

Boorna Waanginy – a cultural and ecological arts spectacular

Issue 101

Autumn 2017

Time of Bunuru and Djeran in the Nyoongar calendar.

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By Stephen Bevis

Thousands of people took a walk of wonder and inspiration through Kings Park to start the Perth International Arts Festival in February. An estimated 110,000 people flocked to Kings Park to see the Lotterywest Festival Opening – Boorna Waanginy: The Trees Speak. Spectacular high-tech 3D projections, animation, sound and lighting effects surrounded audiences as they walked through Kings Park to experience the natural splendour and diversity of the South West. The overwhelming community response was one of joy, wonder, reflection and pride in this land we share.

“It’s been a thrilling journey working alongside such great artists, Noongar elders, scientists and botanists to put this show together about the wonder of the unique and fragile ecosystems of the South West,” director Nigel Jamieson said. “Boorna Waanginy hopes to remind us of our incredible inheritance and the pressing need to protect its survival,” he said.

Boorna Waanginy spanned five sections: Six Seasons, Knowledge, Creation Stories: Coming of the Colours, Extinctions and Seeds of Change. Six Seasons was a startling transformation of Fraser Avenue’s splendid 750m ‘tunnel’ of trees. The famous eucalypts bloomed with vivid colours as great flocks of birds flew overhead and animals led visitors on a sumptuous journey of discovery. Knowledge celebrated the twin streams of western science and traditional Indigenous relationships to country which are reshaping our views of ecology. Creation Stories: Coming of the Colours told the story of Jindalee and the creation of the Milky Way and

Left: The Seeds of Change, more than 1400 lanterns created by WA children to represent native species they have adopted as ‘totems’ to protect into the future. Photo – Rachael Barrett.

Right: The Noongar six seasons come to life in Boorna Waanginy: The Trees Speak. Photo – Toni Wilkinson.

the ‘coming of colour’ to the world, and the story of the formation of the sandy banksia woodlands. Extinctions was a dramatic memorial of extinct species in glowing specimen jars in a walk along the Long Vista toward the Pioneer Women’s Memorial. The Seeds of Change installation represented species adopted by the children as ‘totems’ to protect into the future.

The show draws on input from a wide range of Noongar historians, elders and advisors, geologists and life scientists from backgrounds including ecology, botany, and zoology. The team interpreting these conversations includes animators, composers, designers, writers and visual artists. The creative team was particularly inspired hearing former Kings Park director Stephen Hopper and Noongar elder Noel Nannup talk about the importance of two streams of knowledge – western science and Noongar culture sitting side by side if we are to preserve and protect our environment. This prompted the idea of inviting school children to pledge commitment to protecting a plant or animal species as a “totem” as part of the community art and research project Seeds of Change. More than 1400 lanterns, made by students from 37 primary schools around WA, conveyed a message of creativity and conservation as part of Seeds of Change, the major light installation that was the finale for Boorna Waanginy.

Contact: Stephen Bevis, Perth International Arts Festival by [email](#)

Managing weeds in John Forrest National Park

By Grazyna Paczkowska

John Forrest National Park, the first national park in Western Australia, is known for its high conservation values. Located on the edge of the Darling Scarp, 25km from Perth, the 2670ha park includes geographically restricted flora and fauna and a diversity of vegetation ranging from jarrah, marri-wandoo woodlands to scarp heathlands, granite outcrops, rivers and waterfalls. The park is managed by the Department of Parks and Wildlife with the help of the Friends of John Forrest National Park (see Group profile page 11). Weed management is an important aspect of protecting the conservation values of the park but because of its size, weed control by park rangers and the Friends has been targeted to only some sections of the park.

In 2015, as part of the Australian Government's National Landcare Programme, funding was received from Perth Region NRM to enhance the regionally significant remnant vegetation along the Perth Hills Heritage Trail from Talbot Road Nature Reserve to Leschenaultia Conservation Park, including the John Forrest section of the trail. As part of this project, weeds and vegetation condition were mapped and a three-year weed management program for this section is currently underway. To complement this work the major stakeholders with the assistance of Urban Nature have proposed to extend the project by producing a vegetation



Elisa Skillen, Parks and Wildlife, mapping woody weeds on the Jane Brook. Photo – Kate Brown.

condition map for the whole park to guide and prioritise any future weed mapping, management and restoration works. Last December a workshop was held to compile all known and available information from historical reports, personal observations and on-ground knowledge of weed distribution, disturbance, vegetation condition and *Phytophthora* dieback occurrence which enabled Urban Nature to produce a draft desktop assessment. This year we will undertake field work to ground truth the draft vegetation condition mapping and prioritise future weed mapping areas within the park.

