workshop with Gaia Permaculture. **WA Museum Boola Bardip**. [Tickets](#) \$28.59.
-  **7 Sunday 2pm–4pm**
Nature journaling workshop at **Henderson Environmental Centre**, North Beach. [Tickets](#) \$45.
-  **8 Monday 5:45pm–6:45pm**
Basic Bee ID and Conservation with Kit Prendergast. Learn about native bees, basic identification, and how we can help conserve them. First of three in a series of native bee workshops (see other sessions held on 24 November and 9 December). No requirement to sign up for all three sessions. **Ellenbrook Community Library**. For adults and young people aged 14+. [Registrations essential](#).
-  **13 Saturday 7:30am–10:30am**
Birdwalk at Wearne Road, **North Bannister**. [BirdLife](#).
-  **13 Saturday 9:30am–11am**
Be inspired by nature and the sense of place in a **poetry workshop** hosted by Dr Nandi Chinna. Yagan Mia (Wireless Hill Reserve), **Ardross**. Suitable for ages 16+. [Tickets](#) \$5.





[Journaling with nature](#). Photo – Raquel Aranda.

-  **13 Saturday 10:30am–12:30pm**
Botanical drawing workshop with Una Bell. For adults and young people aged 14+. **Ballajura Public Library**. [Registrations essential](#).
-  **18 Thursday 7:30am–10:30am**
Birdwalk at **Ascot Waters**, Ascot. [BirdLife](#).
-  **21 Sunday 7:30am–10:30am**
Birdwalk at **North Lake**. [BirdLife](#).
-  **24 Wednesday 5:45pm–6:45pm**
Urban Bee-Plant Interaction Networks with Kit Prendergast. Learn about Kit's research into bee pollination networks. Second of three in a series of native bee workshops (see other sessions held on 8 November and 9 December). No requirement to sign up for all three sessions. **Old Midland Court House**. For adults and young people aged 14+. [Registrations essential](#).
-  **25 Thursday 5:30pm–6:30pm**
Western Swamp Tortoises, a **talk** by Friends of the Western Swamp Tortoise. Learn about this critically endangered tortoise, their ecology, behaviour, and how you can help recovery activities. **Bullsbrook Public Library**. [Registrations essential](#).
-  **27 Saturday 8am–12 noon**
Birdwalk at **Walyunga National Park**, Swan. [BirdLife](#).

December

- 
4 Saturday 10am–12 noon
Botanical drawing workshop with artist Una Bell. For adults and young people aged 14+. **Beechboro Public Library.** [Registrations essential.](#)
- 
5 Sunday 2pm–4pm
Nature journaling workshop at **Henderson Environmental Centre**, North Beach. [Tickets](#) \$45.
- 
9 Thursday 8:30am–12 noon
Birdwalk at **Penguin Island**, Rockingham. Meet at Mersey Point Jetty, off Arcadia Drive, Shoalwater at 8:30am at the ticket office for Penguin Island, to catch the 9am ferry. [BirdLife.](#)
- 
9 Thursday 5:45pm–6:45pm
Advanced Bee Identification workshop with Kit Prendergast. Third of three in a series of native bee workshops (see other sessions held on 8 November and 24 November). No requirement to sign up for all three sessions. For adults and young people aged 14+. **Ballajura Public Library.** [Registrations essential.](#)
- 
11 Saturday 8am–3:30pm
Penguin Island & Naragebup Tour presented by the Canning Agricultural, Horticultural & Recreational Society (CAHRS). [Tickets](#) \$37.22–\$68.38.



- 
12 Sunday 7:30am–10:30am
Birdwalk at **Alfred Cove**, Melville. [BirdLife.](#)
- 
18 Saturday 7:30am–10:30am
Birdwalk at **Carine Open Space**, Carine. [BirdLife.](#)

Lotterywest's 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.

NACC Biodiversity Community Grants of up to \$5,000 are available for community groups working to improve the management and protection of threatened malleefowl and black-flanked rock wallaby in the Northern Agricultural Region. [Applications](#) assessed on a first in, first served basis.

