

bushland news



Issue 118 **Winter 2021** *Time of Makuru and Djilba in the Noongar calendar.*



30 years of Canning River Regional Park Volunteers

Photo – Claire Kennedy.



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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Contacts

Urban Nature office

Grazyna Paczkowska 9442 0322

Anna Wisolith 0477 333 519

Email urban.nature@dbca.wa.gov.au

Parks and Wildlife Service

Parks and Wildlife Service, Swan Region Office
Cnr Australia II Drive and Hackett Drive, Crawley WA 6009

Locked Bag 104, Bentley Delivery Centre, WA 6983

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

Spring Bushland News

Spring *Bushland News* contributions should be sent to [Urban Nature](#) by **8 September 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.

30 years of Canning River Regional Park Volunteers



By Pam Agar

In late 2020, Canning River Regional Park Volunteers (CRRPV) achieved 30 years of continuous activity, but any thought of celebration was crushed by COVID-19 requirements.

CRRPV began in 1990 as Canning River Regional Park Volunteer Guides; in about 2000 it morphed into Canning River Regional Park Volunteers.

Currently the group has 33 members, three of whom were inaugural members. Six members are also listed on the City of Canning Environmental Honour Board and our dedicated Field Officer, Jo Stone, has received many awards over the years.

In 2010 the group was the winner of the WA Environment Award in the category Community Achievement - Metropolitan.

With our members' wide range of skills, the group is able to cope efficiently with chores such as seeking funding and writing grant submissions, mapping vegetation, bushland regeneration, birdwatching and photography, and researching new equipment and technology.

Our group's primary focus is conservation and restoration of natural areas, working closely with the Department of Biodiversity, Conservation and Attractions (DBCA) and the City of Canning.

CRRPV also supports the City of Canning in community activities such as Earth Day, and displays at the Canning River Eco Education Centre, which help to promote and benefit the park as well as educate visitors.

Monthly Saturday workdays provide an opportunity for further community involvement.

Weekly Monday morning work sessions have enabled a small group of us to achieve a more constant effort on our project sites. Eleven sites have been developed over the years, with four (Banksia Hill, Litoria Flats, Litoria Stage 7 and Paddock) worked regularly and the rest monitored, with occasional work done as needed.

Our group's interest also extends to areas beyond the regional park which impact it, or are otherwise of significant environmental interest – for example, opposing a proposed single lane bus route across

a section of the park, and protecting a Threatened Ecological Community in Cannington. The group has also advocated for the rescue of a number of grass trees from development sites.

Other projects over the years have included removal of feral bees, a [published book](#) detailing a year in the park, installation of a number of bat boxes and two possum boxes, annual mapping of vegetation at Litoria Flats to gauge change, plant rescues from a number of development sites, the establishment of a [website](#) with support from South East Regional Centre for Urban Landcare (SERCUL), a group [Facebook](#) page, and a set of display books which record the progress of each site.

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Cover photo: CRRPV Volunteers with Keep Cups, Clean Up Australia Day 2020. Photo – Claire Kennedy.

Canning River Regional Park Volunteers and members of the community lending a hand for Clean Up Australia Day 2020. Photo – Claire Kennedy.

Clean Up Australia Day has been an annual community event for the group since its instigation, with 60–80 people arriving to help clean up the regional park and areas that feed into it.

Biannual bird surveys began in November 2003 and have continued with only one survey missed due to COVID-19. The 35th survey was completed in April this year.

The most recent project, the Microbat Project, was designed to identify which species of microbats use the regional park and their food sources. Funding from Lotterywest enabled employment of an expert to do DNA analysis of faecal samples collected from the park and to identify the food being eaten by these tiny bats.



*Learning to use a Pottiputki at Litoria Flats Stage 7.
Photo – Pam Agar.*



*Vollies at work planting Juncus kraussii at Litoria Flats Stage 7.
Photo – Pam Agar.*

As part of the project, a brochure was produced recently to educate visitors about the microbats and their importance to the area. A report of the results will be published and made available to the public in the future.

In 2020–21, work continued at the Paddock Site, Banksia Hill and Litoria Flats Stage 7, with wonderful support from Riverview Church, The Rocks Church Cannington, Fountain College, and the Intercultural Harmony Society. Monitoring of earlier project sites also continued.

When COVID-19 derailed community planting days planned by the City of Canning, CRRPV members stepped in, helping to plant thousands of seedlings at Ferndale Flats, Queens Park Bushland, and Lambertia Creek.

It is encouraging to see the number of people who use the park for recreation on a regular basis and to have them acknowledge the group's work in passing.

CRRPV's aim is to maintain work on our project sites. The regular annual activities will continue, as will the endless weed control. Less planting is required now we have confirmed that native species will appear and flourish of their own accord, so long as the onslaught on weed species is maintained.

Looking further ahead, the group will continue working towards our overarching goal of providing linkage throughout the south-eastern areas of the park. One day it would be nice to see the restoration of natural areas extended to a continuous band of native vegetation along the river as far as the foothills.



Folding and repinning weed matting; and knocking out Gahnia trifida for planting. Photo – Pam Agar.

Contact

Pam Agar

Canning River Regional Park Volunteers
email admin@canningriver.org.au
phone 9457 2292

Celebrating volunteers

By Anna Wisolith

Every issue of Bushland News contains stories of and by volunteers. We love to hear from the many passionate individuals and groups who work so hard to make a difference to their local bushland and to conservation of flora and fauna. This issue we want to especially highlight the role of volunteers – to recognise and celebrate the vital contributions they make to the environment, to the management and restoration of bushland, and to knowledge of natural history.

Our cover story features the Canning River Regional Park Volunteers, who late last year marked 30 years of activity – a significant milestone. Ten years ago I had the pleasure of meeting and working with Jo and Richard Stone, two founding members of the group, when I helped weed a couple of the group's sites with Ecojobs. The details may have faded over the years, but my impression of them has not. I was inspired by their passion, dedication and hard work, and by the way they encouraged our team as the younger generation (many of us at the time recent university or TAFE graduates) to fight for the environment. It was also the only job we were ever offered a homemade morning tea – Jo Stone handing around a Tupperware container with her delicious apricot and honey muesli bars, which were gratefully devoured after a morning's hard yakka. When one of our team requested the

recipe, the next workday Jo thoughtfully brought along photocopies of her hand-written recipe for any of us who wanted it – I still have my copy!

We also feature two other dynamic volunteer duos in Joe and Jan King, and Fred and Jean Hort. [Joe and Jan King](#) have contributed more than 10 years of volunteer work in John Forrest National Park, forming the friends group with the aim of eliminating invasive weeds there and through their work have made an enormous impact in helping improve the park's biodiversity. Last December, Joe and Jan King were jointly presented with DBCA's top honour of overall Volunteer of the Year for 2020.

I had known of [Fred and Jean Hort](#) through their [Flickr site](#), a treasure-trove of wonderful nature photographs, however until reading Marnie's article was unaware of the full extent of their many contributions to flora and fauna discoveries through their photography and collections over decades of volunteering.

I hope you enjoy, as I have, reading about the work of these and other volunteers.

To all our volunteers, a huge thank you for your invaluable efforts, enthusiasm, and commitment – much of what we do simply wouldn't be possible without you!

Updates available for Brixton Street Field Herbarium

By Grazyna Paczkowska

Brixton Street Field Herbarium: A new flora identification tool for managers of seasonal clay-based wetlands was [first released on FloraBase](#) in 2017. Since then, we have collected and vouchered another 17 new species from the reserve. The December 2020 update includes the new species and updates 16 existing fact sheets to reflect taxonomic changes to plant names. The updated Brixton Street Field Herbarium PDFs are available to download and view on [FloraBase](#).



Utricularia menziesii, known commonly as redcoats, is one of the 17 new species that has been added to the updated Brixton Street Wetlands Field Herbarium. Photo – Kate Brown.



Robin redbreast bush
(*Melaleuca lateritia*).
Photo – Mark Brundrett.

Robin redbreast bush seed collection *By Grazyna Paczkowska*



The Friends of Brixton Street Wetlands collecting fruits of robin redbreast bush. Photos – Grazyna Paczkowska.

Robin redbreast bush (*Melaleuca lateritia*) flowers in summer and is one of the key species of the 'Clay pans of Swan Coastal Plain' plant community that is listed as a critically endangered Threatened Ecological Community (TEC) under the federal *Environmental Protection Biodiversity Conservation Act 1999*. Seed collecting by the Friends of Brixton Street Wetlands on 20 March 2021 targeted the central and southern claypans of Brixton Street Wetlands Nature Reserve. The seed will be used for future restoration projects within the reserve, made possible with federal funding from the Regional Land Partnerships program through [Perth NRM](#) with support from [SERCUL](#) for on-ground management of threatened ecological communities.



The Friends of Brixton Street Wetlands – a group photo with the three collected bags of fruits, which will be delivered to DBCA's Western Australian Seed Centre, Kensington, for processing and storage. Photo – Grazyna Paczkowska.

Soil care: understanding soil conditions to improve seedling survival By Shane Hunter

While you walk through your favourite patch of bushland, how much thought do you put into the soil beneath your feet? We take great interest in blooming flowers, tireless insects and pretty birds, but the complex and dynamic action going on beneath our feet often doesn't receive anywhere near the same level of interest.

To repair degraded ecosystems, we must pay attention to the soil. With all the cumulative impacts of various human activities, along with changing climates, finding ways to improve soil condition is imperative to repairing ecosystems. This doesn't just mean adding fertilisers or minerals, but also trying to better understand how we can support soil ecosystems – the networks of fungi, bacteria, invertebrates and other soil organisms that abound in healthy soils.



Gathering soil samples. Photo – EarthWhile Australia.

In 2020, [Armadale Gosnells Landcare Group](#) undertook surveys of soil biology and trials of soil amendment treatments in an effort to understand the role of soil biology in specific degraded landscapes and learn how we can improve seedling survival. These investigations are really just the tip of an iceberg – we have so much more to learn.

Soil biology study

We engaged [EarthWhile Australia](#) to show us how to take soil biology samples and explain how the samples are assessed. Essentially, a basic soil biology assessment involves looking at soil samples under microscope to assess the relative quantity of bacteria, fungi, protozoa and nematodes. This data is then used to produce a qualitative analysis of the soil biology, as shown in Table 1. An interesting concept to understand is that different types of plants correlate to different ratios of bacteria to fungi. Old growth forests have fungi dominated soils (fungi to bacteria ratio of approximately 1000:1), while weeds and annual plants grow best in bacteria dominated soils (fungi to bacteria ratio of approximately 1:100). We can influence these ratios to favour certain soil organisms through implementing soil treatments and management practices.



Assessing soil samples under microscope. Photo – Shane Hunter.

Table 1: Soil biology analysis at Eva and Bill Moore Reserve restoration site.

Soil analysis showed that bacteria were at high levels across all the sample sites. This is consistent with our expectations of high weed growth in degraded landscapes that are undergoing restoration. Fungi and protozoa levels were low and varied at each sample site and nematodes were not present at all in the soil samples analysed. This suggests that in terms of soil ecology, this restoration site doesn't have a well-functioning soil ecosystem.