Native shrublands return to Penguin Island



By Kate Brown

Penguin Island Conservation Park is an amazing place to visit over the summer months. Most of the silver gulls have returned to the mainland and the bridled terns have returned from islands in the Sulawesi Sea near the Philippines and Borneo. Penguin Island is an important breeding site for bridled terns and Urban Nature has been out monitoring our two-year-old trials to restore their nesting habitat. Seabird islands are highly disturbed, nutrient enriched environments and while weed invasion can be rapid, restoration under these conditions can also be remarkably rapid. Our aim has been to return a cover of native shrubs including *Rhagodia baccata*, *Enchylaena tomentosa* and *Tetragonia implexicoma* where they have been displaced by dense stands of annual weeds. Our [2017](#)



We have also been working on returning the native Australian Hollyhock (*Malva preissiana*) to Penguin Island. This summer, when the Pelicans moved off from our reintroduction site (above), second generation seedlings were discovered growing in the guano left behind (below). Photos – Kate Brown.



Urban Nature Update By Julia Cullity

I'd like to say a big thank you to Rebecca Ong for producing the last two issues of *Bushland News* and am happy to say she is continuing with the Urban Nature team. The team has been busy while I've been away and it's great to catch up on some of their projects.

Winter Bushland News contributions should be sent to [Urban Nature](#) by **2 June 2017**. *Bushland News* seeks original contributions. If your submission has been or may be published elsewhere please let us know.

Contacts

Urban Nature office

Julia Cullity	9442 0320	Department of Parks and Wildlife, Swan Region Office, Cnr Australia II Drive and Hackett Drive, Crawley WA 6009
Kate Brown	9442 0321	Locked Bag 104,
Grazyna Paczkowska	9442 0322	Bentley Delivery Centre WA 6983
Rebecca Ong	0408 862 953	Fax 9386 6399 Email urban.nature@dpaw.wa.gov.au

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Rhamnus alaternus (Italian buckthorn); a serious weed increasing in Perth's coastal bushlands By Kate Brown

Italian buckthorn was first recorded as naturalised in the Perth area in 1970 but until recently it has had a fairly limited distribution with collections and reports not widespread. Recent reports however suggest it is increasingly invading coastal bushlands and calcareous soils in the Perth Region. In 2016 Italian buckthorn was reported by officers from Rockingham Lakes Regional Park as widespread through coastal vegetation at Point Peron and staff from Greening Australia reported a large well established population invading a threatened ecological community in the Holocene dune swales near Rockingham.

Italian buckthorn is invasive in natural areas particularly coastal shrublands and woodlands across south eastern Australia. In South Australia it is a declared Category 3 weed because of its threat to the natural environment and the movement or sale of Italian buckthorn is banned across the State. In Victoria the weed is listed as a major threat to the Coastal Moonah (*Melaleuca lanceolata*) Woodland Community, an ecological community listed as threatened under State law which occurs on calcareous coastal dunes.

Confusing species

A common shrub species in coastal vegetation around Perth, sea box (*Alyxia buxifolia*), is quite similar in appearance to Italian buckthorn. Italian buckthorn can easily be missed and has been overlooked where it co-occurs with this native shrub. Sea box has opposite leaves or leaves in groups of three with entire margins, while the leaves of Italian buckthorn have slightly serrated margins.

Biology, reproduction and dispersal

A hardy adaptable shrub from Europe and the Mediterranean, Italian buckthorn establishes in full sun or partial shade on a range of soil types. Plants develop into large dense shrubs that shade out native vegetation and prevent regeneration of native flora. Its recent expansion into Perth's coastal bushlands is particularly concerning.

