

Rivers 2 Ramsar Rollout By Peel-Harvey Catchment Council



Shorebird 2020 Volunteers at Nairns.
Photo – Peel-Harvey Catchment Council.

Ecological corridors across the Peel-Harvey catchment will receive a \$3.6 million boost under the Rivers 2 Ramsar project (R2R). Funded by the Australian Government, the project aims to re-establish habitats for native fauna by linking the region's rivers and Ramsar-listed wetlands across six priority sites in the 11,940km catchment.

Community-based natural resource management organisation, the Peel-Harvey Catchment Council (PHCC), is managing the delivery of the overarching project with seven key partners, numerous stakeholders and community members. It is the region's largest biodiversity project and will generate environmental, economic and social benefits.

Partners involved in the project's delivery came together in Mandurah recently to celebrate the many milestones achieved in the past 16 months.

In the Hotham-Williams catchment, 10 landholders have already taken up community grants under the project to provide vegetation links and re-connect riparian corridors for wildlife. So far, the project has involved more than 32km of fencing, feral animal control on 2175ha, weed control across 171ha, 128ha of revegetation and stabilisation of 4.25km of riverbank.

Phytophthora dieback has been treated across 780ha, 1000 dieback-resistant jarrah trees will be planted, four seed banks have been established and river action plans have been prepared to prioritise work on the Murray and Serpentine rivers.

The large scale biodiversity project is on schedule to finish in 2017 and is having significant community and cultural engagement outcomes.



Partners involved in the delivery of the project came together to celebrate the many milestones achieved in Rivers 2 Ramsar.
Photo – Peel-Harvey Catchment Council.

To date, R2R has had 31 Noongar engagement activities, including a milestone training project where 13 people achieved national accreditation in chemical safety and handling. Working with Noongars back on country has included seed collection and cultural site mapping.

With local award-winning photographer David Rennie and our community, we led a shoreline clean-up of 100kg of rubbish to pave the way for migratory birds.

In partnership with Birdlife WA, PHCC has delivered 10 workshops to increase community awareness of black cockatoos. The Peel branch of Birdlife WA has also worked closely and effectively in the delivery of Shorebird 2020 identification workshops as part of the monitoring and evaluation aspect of the R2R project.

This project is supported by the Peel-Harvey Catchment Council through funding from the Australian Government.

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Issue 94

Winter 2015

Time of Makuru and Djilba in the Noongar calendar.

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Urban Nature Update *Julia Cullity and Kate Brown*

The Department of Parks and Wildlife set up a stall to promote volunteering at EnviroFest 2015 in March. Held annually at Whiteman Park, EnviroFest is an event that aims to showcase a range of environmental concepts, issues and products. The Urban Nature program and the Community Involvement Unit were there to highlight the Department's work with volunteers. To help spread the word, we were joined by volunteers, who were operating the Wildcare Helpline live from our stall. There was also interest in our [Find a Conservation Group app](#) and we helped some people get in touch with groups in their local area. The app links people to each other and to bushland, so [contact us](#) to get your group on the map.

Early in March, as part of a series



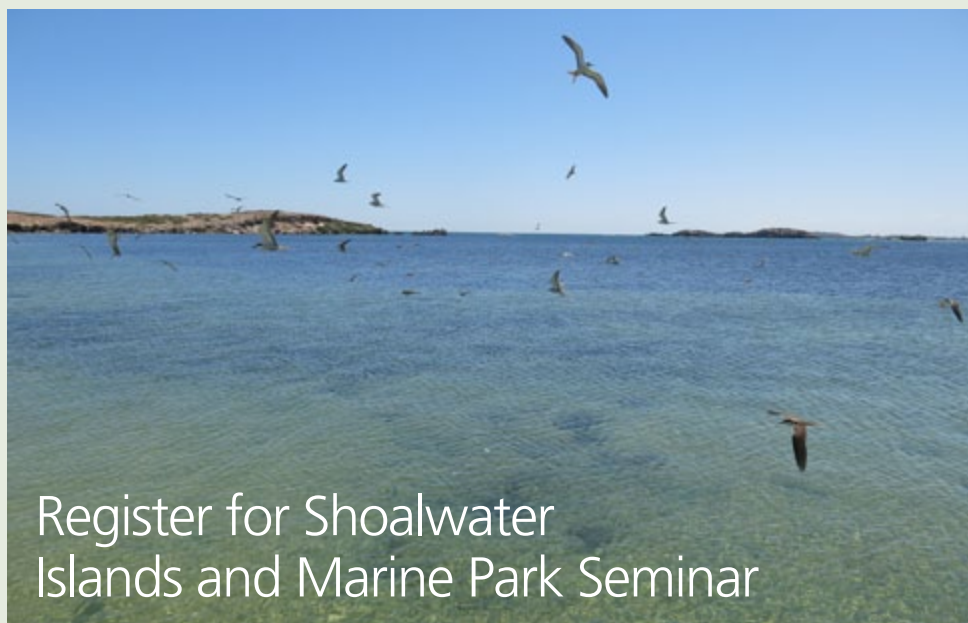
EnviroFest is held annually at Whiteman Park. Photo – Lee Hollingsworth.

of regional weeds workshops, the department's Perth Hills District and Urban Nature hosted a day on weed management with a focus on blackberry. Presentations from district and regional staff covered weed mapping and identification,

and blackberry management and control

in national parks and nature reserves across the Swan Region. Weed notes on [Florabase](#) have also been updated. New information on timing of herbicide application for the different species of blackberry has been included.

Urban Nature is planning a number of seminars on bushland management and related research. Our lunchtime seminar series continues on the first Friday of the month at Parks and Wildlife in Kensington. Over the next three months we will have presentations on fox bait uptake, evaluating the effectiveness of environmental offsets, and reflections on WWF quenda and rakali citizen science surveys. Check the What's on calendar (page 6) for details.



Register for Shoalwater Islands and Marine Park Seminar

Stretching from Cape Peron to Point Becher, the Shoalwater Islands Marine Park supports a diversity of marine life and protects a small chain of islands known as the Shoalwater Islands. Located 40km south of Perth, the islands' vegetation and flora provide critical habitat for migratory seabirds and marine mammals.

The Urban Nature Program will be running a seminar on the 'Natural History and Management of the Shoal water Islands and Marine Park' on 22 July. Presenters will cover a range of topics including change

Bridled terns, Penguin Island April 2015. Photo – Kate Brown.

over time on the islands, a history of management, sea lion ecology, impacts of a changing climate on seabird populations, impacts and control of feral predators, and weed management and restoration of island plant communities. The one day seminar will be held at Point Peron. For a full program and to register [contact Urban Nature](#). The seminar is free but RSVP by Wednesday 8 July is essential.

Spring Bushland News

Spring *Bushland News* contributions should be sent to [Urban Nature](#) by **Friday 4 September**. *Bushland News* seeks original contributions. If your submission has been or may be published elsewhere please let us know.