Sample #	Soil amendment	Bacteria	Fungi	Protozoa	Nematodes	Overall soil quality rating
1	None (control)	Excellent	0%	5%	Not present	Poor
2	TerraCottem	Excellent	5%	5%	Not present	Adequate
3	Soil Solver	Excellent	15%	10%	Not present	Adequate
4	Bactivate	Excellent	20%	10%	Not present	Adequate
5	Compost	Excellent	25%	10%	Not present	Adequate
6	Osmocote	Excellent	0%	0%	Not present	Poor

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Soil amendment trials

The soil amendment trials were very small scale and weren't intended to be a scientifically rigorous research project. I had hoped they would better inform our own planting processes. Two sites were chosen, Southernwood Park in Southern River, and Eva and Bill Moore Reserve in Camillo, which both have deep sandy soils, with a long history of ecologically degrading processes. Southernwood Park was mulched after planting; Eva and Bill Moore Reserve was not mulched. TerraCottem, Soil Solver, Bactivate and compost were trialled at both sites, while Osmocote native plant fertiliser was only trialled at Eva and Bill Moore Reserve. These soil amendments were incorporated at the time of planting. A survey of seedling survival was undertaken in February and the results are presented in Tables 2 and 3 below.



Shane Hunter surveying seedling survival. Photo – Ross Wylie.



Preparing plots for the soil amendment trial. Photo – Shane Hunter.

Table 2: Seedling survival results from the soil amendment trial at Southernwood Park.

At Southernwood Park, 50 seedlings were planted per treatment plot in May 2020, with mulch applied after planting to all plots. Seedling survival was assessed on 9 February 2021. The overall survival rate for the site (across all treatments) was 60%. The compost treatment had the lowest seedling survival, while the control (no soil amendment) and Soil Solver treatment performed the best.

Southernwood Park	Control	Compost	Bactivate	Soil Solver	TerraCottem
Number of surviving seedlings	32	23	30	33	31
Seedling survival rate	64%	46%	60%	66%	62%

Table 3: Seedling survival results from the soil amendment trail at Eva and Bill Moore Reserve.

At Eva and Bill Moore Reserve, 30 seedlings were planted per treatment plot in July 2020. No mulch was applied. Assessed on 9 February 2021, the overall seedling survival rate was found to be 59% for the site (across all treatments). Despite the soil with added compost having a higher presence of fungi and protozoa than other sites, it performed the worst in seedling survival rate. This needs further investigation. Seedlings treated with Osmocote had the best survival.

Eva and Bill Moore Reserve	Control	Compost	Bactivate	Osmocote	Soil Solver	TerraCottem
Number of surviving seedlings	13	13	19	23	19	20
Seedling survival rate	43%	43%	63%	77%	63%	67%

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Shane Hunter gathering soil samples. Photo – Ross Wylie.

The results are difficult to interpret. Osmocote fertiliser performed substantially better than other amendments at Eva and Bill Moore Reserve, but unfortunately it wasn't included in the trial at Southernwood Park. Anecdotally, it was noted that the seedlings at Southernwood Park were much larger and seemed far healthier compared to the seedlings that survived at Eva and Bill Moore Reserve, even though the overall survival rate was similar, suggesting the mulch may have improved seedling growth and vigour. Unexpectedly, compost amendment did not improve survival at either site.

Realistically, there were likely a range of factors that could have also impacted these results that were not accounted for in this trial. I will be looking to repeat aspects of these trials in the future using a larger number of seedlings per trial plot, to further quantify and provide more certainty about the effects soil amendments have on seedling survival. Future trials will compare mulched and non-mulched treatments at the same site, as well as liquid-based soil biology amendments such as vermicompost and compost tea. By developing our understanding of soil biology and testing different soil amendments, Armadale Gosnells Landcare Group aims to develop methods of increasing seedling survival, which we hope will ultimately result in better outcomes for Landcare projects at a lower cost.

Contact

Shane Hunter

Armadale Gosnells Landcare Group
email shane@aglg.org.au



Karri forest at Gloucester National Park, Pemberton.
Photo – Anna Wisoloth.

Have your say on native forests

Provide your views on the value and use of the State's south-west native forests by participating in a community consultation survey. Recently launched by Environment and Climate Action Minister Amber-Jade Sanderson, the survey invites the public and industry to have their say to inform development of the Forest Management Plan 2024–2033.

The survey is part of the McGowan Government's commitment to ongoing consultation with all interested parties on the future management of Western Australia's native forests.

This preliminary consultation is in addition to a formal consultation

process that will be carried out during the drafting of the new Forest Management Plan.

The study is being conducted by the Western Australian Biodiversity Science Institute (WABSI) on behalf of the State Government. Your participation will help guide decision-makers as they work to ensure a sustainable future for our unique south-west native forests.

[The survey is open now](#) and closes at 5pm on Sunday 1 August 2021.

Contact

Western Australian Biodiversity Science Institute

email info@wabsi.org.au
phone 9263 9811

Salsola (Chenopodiaceae) in Western Australia By Greg Keighery

Salsola (prickly saltwort, tumbleweed, roly-poly) in Western Australia is a group of fast-growing, erect to spreading annual, rarely perennial, shrubs. With no distinct leaves, plants are various shades of green and green/purple. Flowers are inconspicuous and the fruit are round with a membranous wing. When plants die, they are so light that they are rolled across the landscape by wind, rain and floods, distributing the fruit on the way. Dead plants are commonly found piled against fence-lines.



The very densely branched, erect, succulent, bright green coastal form of *Salsola australis* with very short, fat, spinetipped leaves, and fruits with a pale green to white wing. This is the form named by Robert Brown as *S. australis*.
Photo – Bronwen Keighery.

Salsola has a convoluted taxonomic and weed history in Australia. This is most likely because: some forms are inherently weedy; difficulty in recognising species; and that the sole species listed for Australia over the past hundred years had been misidentified as European species *Salsola kali*, and wrongly treated as an introduction. A [worldwide revision](#) by Rilke in 1999 placed all Australian material in *Salsola tragus*, also a Eurasian species, but with both native and introduced elements. This revision was influenced by the timing of collections by Sir Joseph Banks (1770) and Robert Brown (1801) that showed the genus was widely present before European settlement.

Catherine Borger (Department of Primary Industries and Regional Development) undertook her doctoral studies on *Salsola* in Western Australia to ascertain the status of the species in Western Australia and South Australia. Catherine's [detailed research](#) showed that the Australian populations of *Salsola* were very distinct from overseas plants that they were previously aligned to and should be considered as a native species – *Salsola australis*. She also showed that the common roly-poly weed of the agricultural area [was part of this native species](#). It is possible that elsewhere in southern Australia there are introduced elements of the genus, as these areas were not studied, but this is unlikely. In Western Australia *Salsola* is a native genus.

However, the situation within the genus in Australia is complex, with many taxonomists, for example [Chinnock](#), noting that at least five or six species or subspecies are currently encompassed in the variation of the species *S. australis*, which ranges throughout Australia.



This open erect green *Salsola australis* plant is the most widespread form. Photo – Bronwen Keighery.

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The true *S. australis* appears to be the very succulent green plant found on coastal dunes in southern Australia. Whereas the inland agricultural weedy form appears to correspond in part to forms now named as [Salsola strobilifera](#), and perhaps to an as yet unnamed slender *Salsola* species. During the [Pilbara Region Biological Survey](#) a very distinctive blue-leaved plant confined to claypans in the Pilbara was sampled. This taxon will be recognised as a distinct species. The slow process of formally describing and untangling these forms is commencing with a new striking species, [Salsola sabrinae](#), confined to coastal tropical Australia recently named by Mosyakin. This and other work shows that there are at least five species of native *Salsola* in Western Australia.

Interestingly, *Salsola australis* is now recognised as a weed in California and Namibia. Even more interesting is that in California it hybridised with local *Salsola*, and doubling the chromosome number of the hybrid produced a new species, [Salsola ryanii](#) that is VERY invasive. Hybrids are also present between *Salsola* species in Western Australia, for example, between the upland and claypan species in the Pilbara, but these are poorly documented.



Salsola strobilifera annual plants growing on a dune by Lake Gregory. Photo – Greg Keighery.

So ALL Western Australian *Salsola* are considered native, but the exact nature and extent of the pre-European distribution in south-west Australia is unknown. However, both wheatbelt species are found in relatively undisturbed woodlands and naturally saline drainage lines, suggesting they may be naturally occurring there. With wind dispersed plants and fruits, they are both very efficient colonisers of disturbed ground, and are considered [agricultural weeds](#) that need managing in pastures and crops. Since they are annuals, numbers of plants in 'natural' sites should decline once disturbance lessens and other native plants compete with them for water, nutrients and sunlight.

More information

Borger CPD, Scott JK, Walsh M, Powles SB (2008) *Salsola tragus* or *S. australis* (Chenopodiaceae) in Australia—untangling taxonomic confusion through molecular and cytological analyses [Australian Journal of Botany](#) 56, 600–608.

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Chinnock RJ (2010) Some observations on *Salsola* L. (Chenopodiaceae) in Australia [Journal of the Adelaide Botanic Gardens](#) 24, 75–79.

Mosyakin SL (2018) Notes on an Australian species of *Salsola* (Chenopodiaceae) and validation of *Salsola sabrinae*, nom. et stat. nov. [Ukrainian Botanical Journal](#) 75 (1), 3–19.

Mosyakin SL (2019) *Salsola strobilifera* (Chenopodiaceae), a new combination for a remarkable Australian taxon [Phytotaxa](#) 409 (5), 283–290.



One of the many unnamed *Salsola australis* relatives with small reddish fruits. Photo – Greg Keighery.

Contact

Greg Keighery

Department of Primary Industries and Regional Development
email greg.keighery@dpird.wa.gov.au

Rehabilitating Roe 8 update

By Isabella Streckhardt

After being postponed due to COVID-19 in 2020, the [Hands Healing the Land – Boodja Moort Kaardijin](#) Community Science Conference was held in March 2021 at the Keiran McNamara Conservation Science Centre and proved to be a great success.

The sold-out event was organised in collaboration with SERCUL, Perth NRM and DBCA and attracted over 100 attendees, who learnt from 18 different speakers from all walks of ecological restoration, natural resource management and environmental education. Keynote speakers included Felicity Bradshaw (CSIRO), Associate Professor Rachel Standish (Murdoch University), and Whadjuk/Balladong man Oral McGuire (Gundi Consulting).

In the afternoon, the audience were invited to participate in an interactive panel discussion by submitting feedback and questions via Mentimeter software, collaboratively discussing current challenges in caring for our flora and fauna, as well as changes needed for the future. Craig Miskell from CAM graphics volunteered to capture the key concepts of the conference via live drawings, which can be viewed alongside the abstracts and video of all [presentations](#).

Murdoch University's Associate Professor Rachel Standish and E-mapper's Julian Kruger both presented on vegetation monitoring in the Roe 8 corridor, highlighting progress in vegetation cover and height. Results from annual vegetation monitoring indicate that many of the primary restoration objectives detailed within the [Rehabilitating Roe 8 Rehabilitation Management Plan](#)



Rehabilitating Roe 8

have been achieved. Other objectives will require ongoing monitoring and management.

Close to 90,000 native tubestock will be installed across the Roe 8 corridor this winter, both as infill planting and in areas that have not been actively revegetated yet. Two community planting events on the 20 June and [24 July](#) will form part of this effort.

Major works recently completed as part of the project are the Signage Plan and Path Network Plan, which have been developed in consultation with the Rehabilitating Roe 8 Advisory Committee, traditional owners and broader community. This will add value to the site as a recreational space while responding to the ecological sensitivities of the site.

For more information on the Rehabilitating Roe 8 project contact [Isabella Streckhardt](#).



