

bushland news



Issue 106 **Winter 2018** *Time of Makuru and Djilba in the Noongar calendar.*



Urban Bushland Council celebrates 25 years

Photo – Kim Sarti.



Department of Biodiversity,
Conservation and Attractions



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

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

Next issue

Spring Bushland News

Spring *Bushland News* contributions should be sent to [Urban Nature](#) by **7 September 2018**.

Bushland News seeks original contributions. If your submission has been or may be published elsewhere please let us know. Compiled and edited by Julia Cullity.

Urban Bushland Council celebrates 25 years

by Mary Gray

The Urban Bushland Council WA (UBC) was launched in Kings Park in March 1993 with the key objectives of seeking government protection for urban bushland and providing support and educational activities for member groups. Those priorities are just as important today as they were more than 20 years ago.

UBC formed in the aftermath of the highly-publicised community campaign in 1992 against housing development in Hepburn Heights bushland, which included court cases and photos in the press of community folk (many whom had never challenged authority before) demonstrating on site. At a pivotal meeting supported by the National Trust, community conservation groups, who were also campaigning against local development threats, the Conservation Council WA and others came together and agreed that “we must not let this happen again”, and that a group was needed to focus on the protection of urban bushland. A committee set to work and organised the birth of UBC, an association of community groups with a common interest in the protection and management of urban bushland. Now 25 years later UBC is the peak community organisation for urban bushland recognition and protection with an association of more than 70 [community conservation groups](#) focused on urban bushland.

In addition to supporting local [campaigns](#), there have been many ‘big picture’ achievements by UBC including the facilitation of new friends groups for bushland sites, two training courses for community people to become ‘City Bush



To celebrate 25 years of activity and achievement, more than 80 people gathered again in Kings Park on a bright, sunny morning in April this year. This included 17 of the original 85 supporters who were present at the 1993 Kings Park launch of UBC. Here Joan Payne (clockwise from left), Rob Greenwood, Mary Gray, Angela Carr, David Wake, Norma Calcutt and Rachel Siewert are cutting the cakes. Photo – Colma Keating.

Guides’, and holding many conferences and seminars with published proceedings. The biggest project, Perth Urban Bushland Fungi in conjunction with the WA Naturalists’ Club and WA Herbarium, involved field surveys, data collection and the publication of a field guide.

The generous contribution of thousands of community volunteers, working together with their local groups, local and state government land managers and scientists to help manage and restore bushland sites is so rewarding.

Continued next page ...

UBC works together with Government in achieving common goals to protect the rich biodiversity of our urban bushland, and there is much still to be done.

Significant highlights have been in State Government's policy developments for protection of bushland. UBC consistently advocates and supports Government policy and protection of urban bushland, which started with the promotion of the National Trust's Urban Bushland Policy. The Government produced the Urban Bushland Strategy, and following the System 6 Red Book, the comprehensive, whole-of-Government, Bush Forever was launched in December 2000.

Implementation of Bush Forever is still to be completed. Some sites still need to be acquired by the Government and transferred to Class 'A' reserve status for the purpose of nature conservation and allocated a land manager with appropriate funding. Unmanaged sites are being degraded by vandalism, off-road vehicles and rubbish dumping as suburbia expands, and restitution will be much costlier than prevention of degradation.

UBC together with the Wildflower Society nominated banksia woodlands as a Threatened Ecological Community (TEC) under the Federal legislation *Environmental Protection and Biodiversity Conservation Act 1999*. 'Banksia woodlands of the Swan Coastal Plain' was listed as an endangered TEC, effective 16 September 2016. The Approved Conservation Advice is clear, concise and comprehensive and applies to all levels of government and landholders. The first conservation objective is to 'protect the ecological community to prevent its further loss of extent and condition'. The second is to 'restore it'. This means that the patch-by-patch loss of banksia woodlands must stop, and the focus needs to shift to protection and restoration, and raising community awareness and enjoyment of its priceless values. UBC will continue to campaign for banksia woodlands.



Cover Photo: Cottonwood Crescent bushland in Dianella is a banksia woodland and Bush Forever site in suburbia, an example of the biodiversity values that UBC is working to protect. Photo – Kim Sarti.

More information

Bougher NL (2009 [revised 2017](#)) *Fungi of the Perth Region and Beyond: A self-managed field book*. Western Australian Naturalists' Club.

Gaynor A, Newman P and Jennings P ed. (2017) *Never again: Reflections on Environmental Responsibility after Roe 8*, UWA Press.

Government of Western Australia (2000) [Bush Forever, keeping the bush in the city](#). Department of Environmental Protection.

Lloyd A and Marwick W (2009) *Saving Hepburn Heights*, Friends of Hepburn and Pinnaroo Bushland

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Riverine woodland restoration at Lowlands

by Kate Brown, Grazyna Paczkowska and Meegan Sheehan

Urban Nature's work restoring the fringing vegetation along the Serpentine River at Lowlands Bush Forever site over the last 14 years highlights the importance of long-term commitment when undertaking vegetation restoration. Lowlands protects 1,200ha of ecosystems rare on the Swan Coastal Plain including regionally significant areas of mature banksia woodland in excellent condition and an intact riverine system where the Serpentine River crosses the Swan Coastal Plain. The flooded gum woodlands along the river provides habitat for endangered and priority species including chuditch and rakali, and provide shade and improve water quality for the endangered fresh water mussel as well as a range of native fish, which are disappearing from other river systems on the Swan Coastal Plain. Back in 2005 we identified invasion from arum lily as a major threat to the fringing vegetation and an adaptive weed management and restoration plan was developed and implemented over the following 14 years.

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April 2018, 14 years after initial arum lily control and two years after establishing fenced (left) and unfenced (right) plantings, completely grazed to the ground by kangaroos.. Photo – Kate Brown.

- 2005** The distribution and density of arum lily was mapped along the Serpentine River and in adjoining banksia woodland. Results indicated large areas of woodland had a greater than 75 per cent cover of arum lily in the understorey.
- 2006** A series of transects were established in dense infestations to monitor effectiveness of the weed control program and regeneration of invaded plant communities. The six-year control program was implemented (150ml glyphosate, 0.4g metsulfuron methyl (Brushoff®) and 30ml of the penetrant Pulse ® in 15L of water) each September/ October after plots had been rescored.
- 2008** A seed collection program focusing on the riparian vegetation commenced.
- 2009** Results of our monitoring showed that in herbicide treatment plots, arum lily decreased to less than one per cent cover following three years of treatment. There was however little recruitment of native species into the treated sites. (see [Bushland News autumn 2014](#) for detailed results).
- 2011– 12** The distribution and density of arum lily was re-mapped and the results showed infestations had been reduced to mostly less than five per cent cover. We undertook small scale burn trials in autumn 2011 and 2012 to gain an understanding of soil seedbank attributes. While there was some recruitment of natives following the burn, there was no significant difference in recruitment between burnt and unburnt sites and conclusions were that hot summer fire may be required to stimulate germination of the soil seed bank.
- 2013** Dense plantings were investigated as a method of establishing native cover in areas that were once greater than 75 per cent cover of arum lily. Growing on of tube stock and continued seed collection from 2013 to 2017 was funded through the Peel Harvey Catchment Council's *Rivers 2 Ramsar Project*. For the first time *Lepidosperma persecans*, a riparian sedge that forms a major part of the understorey on the Serpentine, was available. From our 2008 seed collections, the species took 18 months to germinate and an additional year growing on in the nursery before it was ready to plant out.
- 2014–15** Restoration plantings continued, however it was becoming evident that western grey kangaroos were having a serious impact on establishment of plantings, particularly *L. persecans*.
- 2016** A series of fencing trials to investigate the impacts of kangaroo grazing on *L. persecans* were established. Ten fenced and 10 unfenced (2mx10m) plots at priority permanent pools along the river, were planted in June 2016.

- 2018** By April 2018 nothing outside the fences survived but inside the fences dense, flowering stands of *L. persecans* displaced weeds and provided habitat and shade. On 30 June, Urban Nature hosted a planting day at Lowlands. We are putting up temporary weldmesh fences around these plantings that can be moved on as the vegetation becomes established.

The ongoing project raises interesting questions about the interactions between weed invasion, regeneration of riparian vegetation and kangaroo grazing.



One of our untreated 'control' sites September 2008. Photo – Kate Brown.