This publication is available in alternative formats on request.

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Current and archived issues of
Bushland News are available at
www.dpaw.wa.gov.au/bushlandnews.

Mapping WA's microbes *By Deborah Bowie*

Western Australia's Microbial Map is well on its way to being charted. Launched in 2014, MicroBlitz is a UWA citizen science project that has distributed over 3000 soil-sampling kits to an ever-growing army of 800 plus citizen scientists. From all across WA, volunteers have been sending samples to the research team led by Professor Andy Whiteley. Now, with the recent commissioning of UWA's DNA sequencing laboratory, work has begun on processing the samples.

As each sample is received its dry weight is calculated and portions of the sample are allocated for chemical background analysis, archiving or DNA extraction (the first 'real' step in the DNA sequencing process).

It's fascinating! From a 200g sample, only half a gram of soil is needed for DNA processing, which will ultimately generate millions of microbial DNA sequences.

Amplifying the amount of DNA extracted from each sample is achieved through PCR (Polymerase Chain Reaction), which generates millions of copies of each piece of DNA. Sequencing follows, where DNA from 100 unique samples at a time is loaded onto a biochip to be 'read', leading to an output of millions of sequences.

Analysing these sequences to determine the diversity and abundance of microbes present is achieved through bioinformatics, using computers to compare the results of thousands of samples at once.



*Microblitz team leader Winthrop Professor Andy Whiteley.
Photo – Craig Carter Torbay Catchment Group.*

With sequencing and subsequent analysis work now underway it is expected that the first results will be released in the second half of this year. Stay tuned!

It's not too late to send a soil sample in. If you are interested in participating, contact the Microblitz team.

Contact: Deborah Bowie, UWA. Phone: 6488 6373.
Email: deborah.bowie@uwa.edu.au.

Resilient Landscapes and Living Wetlands Grants to open in July

Perth Region NRM is launching two community grants programs in early July. The Resilient Landscapes Grants and Living Wetlands Grants will provide support to community groups in the Swan NRM Region to undertake high priority environmental projects.

Funded through the Australian Government's *National Landcare Program*, up to \$720,000 will be available over three years. Resilient Landscapes grants range between \$60,000 and \$240,000, while Living Wetlands grants are between \$20,000 and \$120,000. Projects need to begin in 2015/16 and be completed by June 2018.

Resilient Landscapes projects will focus on the conservation of threatened species and ecological communities [listed](#) under the *Environmental Protection and Biodiversity Conservation Act (EPBC Act 1999)*, and on increasing landscape resilience by enhancing or

restoring ecological linkages. Successful Living Wetlands projects will restore [Ramsar](#) and [nationally important wetlands](#).

The application process will have two phases; an initial Expression of Interest (EOI) process and then an invitation to develop a full proposal. The EOI process will seek to attract and then assess initial project ideas that align with the objectives and meet eligibility requirements. Perth Region NRM will then work with applicants to develop full proposals for large-scale, integrated, multi-year projects that represent a commitment to collaborative, landscape scale natural resource management.

Grants launch on **6 July** with an information session on 13 July. The guidelines and expression of interest forms will be available [online](#). Hardcopy forms will be made available on request. For more information please contact Perth Region NRM on 9374 3333 or [email](#).

Perth and Peel@3.5 million

The Western Australian Planning Commission has released the draft *Perth and Peel@3.5 million* for public comment. By 2050 the population of Perth and Peel is expected to increase to 3.5 million people. These draft documents include where future homes and jobs should be located, how important environmental assets can be protected, how to best utilise existing and proposed infrastructure, and appropriate areas for greater infill development and residential density. The *Perth and Peel@3.5million* report provides a snapshot of where Perth is now and where it might be in the future and sets the context for four sub-regional planning frameworks. Once finalised, the frameworks will become sub-regional structure plans. They will be used by state agencies and local governments to guide residential and industrial development and supporting infrastructure. The [public comment](#) period closes Friday 31 July 2015.

Overcoming *Carpobrotus* confusion By Greg Keighery

Members of Stirling Natural Environment Coastcare (SNEC) raised concerns about the identification of planted materials of *Carpobrotus virescens* in their rehabilitation zones and the difficulty they experienced in differentiating between the native species and the weed (*C. edulis*). On 6 November 2014, I visited beaches in the North Beach area with members of SNEC to view native and naturalised species of *Carpobrotus*.

Project background

Western Australia has a range of native and naturalised species of *Carpobrotus* (pig faces) and the closely related *Sarcosoma*. Within the Perth area (Western Australian Herbarium, Florabase) there are four species (*C. virescens*, *C. modestus*, *C. edulis* and *Sarcosoma bicarinata*).

Because of their succulent nature and soft flowers, *Carpobrotus* species make very poor herbarium specimens and should be studied alive, if possible, to adequately determine species boundaries. They also readily hybridise when they come into contact and hybrids are recorded between both native and weedy species, and between *Sarcosoma* and *Carpobrotus*.

Of the species mentioned above only the weedy *Carpobrotus edulis* and the native *C. virescens* are found along the beaches from Wanneroo to Rockingham. Currently most keys are designed to work on herbarium material or on the colour of flowers, which does not identify the species when sterile, nor the frequent hybrids found nor account for the fact that many native *Carpobrotus* have two sexes.

My intention is to help coastal care groups, collectors and propagators in the Perth area obtain the correct material of the native species, to detect the weed when either a seedling or when plants are not flowering, and to detect hybrids between the weed and the native.

The species

Three taxa are described briefly below: the native *Carpobrotus virescens*, the weed *Carpobrotus edulis* and hybrids between *Carpobrotus virescens* X *edulis*.

Carpobrotus virescens

This is a low spreading scrambling to prostrate shrub to 2m across with white stems and an increasingly open nature, stems are often flushed red before they turn white. Mature leaves are green and roughly triangular in cross section, usually slightly concave on



Female (left) and male flowers of *C. virescens*. Photo – Greg Keighery.



Hybrid *C. edulis* x *C. virescens* flower. Photo – Rae Kolb.