Wettenhall Environmental Trust small environmental grants scheme funds research and educational projects on flora and fauna conservation. [Applications](#) open **1 October.**

Aurizon Community Giving is offering grants of up to \$20,000 for initiatives promoting environmental enhancement in the communities through which they operate (Perth, Kwinana, Bunbury, Albany, Geraldton, Morawa, Mullewa, Esperance, Kalgoorlie, Leonora). Examples of supported projects include land rehabilitation and revegetation programs, clean-up and education days, and local conservation projects. [Applications](#) close **22 October.**

Landowner Biodiversity Conservation Grants provide financial support to Cockburn residents living in the rural, rural living and resource zones to conserve and enhance the natural bushland and wetland areas on their property. [Applications](#) close **31 October.**

Community Rivercare Program is providing grants of between \$3,000 and \$150,000 (ex GST) to community volunteer groups to conserve the natural, cultural and social amenity values of the rivers, tributaries and urban drains within the Swan Canning Catchment. [Applications](#) close **12 November.**

Lake Clifton Stewardship Grants of \$250–\$1,000 are available from the [Peel-Harvey Catchment Council](#), to assist Land for Wildlife members in the Lake Clifton Catchment in implementing eligible activities outlined in their Site Assessment Report. This can include revegetation, weed control, pest control and habitat augmentation. To apply contact Karen Bettink on 6369 8800 or by [email](#). **Applications close 30 November.**

Wheatbelt NRM's **Where the Wild Things Are grants** provide funding of up to \$15,000 to support protection of the eucalypt woodlands of the Western Australian Wheatbelt. [Applications](#) close **31 December.**

Local government community grants These local governments provide small grants to their communities which can fund environmental groups' management and restoration projects. Eligibility varies. [Augusta-Margaret River](#) closes **22 October**, [Busselton](#) closes **30 November**, [Canning](#) opens **8 October**, [Gosnells](#) open year round, [Melville](#) open year round, [Mosman Park](#) closes **18 October**, [Rockingham](#) closes **19 November**, [Serpentine-Jarrahdale](#) opens **October**, [Swan](#) closes **31 October**, [Vincent](#) closes **31 December.**



Canning River. Photo – Anna Wisolith.

Highlights

October

Be a part of the **Birds in Backyards Spring Survey** by spending 20 minutes counting the birds in your backyard, local park, school, or outdoor space and submit your survey data to [BirdLife Australia](https://www.birdlife.org.au/).



Spring into Parks' Tunnels and Dams Adventure at John Forrest National Park by The Hike Collective. Photo – WA Parks Foundation.

October–November

Check the WA Parks Foundation **Spring into Parks** [calendar](#) to discover a range of unique events and activities happening in parks around the State. Experience stargazing in Badgingarra, yoga and mindfulness at Cabaret Cave, hut building and flag making at Yancheep and take part in the journey sticks scavenger hunt at John Forrest National Park.

8–10 October

Peel Harvey Catchment Council's Wetlands Weekender Festival celebrates our environment and the migratory birds arriving on our shores to spend the summer. The [program](#) includes wetlands tours, kids' activities, markets and entertainment, a special dinner, an opportunity to meet scientists from the comfort of a café, and a citizen science foreshore clean-up. There are free and paid ticketed events with discounts available to environmental group volunteers.

15–18 October

Tangaroa Blue WA Beach Clean-up

Gather your crew and [register](#) your site for this annual beach clean-up event. For more details, visit the [website](#) or [email](#) coordinator Casey Woodward.

16 October 10am–2pm

Lake McLarty Open Day with the Friends of Lake McLarty, Peel-Harvey Catchment Council and DBCA at Lake McLarty Nature Reserve, Mills Road, Birchmont. Features guided walks, kids' activities, free food and coffee, and a native seedling giveaway. Free event. [Bookings essential](#).

18–22 October

Great Western Woodlands spring bird survey at Helena and Aurora Range, followed by Jilbadji Nature Reserve. For more information or to register your interest, [email](#) Lorraine or Libby at BirdLife.