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Wonga vine (*Pandorea pandorana*)

By Kate Brown

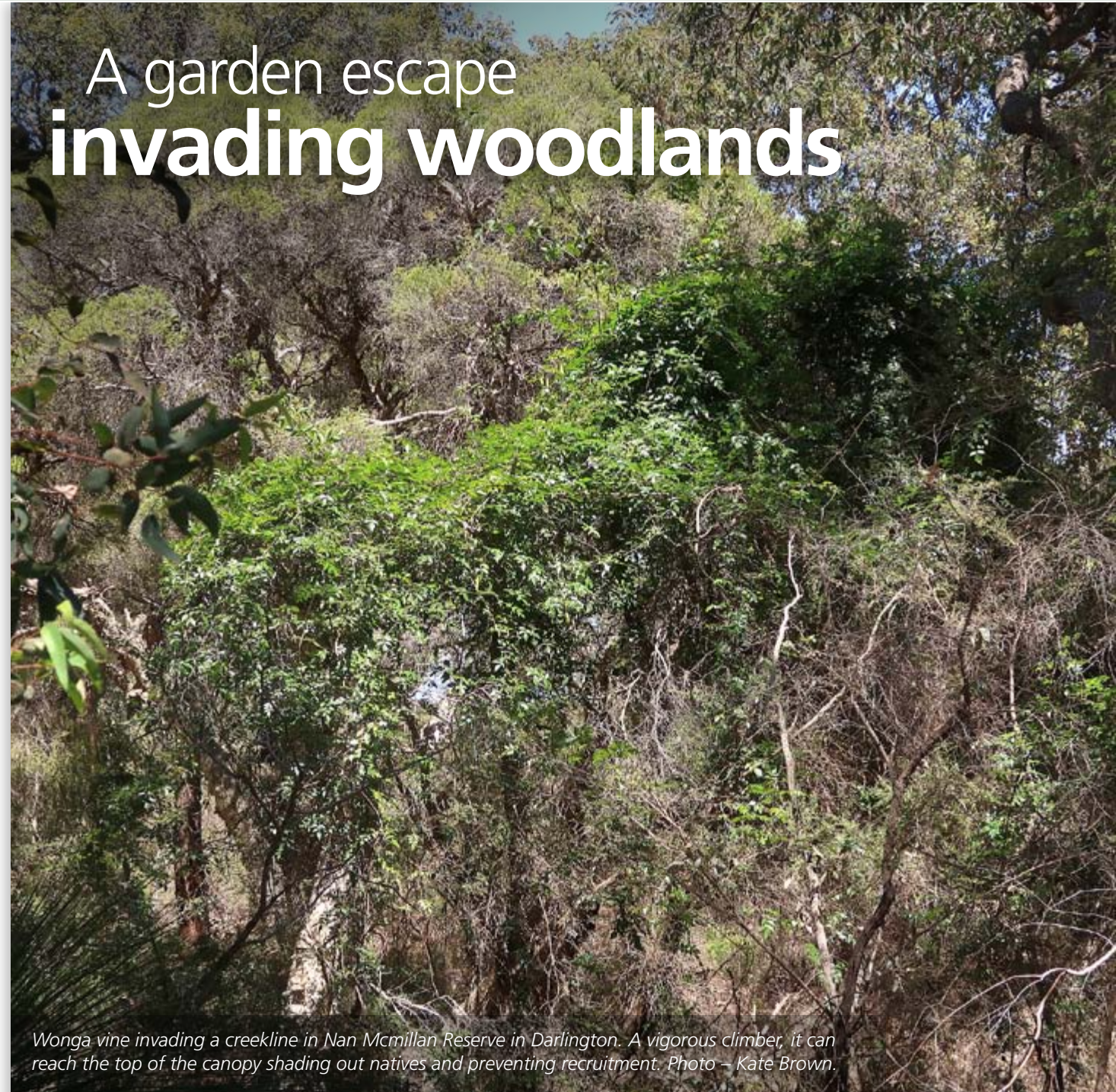
With white to pink large trumpet-shaped flowers through spring and dense green foliage all year around, wonga vine is widely available in the nursery trade and planted across Australia as an ornamental climber. Unfortunately, in recent years it has been increasingly reported as establishing and spreading into native bushland.

Distribution

Wonga vine occurs naturally in New Caledonia, New Guinea, East Timor, on the east coast of Australia from Cape York down to Flinders Island and in central Australia. It also occurs naturally in Western Australia, in the central deserts and in scattered populations in the Kimberly and Pilbara. It is widely planted as an ornamental climber in gardens across Australia and in recent years the species has escaped from plantings and become naturalised in south-west WA. In 2017 it was recorded in marri/jarraah woodlands and along creek lines on the Darling Scarp and Plateau where it has the potential to become a particularly serious weed.

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A garden escape invading woodlands



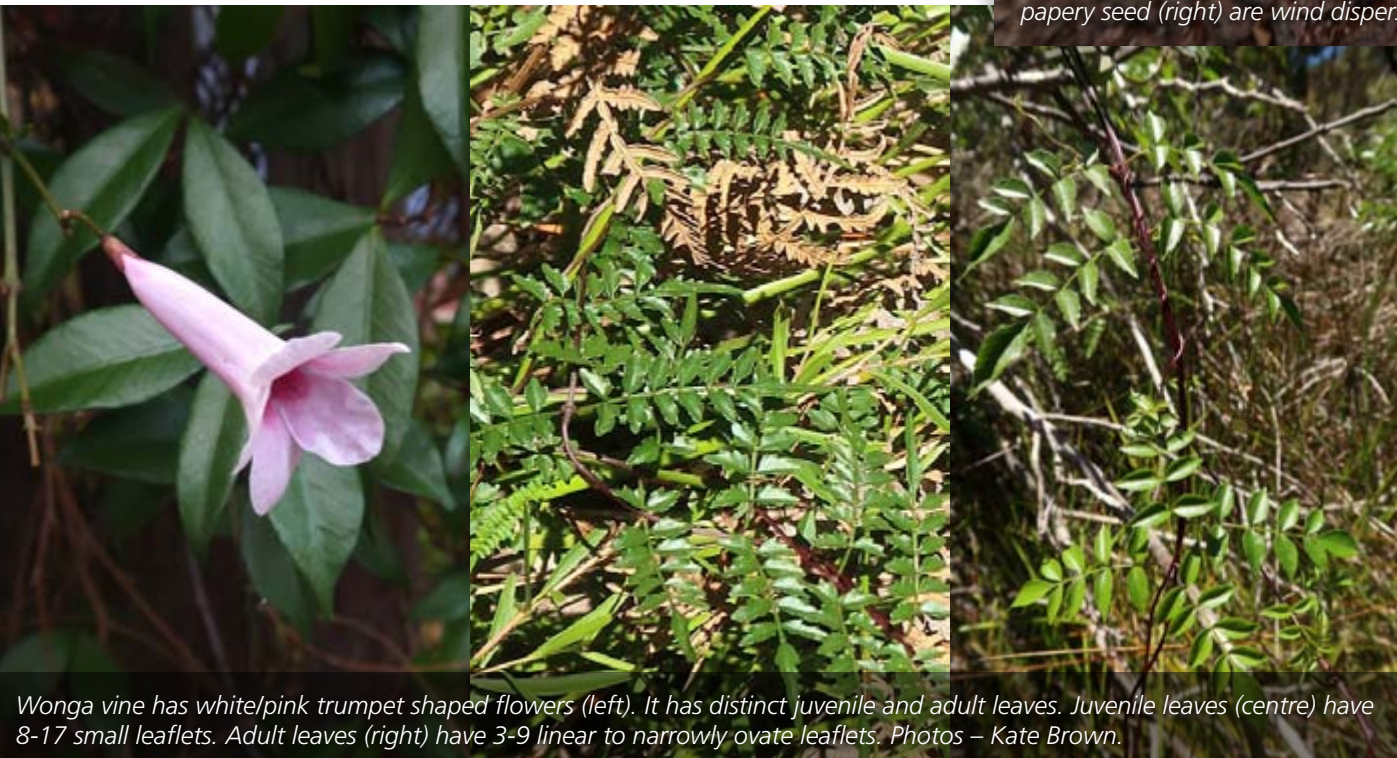
Wonga vine invading a creekline in Nan Mcmillan Reserve in Darlington. A vigorous climber, it can reach the top of the canopy shading out natives and preventing recruitment. Photo – Kate Brown.

Biology

A long lived perennial woody climber, it forms dense layers in low canopy and prevents the establishment of native plant seedlings. It reaches into the canopy of taller trees and appears to reduce growth and recruitment. The seeds are orange with large papery wings and are very effectively dispersed from high in the canopy, across bushland, via the wind. The seeds have no dormancy, but plants will resprout after cut stumping or after fire; flowering and setting fruit within one year. Controlling resprouting plants following fire is a very effective way of managing populations. Plants can also reproduce vegetatively, from stem fragments or layering, and establishment in bushland is often from dumped garden waste.



The species is named for the Greek goddess Pandora, because of the similarity of the seed capsules to Pandora's Box. The seed pod (left) turns brown when the seed is ripe. The orange, papery seed (right) are wind dispersed. Photos – Kate Brown.



Wonga vine has white/pink trumpet shaped flowers (left). It has distinct juvenile and adult leaves. Juvenile leaves (centre) have 8-17 small leaflets. Adult leaves (right) have 3-9 linear to narrowly ovate leaflets. Photos – Kate Brown.

Control options

Optimum control is between February and November. Foliage of wonga vine can be sprayed with glyphosate (10mL/L) where there is no risk of off target damage to the native plant community. Where wonga vine is intertwined with native vegetation try spraying metsulfuron-methyl 600g/kg active at 5g/10L. Alternatively cut and paint stump with glyphosate (20mL/L) or try basal bark application with 250ml Access® in 15L of diesel to bottom 50cm of main stem.