Conference organisers Linda Metz and Isabella Streckhardt. Photo – Ingrid Sieler.



2020

2021

Photo monitoring comparing revegetation progress between autumn 2020 and autumn 2021 in Forrest Road South, Roe 8. Photos – Natural Area Consulting Management Services.

Contact

Isabella Streckhardt

Rehabilitating Roe 8

email istreckhardt@cockburn.wa.gov.au



The Hands Healing the Land - Boodja Moort Kaardijin Community Science Conference attracted over 100 attendees. Photo – Jenny Weigend.

Community Capacity Assessment 2021

By Sabian Wilde

Perth NRM is pleased to announce the [State Natural Resource Management Program](#) has provided funding to Perth NRM to coordinate the Community Capacity Assessment 2021, working with community to identify the strengths and gaps in existing environmental management programs.

Perth NRM welcomes the appointment of Raphaela Raaber as community engagement project officer responsible for this project.

Raphaela brings considerable expertise to the role, joining us after working in a range of countries including islands throughout the Indian and Pacific Oceans.

Recently she worked with Global Island Partnership on an Island Climate Change Adaptation Initiative, following her role as the Coordinator of YWCN, a sustainable and solidarity organisation in the Mozambique Channel.

Contact

Raphaela Raaber

Perth NRM
email raphaela.raaber@perthnrm.com
phone 9374 3333



Raphaela Raaber, community engagement project officer for Perth NRM project Community Capacity Assessment 2021. Photo – Perth NRM.

Perth NRM will host two workshop events to launch the program, demonstrate the outcomes and successes of previous assessments, and outline the participatory, co-designed approach that will be used going forward.

The workshops are being hosted north and south for your convenience, on [21 July](#) at The Wetlands Centre Cockburn and on [23 July](#) at Herdsman Lake Discovery Centre.

We look forward to you joining us!



2021
STATE & TERRITORY
LANDCARE AWARDS

Nominate a Landcare champion

WA Landcare Network in partnership with the State NRM Office is inviting nominations for the [2021 WA Landcare Awards](#). These awards recognise individuals and groups for their outstanding contributions to restoring and protecting their local environment.

Faced with unparalleled challenges including bushfires, drought, floods, and the COVID-19 pandemic, Landcarers across Western Australia have rallied to rebuild their communities with on-ground projects including habitat restoration for threatened species, bushland regeneration, and wellbeing and mental health activities.

Mick Davis, chair of the WA Landcare Network said, "Volunteers across WA play a vital role in restoring and maintaining our natural and agricultural landscapes at a local level, and these Landcare awards are a terrific opportunity to acknowledge their efforts and celebrate their achievements."

WA Landcare Network encourages nominations from groups, networks and individuals, including Indigenous groups, Landcare centres and catchment groups, urban landcare groups including friends groups and bushcare groups, coastcare and rivercare groups, local government authorities, Junior Landcare and youth groups, sustainable farmers, and research agencies.

Winners from the 2021 WA Landcare Awards will go forward as nominees for the 2022 National Landcare Awards.

Eight national award categories are now open for nominations. Information on the award categories, entry rules and conditions, and tips for writing nominations can be found on the [Landcare Australia website](#). Nominations close 15 August 2021.

Contact

Caroline Hughes

2021 WA Landcare Awards
email caroline.hughes@landcarewa.org.au
phone 0421 750 408

Bird Waterers: providing clean fresh water for our birdlife By Stephen Szydlowski

Over the last three years the birdlife at Jirdarup Bushland, Rayment Park, and Harold Rossiter Park in Victoria Park have been enjoying a drink from an innovative [Bird Waterer](#). The original concept was designed by Gregor Wilson, and the structures were developed by me and our Natural Areas Team at the Town of Victoria Park. Our team's objective from the beginning has been to create a permanent, safe, clean, low maintenance and low-cost water source for the

many bird species that visit urban bushlands and tree-lined streetscapes. Somewhat surprisingly, these structures have been remarkably successful urban habitat enhancements. On any sunny day, visitors do not have to wait long to see singing honeyeaters, red wattlebirds, willie wagtails, ravens, forest red-tailed black cockatoos and Carnaby's cockatoos drinking from these curious rustic metal additions to their fragmented habitats.

The prototype design has two water troughs located 3m above the ground on a pole bolted to a secure reinforced concrete foundation. These troughs are then refilled via a pipe through the pole controlled by an irrigation valve to provide fresh water twice a day from any mains water supply. Each of the troughs has a reo bar perch on one side and a wooden perch on the other to suit birds of all shapes and sizes. The prototype enabled the team to identify and resolve early flaws in the design. Most importantly, it tested the dimensions of the structural engineering that allowed the water to flush through to deliver clean fresh water.

Despite many visits from smaller bird species to the prototype Bird Waterer, it was obvious after the first summer's trial that it lacked the size and structure to accommodate the many flocks of forest red-tailed black cockatoos that regularly visit Jirdarup Bushland within the Town of Victoria Park. After consulting with ornithologist Ron Johnstone at the Western Australian Museum and a network of the bird-loving community connected to Jirdarup Bushland, the Bird Waterer team created a new design.

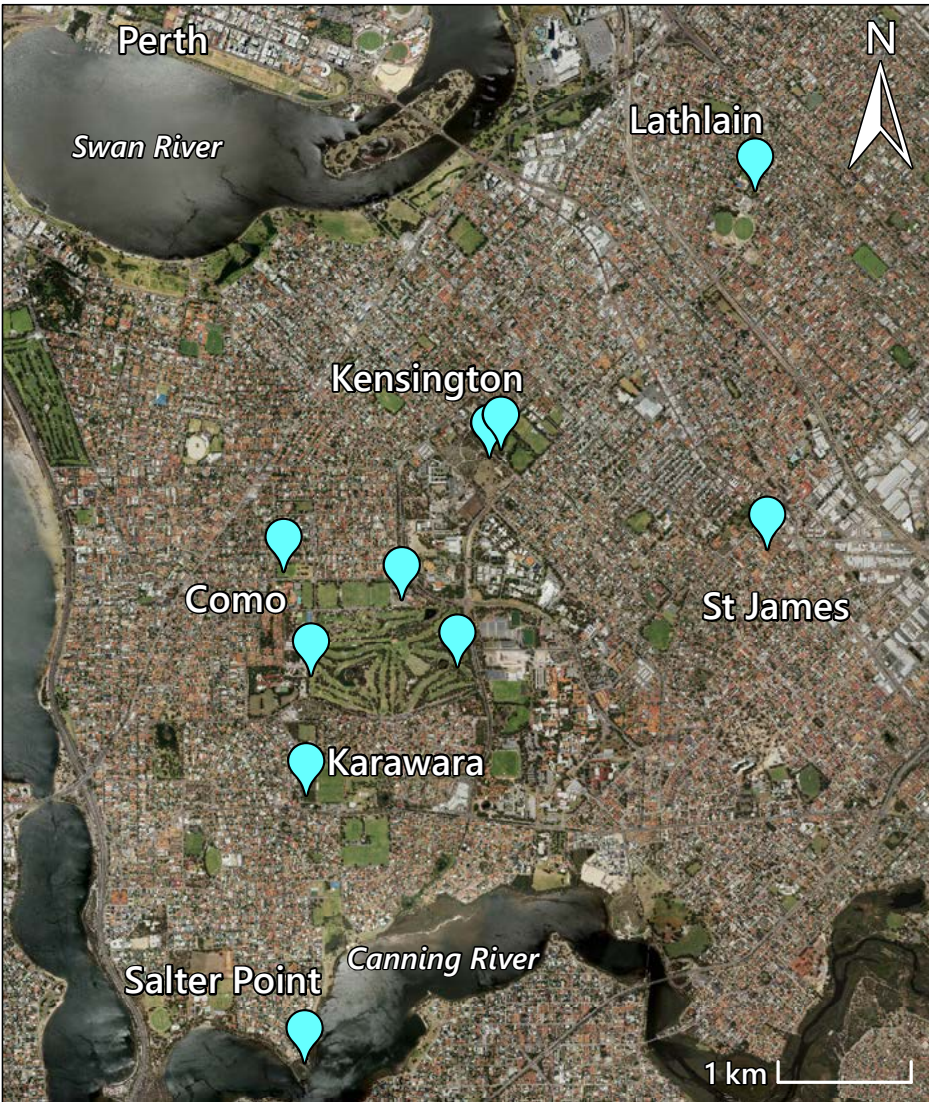
The newly designed Bird Waterer, unveiled in September 2020, was extended to 4m high with four larger troughs and chunky jarrah perches to accommodate 12 or more black cockatoos at any one time. The wooden perches are an important feature of the new design, which provides a natural surface for black cockatoos to gnaw and sharpen their beaks, and to grasp to maintain their claws.



© Georgina Wilson

The chunky jarrah perches provide the ideal surface for the grasping claws and gnawing beaks of the forest red-tailed black cockatoos at Jirdarup Bushland. Photo – Georgina Wilson.

Continued next page ...



Locations of the 10 Bird Waterers in the Town of Victoria Park and the City of South Perth.

In extending the height of the new Bird Waterer to 4m, it was necessary to adapt the design to support the extra weight. Ultimately the height was always a compromise between providing a water source for birds and keeping them far enough off the ground for the birdlife not to feel threatened by the people below.

Bird Waterer stations provide a permanent fresh water supply for birdlife across an ecologically fragmented urban landscape. The structures can also connect and signpost the direction for rebuilding wildlife corridors throughout an urban setting comprising largely of bitumen, concrete, bricks, and mortar. In effect, these natural area enhancements can be the structural steppingstones to inspire and reconnect urban ecosystems. The Town of Victoria Park, like many local governments, is implementing a long-term [urban forest strategy](#) to raise its local tree species canopy cover and enhance biodiversity of a densely subdivided suburban landscape.

There are now 10 Bird Waterers supporting a range of habitats within the Town of Victoria Park and the [City of South Perth](#) including the remnant banksia woodlands at Kensington Bushland and Goss Reserve, the treescape at Collier Park Golf Course, and on the Canning foreshore at Salter Point Lagoon Reserve. The waterers are proving popular with the birdlife – see a flock of Carnaby’s cockatoos enjoying a drink in [this video](#) – or visit one in person and see what birds you can spot!



Australian magpies comfortably perched on the Bird Waterer’s three-tiered troughs. Photo – Georgina Wilson.

For more information on the Bird Waterers contact [Stephen Szydlowski](#) at the Town of Victoria Park.

Contact

Stephen Szydlowski

Town of Victoria Park

email sszydlowski@vicpark.wa.gov.au

Please send us your regional report (400 words) and one or two photos by Wednesday 8 September 2021. Text may be edited in response to volume of submitted reports.

Fire at Ellen Brook Nature Reserve *By Jan Bant*

Fire ravaged Ellen Brook Nature Reserve on 5 February 2021. Ninety percent of the reserve, habitat of the last self-sustaining population of critically endangered western swamp tortoise, was affected. Many areas have been totally burnt out and only black ash remains, and the [Friends of the Western Swamp Tortoise](#) are planning to work with DBCA (the land managers) to rehabilitate the reserve.

One dead western swamp tortoise was found by DBCA staff on Saturday, 6 February within the area impacted by the fire, and one western swamp tortoise was dehydrated and after being sent to Perth Zoo for care was returned to the reserve. No other injured or dead western swamp tortoises have been found to date.