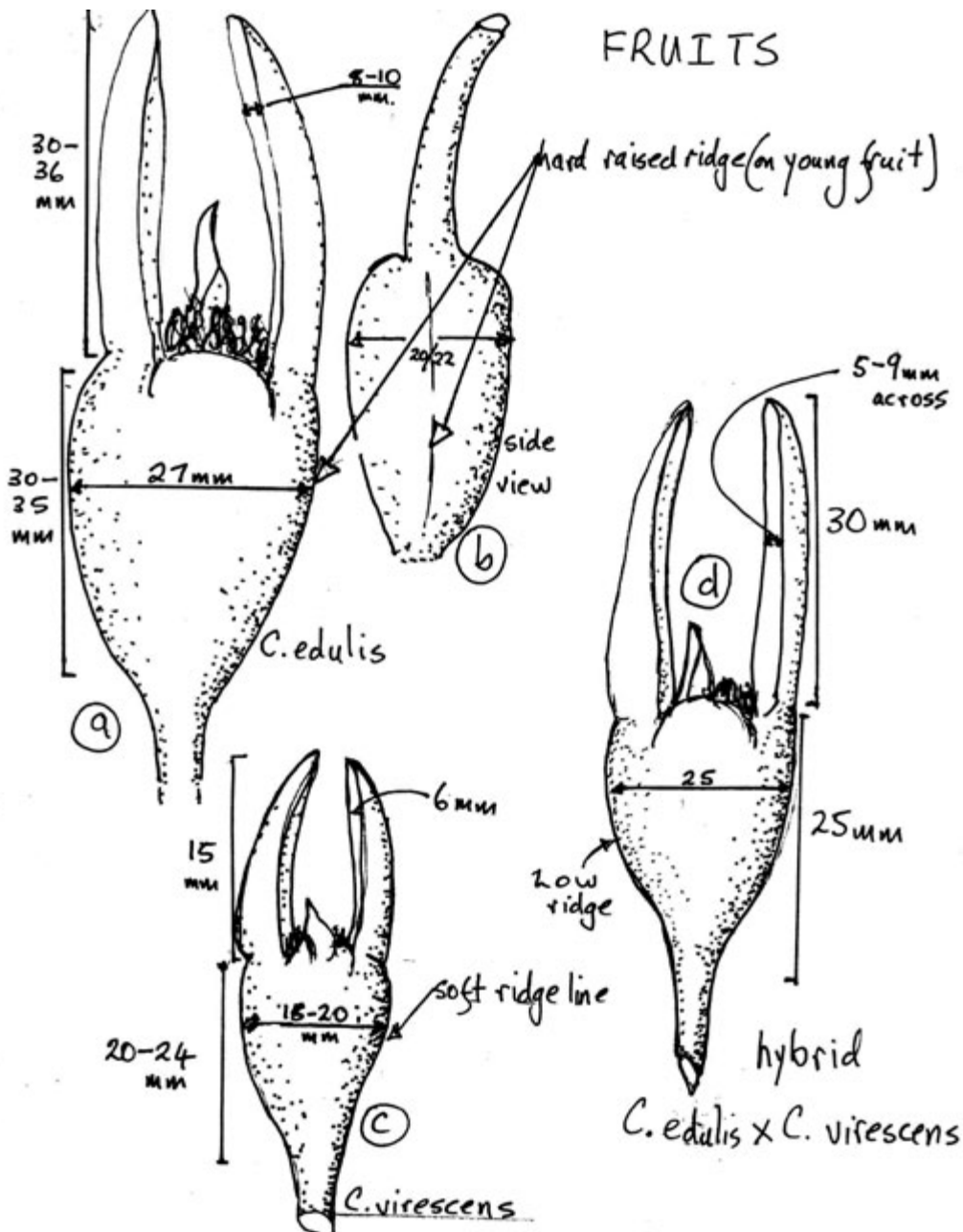
Young fruits of *Carpobrotus* species: (L-R) *C. edulis*, hybrid, *C. virescens*. Photo – Greg Keighery.

the upper surface, normally less than 10mm across, with minute white teeth along the bottom ridge below the apex. Plants are normally either male or female (dioecious). Female plants have small flowers that are pale pink, with 'petals' that are 20-25mm long and a white centre with a prominent stigma in the centre. Male plants have larger flowers that are bright pink, with 'petals' that are 32-36mm long, yellow in centre and the stigma never enlarges.

Fruits are purple red and soft; they lack a hard ridge on the side of the fruit and the retained sepals are 13-16mm long.

Carpobrotus edulis

This is a low spreading, scrambling to prostrate shrub to 2m across with pale yellow stems and a dense habit (which overtops and smothers other plants). Mature leaves are blue-green and are depressed triangular in cross section, usually slightly flat on the upper surface, normally more than 13mm across with rough brown teeth along the bottom ridge below the apex. Plants always have hermaphrodite yellow flowers that age pale pink. 'Petals' are 25-30mm long and flowers are large, 45-55mm wide. Fruits are yellow; when still green have a prominent ridge along the side, and attached sepals are 30-36mm long and 27mm wide.



Fruits of *Carpobrotus* of Perth Beaches: a-b: *Carpobrotus edulis*: a-front view, b- side view; c- *Carpobrotus virescens*: c-front view, d: hybrid (*Carpobrotus edulis* x *virescens*), front view. Images courtesy Greg Keighery.

Carpobrotus edulis x *modestus*

Hybrids have hermaphrodite flowers that are pale pink, larger than *C. virescens*. They are fertile and fruits are also intermediate in size, with sepals 30-33mm long.

Collecting cultivation material

Most natural populations of *Carpobrotus virescens* have more male plants than female plants, often up to 2:1 proportions (e.g. at Seabird 28 males, 15 females and six non-flowering plants were recorded). So when collecting cuttings it is very desirable to collect when they are in flower or from a range of plants widely spaced to ensure both sexes are collected. If collections are made where both the native and weed occurs, to avoid mistakenly collecting hybrids between the two, check the leaf width and colouration of the aging stems.

Fruits (deep red-purple, not yellow or light pink) should ideally be collected from plants that are not near any *Carpobrotus edulis* to minimise the risk of hybrids. Checking leaf width of seedlings and cuttings (leaves wider than 10mm) after six months will tell if they are weeds or hybrids.

Acknowledgements: Thanks to members of SNEC (especially Rae and Walter Kolb) for their interest in conserving our native flora and their careful observations on plants in the field.

Contact: Greg Keighery,
Department of Parks and Wildlife.
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Email: Greg.Keighery@DPaW.wa.gov.au

A copy of Greg's full report including diagrams and photos is available at the Perth Region NRM [coastal knowledge hub](#).

New *Carpobrotus* research project

Given the extremely challenging task of identifying native, non-native and hybrid *Carpobrotus* and *Sarcosoma* in Australia, researchers at CSIRO are about to begin a collaboration with South African colleagues to provide a clearer understanding of the morphological and molecular differences between the species. The work will ultimately provide insight for the conservation

and management of native *Carpobrotus* and *Sarcosoma*, as well as the control of introduced *Carpobrotus* in both countries. The researchers are interested in hearing from people who know of populations that may be useful for including in their study.


Contact: Dr Bruce Webber, CSIRO.
Phone: 0417 915 220.
Email: bruce.webber@csiro.au.

what's on


Opportunities for you to take part. Visitors always welcome but please confirm activities with the 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 Rutherford (ABBBS Coordinator) 0438 910 252 or [email](#).