More information

See [Florabase](#)

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New vegetables from native plants

by Geoff Woodall

Work has been underway at The University of Western Australia to systematically assess the horticultural potential of southern Western Australia's diverse tuberous flora and start to commercialise promising species as new vegetable crops.

WA's flora contains an extraordinary number of species that form root tubers. More than 85 per cent of 153 tuberous species recorded in WA occur in the State's south-west. This diversity provides an unparalleled resource from which new horticultural crops can be developed. The diversity of flora is of international significance, but outside of Noongar cultural practice and knowledge, it has not been surveyed for potential vegetable crops.

Platysace deflexa is one of the [key species identified](#) as having good horticultural potential. It is a small herbaceous perennial shrub native to the Jerramungup to Ravensthorpe region of WA and is a member of the Apiaceae, a family of plants which includes many horticulturally important food plants including carrots and celery. An Aboriginal name for this species is youlk.

We now have a basic agronomy package for this species (and others) and there are at least four commercial growers in the south-west. Importantly, there are several Aboriginal youlk growers. These plants have provided an exceptional opportunity for all Western Australians to celebrate and embrace native vegetables that were routinely consumed by Noongar people. The story is fabulous and they taste good too. They are sweet and crunchy. Consumer's feedback on the taste and texture indicate the taste to be delicate, commonly compared to radish, water-chestnut and coconut and that the texture is firm and crisp akin to radish or apple. The project has generated an enormous interest and there is now a national push to repeat the project in different parts of Australia.

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The tubers of Platysace deflexa are being mechanically harvested. Consumer feedback from chefs and the public indicate that the size, shape and golden colour of the tubers are appealing to consumers. Photo – Woodall family.

This interest has provided a new platform for Indigenous people to share knowledge of this and other native products – which is a something that is just so good for our community.

It is a time intensive crop. In the contemporary cultivated setting (on-farm cultivation), harvesting usually commences 2-3 years after establishment, and then every 2-3 years after the initial harvest. At this point in time demand exceeds supply and there is a niche market for the tubers including innovative chefs and food establishments and gourmet grocers. Price for premium product (washed, graded and packaged) ranges from \$10-15 per kilogram.

Chefs, distributors and specialist retailers have a real requirement of native vegetables as currently native meats such as kangaroo, emu and fish are served up to consumers with European/western vegetables e.g. potato and peas. Kangaroo prime cuts consumed by the Australian restaurant sector is conservatively estimated at 645 tonne per year. Therefore if kangaroo meat was served with *Platysace* tubers it is realistic to expect a potential market of 50–200t per annum.

It's a market well-worth exploring; culturally to understand our sense of place, nutritionally to expand our repertoire and economically as new crops uniquely evolved to grow in our soils and climate.

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At the West Arthur field day, potential growers experienced the size and quantity of tubers a three year old plant can produce. Photo – John Caldwell.

Citizen science opportunities

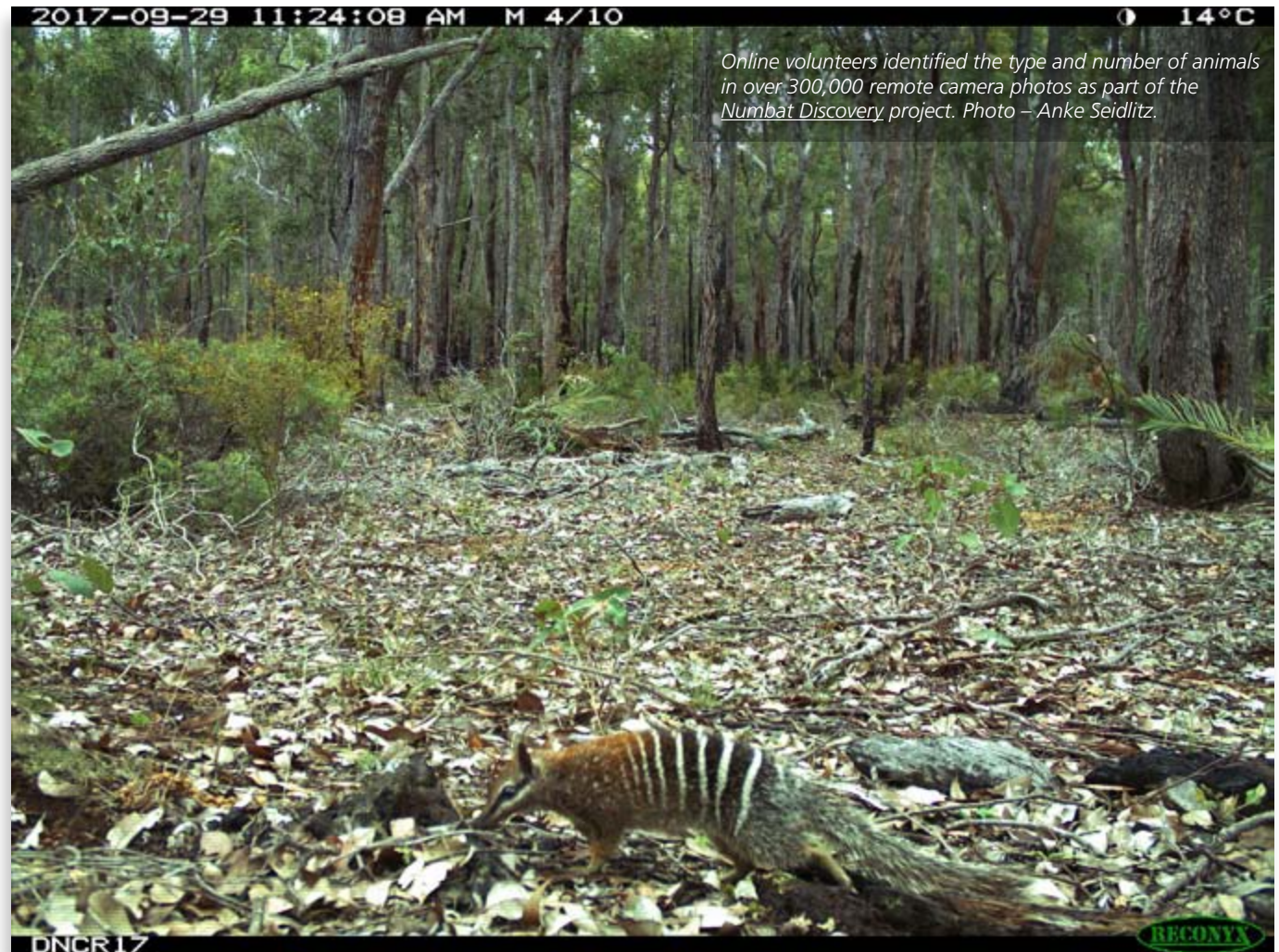
Biological science has always relied on the amateur naturalist; local people for local knowledge. Please consider giving your time or knowledge to one of these projects.

Numbat Discovery

[Numbat Discovery](#) is part of a joint PhD project with Murdoch University, Department of Biodiversity, Conservation and Attractions (DBCA) and WWF-Australia. Fifty camera traps collected photos from the Upper Warren Region to help inform numbat conservation and recovery management. Zooniverse users helped make sense of all the photos by identifying the type and number of animals in each photo. 1,933 volunteers have classified 307,088 photos and found 15,388 subjects. That's the first batch of photos, but check in for updates soon. The Upper Warren Region is extremely important for the conservation of many other Australian native species, including several threatened mammals such as woylies, western ringtail possums and chuditch. See candid snaps of our wildlife, share your favourites and join the discussion.

Microblitz

Microblitz has been relaunched with a new [website](#) and apps. Microblitz's goal is building a map of the diversity and distribution of soil microbial life across WA. Once people have been trained on how to take a soil sample they can go out into the field and collect samples to send back to specialised labs at UWA where the DNA of the microbes living in the soil will be extracted and analysed.



Citizen science opportunities

Biological science has always relied on the amateur naturalist; local people for local knowledge. Please consider giving your time or knowledge to one of these projects.

What do you know about rainbow lorikeets?

Operation Rainbow Roost has a short [survey](#) to find out what you know about rainbow lorikeets in Perth and surrounds. Taking only a few minutes to complete, the survey aims to collate the combined knowledge of Perth residents on noticeable effects of the introduction of rainbow lorikeets on our local birds and interactions between rainbow lorikeets and other birds.



Operation Rainbow Roost is interested in your knowledge of when you first noticed rainbow lorikeets and how they are interacting with native birds. Fill out this [short survey](#) to help collate local knowledge of their distribution and impact. Photo – Robyn Pickering.

Farm dams as refuges for freshwater plants and animals in a drying climate

The Eastern Metropolitan Regional Council and Murdoch University have partnered to determine what species of aquatic plants, invertebrates, frogs and waterbirds use farm dams and to identify characteristics of farm dams associated with a high number of native species. The project sites will be located in Kalamunda, Swan and Mundaring. This \$92,926 project, funded by Lotterywest, will train landholders as citizen scientists to collect data via apps on bird and frog species that frequent their dam sites. This data is integral to understanding the biodiversity values of farm dams. Farm dams may prevent the loss of freshwater plants and animals dependent on perennial water in situations where water is otherwise scarce in the landscape. Email karen.warner@emrc.org.au to get involved.