A trained [detection dog, Dazzy](#), engaged through Terrestrial Ecosystems, went on site with district and Perth Zoo staff on Saturday, 6 February. No western swamp tortoises were detected in the area that was searched, in and around the fire containment lines.

Fortunately, Mother Nature has looked after these little reptiles for thousands of years, and the bushfire season coincides with their aestivation (hibernation). The tortoises should all have been cosily tucked up underground while the fire swept over them. Just to be sure, DBCA staff are doing regular sweeps, to help them or other animals living in the reserve.

Additional sand pads for predator monitoring have been established within the reserve, to determine the quantity and timing of feral animal control.

District staff are preparing a rehabilitation plan for revegetating the reserve and to enhance cover in key habitat areas. Thanks to our colleagues at Chittering Landcare, about 6,000 tubestock will be available for planting this season.

DBCA staff expertly mended the feral proof fence damaged slightly in the firefighting efforts. The fence has an electric wire at the top (run by solar panels within the reserve) and a skirt under the ground to deter feral animals digging their way in.

Many of our members, concerned about the health of the reptiles, donated money to help. Part of the donations have been used to upgrade equipment to monitor tortoises as they leave aestivation. PhD candidate, Nick Rodriguez, is working with Gerald Kuchling (DBCA) to check the health of tortoises.

In order to do something NOW, the Friends of the Western Swamp Tortoise held two very successful [seed bomb making sessions](#). We made small balls of clay, compost and local provenance seeds, which have been dried and stored until distribution in areas of the Ellen Brook Nature Reserve that are difficult to reach. When the rain comes, they break down and the seeds germinate. This way we will have a succession of sowing, with tubestock giving an early coverage, followed by the germinating seeds.

We'd like to thank DBCA for their hard work in this reserve and the many other areas affected by the fire.



Friends of the Western Swamp Tortoise, including the youngest helpers, lent a hand to distribute seed bombs in burnt-out areas of Ellen Brook Nature Reserve on World Biodiversity Day (22 May). With the start of the wetter weather, the plan is that the balls will break down and the seeds germinate! Photo – Friends of the Western Swamp Tortoise.

Contact

Jan Bant

Friends of the Western Swamp Tortoise
email westernswamptortoise@yahoo.com.au

Friends of Lake Claremont

By Nick Cook

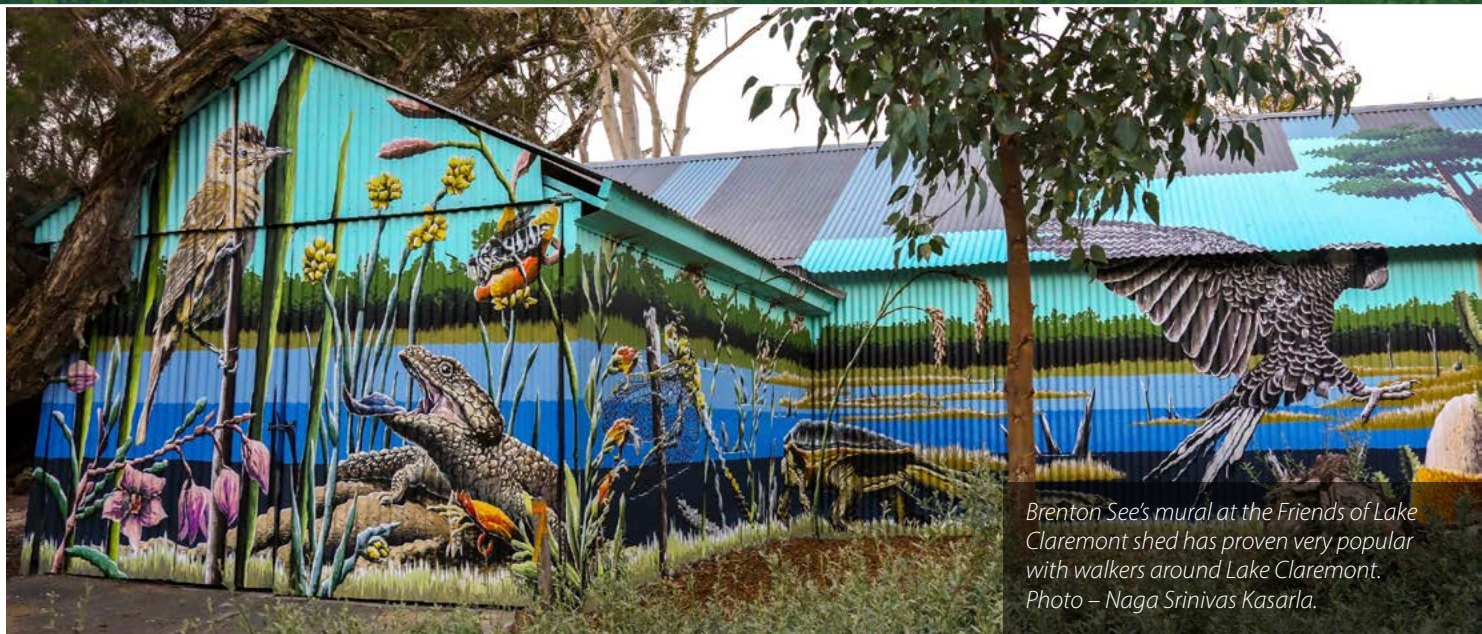
As I write this it is National Volunteer Week and our scheduled celebration is postponed due to forecast 30mm rain and thunderstorms. However, the rains are well timed for our infill planting program commencing in early June.

We are very fortunate at [Friends of Lake Claremont](#) (FOLC) to have a strong membership base and many generous, talented, and passionate volunteers. Our group has been in existence since the early 1990s but really took it to the next level around 2008/09 with the incorporation of FOLC and the closure of the long nine golf course.

Historically our wetland and surrounds has been highly degraded. Prior to the golf course the site was used as a rubbish tip. In 2010 FOLC began major revegetation works in conjunction with the Town of Claremont.



In total, the Friends of Lake Claremont have planted almost 400,000 local native plants, resulting in a huge uplift in the biodiversity both in the wetlands and uplands of Lake Claremont. Photo – Nick Cook.



Brenton See's mural at the Friends of Lake Claremont shed has proven very popular with walkers around Lake Claremont. Photo – Naga Srinivas Kasarla.

Working on a co-funding model the Town of Claremont sprayed out the turf and provided mulch and fencing. FOLC sought grants funding to purchase native tubestock and provided volunteers to plant.

Under the leadership of Heidi Hardisty (2008–17) the group went from strength to strength and with Claire Brittain as grants officer we continued to obtain funding year after year. All of our revegetation works are guided by the town's Lake Claremont Master Plan and the Lake Claremont Management Plan. Over the last 11 years FOLC have received approximately \$750,000 in grants funding and in 2020 we reached a major milestone with the completion of the Lake Claremont Master Plan plantings. In total the FOLC have purchased and planted almost 400,000 local native plants covering an area of roughly 10 hectares. Our planting has been a huge, whole of community effort, with local schools, residents and other community groups assisting the FOLC volunteers.

The results are stunning. Our plantings have enjoyed very high success rates overall. We have seen a huge uplift in biodiversity both in the wetland and uplands.

[Lake Claremont](#) is a conservation category wetland and a natural asset cherished by the community.

The Town of Claremont recently commissioned mural artist Brenton See to paint the flora and fauna of Lake Claremont on the shed used by FOLC as a base for their operations and storage for equipment. This is a gift for the whole community to celebrate the collaboration between the town, FOLC and the wider community.

Our work is never finished. Infill planting will continue and we have a big focus on manual weed control and environmental education whilst we continue to enhance and increase biodiversity at the site. We continue to see new species return such as a recently sighted black-headed monitor and Carnaby's cockatoos now forage daily amongst the revegetation sites.

Thank you to all our volunteers, our funding partners and the Town of Claremont.

Contact

Nick Cook

Friends of Lake Claremont
email folc.wa@gmail.com
phone 0401 376 085

Bat survey at Paganoni Swamp Reserve By Leonie Stubbs

On the evening of 13 January 2021, Nic Dunlop from the Conservation Council of Western Australia (CCWA) conducted a bat walk with members of [Friends of Paganoni Swamp](#) at Paganoni Swamp Reserve, using a SongMeter set for ultrasonic frequencies. This was part of a simultaneous survey of urban bushland areas managed by CCWA member groups. Two species, Gould's wattled bat (*Chalinolobus gouldii*) and the western free-tailed bat (*Ozimops kitcheneri*) were also recorded during the survey at both Star Swamp Bushland Reserve and Wireless Hill Reserve.

At around 5:30pm we drove the car along the Powerlines Track to the end of the limestone and then headed north-west through the wetland area. The plan was to follow the track adjacent to the central wetland.

Our first bat contact that showed up on the recorder was nearly at the end of the east-west track. Nic identified the bat as a southern forest bat (*Vespadelus regulus*). Although it was pretty quiet from sunset at 7:26pm until around 8:30pm, we recorded four species in addition to the *Vespadelus regulus*: the long-eared bat (*Nyctophilus* sp., most likely *geoffroyi*), Gould's wattled bat (*Chalinobulus gouldii*), the white-striped free-tailed bat (*Austronomus australis*), and the western free-tailed bat (*Ozimops kitcheneri*).

The real action began once the survey had finished around 8:30pm and we were retracing our steps, with an increased frequency of bat calls (though no new species were recorded). For example, there were five contacts of *Austronomus australis* during the survey, but 13 contacts later.

It's a real experience to complete a night walk concentrating on the presence of bats who are primarily only 'seen' through an ultrasonic blip on a recorder. It also makes you realise the extent of competition for a good home, a tree hollow for example, and how valuable our big, old trees are for the range of services they provide. We must protect them from disease, fire and logging.

The group was so inspired, we now have access to a different type of recorder than Nic's – ours records the contact for later viewing and listening via a computer program. The recorder also records bird/mammal calls so can be set to record bats in the evening and birds during the day. We are hoping it will also improve our bird identification skills.

Sound recorders are not for the faint-hearted though, because the size of the data files are huge. They also come with plenty of challenges in terms of the cost of the recorder, batteries, SD cards, viewing program applications, and learning to understand and



A white-striped free tailed bat (Austronomus australis), one of the species recorded during the bat walk at Paganoni Swamp Reserve. Photo – Nic Dunlop.

interpret the data obtained. However, it opens up a whole new way of looking at your local patch without requiring a fauna taking licence or animal ethics approval, so if you have the opportunity to obtain a sound recorder, it's definitely worthwhile.

Contact

Leonie Stubbs

Friends of Paganoni Swamp
email FoP@westnet.com.au

River Conservation Society's Clean Up Australia Day By Kathy Boladeras

In previous years, River Conservation Society's Clean Up Australia Day projects have involved removing litter from reserves, river walk trails, and from pools in the Avon River within the Shire of York. This year, the corner of Avon Terrace and Glebe Street in York was the focus for our 7 March Clean Up Australia Day event.

Lot 94 Avon Terrace is a prime location in the centre of York and had become overgrown with a particularly troublesome plant known as roly-poly or tumbleweed (*Salsola* sp.). Although [native to Western Australia](#), it is a relative newcomer to the town of York and poses a potential 'weed hazard' as an [agricultural weed](#) if left to establish. It produces thousands of seeds per plant and colonises very quickly in disturbed areas, especially with summer rainfall events.