Saturdays 8am-9am

 **Guided walks** with Friends of **Koondoola**. Second Saturday of each month. Meet Gate 2, corner of Koondoola and Burbridge Ave.


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.


Saturdays, 8am-9.30am

 Third Saturday every month. **Herdsmen Lake Bird Walk**. WA Gould League. Meet at Herdsmen Lake Wildlife Centre, cnr Flynn and Selby Streets Wembley. BYO sturdy shoes and viewing equipment. Gold coin donation. WA Gould League 9387 6079.


Saturdays 8.30am-10.30am

 **Bushcare activities** with Swan Estuary Reserves Action Group at **Alfred Cove A-Class Nature Reserve**. Fourth Saturday of each month. Contact Cathie 9339 2439 or [email](#).

Saturdays 9am

 **Bushcare activities** with Friends of **Brixton Street Wetlands**. Third Saturday of each month. Meet Alton St, Kenwick. Contact Regina 9459 2964 or [email](#).


Saturdays, Sundays 9am-12noon

 **Koala maintenance** at **Yanchep National Park**. Call Ciara 9303 7771.


Sundays

 **Wilson Wetlands** Action Group undertakes regular work mornings throughout the year on Sunday mornings. Contact 9258 7301 or [email](#).


Sundays 8am-9am

 **Guided walks** with Friends of **Marangaroo**. Fourth Sunday of each month. Meet at Gate 3, Decoursey Way.


Sundays 8am-10am

 **Bushcare activities** every Sunday with Friends of **Shenton Park Bushland**. Contact Dani 9381 3470 or [email](#).


Sundays 8.00 am to 10.00 am

 **Bush care activities** with the Friends of **Booragoon** and **Blue Gum Lakes**. First Sunday of the month. Contact Mary-Ann 9316 9716 or [email](#).

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 or [email](#).


Sundays 8.30am-9.30am

 **Guided walks** followed by meeting with Friends of **Mirraboona**. First Sunday of each month. Call Jan 9344 2872.


Sundays 9am-11am

 Friends of **Lake Claremont** busy bee and morning tea, second Sunday of every month. Meet at south end of Strickland Street, Swanbourne. Focus: hand weeding. Wear closed in shoes, hat and long-sleeves. Gloves and tools provided. Contact 0416 614 696 or [website](#).


Sundays 9am-11am

 **Bushcare activities** with **Cottesloe Coastcare**. First Sunday of each month. Contact Robyn 9384 7668 or via [email](#) or [website](#).


Sundays 9am-12 noon

 **Bushcare activities** with the Friends of the **Spectacles** (Kwinana). Third Sunday of each month. Contact Lynda 0419 983 956 or [email](#).


Sundays 9.45am-12 noon

 **Bushcare activities** with the Friends of **Piesse Brook**. Third Sunday of each month. Contact Gerry 9293 2517 or Bridget: [email](#).


Mondays 7am-8am

 **Norma's Monday Morning Weeding Group**, Friends of **Lake Claremont**. Learn basic weeding techniques and identification. Meet at south end of Strickland Street. Phone 0413 282 515.


Mondays 9am-11am

 **Litter collection** with Swan Estuary Reserves Action Group at **Milyu A-Class Nature Reserve, South Perth**. Second Monday of each month. Contact Cathie 9339 2439 or [email](#).


Mondays 8.30am-10am, Fridays 9.30am-2noon, Sundays 4pm

 **Bushcare activities** with the Friends of **Mary Carroll Wetland (Gosnells)** every Monday. Volunteers also work fortnightly on Friday, 9.30am-12noon and meet at 4pm on first Sunday for cockatoo watch and bushcare. Contact Unice 0434 831 230 or [email](#).


Mondays, Wednesdays, Fridays 9am-12 noon

 **Bushcare activities** and **wetlands walk trail maintenance** with **Yanchep National Park Volunteers**. Call Ciara 9303 7771.


Tuesdays 7am-9am

 **Bushcare activities** with Swan Estuary Reserves Action Group at **Alfred Cove A-Class Nature Reserve** each Tuesday. Contact Cathie 9339 2439 or [email](#).


Tuesdays and Thursdays, 8am-10am

 **Coastal dune bushcare activities** – weeding and planting. **Stirling Natural Environment CoastCare (SNEC)**. Contact Rae 0419 191 710 or Sheldon 0488 190 651, or via our [website](#).

Wednesdays, 3pm-5pm during school term

 **Wildlife Wednesdays**. Join 'Eco-Warriors' at **Herdsmen Lake Wildlife Centre**. Contact 9387 6079 or [email](#).


Thursdays 8am-9am

 **Bushcare activities** every Thursday with **Byford Enviro-Link**. Call Kristy 9526 0199.


Thursdays 9am-1pm

 **Bushcare activities** in **Margaret River** with the **Capes Volunteer Team**. Call 9757 2202.


Thursdays 9am-11am

 **Bushcare activities** on the fourth Thursday of each month at **Baldivis Children's Forest**. Contact via [email](#) or [website](#).


Thursdays and Sundays 10am-12noon

 Every Thursday and Sunday, **Discovery Centre Tours, Kanyana Wildlife Centre**. Close encounters with native animals and interactive Discovery Centre. \$15/adult, \$10/child, \$12/senior, \$40/2A2C. Bookings essential, contact 9291 3900 or [email](#).

Thursdays or Fridays 9am-4pm


 Wetland, bushcare and nursery activities with **Cockburn Wetlands Centre**. Contact Denise 0412 081 540 or [email](#).

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/adult, \$12/child, \$55/2A2C. Bookings essential, contact 9291 3900 or [email](#).

July


3 Friday 12noon-12.45pm

 **Urban Nature Lunchtime Seminar**. Are foxes taking the bait? Trish Fleming (Murdoch University). Contact **UN Seminar**.

3 Friday 7.30pm

 Adrian Pinder on Salt Lakes: Iconic centres of evolution in the Western Australian deserts? Focus by Nadia Sloan. Contact **WA Naturalists'**.


5 Sunday 2pm-4.30pm

 Manjar Boodjar: Together on Sacred Ground, **The Spectacles**. Free event **celebrating Naidoc week**. Guided walk, bush tucker, planting, stories and dance. Bookings essential contact Mandy 0407 072 858 or [email](#).


5 Sunday 3-5pm

 Friends of **Mary Carroll Wetland Community Planting**. Must wear closed in shoes or boots; gloves and tools supplied. Meet Barcombe Way off James St, Gosnells. Contact Unice 0434 831 230 or [email](#).

8 Wednesday 8am

 **Bird Walk, Little Rush Lake, Yangebup**. Meet near playground on the western side of the lake, Grassbird Loop. Contact **BirdLife WA**.

11 Saturday, 8am-10am

 **Planting in Point Walter**. Meet Honour Avenue car park. **BEAG**.

11 Saturday 10am-12noon

 Friends of **Mary Carroll Wetland Community Planting**. Must wear closed in shoes or boots; gloves and tools supplied. Meet Barcombe Way off James St, Gosnells. Contact Unice 0434 831 230 or [email](#).