CockyWatch

To protect south-west black cockatoos and their habitats, we need to identify population numbers and where their favourite haunts are. *CockyWatch* will help answer these questions. Launched in February, *CockyWatch* is off to a great start with more than 70 surveys completed. Surveys are easy to do and every survey helps. Each time you walk or cycle for at least 2km or drive more than 10km anywhere in the South West (from Geraldton to Esperance) consider recording your start and stop details, and details about black cockatoos that you see. Send us your counts as a [CockyWatch survey](#).

Strategic Assessment of Perth and Peel Regions under review

The State Government has suspended work on the Strategic Assessment of the Perth and Peel Regions (SAPPR) until a critical review of the ongoing costs, risks and benefits for Western Australia has taken place. A lot of important and complex work has been completed as part of the SAPPR, which sought to secure up front environmental approval for future development and raw material extraction over a 30-year period. However, the project presents many policy, legal and financial challenges which have been proving difficult to resolve, among the competing priorities of the Government.

The State Government has appointed an independent four-member panel to undertake the review of SAPPR, which will take place over the next six months, consulting across governments and with industry and non-government organisations. View the [website](#) for terms of reference and further updates as they are available.

2018 Australian bird photographer of the year

Endlessly fascinating, enchantingly beautiful, and the epitome of nature at its finest, birds make the best photo subjects. BirdLife Australia and BirdLife Photography's 2018 Australian Bird Photographer of the Year [award](#) offers cash prizes over seven categories for people who can best capture our fascinating, beautiful and unique avian life. **Entries close Monday 6 August.**



A trusty emu dad with his cohort of chicks cruising through the iconic red rich sands in the heart of Australia. Photo – Georgina Steytler.



Queen's Birthday honours

Congratulations to two Western Australians recognised in the Queen's Birthday Honours List. Ron Johnstone OAM for service to the museums and galleries sector, and to ornithology and to Audrey Pearson OAM for service to botanical organisations in Western Australia. Ron is examining Pitta iris johnstoneiana. Photo – Kim Sarti. Audrey in Kings Park where she was a guide for 28 years. Photo – Kings Park

Going Batty at Maralla Road Nature Reserve

by Shenaye Hummerston

WWF-Australia recently hosted a 'Going Batty' workshop in Ellenbrook. We learnt about local microbats and how they cleverly use echolocation to hunt and catch their prey, eating up to 1,000 mosquitoes per night! We had fun building 10 bat boxes under the guidance of nest box specialist Joe Tonga.

During our night stalk we identified three different species of microbats living in Maralla Road Nature Reserve. These were the Gould's wattled bat, the white-striped free-tail bat and southern forest bat. Naturally bats roost and breed in small tree hollows. With large-scale clearing occurring in the area recently, we figured they could use a little help. The boxes will be installed in the reserve to increase available roosting and breeding sites.

The event was supported by Perth NRM as part of a Living Landscapes project which has enabled WWF-Australia to work with DBCA and the community to help protect threatened species and communities in the area.

This event was held to encourage local participation in the care and management of the beautiful Maralla Road Nature Reserve. The reserve is 285ha of protected bushland including banksia woodlands and paperbark wetlands on the northern edge of Ellenbrook.



Community members with the bat boxes they created in the Going Batty workshop. Photo – Amy Robey.

Blooming with wildflowers throughout spring and home to a variety of plants and animals, there is always something to discover. A new friends group has recently formed and is currently seeking members to help care for this special place. If you are keen to help, please contact the Friends Group Coordinator, Ross rosco_mac@hotmail.com.

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Report in!

Please send us your regional report (200 words) and a photo by **Friday 7 September 2018**. Text may be edited in response to volume of submitted reports.

Activate Your Community

by Julia Cullity

Eighty per cent of Australians are using social media so it's no surprise that more than 50 people attended the Activate Your Community workshop on how to implement and grow a successful social media platform to market community groups. The workshop, hosted by Perth NRM and delivered by Hancock Creative, discussed how social media can be used to increase reach in the local community, achieve measurable results and attract volunteers and funds.

Participants were encouraged to research their target audience, select an appropriate platform or adjust for different platforms and build quality content that will cut through and communicate effectively. Tips and tricks were given to create compelling content that will engage with your audience. Examples were given of great ways to express vision and values, start conversations, educate and market your work and activities. Identify what you have that nobody else does and use it. We learnt about the value of photos and video, using hashtags, managing events pages and groups, how to gain a new audience, statistics on what works for most people and using analytics to research your own site.



Anna Hill from Hancock Creative and Abi Smalley, Perth NRM delivered a workshop that inspired community groups to get more out of their social media. Photo – Julia Cullity.

Please get in touch if you missed out and would like to attend a future workshop.

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Special thank you to local volunteers

by Kathy Boladeras

Volunteers from our local area were acknowledged this week in a special way. They were treated to an inspiring talk by the author of a book tracing the life of one of the first female botanical collectors in the Swan River Colony.

More than 60 people gathered to hear presentations by Dr Neville Marchant, a botanical history enthusiast and renowned botanist of over 50 years with the WA Herbarium, and Bernice Barry, author of *Georgiana Molloy: the mind that shines*.

Dr Marchant spoke about the early collectors from this area; James Drummond from Toodyay and Oswald Sargent, who was a pharmacist in York in the early 1900s but also an avid and prolific collector of native species. Dr Marchant has worked with some of Georgiana's specimens at the University of Cambridge Herbarium.

Bernice and her husband Mike spent countless hours in the UK and Scotland researching Georgiana's childhood, trying to understand her personality and the source of her incredible resilience. The result is a story that brings her to life. She and her husband John Molloy were among the first small group to settle at Augusta, when the Swan River Colony was still in its infancy. She was invited by Captain James Mangles to collect specimens to be sent to England to meet a rising demand for plants from the Colonies. This she managed with great skill and attention to detail, at the same time enduring difficult childbirths, extreme loneliness and the hard labour of working their land.

Funding came from Volunteers WA and Lotterywest to cover the cost of the event. River Conservation Society secretary Audrey Sole was responsible for accessing the grant and organising the day, with assistance from members of the RCS, the York Society and the York Branch of the Wildflower Society. Hope Farm provided discounted accommodation for Bernice and Mike.

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Beach and Dune Discovery Day a big success

by Don Poynton

The coastal strip between Burns Beach and Hillarys is unique as it is the only Bush Forever site (325) bordered by a marine park.

This provided the ideal opportunity for three friends groups to conduct a very successful Beach and Dune Discovery Day on the first Sunday of the April school holidays. Mullaloo Beach Community Group, Friends of North Ocean Reef – Iluka Foreshore and Friends of Marmion Marine Park combined to provide activities that encouraged children to explore the beach and then to identify and classify their discoveries. Their parents participated in bird walks led by members of Birdlife WA or learnt about the relationship between climate change, sea level rises and falls, and dune formation and stabilisation by the vegetation associations. These could be viewed from the recently installed lookout on top of the dunes. Everyone was asked to participate in the collection of litter which was then sorted and counted.

Angela Rossen, honorary research associate in the School of the Biological Sciences at UWA and her three students brought a touch of digital technology to the event by showing people how they could use their phones or ipads to magnify and capture images of microscopic arthropods and the fine detail of seaweed.



*Lynda Arnold (Friends of Marmion Marine Park) helping a young marine biologist identify and classify specimens.
Photo – Don Poynton.*

The event was partly funded by a grant from State NRM. Due to the numerous enquiries about similar events, an application has been submitted for funds to repeat the event next year.

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Network terns-out

by Nic Dunlop

On Saturday 28 April about 30 participants in the Western Australian Fairy Tern Network gathered at the Ecology Centre to review four years of research, monitoring and conservation action on the threatened Australian fairy tern in WA, and to chart a course for the next breeding season. Claire Greenwell provided an overview on her upcoming PhD research at Murdoch University on the factors controlling colony formation and structure in the migratory population and the role network participants might play in data collection. Lee Beavis from River Guardians provided an account of the trials and tribulations of trying to protect the Point Walter colony from human disturbance, the most pervasive threat in small tern conservation.

Much has been learned about fairy tern movements, demography and population structure since the research project. We have now confirmed that there is a general northward movement of terns from the south-western population towards the north-west coast in March and April with major staging location at the Abrolhos Islands. Our fairy terns can live for at least 20 years and return at the age of two to the natal areas to breed or to colony sites (that remain operational). Colonies arise from contagious 'neighborhoods' of birds organised into pre-breeding flocks. It now appears that the greater metropolitan region (including the Mandurah and possibly Bunbury colonies) supports about 800 breeding pairs making it the most important area for the species as a whole.



Members of the Fairy Tern Network banding chicks at Bunbury. Banding chicks and reporting observations of banded birds increases our understanding of this highly mobile threatened species. It now appears the most important breeding sites for fairy terns in WA are on the beaches of the coastal cities of the south-west. The network of citizen science observers and land/water managers actively assist the research program, conduct surveillance or monitoring and take part in conservation actions. Photo – Nic Dunlop.