[River Conservation Society](#) and community members volunteered their time to clear the block of the larger specimens of the somewhat prickly giant balls of roly-poly. The skip bins kindly donated by Avon Waste were quickly filled. It has made such a difference to have this block of land, in the centre of our town, cleared and tidied up.

Litter was also removed from the Avon River walk trails and the adjacent dog exercise area. It is very pleasing to see the amount of litter reducing in these areas thanks to our vigilant helpers who keep a watchful eye out for rubbish that may have been left behind.

Our busy bees are making a big difference to the appearance and health of the riverbanks, with weed loads being reduced and African boxthorn kept under control. Riverbank areas will be ripped in preparation for three planting days in June, one of these being an initiative of a local schoolgirl who raised money for the River Conservation Society by shaving her head late last year. In June she and her Year 6 classmates will be planting 1,500 seedlings funded by the proceeds to beautify an area along the Avon River walk trail.

Contact

Kathy Boladeras

River Conservation Society
email carlee@activ8.net.au



*Members of the community and the River Conservation Society cleared roly-poly from a degraded lot in the town of York. Although roly-poly (*Salsola* sp.) is native to Western Australia, it can behave in a weedy manner and become over-abundant in disturbed soil and is considered a weed in agricultural systems. Photo – York River Conservation Society.*

Going batty on World Environment Day

By Ingrid Sieler

Lately bats have been much maligned, but did you know they are critical to maintaining biodiversity, especially of our forests? Joe Tonga, a well-known bat expert, shared many interesting facts about bats at a bat box making workshop and bat night stalk held on World Environment Day (5 June), encouraging workshop participants to rethink misconceptions about them.

Participants of all ages worked together to make 10 high quality bat boxes, with stainless steel roofs and reflector strips, for microbat habitat along the Canning River. During the workshop we learned how up to



Joe Tonga demonstrates the principles of novel habitats for microbats at Perth NRM's bat box building workshop. Photo – Ingrid Sieler.

25 microbats will huddle together in one box, and how the white reflector strip shows the silhouette of the bats, enabling community members to quickly detect if bats are present in the boxes. In theory, our 10 constructed boxes can provide habitat for 250 bats for most of their 23-year lifespan.

In the evening, an excited group walked to Bodkin Park to stalk bats. We saw boxes of different shapes and sizes in situ and listened for the bats as they hunted for food. Along the way we watched a variety of spiders devour their night catches, including a beautiful golden orb spider, and heard the musk ducks and frogs calling out across the park and river.

You too can grab your torch, head down to Bodkin Park in South Perth, and let your eyes adjust to the dark to witness our nocturnal wildlife. Just be sure to watch out for the drop bears!

The Bat Box Making Workshop and Bat Night Stalk were coordinated by Perth NRM for World Environment Day with support from the City of South Perth and the [Salter Point Sea Scout Group](#). The event was funded by the Australian Government. Please go to our web page to learn more about [Perth NRM events](#) or contact Stakeholder Engagement Manager [Ingrid Sieler](#) to find out more about our capacity building workshops.



Joe Tonga shows a microbat to participants of Perth NRM's night stalk in Bodkin Park. Photo – Ingrid Sieler.

Contact

Ingrid Sieler

Perth NRM

email ingrid.sieler@perthnrm.com

Joe and Jan King: leading the war on weeds *By Claire Bradstreet and Paul Udinga*

The regeneration of Western Australia's premier National Park has been the primary focus of two local conservation champions for more than a decade.

Joe and Jan King shared a deep love of the Western Australian flora and had a history of bushland regeneration volunteering before they moved to their new home across the road from John Forrest National Park in 2008.

Eager to explore the bushland and abundance of wildflowers, the pair set off onto the trails but were instead confronted with an invasion of watsonia.

If left to spread in bushland, the garden escapee will readily outcompete native plant communities.

It was then the couple pledged to do everything they could to see the natural beauty of the bush returned and began work initially digging up the bulbs.

Soon, the monumental task of tackling large infestations of watsonia saw Joe and Jan seek help from DBCA, from neighbours and other volunteers.

They formed the [Friends of John Forrest National Park](#) in 2010 with the goal of eliminating invasive introduced plant species, often mistaken for native flora, so the natural vegetation, native birds and animals could thrive and be enjoyed by park visitors.

When they were not out weeding, they would be busy applying for grant applications, surveying areas that need attention from the group, organising bushcare days, liaising with DBCA and preparing equipment.

In 2015 their efforts were recognised with a DBCA Outstanding Service Award, they received this a second time in 2018 and in 2020 were bestowed the top honour of overall DBCA Volunteer of the Year.

"WA has such beautiful wildflowers it's hard not to be taken by the natural beauty of the bushland," Joe said.



Jan and Joe King receive the overall DBCA Volunteer of the Year award for 2020 from Minister for Environment Stephen Dawson. Photo – DBCA.



L-R: Mitchel Jones, Sue Young, Jan King, Joe King, and Helena Mills from the Friends of John Forrest National Park enjoy a well-deserved morning tea break. Photo – Val English.

Continued next page ...

“Its conservation is quite a difficult issue because of the impact of European habitation – particularly the introduction of introduced species.”

Despite the overwhelming task ahead of them, Jan said it was simply a matter of learning and putting in the time and effort.

“We were quite passionate about it and quite determined to do something,” she said.

“You soon learn to recognise what’s a weed and what’s not a weed, what’s introduced and what doesn’t belong there.

“It’s very rewarding work.



Jan King bagging weeds out on a bushcare day with the Friends of John Forrest National Park. Photo – Val English.



Joe King pulls out a woody weed, Queensland silver wattle (*Acacia podalyriifolia*) at John Forrest National Park. Photo – Val English.

“It keeps us fit and healthy, feeling like you are contributing something to the preservation of the natural bushland and leaving something behind for others to build on.”

While they have since handed over the ‘keys’ to a new committee, they haven’t quite hung up the gardening gloves and continue to join the group on bushcare days, in weed surveys and planning.

Their incredible efforts in the park over the past 10 years have truly made a huge impact on the biodiversity of flora and, by association, fauna, in the park.

Senior Park Ranger Paul Udinga said Joe and Jan’s efforts had been an inspiration.

“At times, in park management, with so much to do, it can feel a bit like it is us against the world and no one else cares about the park,” he said.

“Having dedicated volunteers that are so passionate about the park is an inspiration to staff, the drive to keep going.”

Friends of John Forrest National Park volunteers have contributed more than 10,000 hours and received six grants totalling \$164,515 since 2014.

Contact

Paul Udinga

DBCA

email paul.udinga@dbca.wa.gov.au

Fred and Jean Hort: decades of discoveries

By Marnie Mallié

Fred and Jean Hort are self-described nature enthusiasts who have contributed countless volunteer hours in many flora and fauna studies in Western Australia over the last 25 years. They started as volunteers for the then Department of Conservation and Land Management (CALM) in 1996 and often teamed with Fred's brother and fellow longstanding volunteer, Bert Hort. During this time, Fred and Jean pursued their interests in exploring the natural environment particularly to record and report new populations of threatened and priority flora in the Perth Hills.



Fred and Jean Hort, both keen nature photographers, enjoy taking photos to share and educate. Through their passion for the natural world and decades of dedicated volunteering, Fred and Jean have made significant contributions to the knowledge and conservation of Western Australia's flora and fauna. Photo – Jean and Fred Hort.

40 years of flora discoveries

Their interests in Western Australian flora started well before 1996. During the 1970s they enjoyed searching for native orchids throughout the South West Land Division, photographing them or collecting and recording them for taxonomic studies. This is when they photographed the now threatened *Thelymitra dedmaniarum* at Gidgegannup and in 1987 photographed a new population of the threatened underground orchid *Rhizanthella gardneri* at Munglinup. They brought a number of orchids to the attention of orchid specialists and participated in several expeditions to explore for native orchids throughout the South West Land Division and into the Eremaean Botanical Province of Western Australia. A species of duck orchid, *Paracaleana hortiorum*, was named after the Horts in 1996.

During their flora expeditions, the Horts have collected or co-collected over 70 plants of particular interest in Western Australia, many of these first-time collections that have since been formally described as new species. They have collected or co-collected close to 5,000 native flora specimens which are lodged at the Western Australian Herbarium and other herbariums in Australia and overseas. Many of these are from the northern jarrah forest region particularly in DBCA's Perth Hills District, collected during day trips from their home in Swan View. A glance at the Western Australian Herbarium records shows the extent of their explorations from this region.



*A new species of bee fly, *Meomyia hortorum*, was named by Xuankun Li and David Yeates in 2020 to honour Fred and Jean Hort for their contributions to photographing and collecting Diptera specimens in Western Australia. Here, it feeds on *Olearia rudis*, a native daisy. Photo – Jean and Fred Hort.*

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In recognition of their discoveries and increasing the knowledge of our Western Australian flora, eight flora species have been named in honour of the couple (*Darwinia hortiorum* (Priority One), *Lechenaultia hortii* (Priority Two), *Hibbertia hortiorum* (Priority One), *Grevillea hortiorum*, *Conostephium hortiorum*, *Calandrinia hortiorum*, *Paracaleana hortiorum* and *Stylidium hortiorum*). Additionally, the recently described and critically endangered flora *Styphelia capillaris* was officially designated by the author as: '[Horts' Styphelia](#)'.

A wider realm of nature

For many years while the Horts had been searching for threatened and priority plants, Jean had been photographing invertebrates and posting [images on the photo-sharing website Flickr](#). These images caught the attention of many Australian and overseas institutions. At the end of 2011, they were invited to participate in fieldwork collections of flower-loving flies for a worldwide taxonomic/phylogenetic revision of the Order Diptera (true flies). As volunteer Research Associates for the Western Australian Museum since 2011, the Horts have collected, recorded and donated over 13,500 specimens of Diptera and other invertebrates including butterflies, sun-moths, native bees, wasps, beetles, silverfish, lacewings, and occasionally spiders.

In 2016, a stiletto fly *Sidarena hortorum* was named after the couple. This was followed by *Marmasoma hortorum* in 2018 and the bee fly [Meomyia hortorum](#) in 2020, named "in honor of Fred and Jean Hort for their important contributions to photographing and collecting Diptera specimens from Western Australia."

Sometimes only venturing into their backyard or down the road to the Talbot Road Nature Reserve, the Horts continue to contribute knowledge about our natural environment. As a result of these forays and photographic cataloguing of the natural wonders on their doorstep, a peacock spider was named [Maratus hortorum](#) in 2014.

Fred writes, "As we wandered over the landscape in search of threatened flora, it seemed quite logical for us to peer into the wider realm of nature, of animals, birds and insects etc. – that co-existed around us. We developed a personal interest in photo recording some of the fauna that were the pollinators of WA's native flora. As volunteers we were keen to assist the research programs of the Western Australian Herbarium as well as flora conservation programs run by DBCA district conservation officers. Loss to the environment particularly through human intervention is a continuing concern to us."

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Hort's peacock spider, Maratus hortorum, was recognised as a distinct species by Julianne Waldock in 2014 and named in honour of the Horts. The most distinguishing feature on the males is the two spots in the middle of the patterns on the abdomen. Describing the spider's mating dance, Fred writes: "He raises his stunning wraparound mediaeval cloak from the Maratus hortorum clan and sways with this from side to side – a performance that would make Elvis proud." Photo – Jean and Fred Hort.