15 Wednesday 9am

 Free guided **walk and talk**. Friends of **Brixton Wetlands** Kenwick. Morning tea provided. Meet Alton Street Kenwick. Call Regina on 9459 2964.

18 Saturday, 9am

 Community **planting** day at **Booragoon Lake** with the Friends of Booragoon and Blue Gum Lakes. Morning tea provided. Contact Mary-Ann 9316 9716 or [email](#).

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.

Please send us your October, November and December events by Friday 4 September 2015.

Registration/contact details

BEAG, Bicton Environmental Action Group. Contact Peter Neesham on 0439 467 855 or [email](#).

UN Seminar, Urban Nature Seminar series.

Tondirrup/Nambung meeting rooms at the Keiran McNamara Conservation Science Centre, Department of Parks and Wildlife, 17 Dick Perry Ave, Kensington from 12-12.45pm. Free, no need to RSVP. Free parking. BYO lunch.


BirdLife WA. Monday – Friday 9.30am-12.30pm. All walks are free. No bookings required. 9383 7749 or [email](#).

WA Naturalists'. Lectures held at Hew Roberts Lecture Theatre, Clifton St, UWA Nedlands Campus. Contact 9228 2495 or [email](#).


19 Sunday 1pm

 An afternoon of **Australian Flavours** hosted by Friends of **Kings Park**. Learn about Australian native food plants with expert guest speakers, educational displays, tastings and delicious 'bush food' afternoon tea. Kings Park Education Centre \$25 FOKP members, \$30 non-members. [Bookings](#) essential.


22 Wednesday

 **Urban Nature Shoalwater Islands Workshop**. Point Peron Camp School (see page 2). Call 9442 0320.

25 Saturday 8am

 **Bird Walk. Lightning Swamp, Noranda** – meet at the gate in the SE corner of the bushland on Della Road. Contact [BirdLife WA](#).


25 Saturday, 8am-10am

 **Weeding**. Point Walter Bush Forever site and along Blackwall Reach. Contact [BEAG](#).

26 Sunday, 9am-12noon

 Community **planting day, Astley Street River Park**, 60 Astley Street, Gosnells. Hosted by City of Gosnells in partnership with Armadale Gosnells Landcare Group and Prosser Toyota. Family-friendly event. Sausage sizzle and kids' activities. Call Toby Rees 9397 3204.

26 Saturday


 **Beachsweep, Woodman Point**. Contact [WA Naturalists'](#).

August

7 Friday 12noon-12.45pm

 **Urban Nature Lunchtime Seminar**. What happens after assessment? An evaluation of the effectiveness of environmental offsets in Western Australia between 2004 and 2015. Jelena May (UWA). Contact [UN Seminar](#).


7 Friday 7.30pm

 **Conservation in Australia by Atticus Flemming** – Australian Wildlife Conservancy. Contact [WA Naturalists'](#).


13 Thursday 8am

 **Bird Walk. Manning Lake**, Spearwood – meet in the car park on Azelia Rd, opposite the Azelia Ley Homestead Museum. Contact [BirdLife WA](#).


15 Saturday, 8am-10am

 **Weeding. Point Walter Bush** Forever site and along Blackwall Reach. Contact [BEAG](#).


15 Saturday 8.30 am

 **Bird Walk. Lake Gwelup**, Stirling – meet in the car park at the corner of Stoneman St and Huntriss Road. Contact [BirdLife WA](#).


16 Sunday, 10am-3pm.

 **Community Science Expo - Patterns of Science**, Canning River Eco Education Centre, cnr Kent St and Queens Park Rd, **Wilson**. Contact 9461 7160 or [email](#).

16 Sunday 11am-4 pm

 **'Orchids, soil & disturbance', Anstey-Keane Bush Forever Site**, Junction Anstey and Keane Roads, **Forrestdale**. Join experienced naturalists from Friends of Forrestdale and Wildflower Society of WA on a walk, learn about local flora and fauna and collect soil samples to show how disturbances affect vegetation and soil properties. Samples will be analysed and the results available publicly. [App: iNaturalist](#) - recommended. Once downloaded, please join the [Anstey/Keane Bushland Project](#). Contact via [email](#) or [website](#).


22 Saturday, 1pm-3pm

 Urban Bushland Council (UBC) **Woodman Point Nature Walk** co-hosted with the Wildflower Society and will also function as a **UBC General Meeting**. BYO afternoon tea. John Graham Reserve - Woodman Point, Nyerburp Circle, Munster.

23 Sunday 1pm-3pm

 **Star Swamp bees** with David Pike. Henderson Environment Centre, Star Swamp. Contact [WA Naturalists'](#).

29 Saturday, 8am-10am


 **Foreshore clean-up Blackwall Reach Pde**. Meet at Bicton Baths. Contact [BEAG](#).

September


4 Friday, 12 noon-12.45pm

 **Urban Nature Lunchtime Seminar**. *Engaging the community in wildlife research and conservation. Reflections on the use of citizen scientists to monitor quenda (Isodon obesulus fusciventer) and rakali (Hydromys chrysogaster) in Western Australia.* Sabrina Trocini and Rebecca Boyland (WWF). Contact [UN Seminar](#).


4 Friday 7.30pm

 Oliver Barry, *New advances in vertebrate pest management*. Contact [WA Naturalists'](#).


8 Tuesday 6pm

 **Kings Park Festival Address Dinner** Steven Hopper *Science, Plants and People: Roles of Botanic Gardens in the century of East Asian ascendancy* Frasers Restaurant. [Bookings](#) essential.

12 Saturday, 8am-10am

 **Weeding. Point Walter Bush** Forever site and along Blackwall Reach. Contact [BEAG](#).

12 Saturday

 Major Bushcare Day at **Mary Carroll Wetland Community Planting**. Must wear closed in shoes or boots; gloves and tools supplied. Meet Barcombe Way off James St, Gosnells. Contact Unice 0434 831 230 or [email](#).

Highlights

23-24 July, 2015

Citizen Science Conference, Canberra. Australian practitioners will lead [interactive workshops](#) with internationally recognised experts.

1-30 September

Kings Park Festival. A month of [activities](#) to celebrate WA's wildflowers.

7-9 September

WA Soils Conference, Canberra. A [conference](#) to celebrate the International Year of Soils 2015 from a Western Australian soils perspective.

13 Sunday September**Bushcare's Major Day Out.**

A [fun day](#) designed to give everyone the opportunity to find out more about our bushland as you work and learn alongside experts.

21-24 September


18th International River Symposium, Brisbane. Healthy Rivers – Healthy Economies. [Explore](#) the links between river health and economic performance.