This is particularly significant given the intense threats associated with breeding in this highly urbanised and industrialised area.

The network continues to partner with land / water managers to establish, protect and monitor dedicated fairy tern breeding sites at Rous Head, the Mandurah Marina, Rottnest Island and Wilson Inlet. A second edition of the WA Fairy Tern Conservation Guide is [now available](#).

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Happy Hollows

by Adam Peck



Birdlife Australia recently completed a State NRM funded project called Happy Hollows. The project compared use of natural and artificial hollows in the Newdegate area. Four sites were selected for intensive surveys, with each site being visited up to four times. The results suggest that Carnaby's cockatoos take readily to artificial hollows, but that competition for them can be fierce. Of all artificial hollows surveyed 18 per cent were occupied by competitors (principally regent parrots and galahs).

Artificial hollows on the Swan Coastal Plain

The Swan Coastal Plain is not the traditional breeding grounds of black cockatoos, with Carnaby's migrating to the Wheatbelt to breed and Baudin's and forest red-taileds breeding in the forests of the Darling Scarp and further south. However, recent observations of Carnaby's and forest red-taileds have shown successful breeding in Joondalup, Murdoch, Kenwick and Mandurah (in both natural and artificial hollows). This has led to great interest in installing artificial hollows in the Perth region. Birdlife does not recommend installing artificial hollows on the Swan Coastal Plain unless there is [evidence of breeding](#) in the area. This is due to the increased mortality rates of chicks in urban areas (from car strike and raven attacks mainly) and because many of these hollows will be used by non-target species such as corellas and galahs.

Continued next page ...

Birdlife's Happy Hollows team with equipment ready to monitor a natural hollow near Katanning. Photo – Adam Peck.

Table 1. Results of breeding surveys at the four Happy Hollows sites.

Site	Natural hollows				Artificial hollows			
	Surveyed	In use by Carnaby's	% use	% used by competitors	Surveyed	In use by Carnaby's	% use	% used by competitors
1	11	3	27%	11%	50	13	26%	18%
2	33	0	0%		10	0	0%	
3	66	6	9%		30	6	20%	
4	32	4	13%		21	0	0%	
All	142	13	9%		111	19	17%	

If you really want to install artificial hollows though, make sure you follow these steps:

• **Good design**

Hollows should be 0.8-1.4m in height, with a vertical ('chimney') entrance. The diameter should be 30-45cm, with a ladder (usually made with weldmesh) to allow birds to climb in and out. A sacrificial hardwood post (untreated) which reaches all the way to the floor should be installed. The floor should have small holes to allow rain water to escape, with a 20cm covering of mulch. The best materials to use are plastic tubes (e.g. culvert pipe) or wood but be aware that wood is much heavier and has a much shorter lifespan. The [best hollows](#) are made by approved suppliers contact Birdlife WA for details.



Competition for hollows can be fierce leading to non-threatened species taking the resources. Here five regent parrot chicks are almost ready to fledge. Photo – Adam Peck.

• **Good installation**

The hollow should be installed at a height of 7-10m, which allows easy monitoring and maintenance (see below). A cherry picker is normally used to do the install. The hollow should preferably be installed with as much shade as possible from the tree or neighbouring trees to reduce heat build-up in warmer months and should be oriented away from prevailing weather. The mounting should be done using galvanized brackets or chains fixed with coach screws, with more than one anchor point.

• **Maintenance**

Hollows should be checked once a year. Care should be taken to check anchors are secure, that the sacrificial post is sound, that no debris such as fallen branches are blocking the entrance and that the floor is sound, and woodchips are sufficient.

• **Monitoring**

It is important to know what species are using the hollow. The best time of year is usually August to January, but forest red-taileds have been known to breed in any month. Surveys can be done using the tap and flush method, whereby the tree trunk is scratched or tapped. If a bird is flushed this is a sign there may be eggs or chicks present.



Carnaby's cockatoos take readily to artificial hollows but they need to be installed in known breeding areas with adequate feeding resources, be well designed, installed, maintained and monitored. These two Carnaby's chicks are about 1–2 weeks old. Photo – Adam Peck.

More modern survey techniques use wireless cameras on telescopic poles to look inside hollows. If it is found that pest species are continually the only users, the hollow should be removed or moved elsewhere.

If you are applying for funding to install hollows include the full cost of the job (install, [monitoring and maintenance](#)), not just the price of the hollow.

More information

Groom C (2010) [Artificial hollows for Carnaby's black cockatoo](#)

Contact

Adam Peck

Birdlife WA

email adam.peck@birdlife.org.au

Friends of Point Peron

by James Mumme

Friends of Point Peron (FPP) was founded by James Mumme in 2006 in response to letters in local Rockingham papers saying that the cape was full of rubbish and weeds and needed a marina. The initial idea was for people to adopt patches of bush and look after them in their own time. For six years 14 families pulled out Geraldton carnation weed from their patches, removed rubbish and planted over 6,000 seedlings with good support from Parks and Wildlife Service who funded planting and a pump and trailer. An elderly couple could often be found carrying two litre bottles of water to their seedlings. They even made a sign – Bert and Belle's Patch. Once a fortnight we'd meet as a group to work on one family's patch. Today only two adoptive families continue tidying up their plots once a year, natural regrowth has complimented plantings and flourished in the absence of competing weeds.

Then work stopped as key members became involved in attempting to save the park from the proposed Mangles Bay Marina. We researched, lobbied and wrote submissions to various levels of government losing every battle. Ultimately in mid-2016, many of us appeared in person before the WA Planning Commission.

After those hearings hopes began to revive because planning issues looked like they might sink the project which in the end they did, though not without huge work on the environmental issues. FPP began tackling carnation weeds again.



Taking a break from woody weeding are Gavin Kewan (left), James Mumme, Terry Kain, Luk Battersby and Andy Burns. On the left of the photo are stacked branches of buckthorn that we have removed and if you look closely you can see thickets behind us. Photo – Andy Burns.

This year with great support from Parks and Wildlife Service we have also been tackling woody weeds, mainly Brazilian peppers and buckthorns, which have gone feral during the time the Mangles Bay Marina was hanging over the park. Many of the threats to the Threatened Ecological Communities at neighbouring Lake Richmond are understood to be originating across the road at our patch in the Cape Peron Reserve.

Continued next page ...

So far this year over 130 volunteers have taken part in 28 clean ups to deal with thousands of weeds. The City of Rockingham has also come to the party in offering to remove the dead weeds. Excellent support has also come from Conservation Volunteers Australia, Kolbe College *Bush Rangers* and Hands Off Point Peron.

In this post-Mangles Bay Marina era, challenges remain. A recent letter to the paper talked about the 'scrub' being perfect for a caravan park! To resist those challenges FPP is demonstrating to the community and to decision-makers that people do care about the park and are willing to get their hands dirty and their shirts sweaty. We are also supporting Parks and Wildlife Service's work at Cape Peron and our group continues to be an advocate for a coastal park of the south (or whatever it'll be called).

Over the next twelve months our goals are

1. to ensure that by July the woody weeds don't seed
2. to enlist local land holders in taking responsibility for protecting the park
3. to collect native seed over summer
4. to obtain funding to plant 2000 seedlings next winter
5. to engage the community in putting forward ideas for improving the park so that it is inviting, educational and enjoyable.
6. to support DBCA's planning processes for enhancing the park's attractions.



It is surprising the interest that our sign provokes - toots, waves, thumbs up. When we are working close to the road we are often stopped by passersby interested to discuss the work we are doing and expressing interest in helping. Photo – Robert Britza.

Work has focussed on the eastern part of the park from Safety Bay Road as far as Shoalwater Bay and the causeway. Our 125 volunteers include local supporters who register with DBCA, volunteers with Conservation Volunteers Australia and Kolbe College *Bush Rangers*.