Plants fruit prolifically over spring and summer and birds and possibly foxes disperse the red berries. Seed can remain viable in the soil seed bank for at least five years. With a large lignotuber, plants produce root suckers and resprout vigorously following fire or if top growth is damaged or removed.



Left: *Rhamnus alaternus* growing under tuart at Point Peron, Rockingham Lakes Regional Park. Bottom right: Plants produce prolific amounts of bird dispersed seed. Top right: *Rhamnus alaternus* is easily mistaken for the native often co-occurring shrub, *Alyxia buxifolia*. *Rhamnus* leaves (right) have slightly serrated margins while *Alyxia* (left) do not. Photos – Kate Brown.

Management and control

Small seedlings can be hand pulled and small plants (<50cm tall) dug out, taking care to remove all root material. Basal bark application of 250ml Access® in 15L of diesel to the basal 50cm of trunk of small to medium sized shrubs has been found to be effective but very large old plants may resprout and will require follow up control. See Florabase for [updated weed management notes](#) and a management calendar.

Contact: Kate Brown, Parks and Wildlife by [email](#)

Share your understanding of Opuntoid cacti in WA By Susan Campbell

Opuntoid cacti (*Austrocylindropuntia*, *Cylindropuntia* and *Opuntia* species) were added to the list of Weeds of National Significance (WoNS) in 2012 and a national best practice management manual for opuntoid cacti is under development. The project team are asking for weed managers with experience of these invasive cacti to contact

them. They are interested in reports, publications or anecdotal information on opuntoid cacti, mapping data on cacti distribution, your experience and case studies of managing these weeds and contact details of other people involved in cacti management.

Contact: Matt Sheehan, Wild Matters 0427 722 793 or [email](#).

Chuditch in the suburbs

By Rhianna King, Keith Morris and Julia Cullity

A recent discovery of a dead chuditch (*Dasyurus geoffroi*), or western quoll, in Bateman is shedding light on the distribution of this threatened carnivorous marsupial that was thought to have been displaced from most of metropolitan Perth.

Chance discovery

The chuditch was reported to Parks and Wildlife by a member of the public, Francis D'Souza, who noticed it on a footpath outside Bateman Primary School during a morning walk on 9 June 2016. After being buried by the school gardener, the animal was recovered and added to the State's fauna collection at the Western Australian Museum. It was a male, estimated to be around two years old, in good condition, showing no signs of predation but with a broken rear leg indicating it likely died after being hit by a car.

Characteristics

Chuditch are about the size of a small domestic cat with distinctive large white spots on brown fur, rounded ears, pointed nose, a long tail with a black tip and non-hopping gait. They are solitary animals with large territories (1000ha for males and 600ha for females) and can regularly travel several kilometres in a day, more so during the April–July breeding season.

Chuditch once occurred throughout most of southern mainland Australia but now the threatened species occurs in just over five per cent of their former range, predominantly in the south-west of WA in jarrah forest, some Wheatbelt areas and along the south coast. Chuditch were fairly common in semi-rural blocks on the Swan Coastal Plain during the 1930s to the 1950s when they were considered a pest for preying on backyard chickens and often shot or poisoned. Factors such as habitat clearing, changed fire regimes, disease, predation and vehicle strike have also contributed to their decline.

How did it get there?

Bateman Primary School is near the Piney Lakes Reserve, where two people advised they had seen the chuditch in the weeks before. However the 32ha bushland and wetland reserve is not large enough to support a viable population. It must have travelled from elsewhere.

One possibility is that it came from the Perth Hills more than 20km in the east and used the bushland corridor associated with the Canning River. Another possibility is that it travelled even further from Paganoni Swamp, a 700ha bushland in the Rockingham Lakes Regional Park where chuditch were trapped in a 2010 [study](#) by researchers from The University of Western Australia. The chuditch could have moved through the bushland and rural areas of Baldvis and Mandogalup and then via the Beelihar Wetlands, a theory supported by subsequent reports from the public of dead chuditch on the Kwinana Freeway and Forrest Highway and a previous [record](#) from Wandi. Even using these patches of bushland as ecological stepping stones, it's remarkable that the chuditch avoided predators such as cats, dogs and foxes, along with vehicles for such a distance until it did meet its end in Bateman.