18–24 October

Be a part of BirdLife Australia's annual **Aussie Backyard Bird Count**. [Register](#) as a counter for 2021.

20 October 5pm–7pm

Meeka Moorart Full Moon Ceremony at Gurndandulup / Matilda Bay on the first full moon of Kambarang. This Aboriginal-led cultural event features original song and dance celebrating the moon. It also forms part of the Danjoo Korliny Walking Together Project's signature project Nil Bilyada Waanginy Listen! The Rivers are Speaking which involves caring for and healing our waterways. Meet at Bayside Kitchen, Crawley. [Tickets](#) free or support the Danjoo Korliny Walking Together Project with a donation of \$22, \$110, or amount of your choosing.

20-21 October 9am–12 noon

Australian Land Conservation Alliance's **Private Land Conservation 2021 online summit** will focus on global trends, policy, and building optimism. [Tickets](#) \$55–85 for a one-day pass or \$85–130 for a two-day pass.

23–24 October

Bushwalking for malleefowl monitoring at Merredin (Rifle Range). A suitable level of physical fitness and appropriate clothing and footwear is required to take part. Training and supervision is provided. Free event, with a \$10 annual WA Malleefowl Recovery Group membership fee requested for recurring monitors. To book, contact Liz Kington on 0417 996 719 or [email](#).

26–29 October

Great Western Woodlands spring bird survey at Dundas Reserve. For more information or to register your interest, [email](#) Lorraine or Libby at BirdLife.

4 & 17 November 6:30pm–8:30pm

Your Garden with Josh Byrne, a [free workshop series](#) providing Perth residents with ideas and inspiration to create a successful and river friendly garden. Avely Community Building, Avely (4 November) and Royal Park Hall, Perth (17 November).

6–7 November

Muster weekend – bushwalking for malleefowl monitoring in the Ongerup area. Accommodation is included with camping and limited beds at Red Moort Field-Station, and a BBQ will be held on Saturday night. A suitable level of physical fitness and appropriate clothing and footwear is required to take part. Training and supervision is provided. Free event, with a \$10 annual WA Malleefowl Recovery Group membership fee requested for recurring monitors. To book, contact Liz Kington on 0417 996 719 or [email](#).

9, 10, 16, 17 November 10:30am–2pm

Environment Institute of Australia and New Zealand Inc. (EIANZ) Annual Conference will be held online across four half days in November, with the theme *How good is science!?* [Tickets](#) \$125–500 to access the full conference program or \$65–250 for a daily pass.

17 November 6pm–8:30pm

Dolphin Watch Project training with scientists and researchers from DBCA and Murdoch University. Learn more about the Swan Canning river system, dolphin biology, how to identify dolphins and their behaviours. Join as a trained Dolphin Watcher and contribute to valuable research. Scitech, West Perth. Free event, [registrations essential](#).



Photo – Dolphin Watch Project.

22–26 November

The 2021 Conference of the Ecological Society of Australia will be held [online](#) with a theme of renewal as our land recovers from fire, drought and flood. [Tickets](#) \$175 for ESA members or \$225 for non-members, with discounted early bird pricing available until 31 October.

7–9 December

Australasian Wildlife Management Society Annual Conference 2021 Biodiversity Management and Climate Change will be held virtually. [Tickets](#) \$25–100.

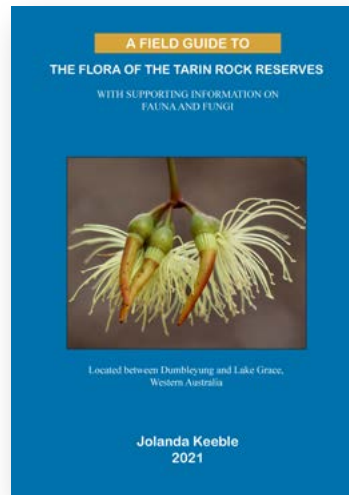
13–17 December

30th International Congress for Conservation Biology will take place [virtually](#). [Tickets](#) \$60–290 with discounted early bird registration available until 19 October.