21-23 September


2015 State NRM, Mandurah. [Conference](#) theme – Finding the Balance; Healthy Environment; Productive Economy.

WA Naturalists' Club has a wide range of [walks and talks](#) at various branches and locations across the metropolitan area.


20 Sunday 7.30am

 **Bird Walk**. Canning River Regional Park, **Wilson** – meet at the Kent Street Weir car park. Contact [BirdLife WA](#).


24 Thursday 7.30am

 **Bird Walk**. Alan Anderson Park, **Walliston** – meet at the car park near Alan Anderson Park between Lawnbrook and Pomeroy Roads, Walliston. Contact [BirdLife WA](#).


26 Saturday, 8am-10am

 **Weeding. Point Walter Bush** Forever site and along Blackwall Reach. Contact [BEAG](#).

26 Saturday – 28 Monday, 10am-4pm

 Friends of **Kings Park Plant Sale**, a rare chance to buy unusual plants. All sales fund projects and research. Exhibition Ground (off Fraser Ave) **Kings Park**.

27 Sunday

 **Eco Walk and Talk. Mary Carroll Wetland**. Contact Unice 0434 831 230 or [email](#).

Funding opportunities

State NRM Program Community Grants

The State NRM Program provides funding for community-based projects that conserve, restore, rehabilitate or enhance the environment. The new program will also provide funding to develop the capability of volunteers to undertake on-ground work and to improve the governance of their community based organisations. The call for applications is anticipated to be announced in July/ August for a limited period. [Subscribe](#) to get notified of any updates.

Trails grants

Lotterywest and the Department of Sport and Recreation [Trail grants](#) are open all year round. Grants may be obtained for planning, constructing, upgrading or promoting a trail. Maintenance is not eligible under this scheme. Grants are limited to \$100,000.

Looking for funding?

Check out the [Community Grant Guru website](#). It provides a free searchable listing of nation-wide grants and funding programs for community and not-for-profit organisations. You can also register and store your preferences to receive grant alert emails.

Myer Foundation

The Sidney Myer Fund and the Myer Foundation is currently developing a capacity building stream under its Sustainability and Environment category. Guidelines for this program are expected to be published in September 2015. Check [website](#) for any developments.

Resilient Landscapes and Living Wetlands Grants

Launching **6 July**, this grants program will see up to \$720,000 available over three years to support community groups with high priority environmental projects. See page 3 for details or visit [Perth Region NRM website](#).

July School Holidays

Why not get the kids out and about in the bush this July holidays? A number of organisations have special holiday activity programs. Parks and Wildlife's **Nearer to Nature activities** are held throughout the metro region and include *Frog Forage*, *Eco Treasure Hunt*, *Creature Feature* and loads more. Or **'Get Wild about Wetlands: eco walks talks and night stalks'** at [Cockburn Wetland Education Centre](#). Or **Piney Lakes Environment Centre** also has a fabulous [events program](#), including special school holiday activities.

Please send us your regional report (150–200 words) and a photo by Friday 4 September 2015. Text may be edited in response to volume of submitted reports.

New osprey tower a hit *By Catherine O'Neill*

A stunning new artificial nesting tower for local osprey has been erected at Pelican Point in Crawley as part of a Swan River Trust and Alcoa Landcare Project, coordinated by the Swan Estuary Reserves Action Group (SERAG).

The project captured the imagination of the wider community—local sculptor Tony Jones designed and built the magnificent platform; engineer Martin Searle oversaw the construction; Parks and Wildlife contributed the 10m-high pole and people from Ernst & Young and UWA joined members and friends of SERAG in re-vegetating the surrounding area.

At a gathering on site to celebrate the opening of the platform, guests were treated to a spectacular acrobatic display by an osprey fishing offshore, writer Robert Drewe shared reminiscences of growing up on the Swan River and Professor Lyn Beazley encouraged people to participate in a 'citizen science' initiative called OspreyWatch.



Osprey building a nest. Photo – Tim Graham-Taylor.

OspreyWatch is a [user-friendly app](#) that allows observers throughout the world to map osprey nests, log observations, share photos and discuss findings with researchers and other people interested in ospreys.

That the platform was claimed by a pair of osprey within days of its installation is not only thrilling, but testament to an urgent need to protect the few remaining areas of natural aquatic and riparian habitat in the estuary for their benefit.

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Green Army on Rottnest *By Shane Kearney*

The Rottnest Island Green Army team has started work on conserving two threatened ecological communities on Rottnest Island. The project, which began in late May, focuses on rehabilitating the samphire community and abating threats in the woodland community.

It is part of the Federal Department of Environment's Green Army program and is being undertaken by Conservation Volunteers Australia in association with the Rottnest Island Authority. The team will undertake site assessment, site preparation, seed collection, plant propagation and debris removal in preparation for successive teams to continue to implement works.

The program focuses on engaging youth 17–24 years of age from all backgrounds to participate in conservation, land management and

heritage projects. The participants, led by a Conservation Volunteers Australia supervisor, will gain accredited units in conservation land management and practical skills. They will gain knowledge about Western Australia's unique and fragile environment, and in this case, Rottnest Island.

The participants said that they felt extremely lucky to be able to visit Rottnest Island daily and be part of a project that 'does good' for Australia, the community and the environment.

"I've always wanted to get into conservation. I have natural interest in flora and fauna. The Green Army will help me get practical skills to pursue a career in the environmental sector," Green Army participant Danielle Kemp said.

Supervisor Mathilde Bernard said, "the Green Army program offers youth a chance to get the skills that they need for their future. It's great to see youth



The Rottnest Island Green Army team is working to rehabilitate threatened ecological communities on the island. Photo – Rottnest Island Authority.

gain knowledge about the importance of the environment and the challenges we face – the program really builds up their confidence."

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Strengthening Landcare in WA By Aruni Jayasekera

WA Landcare Network (WALN) was formed under the auspices of the National Landcare Network (NLN) in answer to the call from community landcare groups to represent them at a state and national level. Since its inception in 2013, membership has tripled and WALN is strengthening capacity and earning the status of the voice of community landcare groups in WA. As its major focus, WALN is steadily progressing on building operational capacity.

WALN hosted its first community landcare forum in Chittering on the 22 May under the banner Strengthening Landcare in WA. Local and interstate landcarers, NLN representatives, State NRM Office and regional NRM bodies were all present. Delegates shared stories of accomplishments, struggles, pains and plans. Policies and practices were discussed. Case studies of actions to restore wetlands, bushcare, river and coast care, and catchment management were highlighted. Hurdles and enablers were identified. The networking was excellent and the first WALN Forum was an all-round success.