Chuditch have distinctive large white spots on brown fur, rounded ears, pointed nose, a long tail with a black tip, are the size of a small domestic cat and do not hop. Photo - Ry Beaver.

Community knowledge

Little would be known about chuditch movements in suburban Perth without the sightings reported from community members. This information helps build a profile about where this threatened species might still occur and informs land managers and owners and developers about the distribution and significant habitat for chuditch in the Swan Region. Anyone with information about chuditch sightings or any threatened species can [report online](#) to Parks and Wildlife.

Contact: Keith Morris, Department of Parks and Wildlife on 0400 746 645 or [email](#).



Eradication of *Hydrocotyle* from the Canning River catchment

By Matt Grimby

Hydrocotyle ranunculoides has been a major problem in the Canning River since the early 1990's with the cost of management exceeding \$2 million. At times it completely covered the Canning River for kilometres upstream of Kent St Weir, altering the ecology of the system and making recreational activities such as kayaking and fishing impossible. While it is extremely fast growing, doubling its biomass every three days in the warmer months, eradication is possible with a coordinated and persistent approach.



H. ranunculoides showing the leaf shape and creeping habit. Refer to [Bushland weedwatch](#) for more information on identification and control. Photo – Matt Grimby.



Adequate resources and coordinated and persistent follow-up weed management suggest that *Hydrocotyle ranunculoides* will be completely eradicated from the Canning River catchment. Mapping of infestations and treated areas at Wilson Wetlands from July (above) to December (below) 2016 have delivered very encouraging results.



The Australian Government's Swan Canning River Recovery project—*Hydrocotyle* Weed Management Program has provided the resources to make the persistent management required to eradicate *Hydrocotyle* possible. SERCUL received this funding in 2015 and, in coordination with the five land managers and three community groups that form the *Hydrocotyle* Working Group, has been able to advance towards the point where eradication is within reach.

Critical aspects of this program have been:

- Working with all land managers to ensure entire infestation is treated at the same time to prevent reintroduction of *Hydrocotyle* into areas previously cleared.
- Controlling other vegetation such as *Typha* and other weeds to allow full access to all *Hydrocotyle*.
- Integrated weed management. Initial control of large rafts of *Hydrocotyle* with herbicide followed by monthly manual removal of small fragments of *Hydrocotyle* to prevent reinfestation and seeding.
- Mapping to ensure entire infestation is treated and reducing.


It is anticipated with this approach that *Hydrocotyle* will be completely eradicated from the Canning River catchment by 2020. This will be made possible by the next round of Swan Canning River Recovery funding.

Contact: Matt Grimby, SERCUL by [email](#).

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 0438 910 252 or [email](#).


Saturdays 8am–9am

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

Saturdays 8am–9am

 **Guided walks** with Friends of **Lake Gwelup**. Third Saturday of each month. Meet at Scout Hall Carpark (near the tennis courts), Huntriss Rd, Gwelup.


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–9am

 **Guided walks** and Friends of **Star Swamp**. Fourth Saturday of each month. Meet at the Henderson Environment Centre in Groat St, North Beach.

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. Contact Mary-Ann 9316 9716 or [email](#).


Saturdays 8.30am–10.30am

 **Bushcare activities** with Swan Estuary Reserves Action Group at **Alfred Cove** 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

 **Bushcare activities** with Friends of **John Forrest National Park**. Equipment, instruction and morning tea provided. Starting times and tasks change according to the season. Call Jan 0409 299 861 or [email](#).


Saturdays, Sundays 9am–12 noon

 **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, Decourcey Wy, Marangaroo.

Sundays 8am–10am

 **Bushcare activities** every Sunday with Friends of **Shenton Park** Bushland. Contact Dani 9381 3470 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 **Mirraboopa**. 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 the south end of Strickland St, Swanbourne. Gloves and tools provided. Call 0416 614 696 or visit [web](#).


Sundays 9am–11am

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

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. Phone Gerry 9293 2517 or email [Bridget](#).


Mondays 7am–8am

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


Mondays 9am–11am

 **Litter collection** with Swan Estuary Reserves Action Group at **Milyu Nature Reserve, South Perth**. Second Monday of each month. Contact Cathie 93392439 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 Nature Reserve** each Tuesday. Contact Cathie 93392439 or [email](#).