New publications

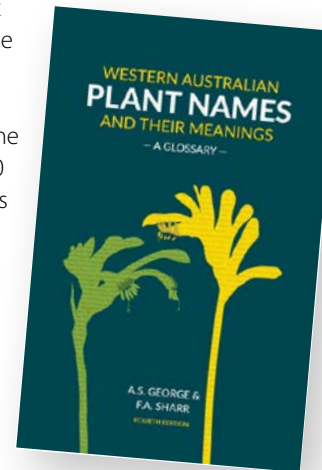
A Field Guide to the Flora of the Tarin Rock Reserves

Keeble, Jolanda. Self-published, 2021. \$40. Many people travel through the Southern Wheatbelt area between Dumbleyung and Lake Grace, and now a new book on the flora of this area, and in particular the Tarin Rock Reserves is available to accompany you on your travels. Released with assistance from the Wildflower Society of Western Australia, the Nenke family in Kukerin and DBCA, the book has been in the making for three and a half years during which Jolanda photographed, collected and notated the magnificent wildflowers in the reserve. Describing over 600 plants and with information on fauna and fungi, this book will be an asset for the region by encouraging wildflower lovers to visit. Available to purchase through the Community Resource Centre in Dumbleyung, Mary's Farm Cottages in Kukerin, and the Wildflower Society of Western Australia. Contact author [Jolanda Keeble](#) for further information.



Western Australian Plant Names and their Meanings (4th edition)

George, A.S., F.A. Sharr. Four Gables Press, 2021. \$48. This new fourth edition now comes in hard cover, with extra drawings, new photographs, and around 200 changes since the third edition of 2019, including new species, records and changes in genera. Alex George brings his experience in studying the flora over 65 years and his expertise in Latin to bear in explaining the scientific names of all 12,800 native and naturalised plants in the State.



Naturalist on the Bibbulmun: A walking companion

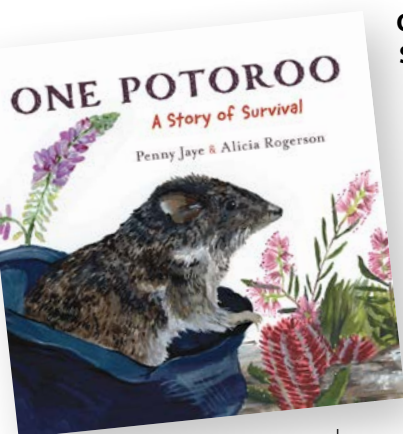
Simmons, Leigh W. UWA Press, 2021. \$45. The story of one man's journey with his son through this ancient and extraordinary corner of the world. This book is part field guide, part travelogue, and a celebration of the biodiversity of the south-west region's forests. With his expertise in ecology and evolutionary biology, the author documents the animals and plants found during the Noongar seasons of Kamarang and Birak, from November to January, with colour photographs throughout. *Naturalist on the Bibbulmun* is both a witness statement of the current state of the natural regions of south-western Western Australia, and a call to arms to protect for our future generations what little remains of one of the world's most extraordinary natural habitats.



One Potoroo: A Story of Survival

Jaye, Penny, Alicia Rogerson. CSIRO Publishing, 2021. \$24.99. When a bushfire destroys Potoroo's home, he becomes one of the last surviving Gilbert's potoroos at Two Peoples Bay in Western Australia. Frightened, hurt and alone, Potoroo needs a new home – somewhere safe from predators and with plenty of his favourite food. Luckily, a team of conservationists

know where Potoroo can go to be safe. *One Potoroo: A Story of Survival* is an illustrated book recommended for children from ages 6–9.



Recent Research

Lullfitz A, Pettersen C, Reynolds R(D), Eades A, Dean A, Knapp L, Woods E, Woods T, Eades E, Yorkshire-Selby G, Woods S, Dortch J, Guilfoyle D, Hopper SD (2021) The Noongar of south-western Australia: a case study of long-term biodiversity conservation in a matrix of old and young landscapes *Biological Journal of the Linnean Society*, 133 (2), 432–448.