WALN receives funding from the Australian Government's *National Landcare Program* and achieving agreed milestones are important for all stakeholders. WALN is a direct link to the Federal Minister of Environment via the Federal Department of Environment. Membership is open to any community group with a demonstrated interest in landcare. The benefits of partnerships, sharing information and ideas became a



Delegates of WALN Forum held in May. Photo – Gerry Butler.

reality at the NLN meeting held in Perth during 25 – 26 May. WALN also hosted an urban field walk on Sunday 24 May at Canning River Regional Park where local landcarers had the opportunity to meet with the visiting NLN delegates. For visitors, it was an eye-opener and a great experience.

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Fishing tackle bins on the Swan By Jason Menzies



There are currently 37 dedicated fishing line bins at popular jetties, fishing platforms, traffic bridges and foreshores. Photo – Stewart Allen.

The Swan River Trust has expanded its fishing line bin project on the Swan and Canning riverbanks to help reduce the impact of discarded fishing line and tackle on dolphins, water birds and other animals.

The Fishing Line Bin project (*Reel it In* campaign) is expected to remove up to 20km of discarded fishing line from the rivers each year. There are currently 37 dedicated fishing line bins at popular jetties, fishing platforms, traffic bridges and foreshores as part of the partnership with seven riverfront local governments. The project has also been taken up by the Fremantle Port Authority and City of Cockburn, with bins installed at Victoria Quay, the North and South moles and popular fishing locations in Cockburn Sound.

Recreational fishers have made excellent use of the bins during the first 12 months of the project, consequently reducing the risk of rubbish impacting on wildlife. More than 8788m of fishing line, 1743 hooks and sinkers, 1508 bait bags and 254 items such as lures and tackle packets were collected throughout the year. The Trust has also invested in an education campaign to teach the community about the dangers of discarded fishing tackle, and to alert the public to the location of the bins.

The project is delivered in partnership with Recfishwest, Native Animal Rescue and Keep Australia Beautiful Clean Marine program.

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Using pesticides safely

By Lin Fritschi and Jill Griffiths

Bushland management often involves using pesticides in one form or another, particularly using herbicides to control weeds. It is crucial that correct personal protective equipment is used and directions carefully followed to limit exposure to these chemicals, which can cause severe health effects.

The most common way in which people using herbicides are exposed to pesticides is via skin contact. Pesticides can be absorbed into the body through the skin. How quickly this occurs depends on many factors, including the type of chemical, where on the body it lands (for example, the hands are less permeable than the head or trunk), moisture and temperature. The presence of sunscreen on the skin may also increase absorption. Pesticides are also sometimes inhaled. Exposure in this way tends to be less common than via the skin, although some herbicides, including glyphosate, are absorbed by inhalation.

Research into the exposure of workers using pesticides shows that exposure to high doses of pesticides is most likely to occur when mixing chemicals and loading equipment, as this is when users are exposed to concentrated product. However, higher total exposure actually occurs when

applying pesticides, because more time is spent doing this. Spills and leaks can also lead to high exposure so it is necessary to check equipment carefully before use. Exposure may also occur when cleaning equipment after use, so it is important to keep wearing protective gear until all equipment has been cleaned and chemicals stored.

Reducing exposure

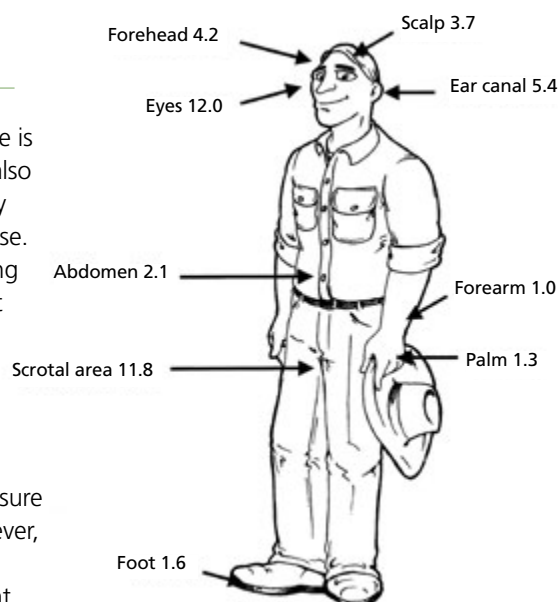
The most obvious way to reduce exposure to pesticides is to not use them. However, this is not always practical. Various types of personal protective equipment (PPE) can be used to limit exposure. Gloves, long-sleeve clothing, chemical-resistant overalls, boots and hats can all be effective in reducing the contact of pesticides on the skin. Informed decisions about the type of PPE used for a given pesticide should be made depending on the manufacturer's safety recommendations. Different types of PPE provide different levels of protection. Obviously, the more skin that is covered, the more effective the protection, but the type of material used to cover the skin is also important. Less permeable and less breathable materials provide better protection.

Limit your pesticide exposure:

- Only use pesticides when absolutely necessary.
- Always follow manufacturer's recommendations for applying pesticides.
- Wear personal protective equipment (PPE) – gloves, long sleeves, long trousers, boots, and a hat. Use a face mask if recommended.
- Wear PPE during all phases of using pesticides – mixing and filling, applying, and cleaning up.
- Use the most appropriate and least risky method of applying the pesticide.
- When you have finished using pesticides for the day, remove the clothes you were wearing and wash them. Do not 'save' them to use again the next day and do not keep them on after you have finished spraying.
- Use dyes in sprays so it is clear to other users where pesticides have been applied.
- Use signs to warn others of the use.
- Individual exposure can be limited by increasing the number of people involved in applying the pesticide, thereby 'sharing the load'.
- Ensure people who are using pesticides are appropriately trained to do so.



Limit exposure to pesticides by using appropriate personal protective equipment. Photo – Julia Cullity.



The body absorbs herbicides at different rates depending on which body part is exposed. This figure shows absorption rates for different body parts compared to the forearm. For instance absorption may be up to 12 times faster in the groin or eyes than the forearm. Danger from exposure is increased if the contaminated area is large or the herbicide is left on the skin for a long time. Source - ChemCert WA 2005 Risk Management in Pesticide Use Training Manual.

People often avoid using PPE because of physical discomfort – it can be cumbersome and hot – despite knowing that it offers protection. However, the risks involved in not wearing PPE outweigh the physical discomfort. Regardless of discomfort, PPE must be worn; do not roll up sleeves or remove gloves while handling pesticides. The consequences of pesticide exposure can be very serious, although they may not be immediately apparent.

Other bush users and volunteers

It is not just the people applying the pesticides who may be exposed to the chemical, people who enter bushland after a chemical has been applied may also be exposed. Their exposure may actually be higher than those applying the pesticide due to a lack of personal protective equipment. Use signage to ensure others are aware of areas that have been sprayed.

More information: E MacFarlane, R Carey, T Keegel, S El-Zaemay, L Fritschi (2013) Dermal Exposure Associated with Occupational End Use of Pesticides and the Role of Protective Measures [Safety and Health at Work](#) 4(3) 136-141.