We are not presently having formal meeting times due to the need to prioritise preventing the woody weeds from setting seed. Instead our Clean Up times are advertised on [Events WA](#) and by email jgmumme@live.com.au

Contact

James Mumme

FPP

phone 9527 5339 and 0455 157 547

email jgmumme@live.com.au

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

Recurrent activities



Saturdays 15 minutes before sunrise

Research into bird populations with the **Herdsmen Lake** Bird Banding Group.
Contact: Bill 0438 910 252 calidris@inet.net.au



Saturdays 8am–9am

Guided walks with Friends of **Koondoola**.
Second Saturday of each month. Meet Gate 2, corner Koondoola and Burbridge Ave, Alexander Heights.
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 8.00am–10.00am

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 the Friends of **Booragoon** and **Blue Gum Lakes**. First Saturday of each month.
Meet at the boardwalk into Booragoon Lake on Alridge Rd, Booragoon. **Weeds course** third Saturday of each month at Blue Gum Lake.
Contact: Mary-Ann 9316 9716 molly.olly1@bigpond.com



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, Sundays 9am–12 noon

Koala maintenance at **Yanchep** National Park.
Contact: Ciara 9303 7771



Sundays 8am–10am

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



Sundays 8.30am

Bushcare activities with Friends of **Wireless Hill**.
Second and fourth Sunday of each month.
Meet at main carpark.
Contact: Margaret 0402 105 649
s3mmatthews@hotmail.com



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 [website](http://www.lakeclaremont.org.au)



Sundays 9am–11am

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



Sundays 9am–12 noon

Bushcare activities with the Friends of the **Spectacles** (Kwinana). Third Sunday of each month.
Contact: Lynda 0419 983 956 fotsmail@gmail.com



Sundays 9am

Bushcare activities with the Friends of **Samphire Cove** Nature Reserve, Halls Head. Last Sunday of each month.
Contact: Barry bjsdoongin@gmail.com [website](http://www.samphirecove.org.au)



Sundays 9.45am–12 noon

Bushcare activities with the Friends of **Piesse Brook**.
Third Sunday of each month.
Contact: Ken 9293 3159 0402 243 351
bibbulman@hotmail.com



Sundays 1pm–4pm

WA Gould League's **Herdsmen Lake Wildlife Centre** holds **birdwalks, centre viewing** and **scooping**. First Sunday of each month. \$2 adults, \$1 kids & seniors, \$5 family.
Corner Selby St and Flynn St Wembley.
Contact: 9387 6079 admin@wagouldleague.com.au

Activities Key



Hands on – bushland and wetland management activities.



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





















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



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

Recurrent activities ... *continued*

-  **Sundays**
Wilson Wetlands Action Group undertakes regular work mornings throughout the year on Sunday mornings.
Contact: 0407 135 412 wilsonwetland@gmail.com
-  **Mondays 7am–8am**
Norma's Monday Morning **Weeding Group**. Friends of **Lake Claremont** weekly hand weeding. Learn basic weeding techniques and identification. Meet at the old shed.
Contact: 0413 282 515
-  **Mondays 8am–10am**
Litter collection with Swan Estuary Reserves Action Group at **Milyu Nature Reserve, South Perth**. Second Monday of each month.
Contact: Cathie 9339 2439 oneillc@westnet.com.au
-  **Mondays, 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, [facebook](https://www.facebook.com/foapbg) or foapbg@gmail.com
- Tuesdays and Thursdays, 8am–10am**
-  **Coastcare activities** with **Stirling** Natural Environment CoastCare (SNEC).
Contact: Sheldon 0488 190 651 or Rae 0419 191 710
[website](http://www.stirlingcoastcare.org.au)
-  **Wednesdays and Saturdays 7.30am–9.30am**
Bushcare activities with **Bicton** Environmental Action Group. Planting, weeding and foreshore cleanup. Various dates.
Contact: Peter 0439 467 855 pneesham1@hotmail.com
[website](http://www.bictonenvironmentalactiongroup.org.au)
-  **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](http://www.friendsbp.org.au)
-  **Thursdays and Sundays 10am–12 noon**
Kanyana Wildlife Centre, Discovery Centre **Tours**. Close encounters with native animals and interactive Discovery Centre. \$20 or less. Bookings essential.
Contact: 9291 3900 info@kanyanawildlife.org.au
[website](http://www.kanyanawildlife.org.au)
-  **Thursdays or Fridays 9am–4pm**
Wetland, bushcare and nursery activities with **Cockburn Wetlands** Centre.
Contact: Denise 0412 081 540
denise@cockburnwetlands.org.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: Christine 0468 676 933
murdoch.branch@wildflowersociety.org.au
[facebook](https://www.facebook.com/murdoch.branch)

-  **Fridays 8am**
Bushcare activities at **Piney Lakes**. Volunteers need a site induction.
Contact: brian.walker@melville.wa.gov.au
-  **Fridays 7.30pm**
Talks with **Eastern Hills** Branch of the **Wildflower Society**. Fourth Friday each month, not December/January. Octagonal Hall, 52 McGlew St, Glen Forrest. \$2 entry, visitors welcome. Also art and photography, propagation, excursions, open gardens and library. Annual plant sale in May.
Contact: eastern.hills.branch@wildflowersocietywa.org.au
[website](http://www.wildflowersocietywa.org.au)
[facebook](https://www.facebook.com/easternhillsbranch)
-  **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 info@kanyanawildlife.org.au
[website](http://www.kanyanawildlife.org.au)
-  **Birdlife Australia – check calendar**
Holds regular **talks** and **excursions** each month.
[View](http://www.birdlife.org.au) their calendar.
-  **WA Naturalists – check calendar**
Holds regular **excursions, photo groups** and **campouts** each month. [View](http://www.wanaturalists.org.au) their calendar for activities of four branches.
-  **Wildflower Society of WA – check calendar**
Holds regular **talks**. [View](http://www.wildflowersocietywa.org.au) 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





-  **4 Wednesday 1.30pm–3pm**
Wild Wetlands grab your gumboots for a frog stalk at **Piney Lakes** for the school holidays. [Tickets](#) \$6.
-  **5 Thursday 9.30am–3pm**
Watch out for Waste workshop for 7–12 year olds (accompanied by parent/guardian) includes a riverside walk, waste audit, and tour of Red Hill Waste Management Facility. Registrations environment@emrc.org.au or call Waste Education 9424 2271 for more information.
-  **7 Saturday 9am–1pm**
Community planting day hug a tree then plant it. Native bird oasis, Bibra Lake Reserve, Bibra Lake. All equipment, morning tea and barbeque lunch provided. Meet at Cockburn Wetlands Education Centre carpark and follow signs to planting site. Registrations are [online](#), customer@cockburn.wa.gov.au or call 9411 3444.
-  **8 Sunday 9am–noon**
Planting with Roleybushcare **Araluen** walk trail, meet track entrance off Thompson Rd, Roleystone. **AGLG**
-  **10 Tuesday 10am–noon**
Bush Food in My Garden a free workshop for 10–15 year olds (accompanied by parent/guardian) to learn how Noongar people use plants in their daily lives, Maalinup Gallery, 100070 West Swan Rd, Henley Brook (next door to Supa Golf). Registrations BS4Y@emrc.org.au.
-  **12 Thursday July 8am**
Bird walk Little Rush Lake, Yangebup. Meet near the playground on the western side of the lake. **Birdlife WA**
-  **12 Thursday 6.30pm–8.30pm**
Digging around in our bushland: what is happening with quenda and their mates? [Talk](#) by Trish Fleming, Murdoch University for the Urban Bushland Council, City West Lotteries House, Delhi St, West Perth.

-  **14 Saturday 8:30 am**
Bird walk Lightning Swamp, Noranda. Meet at the gate in the SE corner of the bushland on Della Rd. **Birdlife WA**
-  **14 Saturday 9am –noon**
Planting at **John Okey Davis** Park meet north-eastern end of Windsor Dr, Gosnells. **AGLG**
-  **14 Saturday–15 Sunday 9am –1pm**
Planting with Waterbird Conservation Group at Maramanup, Baldivis. Lunch provided. Contact Ruth waterbird@gmail.com.au for directions and what to bring.
-  **15 Sunday 10am–2pm**
Fun with fungi will introduce fungi take a short walk and learn how and where to search for fungi and identify specimens. Lunch provided. Margaret Forrest Centre, John Forrest National Park **BSFH**.
-  **21 Saturday 9am–noon**
Planting at **Gilwell Avenue** Link meet along Gilwell Ave, Kelmscott. **AGLG**
-  **22 Sunday 9am–1pm**
Planting with Waterbird Conservation Group at Maramanup, Baldivis. Lunch provided. Contact Ruth waterbird@gmail.com.au for directions and what to bring.
-  **27 Friday 7:30pm**
Talk by Todd Buters, Use of Drones to Monitor Minesite Restoration Projects, Octagonal Hall 52 McGlew Road, Glen Forrest. [Web](#) or [facebook](#).
-  **28 Saturday 9am–noon**
Planting for National Tree Day at **Goolamrup Reserve** meet near footbridge over the Canning River. Park on the corner of Buckingham and Roberts Rds, Kelmscott and follow the concrete track. **AGLG**

Please send us your October, November and December events by Friday 7 September 2018.

-  **28 Saturday 9am–1pm**
Planting with Waterbird Conservation Group at Maramanup, Baldivis. Lunch provided. Contact Ruth waterbird@gmail.com.au for directions and what to bring.
-  **29 Sunday 9am–noon**
Planting for National Tree Day at **Tom Bateman** Bushland Park meet on closed section of Wilfred Rd, Thornlie adjacent to the reserve. **AGLG**
-  **29 Sunday 9am–11:30am**
Bushcare at **Baigup** Wetlands. Park at Hinds Reserve, Bayswater, walk under the Garratt Road bridge along the sealed path to the crossroads.
-  **29 Sunday 9am –noon**
Planting for National Tree Day at **Lake Magenup**, Frayne Pl. entrance, Wand. 9439 0418 or angela.jakob@kwinana.wa.gov.au.