Lunau K, Scaccabarozzi D, Willing L, Dixon K (2021) A bee's eye view of remarkable floral colour patterns in the south-west Australian biodiversity hotspot revealed by false colour photography, *Annals of Botany*.

Miller R, Merritt D, Miller B, Fontaine J, Enright N (2021) Experimental test of seedling recruitment response to season of fire [Department of Biodiversity, Conservation and Attractions](#), Western Australia, Information Sheet 105.

Prendergast KS, Dixon KW, Bateman PW (2021) Interactions between the introduced European honey bee and native bees in urban areas varies by year, habitat type and native bee guild *Biological Journal of the Linnean Society*, 133 (3), 725–743.

Ritchie AL, Elliott CP, Sinclair EA, Krauss SL (2021) Restored and remnant Banksia woodlands elicit different foraging behavior in avian pollinators *Ecology and Evolution*, 11, 11774–11785.

Schmölz K, Pinder A, Kuchling G, Gollmann G (2021) Evaluating candidate wetlands for the assisted colonization of the western swamp turtle *Pseudemydura umbrina* in a changing climate: Macro-invertebrate food resources and turtle diet [Aquatic Conservation: Marine and Freshwater Ecosystems](#) 31, 1847–1858.

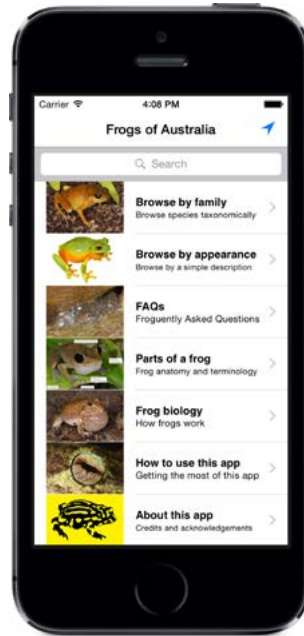
Valentine L, Campbell R, Moore H, Beca G, Bohórquez Fandiño D, Palmer B, Reaveley A, Ryan C, Hobbs R (2021) Translocation of quenda (*Isodon fusciventer*) alters microhabitat of urban bushland reserve [NESP Threatened Species Recovery Hub Project 4.1.7 report](#), Brisbane.

Apps

Turtle Surveying and Analysis Tools (TurtleSAT)

is an online tool for wetland managers, community groups and the public to report freshwater turtle sightings. Available as a [web application](#) or app for mobile devices on the [App Store](#) or [Google Play](#).

Frogs of Australia is a comprehensive [electronic field guide](#) with profiles for all 238 Australian frog species, over 700 frog call sound clips, and more than 1,200 photos. Available for \$24.99 from the [App Store](#).



Websites

Djilba is the Noongar season also known as first spring, generally from August through September. In the video [Welcome to Djilba](#), Professor Colleen Hayward shares her insight into what this season means and what we can learn from what the land, plants and animals of this season are telling us.

Learn about the Noongar season of **Kambarang**, or second spring (October–November) with Ingrid Cumming in a [video](#) where she talks about the signs in the natural world that are featured in this special season of rebirth.

Florabank Guidelines provide best practice guidelines for native seed collection and use in Australia. The revised and updated guidelines contain 15 modules following the native seed supply chain from collection, through processing to propagation and planting, with information on working with Indigenous Australians, approvals, record keeping, and tips for seed purchasers. Download the updated Guidelines for free from the [Florabank website](#).

Presentations from the **Fire and Biodiversity Forum** held in June 2021 are now available to [watch online](#). This forum examines broadscale prescribed burning as a fire mitigation tool, its effectiveness and interaction with the natural landscape, with an objective to develop an informed and nuanced conversation around fire mitigation, responses to fire, biodiversity, people and places, in the face of a changing climate.