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Friends of Queens Park Bushland by Sian Mawson



This wetland, which used to be a straight drain, demonstrates what can be done when organisations work together. Photo – Sian Mawson.

In the early 1990s, the Queens Park Regional Recreation Area Master Plan proposed the construction of sports grounds on remnant bushland in Queens Park. Local residents' desire to save the bush proved the catalyst for engagement with the local council. The Master Plan was modified to have the sports grounds established on what was already totally degraded land, enabling bushland to be protected. This then led to the formation of the group now known as the Friends of Queens Park Bushland (FQPB).

More than 20 years on, the Friends of Queens Park Bushland has grown from strength to strength. From a small beginning of half a dozen locals we have now grown to more than 100 supporters. FQPB has extended its protective reach to encompass all of the remnant native vegetation (approximately 29ha) where the suburbs of Queens Park, East Cannington and Welshpool intersect. The bushland is predominantly banksia/marri woodland with a very good understory and areas of damplands that have wetter soil.

There have been many achievements over the years but the most visible has been the transformation of a straight Water Corporation drain surrounded by weeds into a functional wetland. This project involved FQPB, Water Corporation, Main Roads, City of Canning and Urban Ecosystems working collaboratively to enlarge the drain into a series of wetlands. These wetlands take stormwater runoff from nearby roads and act as a storage

and filtering system before the water drains into the Canning River. When not influenced by heavy rain, the wetlands provide habitat and breeding sites for birds, turtles, frogs and invertebrates.

Another project, that has been the most successful in gaining supporters, was the creation of the [FQPB website](#). The aim of the website is to provide a record of all of the plants and animals found in this part of Perth. We also use it to advertise our regular work days or special [events](#) like our spring nature walk. The website is continually updated, with new plants and animals when they are found and when visitors help identify the sightings. This website is used by people all over the world and, most importantly, has been a conduit through which locals, eager to help, have been able to make contact.

This year has seen the reinstatement of a water source for a dampland under stress from reduced rainfall and a lowering water table.



Participants at a nature walk being led by the Friends of Queens Park Bushland. Photo – Sian Mawson.

To get more water into the area, the stormwater drainage from a multi-dwelling development adjacent to the bushland is being directed into the previously wet area. This will provide more water to those plants that have survived the drying conditions and allow a rejuvenation of the area.

FQPB has built a strong relationship with the City of Canning, the managers of the land, and even though 20 years have passed, is still working cooperatively towards the development of the sports ground. The group is kept busy with weeds to pull, seeds to germinate and seedlings to nurture as everyone works towards helping the bushland remain the unique environment that it is.

This winter there will be around 6000 seedlings planted in the bushland. These will help fill in degraded areas and vegetate the recently restored dampland. FQPB also have monthly activity days and hold a nature walk each year. All of these are open to the public and everyone is welcome.

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Resources

Apps

iNaturalist is an [app](#) where you can **record** what you see in nature, **meet** other nature lovers, and **learn** about the natural world.

Osprey Watch is an [app](#) that brings together a global community of observers focused on breeding osprey.

Website Watch

Boodjar: Nyungar Placenames in the South-West of Western Australia.

This [website](#) provides Nyungar place-names and meanings for the south-west of WA, an area known to the Nyungar people as Nyungar Boodjar. Within this area, 50 per cent of the place-names are of Nyungar origin but, to date, little of their meaning has been widely known. The website shares the information gathered during a three-year investigation into the history and meanings of these names led by Professor Len Collard, a Nyungar man, and supported under the Australian Research Council's Discovery Projects, Indigenous Researchers Development funding scheme.

New publications

Identification and Ecology of Southwest Australian Orchids 2014. Mark Brundrett. Western Australian Naturalists' Club. \$55.

Introductory chapters provide an overview of the orchid family and unique features of their biology and ecology. The second section focuses on orchid identification, as well as information on the pollination, ecology, cultivation and taxonomy.

Swamp: walking the wetlands of the Swan Coastal Plain 2014. Nandi Chinna. Fremantle Press.

In this book of poetry, Chinna uncovers the lost places that exist beneath the townscape of Perth. For four years the poet walked the wetlands of the Swan Coastal Plain – and the paths and streets where wetlands once were. Her poems speak with urgency about wetlands that are under threat from development today.

Plant Life on the Sandplains in Southwest Australia: A global biodiversity hotspot 2014. UWA publishing. \$69.99.

This book brings together current research and understanding about the south-western Australian flora. The 39 contributors cover the environment, biodiversity, speciation and phylogenetics, ecosystem composition and coevolution. This is a thorough revision and expansion of *Kwongan – Plant Life of the Sandplain* (Pate & Beard, 1984), and demonstrates how much knowledge and understanding of kwongan has been gained over the past 30 years.

Research

Davis RA, Doherty TS (2015) Rapid Recovery of an Urban Remnant Reptile Community following Summer Wildfire. [PLOS ONE](#) 10(5) e0127925.

Enright NJ, Fontaine JB, Bowman DMJS, Bradstock RA, Williams RJ (2015) Interval squeeze: altered fire regimes and demographic responses interact to threaten woody species persistence as climate changes [Frontiers in Ecology and the Environment](#) 13(5) 265-272.

Marlow NJ, Thomas ND, Williams AAE, Macmahon B, Lawson J, Hitchen Y, Angus J, Berry O (2015) Cats (*Felis catus*) are more abundant and are the dominant predator of woylies (*Bettongia penicillata*) after sustained fox (*Vulpes vulpes*) control. [Australian Journal of Zoology](#) 63(1) 18-27.

Moore N, Barrett S, Howard K, Craig M, Bowen B, Shearer B, Hardy G (2015) Time since fire and average fire interval are the best predictors of *Phytophthora cinnamomi* activity in heathlands of south-western Australia. [Australian Journal of Botany](#) 62 (7) 587-593.

WILSON BA, KUEHS J, VALENTINE LE, SONNEMAN T, WOLFE KM (2014) Guidelines for ecological burning regimes in Mediterranean ecosystems: a case study in *Banksia* woodlands in Western [Australia Pacific Conservation Biology](#) 20 (1) 57-74.

Lookout for

The red tentacles fungus (*Colus pusillus*) *By Mark Brundrett*



Sharp-eyed visitors to urban bushland will often see this small fungus, which expands rapidly from an egg-like sack after rain, but is gone in a day or so. The octopus-like red tentacles are 3-5 cm long and are very spongy and fragile. They are covered by a brown slimy mass in which millions of microscopic spores are embedded. This slimy covering smells of rotting meat so flies are quickly attracted to feed on it and unwittingly become the distribution agent. This example of a fungus exploiting flies is just one example of the many deceptive interactions in Perth's bushland. Despite the carrion smell the red tentacles are very intricate in structure and quite beautiful. This stinkhorn fungus (Phallales) occurs in Western Australia and over east, especially in Queensland. It is common in Perth in both natural and disturbed habitats.

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