Contributions in Australia and overseas

In recent years Jean and Fred have not only photographed, documented and vouchered flora and insect specimens for the Western Australian Herbarium and Museum, they have directly contributed to numerous Australian and international research organisations including CSIRO, the Queensland Museum, the Australian Museum, The Smithsonian Institution (USA), the Bishop Museum (Hawaii) and the California Department of Food and Agriculture.

Both Jean and Fred are keen nature photographers, and their images can be seen in many published books, journals, magazines, scientific papers and on their [Flickr site](#).

Since 1996, Fred and Jean have together accrued an equivalent of 50 years of volunteering with DBCA and its preceding agencies. They have twice been awarded Volunteer of the Year, with Fred also receiving the award individually a third time. Their field observations, reports, photographic cataloguing, and vouchered collections over that period have contributed greatly to the knowledge and conservation of many poorly known Western Australian flora and fauna.



A pretty splash of yellow: Hibbertia hortiorum was named for Fred and Jean Hort [by Kevin Thiele in 2019](#). This prostrate shrub grows in jarrah forest in laterite soil from Mount Cooke to North Bannister, it grows well in disturbed soil and seems to be relatively common along road verges and adjacent bushland. Photo – Jean and Fred Hort.



Grevillea hortiorum was collected by Fred in 1998, and was [officially named in March 2021](#) by Peter Olde in honour of Fred and Jean Hort. An uncommon species found in woodlands and heath in the Avon Wheatbelt, Grevillea hortiorum is a spindly or bushy shrub with sharp needle-like leaves, white-cream flowers and chocolate coloured bud caps. Photo – Jean and Fred Hort.

But it has been years of enjoyment for the duo, as Fred writes, “because this is something we are passionate about we are out scouting most months of the year. We have been rewarded with immense personal satisfaction and fulfilment in our lives and are very fortunate to meet many passionate and inspiring individuals along the way.

“The wider world of nature has special diversions and dimensions that never cease to amaze us.”

Fred and Jean Hort would like to acknowledge the departments and individuals who have supported their participation in flora and fauna studies over the years.

Contact

Fred and Jean Hort

DBCA flora volunteers & Western Australian Museum research associates
email Fred fjhort1@bigpond.com
email Jean hortje@gmail.com

Mandurah Regional Herbarium Volunteers *By Graham Smith*

It's easy to get caught – newly retired and relocated to the seaside, you innocently sit next to a herbarium volunteer on a wildflower bus trip. Pretty soon you're one of the crew, getting your mind around Latin and Greek, straining your back and neck to spot tiny leaves of orchids, pressing specimens on your dining room table, cursing the computer that never does things the way it should ...

That volunteer I met was Jack Kelly who, in 2000, was one of the first to join Murray Love, the Nature Conservation leader at the then Department of Conservation and Land Management (CALM) Dwellingup office who set up the Mandurah office. Murray had already started collecting local plants in 1998 and initiated the Mandurah Regional Herbarium. E.G. Gyngell and P. Payne were other early volunteers. Peg Foreman and Ken Stewart soon joined Jack and Murray, and together the four of them spent countless hours collecting, identifying and preserving the specimens for the fledgling herbarium. By the time I joined them in 2006 the herbarium contained around 800 specimens, including some weeds also. At that time their territory ranged from Lakes Road in the north to Ellis Road (Yalgorup) in the south, the sea to the South Western Highway in the east.



A spring nature walk at Island Point Reserve, Mandurah. Photo – Graham Smith.

Our work

Over the years the volunteers have worked on many tasks, particularly:

- Establishing, maintaining, and augmenting the plant collection and master list (which also includes specimens taken, with permission, from City/Shire reserves)
- Assessing and reporting, approximately every 5 years, populations of threatened and priority flora in our area, including searching of likely habitat for new records of these flora species
- Developing field herbaria (one sheet of photos and information for each plant) for Pinjarra Nature Reserve, Mooyootj Nature Reserve and Kooljerrenup Nature Reserve
- Liaising with the local community – assisting City/Shire/individuals with plant identification (including weeds), planting and weed control, talks and nature walks with Coodanup Bush Ranger group
- Nature walks for the public in local reserves – these emanated from plant identification workshops run by Peg
- Assessing reserves for possible Threatened Ecological Community (TEC) status as banksia woodland or tuart forest
- Developing a 'non-technical' database (text and photos) to assist volunteers in identification of local flora.

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About us

At present we have five regular volunteers (Heather Adamson, Sue Pastore, Clive Petrie, Jenny Rose and me) working on Thursdays, some weekly and some fortnightly and spending roughly two weeks out of three in the field. We are all retired and with no formal botany training, but we bring skills acquired along the way in photography, organisation, and research. We aim to learn as much as possible about the local plants, contribute to their conservation and research as able, and assist our 'boss', Will Fowler, in his busy nature conservation officer job. Lastly, we hope to leave footsteps that will make things easier for our successors after our knees and backs finally give up on us!



Bel Matthews, Jenny Rose, Clive Petrie, and Graham Smith visiting the Western Australian Herbarium in Kensington. Photo – Anne Harris.

Lessons learned and the future

Over the years we have enjoyed the camaraderie of working and learning together with each other and DBCA staff on our tasks, and this work will mostly continue. Most satisfying is to find and assess threatened and priority plant populations such as *Eucalyptus argutifolia* and *Hakea oligoneura* on thickly wooded limestone ridges or an *Alyogyne* not seen for roughly 10 years, not to mention the ongoing work on the field herbaria, finding new hybrid orchids or enjoying the serenity of morning teas in the bush!

But it's also true that things don't always go as planned. Interest in nature walks has declined greatly so we've decided to do fewer walks, hold some on weekends, and seek to include more younger people. Populations of rare plants are sometimes non-existent now, or severely depleted. Our rigorous specimen collection methods went downhill when the department implemented a fee for vouchering and we ceased to send specimens to Perth Herbarium – we are seeking to rectify this as far as able.

Our area was recently extended in a northerly direction to Thomas Road, meaning that many more reserves have been added to our list, as well as inevitable additions to our current number of about 800 local species. The challenge remains to balance our 'nerdy' work with the plants alongside the need that we see to educate and promote their conservation amidst the community.



Mandurah Regional Herbarium Volunteers Sue Pastore, Heather Adamson, and Jenny Rose checking out a pygmy *Drosera* at Kooljerrenup Nature Reserve. Photo – Graham Smith.

Our group has capacity to expand to other days in the week, especially as we know some younger people (some of whom have training!) who are hoping to join us, depending on study and work commitments. Please feel free to contact us if you are keen to help (phone 9405 0750). We work out of the DBCA Office, 423 Pinjarra Road, Mandurah.








Contact








Graham Smith






Mandurah Regional Herbarium Volunteers
email graham.smith@dbca.wa.gov.au

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 jgmumme@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.friendsoflakeclaremont.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/website)
-  **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 **Samphire 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.

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 93392439

Mondays

Plant learners' group with **Eastern Hills Wildflower Society** meets twice a month in a self-learning environment to identify plants and expand knowledge. Contact: Pam eastern.hills.branch@wildflowersocietywa.org.au

Mondays

Propagation group with **Eastern Hills Wildflower Society** meets twice a month to share knowledge about propagating native plants. Contact: Sandy eastern.hills.branch@wildflowersocietywa.org.au

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 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@bgpa.wa.gov.au [website](#)

Thursdays and Sundays 10am–12 noon

Kanyana Wildlife Centre, Discovery Centre **Tours**. Close encounters with native animals and interactive Discovery Centre. \$15 or less. Bookings essential. Contact: 9291 3900 education@kanyanawildlife.org.au [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 [Facebook](#) murdoch.secretary@wildflowersocietywa.org.au

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 McGlew Rd, Glen Forrest. \$2 entry, visitors welcome. Contact: [website](#) eastern.hills.branch@wildflowersocietywa.org.au, [Facebook](#)

Fridays and Saturdays 7pm–9pm

First Friday and second Saturday every month, **Nocturnal Tours**, **Kanyana Wildlife** Centre. Meet nocturnal native wildlife and hear about endangered species breeding programs. \$20 or less. Bookings essential. Contact: 9291 3900 education@kanyanawildlife.org.au [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.

July

 **3 Saturday 9am–12 noon**
Planting at **Wright Brook**, Kelmscott. [AGLG](#).


 **4 Sunday 9am–12 noon**
Storytelling with Dr Noel Nannup and community planting day at **Malgamongup (Bardon Park)**, a NAIDOC Week [event](#) hosted by the City of Bayswater. Bardon Place, Maylands. [Register](#).





HEAL COUNTRY!


4-11 JULY 2021


 **4 Sunday 9am–12 noon**
Planting at **Shreeve Road Bushland**, Canning Vale. [AGLG](#).

 **6 Tuesday 12:30pm–2:30pm**
Cockatoo Kids Club for the school holidays. Learn about our black cockatoo species with Rex the Carnaby's cockatoo and the team from Kaarakin Black Cockatoo Conservation Centre. **The Wetlands Centre Cockburn**. Free for Cockatoo Kids Club members, \$15 for non-members. [Register](#).

 **6 Tuesday 1pm–3pm**
Acknowledge this! Learn [how to give an authentic Acknowledgement of Country](#). Training event hosted on Zoom. [Tickets](#) \$33 or \$55 (plus booking fee).


 **6 Tuesday 5pm–7pm**
Frog stalk at **Bold Park and Perry Lakes**, City Beach. [Town of Cambridge](#).


 **8 Thursday 8am–10am**
Acknowledge this! Learn [how to give an authentic Acknowledgement of Country](#). Training event hosted on Zoom. [Tickets](#) \$33 or \$55 (plus booking fee).


 **8 Thursday 9am–3pm**
Kids Nature Club: Nature Detectives Holiday Program For kids aged 5–10 years. \$80 per child. **Perry Lakes Reserve**, Floreat. [Register](#).

 **8 Thursday 9:30am**
Planting off Strawberry Hill Drive, **Gidgegannup**. [Susannah Brook Catchment Group](#).

 **8 Thursday 1pm–3pm**
Buzzing about Native Bees: these school holidays, learn about our local native bees from Kit Prendergast, followed by a guided walk through the Bibra Lake bushland. **The Wetlands Centre Cockburn**. Children \$5 (parents and children under 5 free). [Register](#).


 **9 Friday 1pm–2:30pm**
Birds of Prey: these school holidays, learn about birds of prey from Yvonne Sitko (WA Birds of Prey) and meet her team of amazing birds. **The Wetlands Centre Cockburn**. Children \$5 (adults free). [Register](#).

 **9 Friday 9am–3pm**
Kids Nature Club: Nature Detectives Holiday Program For kids aged 5–10 years. \$80 per child. **Perry Lakes Reserve**, Floreat. [Register](#).


 **10 Saturday 8am–11am**
Birdwalk at **Lightning Swamp**, Noranda. [BirdLife](#).


 **10 Saturday 9am–12 noon**
Planting at **Rickman Bangalla Reserve**, Balcatta. [City of Stirling](#).

 **10 Saturday 9am–12 noon**
Planting at **Goolamrup Reserve**, Kelmscott. [AGLG](#).


 **10 Saturday 9am–12 noon**
Winter bird class for those new to birdwatching or just interested in learning more about birds. The program includes bird calls and raptor identification. **WA Eco Centre**, Floreat. [Tickets](#) \$25.