August

-  **4 Saturday 8:00 am**
Bird walk Lake Gwelup, Stirling. Meet in the car park at the corner of Stoneman St and Huntriss Rd, north of Karrinyup Rd. **Birdlife WA**
-  **9 Thursday 8:00 am**
Bird walk Baigup Wetlands, Bayswater. Meet at the car park near the Rowing Club at the end of Milne St in Bayswater. **Birdlife WA**
-  **11 Saturday–12 Sunday**
Native plant propagation weekend with the Northern Suburbs Branch of the Wildflower Society of WA. Held every two years at a nominal cost, [bookings](#) are essential.
-  **17 Friday–18 Saturday**
Bushlands Wonders school (Friday) and community (Saturday) expo to encourage enthusiasm for the physical, chemical, earth and biological sciences, Armadale Environmental Centre.

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.

-  **18 Saturday 9am–12:30pm**
Feral Animal Control workshop will explain the habits and best methods for control of various feral species. Morning tea provided. Shire of Mundaring. **BSFH**
-  **24 Friday 7:30pm**
Talk by Ken Atkins, Conservation of Threatened Flora – Legislation, Policy and Practice, Octagonal Hall 52 McGlew Road, Glen Forrest. [Web](#) or [facebook](#).
-  **26 Sunday 9am–11:30am**
Bushcare at Baigup Wetlands. Park at Hinds Reserve, Bayswater, walk under the Garratt Road bridge along the sealed path to the crossroads.
-  **15 Saturday 8:30 am**
Bird walk Victoria Reservoir, Canning Mills. Meet at the car park beside the information board at the entrance to the dam. **Birdlife WA**
-  **16 Saturday 9am–noon**
Bushcare's Major Day Out at Astley Street Reserve. Meet at Astley St near the intersection with Verna St, Gosnells. **AGLG**
-  **22 Saturday 7:30 am**
Bird walk North Lake, North Lake. Meet at the car park near the north end of Progress Dr. **Birdlife WA**
-  **29 Saturday 9am–noon**
Planting at Burslem Bridge. Meet at the Parkside Dr near Coolabaroo Neighbourhood Centre, Thornlie. **AGLG**
-  **29 Saturday 9am–noon**
Planting at Tom Bateman Bushland. Meet on closed section of Wilfred Rd, Thornlie adjacent to the reserve. **AGLG**
-  **30 Sunday 9am–11:30am**
Bushcare at Baigup Wetlands. Park at Hinds Reserve, Bayswater, walk under the Garratt Road bridge along the sealed path to the crossroads.

September

-  **1 Saturday 9am–11am**
Air Bee N' Bee learn about local native bees and build a native bee hotel for your garden. Morning tea provided. West Swan Hall, Henley Brook. **BSFH**
-  **6 Thursday 8:00 am**
Bird walk Star Swamp, North Beach. Meet in the car park at the end of Mary St, Waterman. **Birdlife WA**.
-  **8 Saturday 9am–noon**
Bush plants workshop with Parks and Wildlife and City of Kwinana. Morning tea included. RSVPs call 9439 0418 or angela.jakob@kwinana.wa.gov.au.
-  **8 Saturday 9am–noon**
Planting at Mary Carroll Wetlands. Meet at the Eudoria St carpark. **AGLG**
-  **13 Saturday 10am–12 noon**
Guided walk Hepburn Heights Conservation Area to celebrate banksia woodland Threatened Ecological Community status. All welcome, meet at the entrance gate at the end of O'Leary Rd, Padbury.

Registration/contact details

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](#).

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

BSFH Bush Skills for the Hills. Free workshops. [Registrations](#) essential. Contact 9424 2216 or environment@emrc.org.au.

Highlights

2–14 July

Nearer to Nature school holiday program [Warm up for Winter](#).



Swamp Dwellers Discovery, part of the Nearer to Nature school holiday program. Photo – Dom Lim.

School holidays

Children's Environmental Workshops with Wildflower Society, Octagonal Hall 52 McGlew Road, Glen Forrest. Three sessions, one day for children 6–12. Fabulous Fungi learning in the bush, Leaf Litter Creatures using ipads as microscopes, and Plants and Peoples the significance of our plants to Noongars. Dates to be confirmed. Contact pamela.riordan@gmail.com.

20 July 9am –3pm

WA Landcare Network and Stakeholders Forum 2018 *Our new landcare: into the 2020s*, Cockburn Wetlands Education Centre. enquires@landcarewa.org.au

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.

Highlights *continued...*

27–28 July 2018

Landscapes, Seascapes and Biota: Unique Western Australia – Past, Present and Future Royal Society of WA [Symposium](#), University Club, The University of Western Australia.

11–19 August

Goodness Festival regional [festival](#). Science, sustainability and innovation. Geraldton.

17–19 August

Sixth National Malleefowl Forum, Grand Hotel Midura. [Registrations](#).

31 August 2018

Dieback Information Group Conference 2018 Working together – combating plant disease through collaboration. [Bookings](#).

Great Western Woodlands spring bird surveys

2–7 September Transline (note new dates) need to be self-sufficient.

14–17 September Credo Station introductory course for beginners.

24–28 September Karroun Hill need to be self-sufficient.

Details gwww@birdlife.org.au

8–11 September

Birdlife Australia **Congress and Campout**, Mangrove Hotel and Broome Bird Observatory, Broome. [Bookings](#) essential.

9–12 September 2018

21st Australasian Weeds Conference (21AWC), Novotel Manly Pacific Hotel, Sydney, NSW

18–30 September

Biosecurity Blitz is about people getting outdoors to [report pests](#) that they see.



Gilbert's whistler is a 'must see' bird for many surveyors in the Great Western Woodlands. This species' habit of feeding low in dense scrub makes it difficult to spot but the distinctive call gives its presence away. Photo – Maris Lauva.



21–23 September

Blues for the Bush Festival at Bush Heritage's Charles Darwin Reserve, Perenjori WA.

23–27 September

Phenology 2018, *One planet, two hemispheres, many regions* [conference](#).

10–12 October

2018 National Landcare Conference [Landcare Building a Better Tomorrow](#), Brisbane Convention and Exhibition Centre.

24–26 October

Accelerating Connection 2018 National Private Land Conservation [conference](#), Brisbane.

27–28 October

2018 Australasian Shorebird Conference [Losing their habitats](#) – conservation and management strategies for migratory and resident shorebirds, Hobart.

25–29 November

2018 Annual Conference of the Ecological Society of Australia [Ecology in the Anthropocene](#), Royal International Convention Centre, Brisbane

State NRM 2018–19 Community Stewardship Grants (Small \$1,000–\$25,000 and Large \$25,001–\$450,000) totalling \$7.75 million to support conservation, sustainable resource use and capability building activities. [Applications close 6 August 2018](#).

The **Community Rivercare Program** aims to conserve the natural, cultural and social amenity values of the rivers, tributaries and urban drains within the Swan Canning Catchment. Round 2 will fund one or two-year projects. [Applications 6 August–17 September 2018](#) for projects commencing July 2019.

Local government community grants

These local governments provide small grants to their communities which can fund environmental groups' management and restoration projects. Eligibility varies. [Augusta Margaret River](#) opens July, [Cambridge](#) opens August, [Fremantle](#) 4–27 September, [Geraldton](#) opens July, [Gosnells](#) closes 3 August, [Joondalup](#) 10 September – 12 October, [Mandurah](#) 1 July – 14 August, [Rockingham](#) close 3 August, [Subiaco](#) closes 24 September, [Swan](#) closes October, [Wanneroo](#) 12 September – 24 October.

Lotterywest Heritage and Conservation grants help organisations conserve, protect, explain and share aspects of our heritage including natural heritage. [Applications](#) open year-round.

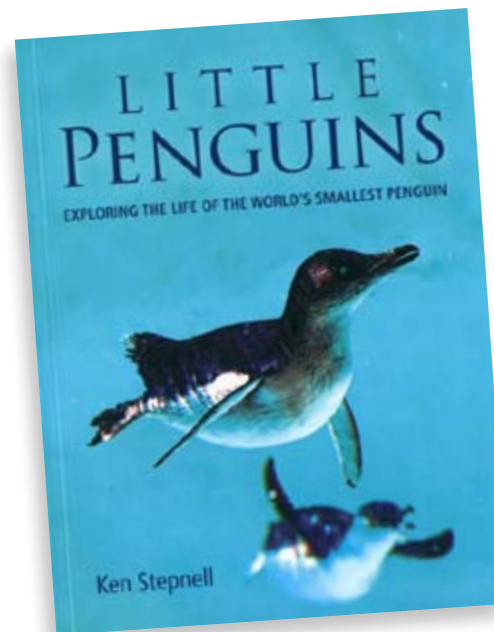
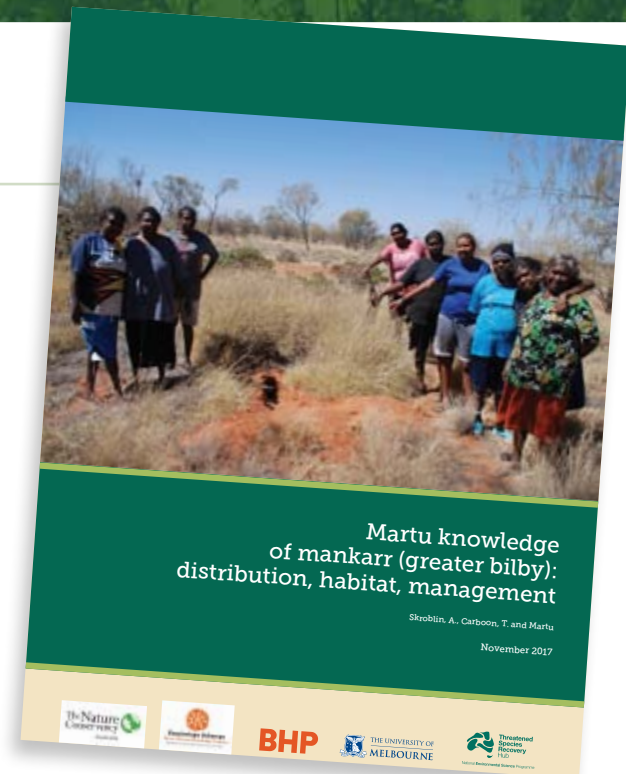
EMRC 2018/2019 Community Grants support programs, events or facilities that develop or maintain sustainability, social, cultural or recreational needs of Gidgegannup, Hovea, Parkerville or Stoneville communities. [Applications 2 July – 24 August](#) or call 9424 2209.