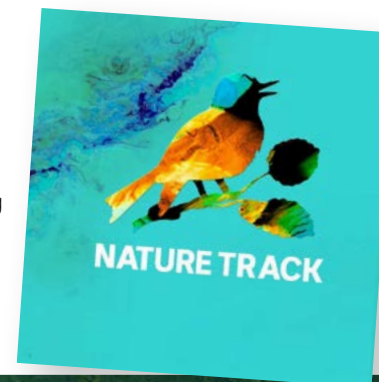
The Intergovernmental Panel on Climate Change (IPCC) has released its **Sixth Assessment Report, [Climate Change 2021: The Physical Science Basis](#)** with findings showing that unless there are immediate, rapid and large-scale reductions in greenhouse gas emissions, limiting warming to close to 1.5°C or even 2°C will be beyond reach.

Talking Australia is a [podcast](#) from Australian Geographic with stories from Australia's inspiring conservationists and explorers. Listen as they take you on a journey around this magnificent country and beyond. Learn about what makes Australian birds so smart with [Gisela Kaplan](#), listen to the story of how some unlikely conservationists decided to try and save the numbat with [Rob McLean](#), and much more.

Learn how to **build your own microbat roosting box** in a how-to [video](#) from Josh Byrne.

Read **Guide: Rakali** on the [Rivers of Carbon](#) website to learn all about rakali, the natural habitats they need and how we can protect populations from becoming extinct.

Nature Track is an [ABC Radio podcast](#) offering long, uninterrupted soundscapes of the Australian wilderness – the perfect relaxing soundtrack to accompany your work, exercise, meditation or sleep. Listen to a variety of unique tracks including carolling magpies, a midnight frog chorus, a calm flowing creek, or an outback thunderstorm.



A 10-year **management plan for the Wheatbelt's parks and reserves** prepared by DBCA has [been released](#). The plan incorporates changes made following community consultation, and covers parks and reserves located across 48 local government authorities.



Check out ABC series **Back to Nature**, a documentary series featuring storytellers Aaron Pedersen and Holly Ringland as they guide viewers through the wonder and awe of the Australian landscape. Explore unique stories of the land that deepen our connection with the natural world, with Country. Available to watch on [iView](#).

Building resilience in local communities: The wellbeing benefits of participating in Landcare

For decades, those involved in Landcare have testified to a greater sense of self, both physically and mentally, from connecting to their local community and environment. Now, newly [published findings](#) from a survey of more than 1,000 Landcare volunteers and coordinators provide confirmation of this.

Check out this amazing [video](#) of an **emu crossing Western Australia's first vegetated fauna bridge** over Tonkin Highway in Ellenbrook.

featherflowers

By Alex George

Among the palette of colours in the bountiful wildflowers of south-western Australia, a number of *Verticordia* species stand out. They are commonly known as featherflowers, from the intricate, often feathery floral structure. The flowers are small but may be massed over the plant, in shades of yellow, pink, red, cream, purple, occasionally orange. In some the colour changes as the flowers age, such as the variegated featherflower, *Verticordia huegelii*, pictured here. Its flowers appear from September to November, opening creamy-white and turning pinkish-red as they age. This species occurs from Geraldton to Dwellingup, including in the hills near Perth where it favours granitic soils.

There are just over 100 *Verticordia* species, most found only in the south-west, between Shark Bay and Israelite Bay, with just a few in the arid regions, two species in the Kimberley and two in the Northern Territory. The best displays may be seen in the kwongan, north to Kalbarri, through the Wheatbelt and south-east beyond Lake King.

Around Perth a number may be seen along the edge of the Darling Scarp and granite outcrops farther inland. A few grow around swamps and granite slopes of the far south-west, but there are none in the tall jarrah and karri forests. The best months are September to November,

but the scarlet featherflower, *Verticordia grandis*, found mainly between Geraldton and Badgingarra, may be seen at any season.

Well worth a trip in December is the spectacular orange Morrison, *Verticordia nitens*, especially along some roads in the Gingin–Moore River area, though small patches may still be seen on the northern outskirts of Perth.

All species are described and illustrated in *Verticordia: The Turner of Hearts* by Elizabeth George with paintings by Margaret Pieroni.

Photo – Stuart Rae.