 **10 Saturday 9am–1pm**
Planting at **Impson Park**, South Lake. [Registration](#) required.


 **10 Saturday 9:30am**
Planting off Strawberry Hill Drive, **Gidgegannup**. [Susannah Brook Catchment Group](#).

 **11 Sunday 8:45am–11:30am**
Planting at **Carine Regional Open Space**. [City of Stirling](#).


 **11 Sunday 1pm–4pm**
Trail winter walk at **Warwick Conservation Reserve**. [Friends of Warwick Bushland](#).

 **15 Thursday 9:30am**
Planting off Strawberry Hill Drive, **Gidgegannup**. [Susannah Brook Catchment Group](#).


 **17 Saturday 8:30am–11:30am**
Birdwalk at **Jandakot Regional Park**, Harrisdale. [BirdLife](#).

 **17 Saturday 8:45am–11:30am**
Planting at **Scarborough Beach**. [City of Stirling](#).

 **17 Saturday 9am–1pm**
Planting at **CY O'Connor Beach**, North Coogee. [Registration](#) required.


 **17 Saturday 9am–12 noon**
Planting at **Mary Carroll Park**, Gosnells. [AGLG](#).


 **18 Sunday 9:30am**
Planting off Strawberry Hill Drive, **Gidgegannup**. [Susannah Brook Catchment Group](#).

 **20 Tuesday 1pm–3pm**
Acknowledge this! Learn [how to give an authentic Acknowledgement of Country](#). Training event hosted on Zoom. [Tickets](#) \$30–\$50.


 **21 Wednesday 9:30am–1pm**
Enhancing Community Capacity for Environmental Volunteers: Co-Design Workshop. **The Wetlands Centre Cockburn**, Bibra Lake. Contact: Raphaela 9374 3333 raphaela.raaber@perthnrm.com [Register](#).


 **22 Thursday 8am–11am**
Birdwalk at **Piney Lakes**. [BirdLife](#).

 **23 Friday 1:15pm–4:30pm**
Enhancing Community Capacity for Environmental Volunteers, Co-Design Workshop. **Herdsmen Lake Discovery Centre**, Wembley. Contact: Raphaela 9374 3333 raphaela.raaber@perthnrm.com [Register](#).


 **24 Saturday 9am–11am**
Planting in the **Roe 8 corridor**, Coolbellup. [Registrations](#) essential.

 **25 Sunday 8am–11am**
Birdwalk at **Lesmurdie Falls**, Forrestfield. [BirdLife](#).


 **25 Sunday 9am–12 noon**
National Tree Day planting at **Banyowla Regional Park**. Meet off Turner Rd, Kelmscott. [AGLG](#).

 **25 Sunday 5:30pm–7:30pm**
Learn about our native possums and how to protect them at a **possum conservation workshop** with Associate Professor Roberta Bencini. The workshop includes making possum boxes for common brushtail possums. **Fremantle Fibonacci Centre**. [Tickets](#) \$15.


27 Tuesday 7:30pm–9:30pm

 **Beauty and Horror: The Wonders of Australia's Carnivorous Plants**, a talk by Laura Skates. Henderson Environmental Centre, North Beach. [Wildflower Society of WA](#).

29 Thursday 12 noon

 **The Power of Landcare Partnerships**, a Landcare [webinar](#). [Register](#) so you can watch, ask questions, and interact with the streamed webinar.


31 Saturday 9am–12 noon

 **Community tree planting** at Dempster Highbridge Reserve, Karrinyup. [City of Stirling](#).

31 Saturday 10am–11:30am

 **Native verge garden workshop** at Piney Lakes Environmental Education Centre, Winthrop. Free entry, [registration](#) essential.

31 Saturday 2pm–4pm

 **Nature journaling workshop** at Henderson Environmental Centre, North Beach. [Tickets](#) \$45.

August


1 Sunday 9am–12 noon

 **National Tree Day planting** at Cam Clay Reserve. Meet off Riverside Lane, Seville Grove. [AGLG](#).

1 Sunday 9am–1pm

 **National Tree Day planting** at Bibra Lake Reserve with the City of Cockburn. [Registration](#) required.

4 Wednesday 8am–10am

 **Acknowledge this!** Learn [how to give an authentic Acknowledgement of Country](#). Training event on Zoom. [Tickets](#) \$33 or \$55 (plus booking fee).

7 Saturday 8:30am–12 noon or 12:30pm–4pm

 **Planting** at Whiteman Park. [Register](#) for the morning or afternoon session (or both).

7 Saturday 9am–12 noon

 **Planting** at Martin Street Reserve, Kelmscott. [AGLG](#).



8 Sunday 8am–11am

 **Birdwalk** at Lake Gwelup, Stirling. [BirdLife](#).

8 Sunday 8:30am–12 noon or 12:30pm–4pm

 **Planting** at Whiteman Park. [Register](#) for the morning or afternoon session (or both).

8 Sunday 9am–12 noon

 **Planting** at Araluen Walktrail, Roleystone. [AGLG](#).

8 Sunday 1pm–3pm

 **Weeding** at Warwick Conservation Reserve. [Friends of Warwick Bushland](#).

12 Thursday 7:30pm–9:30pm

 **Nuts About Natives: 20 years of propagating Western Australian native plants**, a talk by Ben Croxford. Armadale Environmental Centre. [Wildflower Society of WA](#).

13 Friday 7pm–9:30pm

 **Dr Jane Chambers talk on Nature-Link Perth**. Kalamunda Community Centre, Kalamunda. [WA Naturalists Club](#).

14 Saturday 8am–11am

 **Birdwalk** at Bickley Brook, Orange Grove. [BirdLife](#).


14 Saturday 9am–12 noon

 **Planting** at Aldinga Street Wetland, Kenwick. [AGLG](#).

17 Tuesday 8:30am–11:30am

 **Birdwalk** at Little Rush Lake, Yangebup. [BirdLife](#).

17 Tuesday 12 noon–2pm

 **Acknowledge this!** Learn [how to give an authentic Acknowledgement of Country](#). Training event on Zoom. [Tickets](#) \$33 or \$55 (plus booking fee).


21 Saturday 9am–12 noon

 **Planting** along the Canning River, Jacqueline Drive, Thornlie. [AGLG](#).

21 Saturday 9am–12 noon

 **Community tree planting** at Lanchester Reserve, Stirling. [City of Stirling](#).

22 Sunday 8am–11am

 **Birdwalk** at Queens Park Regional Open Space, East Cannington. [BirdLife](#).

28 Saturday 8am–11am

 **Birdwalk** at Herdsman Lake, Stirling. [BirdLife](#).

29 Sunday 9am–12 noon

 **Planting** at Champion Lakes. [AGLG](#).

September

4 Saturday 9am–12 noon

 **Planting** at Mary Carroll Wetlands, Gosnells. [AGLG](#).

5 Sunday 8am–11am

 **Birdwalk** at Bibra Lake, Cockburn. [BirdLife](#).

5 Sunday 9am–11am

 **Wildflower walk** at Wireless Hill Reserve, Booragoon with the Friends of Wireless Hill. Murdoch Branch, [Wildflower Society of WA](#).

11 Saturday 9am–12 noon

 **Birdwalk** at Lake Leschenaultia, Chidlow. [BirdLife](#).

11 Saturday 9am–12 noon

 **Planting** at Astley Street Riverpark, Gosnells. [AGLG](#).


12 Sunday 9am–11am

 **Wildflower walk** through the Orelia bushland with the City of Kwinana. Murdoch Branch, [Wildflower Society of WA](#).

12 Sunday 9am–12 noon

 **Planting** along the Canning River, Jacqueline Drive, Thornlie. [AGLG](#).

16 Thursday 8am–11am

 **Birdwalk** at Star Swamp, North Beach, Stirling. [BirdLife](#).

18 Saturday 9am–12 noon

 **Planting** at Cam Clay Reserve, Seville Grove. [AGLG](#).

19 Sunday 8:15am–12 noon

 **Birdwalk** at Fred Jacoby Park/Portagabra Track, Mundaring. [BirdLife](#).


19 Sunday 9am–11am

 **Wildflower walk** through Sir Frederick Samson Memorial Park, Samson with the Friends of Samson Park. [Wildflower Society of WA](#).

19 Sunday 9am–12 noon

 **Planting** along the Canning River near Burslem Bridge, Thornlie. [AGLG](#).

19 Sunday 2pm–4pm

 **Nature journaling workshop** at Henderson Environmental Centre, North Beach. [Tickets](#) \$45.

25 Saturday 9am–12 noon

 **Birdwalk** at Collins Road, Flint. [BirdLife](#).

Highlights

July

Be a part of the **Birds in Backyards Winter 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](#).

On now – 15 August

Take part in the **National Shorebird Monitoring Program's** annual winter count. Email [BirdLife](#) to be allocated a site and enter your data directly into [Birdata](#) via the mobile app or online web portal.

On now – 27 November

Creatures: Ochred, Poked, Carved & Twined [exhibition](#) delves into the depths of the Berndt Museum of Anthropology's object collection illuminating a diverse menagerie of animal representations from across Indigenous Australia. [Lawrence Wilson Art Gallery](#).

3 July – 21 August

Nearer to Nature [Winter Warmers program](#) offers hands-on nature-based activities for kids and families over the school holidays. With locations across the Perth metro area and a variety of different themes, there is something for everyone to enjoy. Head to the [website](#) or call 9295 2244 for more information or to book.

4–11 July

National NAIDOC Week is held across Australia each July to celebrate the history, culture and achievements of Aboriginal and Torres Strait Islander peoples. The 2021 theme is [Heal Country, heal our nation](#). [Find a local community event](#) taking place near you and share in the celebrations.

5–6 July

The **TERN Science Symposium 2021** will be held [online](#). It is a forum for transdisciplinary ecosystem science research, technological development, data system innovation, collaboration and action, with contributions welcomed from all who have a passion for ecosystem science. [Register](#) to attend.

23 July 7pm & 25 July 5pm

Dreams of Place is a collaboration between the West Australian Symphony Orchestra, the Western Australian Youth Orchestra, and local Noongar singers as they deliver [a concert](#) exploding with evocative images of place, from Perth's own Derbarl Yerrigan to Finland's Kemijoki. [Tickets](#) from \$49–\$79.

26–29 July

The Coast to Coast Conference is the Australian Coastal Society's biennial national [coastal management conference](#). [Register](#) to attend online or in person at the Pullman Cairns International. Tickets for online registration start at \$200.

28 July–17 September, Wednesdays or Fridays 9:30am or 10:30am

Zippy's Kings Park Adventures early learning adventures for 3–5-year-olds. The weekly 45-minute sessions run for eight weeks. There are new discoveries to make each week with hands-on nature-based activities. Rio Tinto Naturescape, Kings Park. [Bookings](#) \$96 per child.

4–6 August

The **2021 National Landcare Conference** has been rescheduled to be held during 2021 Landcare Week, at the International Convention Centre, Sydney. Visit the [website](#) or [email](#) for more information. Register to attend the conference in Sydney or online.

9 August or 6 September 8:30am–4pm

Aquatic weed management training at the Canning River Eco Education Centre, Wilson. Bookings \$55 for paid employees or free for volunteers of community environment groups (maximum of two volunteers per group per year). Monday 9 August will be a Decision Makers Training day. Contact Amy Krupa 9458 5664 or [email](#) to register.



Nearer to Nature's [Winter Warmers school holiday program](#) will have your kids and families enjoying this beautiful winter weather. This season we are all about frogs, fungi, mud and swamps, so prepare your gum boots and rain jackets for a fantastic (slightly messy) season. Photo – Nearer to Nature.