Holdsworth Wildlife Research Endowment for post-graduate research support in ecology, wildlife management and natural history studies. [Applications](#) open **1 August**.

Landcare Australia invites groups to submit [expressions of interest](#) for 12-month projects \$5,000–\$15,000. If a suitable funding partner is found the group will be invited to submit a detailed application.

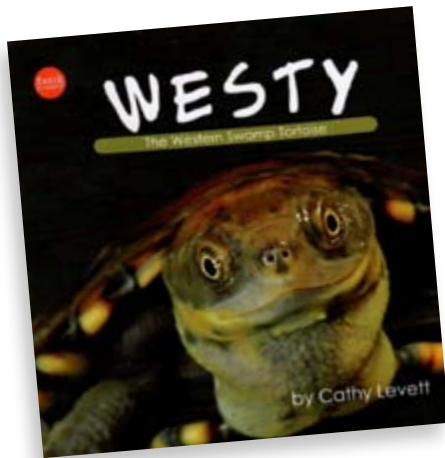
New publications

Martu knowledge of mankarr (greater bilby): distribution, habitat, management. Skroblin Anja and Carboon Tracy. TSR Hub 2017. [Available online](#). This report contains a compilation of Martu knowledge. The report is biased towards spatial information: where mankarr are, what type of habitat they like and how to care for mankarr. Martu knowledge extends well beyond the contents of this report and aspects such as information on the Jukurpa (Dreaming) and how mankarr relate to Martu culture and identity are not covered.



Little penguins: exploring the life of the world's smallest penguin. Stepnell, Ken. *New Holland Publishers*, 2017. \$25.00 This illustrated book explores every aspect of the lives of these remarkable seabirds, from feeding and breeding to migrations and threats.

Candid creatures: how camera traps reveal the mysteries of nature. Kays, Roland. *Johns Hopkins University Press*, 2016. \$81.00 With over 600 colour and night-vision animal pictures, the book's text, maps and illustrations work together to describe the latest findings in wildlife research. It tells stories of scientific discoveries enabled by camera traps such as rediscovering species thought to have been extinct, details of predator-prey interactions and how camera traps are used to address conservation issues.



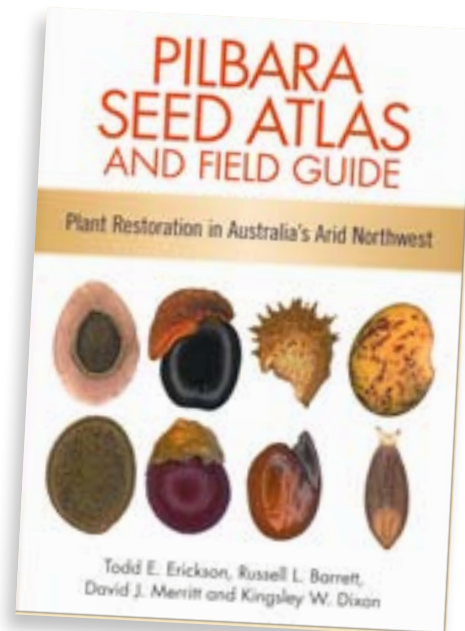
Westy the Western Swamp Tortoise.

Kathy Levett [Friends of the Western Swamp Tortoise](#) \$20 + postage. A children's book using photos of this endangered species tells the story of Westy from his time hatching at the Perth Zoo breeding program to being released in the swamp in Bullsbrook and learning how to survive. Proceeds will go to the Friends of the Western Swamp Tortoise and educational tools and programs.

Drosera of the World, volumes one–three. Lowrie, Allen et al. *Redfern Natural History Productions*, 2017. \$90.00 each. A series of three books that document all carnivorous sundews of the world. *Drosera* are amongst the most recognised carnivorous plants worldwide for their distinctive, dew-covered insect-trapping leaves.

The genus is widespread with the highest levels of diversity found in Australia, home to more than half of the species. These illustrated volumes feature descriptions, background information and over 1900 photographs, as well as an index of all *Drosera* names and synonyms.

Pilbara seed atlas and field guide: plant restoration in Australia's arid northwest. Erickson, Todd E., et al. *CSIRO Publishing*, 2016. \$80.00 This book combines plant identification describing 103 regional plant taxa along with guidelines for effective collection, cleaning, storage and germination of their seeds. It addresses issues such as timing of collection, quality and viability of seed, and dormancy release, which are essential for successful restoration programs.



Recent research

Driessen MM, Jarman PJ, Troy S and Callander S (2017) Animal detections vary among commonly used camera trap models [Wildlife Research](#) 44(4) 291–297

Dunlop JN and McNeill S (2017) Local movements, foraging patterns, and heavy metals exposure in Caspian Terns *Hydroprogne caspia* breeding on Penguin Island, Western Australia [Marine Ornithology](#) 45, 115–120

Helden BEV, Speldewinde PC, Close PG and Comer S (2017) Use of urban bushland remnants by the western ringtail possum (*Pseudocheirus occidentalis*): short-term home-range size and habitat use in Albany, Western Australia. [Australian Mammalogy](#) Online Early.

Johnston TR, Stock WD, Mawson PR (2016). Foraging by Carnaby's black-cockatoo in Banksia woodland on the Swan Coastal Plain, Western Australia [Emu: Austral Ornithology](#) 116, 284–293

Paap T, Burgess TI, Calver M, McComb JA, Shearer BL, Hardy GE StJ (2017). A thirteen-year study on the impact of a severe canker disease of *Corymbia calophylla*, a keystone tree in Mediterranean-type forests [Forest Pathology](#) 47, 1–14

Yeatman GJ, Wayne AF, Mills HR, Prince J (2016). It's not all about the creeks: protection of multiple habitats will improve biodiversity conservation in a eucalypt forest [Australian Journal of Zoology](#) 64, 292–301.

Website watch

#CitSciOz18 the second conference of the Australian Citizen Science Association is posting audio/visual clips of conference talks on their [YouTube Channel](#) and the [posters](#) have also been uploaded.

The **Biodiversity Heritage Library** (BHL) is a consortium of natural history and botanical libraries that cooperate to digitise the legacy literature of biodiversity held in their collections and make it available for [open access](#). For example scanned copies of the Journal of the Royal Society of Western Australia are available from 1916–1990.

OffTrack an ABC radio exploration of the many ways Australians live with and enjoy our natural (and not so natural) environment. Off Track, with Ann Jones, is an Australian ABC radio [show and podcast](#) which combines the sounds of nature with stories of wildlife and environmental science, all recorded in the outdoors.



Dog poo fungus

by Roz Hart

The dog poo fungus (*Pisolithus sp.*) has strange, rather bizarre fruiting bodies that can be found on soil, often in disturbed areas, all year round though more likely seen from April to September.

Confusingly, this fungus is often found in the same places as dog poos – along the sides of walk trails in urban bushlands. It's far too easy to mistake one for the other, which is why poking with a stick carefully, can be a good idea before examining it. To check the identity, cut the puffball in half and the cross section will look like sesame seeds stuffed into vegemite! If older you will just find dry spores, not good enough for identification.

Dog poo fungi vary greatly in shape and size. Some look like dog poos, some like puffballs, they all mature and crack open producing dusty greenish-brown spores. The remaining disintegrated powdery stump can persist for weeks after the spores have dispersed. Children often kick the puffballs along the ground, watching the spores fly. However it's not wise to get these spores into your lungs, so we discourage this, but it does aid with spore dispersal!

This fungus is interesting because it's a partner or mycorrhizal fungus, so shares nutrients and water with many species of associated partner plants including trees.

It's often regarded as a nuisance as the osmotic pressure it exerts to break through the soil is strong enough to push up bitumen roads and break the surfaces of tennis courts.



Photo – Roz Hart.