26–29 August

At **Outback Bloom** – [Mullewa's Wildflower Festival](#), the town hall comes alive with a display of wildflower specimens and naturalistic bushland scenes. See and learn about the huge variety of unusual and spectacular flowers, with four days of wildflower displays, art exhibitions, souvenirs, morning and afternoon teas, and wildflower walks. Free entry.

3–5 September

The Inaugural John Glover Symposium: Southwest Biodiversity Hotspot will cover an array of topics on geology, soils, botany, zoology and archaeology. The two-day symposium at the University Club at UWA will be followed by a field trip to Lesueur National Park and/or the Jurien Bay chronosequence on Sunday 5 September (dependent on sufficient interest). [Tickets](#) \$100, with free tickets available to RSWA and WA Naturalists' Club members. Register separately for the [field trip](#) by 15 August.

6–10 September

The **Australasian Seed Science Conference** will be [held virtually](#). [Register](#) for \$220 (early registration, ends 16 July), or \$270 for standard registration (from 17 July). Students \$200 (limited availability).

6–10 September

National Malleefowl & WA Threatened Species Forum 2021 will be held together for the first time, presenting an opportunity for shared learning. With field trips, conference days, dinner and sundowner, select dates and activities you wish to attend with [tickets](#) from \$50–\$400. The Gerald Apartment Hotel, Geraldton.

15–17 September

The Biodiversity Conference 2021: Resilient Landscapes, will be held in Perth, bringing together researchers and practitioners across academia, government, industry and community to share scientific knowledge, biodiversity informatics and best practice in biodiversity conservation. [Tickets](#) from \$250 with early bird discounts available until 30 July.

25–29 September

22nd Australasian Weeds Conference: [A weed odyssey: innovation for the future](#). Adelaide Oval.

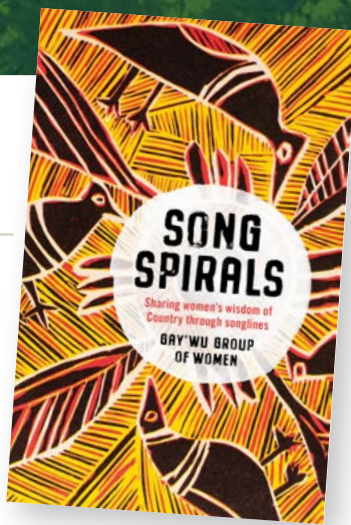
28–30 September 2021

The **AAEE Biennial Conference: [Mandjoogoordap: Changing Tides](#)**, aims to showcase innovative, practical and effective tools to help us 'change the tides' of environmental and sustainability education. Hosted in Mandurah. [Registrations](#) from \$150–\$926 with early bird rates available until 31 July.

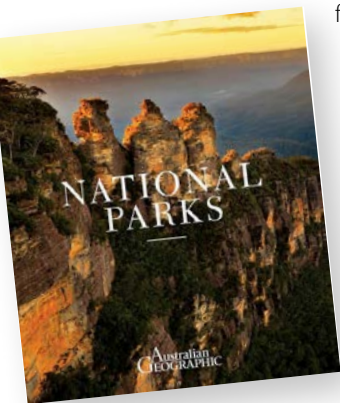
New publications

Songspirals: Sharing women's wisdom of Country through songlines

Gay`wu Group of Women. *Allen & Unwin*, 2020. \$35. "We want you to come with us on our journey, our journey of songspirals. Songspirals are the essence of people in this land, the essence of every clan. We belong to the land and it belongs to us. We sing to the land, sing about the land. We are that land. It sings to us." Songspirals are ancient narratives of landscape, described as a means of navigating vast distances without a map, but they are much more than this. Songspirals are sung by Aboriginal people to awaken Country, to make and remake the life-giving connections between people and place. This book is an opportunity for outsiders to experience Aboriginal women's role in crying the songlines in a very authentic form. Joint winner of the 2020 Prime Minister's Award for Non-Fiction.



National Parks *Australian Geographic*, 2021. \$65. There are 726 national parks in Australia, covering 35,074,410 square kilometres of land. Australia has a rich diversity of habitats and environments, expressed no more beautifully than in our spectacular national parks, each with its own distinct characteristics. Journey through some of Australia's most remarkable wild areas as *Australian Geographic* takes you through 50 of their favourite national parks.



Plantastic! A to Z of Australian Plants Clowes, Catherine, Rachel Gyan. *CSIRO Publishing*, 2021. \$29.99. This children's picture book is an A to Z exploration of 26 of Australia's most unique and incredible native plants. Discover and identify native plants found in your local park, bushland, or backyard. With fun facts, activities, adventurous ideas and illustrations, *Plantastic!* will prove just how fantastic Australia's native plants really are!



Recent Research

Baruch Z, Liddicoat C, Cando-Dumancela C, Laws M, Morelli H, Weinstein P, Young JM, Breed MF (2021) Increased plant species richness associates with greater soil bacterial diversity in urban green spaces *Environmental Research* 196, 110425.

Bolam FC, Mair L, Angelico M, et al. (2021) How many bird and mammal extinctions has recent conservation action prevented? *Conservation Letters* 14 (1), e12762.

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Gosper CR, Coates DJ, Hopper SD, Byrne M, Yates CJ (2021) The role of landscape history in the distribution and conservation of threatened flora in the Southwest Australian Floristic Region *Biological Journal of the Linnean Society* 133 (2), 394–410.

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Apps



Recycle Right app helps you figure out which bin to put it in, with a detailed A–Z list of items and information on how to dispose of them properly. Locate your closest recycling centre or drop-off point in the Perth metro area, and set bin day reminders so you never forget which bin goes out on what day! Recycle Right provides area specific information for 18 Perth councils. Available for free from the [App Store](#) or [Google Play](#).

FeralScan Pest Mapping app can be used to record the location of pest animals in your local area, problems they are causing, and control actions you undertake. Records will be submitted to the [FeralScan website](#) to develop and maintain an up-to-date picture of pest animals in your region, which can be used to monitor populations, and target pests through coordinated control programs. Available for free from the [App Store](#) or [Google Play](#).

Environmental Weeds of Australia is an [app](#) based on an updated version of the popular CD and includes an [interactive identification key](#) to over 1,000 significant or emerging environmental weeds of Australia, [weed fact sheets](#), and over 10,000 images. For many weed species, links are provided to relevant information on their management.

Website watch

The Probiotic Life is a [podcast](#) that explores how we can better the health of humans, soil, and our environment by improving the microbiome. Check out episodes with leading soil microbiologist [Dr Elaine Ingham](#) or ecologist and filmmaker [John D. Liu](#) as he talks on ecosystem restoration.

[Learn how to tell the new season is starting](#), according to the Noongar people of Western Australia.

Witness the first flight of a fledgling red-tailed black cockatoo as it leaves its nesting hollow in the [video Hollows as Homes – First Flight](#), by The Tree Projects.



The **Revegetation Industry Association of Western Australia (RIAWA)** have launched a [new website](#), which is more modern, user-friendly, and hosts two new tools: an online accredited [seed collector training module](#), and a [seed purity and viability database](#).

The Shire of Mundaring have produced a [short video](#) on **tackling dieback spread**, to help residents learn more about Phytophthora dieback and how they can avoid spreading it.

Abstracts and video of all presentations from **Hands Healing the Land – Boodja Moort Kaardijin Community Science Conference** are [available to watch online](#) if you missed out on attending the conference in person, or would like to revisit any of the talks.

Ni! Bilyada Waanginy – Listen! The Rivers are Speaking

Learn from the Noongar people's knowledge of our Western Australian waterways, on ABC Focus [radio program](#) with guests Dr Noel Nannup, Dr Richard Walley, and Professor Peter Klincken.

The Conservation Council of WA's **Climate, Energy and the Environment WA Forum 2021** is available to [watch online](#). Hear from organisations as they discuss what is being proposed to tackle climate change, upgrade our energy system and protect our environment.

All the Dirt is a [podcast](#) on gardening, sustainability, food, and organics, with weekly discussion and interviews. Listen to recent episodes on the [Witchcliffe Ecovillage](#) or [how to attract birds to your garden using native plants](#).

A series of 10 short videos, **Stories from across Gondwana Link**, has been produced by Gondwana Link with backing from the WA Museum Boola Bardip, for a permanent exhibition at the Wild Life Gallery. The videos are also available to view [online](#).



The Terrestrial Ecosystem Research Network's (TERN's) latest webinar **Resilience in Australia's ecosystems** is available to [watch online](#). With the challenges our ecosystems face: fire, flood, disease, climate change – will they recover or change, what are the thresholds, and can we detect the transition before it happens?

The Indigenous Land and Sea Corporation's **Our Country Our Future** [program](#) funds land acquisition or management projects that deliver benefits to Indigenous Australians. **Open on an ongoing basis.**

The **Southern Ports Authority** [Community Sponsorship Program](#) offers funding for the protection, management and enhancement of the environment within the communities of Albany, Bunbury and Esperance. **Open on an ongoing basis.**

Canon Oceania Grants is offering grants of \$2,500 cash plus \$2,500 worth of Canon equipment. [Applications close 30 July.](#)

NAB Foundation Community Grants offers funding of up to \$10,000 for local projects aiming to strengthen the environment through initiatives such as urban greening. [Applications close 30 July.](#)

Grants up to \$1,000 for events on **Thank a Volunteer Day** (5 December 2021). [Applications close 5 August.](#)

Strengthening Rural Communities offers two funding streams with small and vital grants up to \$10,000 or bushfire recovery grants up to \$25,000. [Applications close 24 August.](#)

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 fund environmental groups' management and restoration projects. Eligibility varies. [Armadale opens 1 September](#), [Fremantle opens 1 September](#), [Gosnells opens 11 August](#), [Rockingham closes 23 July](#), [Subiaco closes 21 September](#), [Wanneroo open year round.](#)

hakeas

By Byron Lamont

Hakeas are renowned for their attractive, often bizarre, woody fruits that store their seeds for many years. Its flowers are indistinguishable from grevilleas that have leathery fruits which release their seeds as soon as they are ripe. Another clue is that the flower clusters of hakeas are produced among the leaves or even on the naked old stems whereas grevilleas have their flowers held away from the foliage. About 20 species of *Hakea* are native to the Perth area, with about 100 species endemic to south-western Australia and 170 species in Australia altogether, with no species naturally occurring outside Australia. Most species flower in winter and spring.

Pictured is *Hakea myrtoides* that is a sprawling, winter flowering shrub restricted to laterite and granite in the Darling Scarp from Darlington to Gingin. Its beautiful cerise pink flowers run along the previous year's stem. The long styles bear pollen

at their tips (just visible on flowers to the right) that is lifted out of the four basal anthers (remnants of pollen can be seen on all flowers). The pollen is removed by honeyeaters as they probe for the abundant nectar at the base of the flowers. Such prominent, large, brightly coloured flowers are clues that this species belongs to the bird-pollinated group of hakeas, rather than the insect-pollinated group which has the reverse features. Our research has shown that red flowers are likely to produce high levels of cyanide (not the nectar, just the flower parts) that deter emus and cockatoos (attracted by the succulent flowers and nectar) from eating them. The small flat leaves end in a sharp spine, typical of many hakeas, that has given them an unfair bad reputation from a cultivation point of view, as needle leaves are an important drought adaptation and protect the plant from being eaten by kangaroos and other marsupials.

Photo – Jean and Fred Hort.