Tuesdays and Thursdays, 8am–10am


 **Coastcare activities** with **Stirling** Natural Environment CoastCare (SNEC). Contact Sheldon 0488 190 651, Rae 0419 191 710 or visit [web](#).

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 or [email](#).

 **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. Call Mike 0438 710 527.


Thursdays 8am–9am

 **Bushcare activities** every Thursday with **Byford** Enviro-Link. Call Johanne or 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. [Email](#) or visit [web](#).

Thursdays, Saturdays and Sundays 9am


 **Morning walks** with Friends of **Bold Park** Bushland Volunteer Guides. Various dates. Contact 9480 3996, [email](#) or visit [web](#).

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. Visit [web](#), [email](#) or 9291 3900.

 **Thursdays or Fridays 9am–4pm** **Wetland, bushcare and nursery activities** with **Cockburn Wetlands** Centre. Contact Denise 0412 081 540 or [email](#).

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. Call Pawel 0410 305 034 or [Facebook](#).


Fridays 8am


 **Bushcare activities** at **Piney Lakes**. Volunteers need a site induction. [Email](#).


Fridays 7.30pm

 **Talks** with **Eastern Hills** Branch of the **Wildflower Society**. Fourth Friday each month. Octagonal Hall, 52 McGlew St, Glen Forrest. \$2 entry visitors welcome. Also art and photography, propagation, excursions, open gardens, library and herbarium. Contact Cathy 0404 959 654 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 or less. Bookings essential. Visit [Web](#), [email](#) or 9291 3900.

 **Birdlife Australia** hold regular **talks** and **excursions** each month. [View](#) their calendar.

 **WA Naturalists** hold regular **excursions**, **photo groups** and **campouts** each month. [View](#) their calendar for activities at four branches.

 **Wildflower Society of WA** holds regular talks. [View](#) their calendar.


April


2 Sunday 8am


 **Birdwalk Ray Marshall Park**, Viveash. Meet carpark, end of First Ave, Woodbridge. [Birdlife WA](#).


6 Thursday 8am


 **Birdwalk Tomato Lake**, Kewdale. Meet small tearooms off Oats St, Kewdale. [Birdlife WA](#).


 **7 Friday 9.15am–12noon** **Managing significant native plant diseases of south west WA** a Perth NRM seminar on managing *Phytophthora* dieback and marri canker, Murdoch University. \$30, [bookings](#) essential. Contact Ingrid on 9374 3333 or [email](#).

 **7, 21 & 28 Friday, 6pm–7.30pm** **Nocturnal Woylie Walk**, Woodland Reserve, **Whiteman Park**. See native fauna in their natural environment under special night-lighting. Bookings essential, cost \$15 Adult, \$10 Child, Family (2A + 2C) \$45, see [web](#).

 **11 Tuesday, 12 Wednesday, 19 Wednesday** **Introduction to birds of prey**. School holiday [program](#) for ages 6–12 includes presentation and hands-on workshop on nature's top predators. Various locations in the City of Swan.

 **12 Wednesday 9.00am–11.00am** **Healthy Waterbirds, Healthy Lake** walk and talk for kids and parents. Meet at the kiosk **Tomato Lake**, Scenic Dr, Kewdale. No need to RSVP. [BS4Y](#).

 **12 Wednesday 9.00am–11.00am**

 **Healthy Waterbirds, Healthy Lake** walk and talk for kids and parents. Meet at the kiosk **Tomato Lake**, Scenic Dr, Kewdale. No need to RSVP. [BS4Y](#).


Registration/contact details

BS4Y Bush Skills 4Youth RSVP 9424 2216 or [email](#).

EMRC. Eastern Metropolitan Regional Council RSVP 9424 22016 or [email](#).

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

12 Wednesday 5pm–8pm

Bats fantastic night stalk, games and activities for the school holidays. Piney Lakes Environmental Education Centre, Leach Hwy, Winthrop. [Email](#).

12 Wednesday 7.30pm–9.30pm

Serventy Memorial Lecture: Living in a Biodiversity Hotspot Kingsley Dixon. Social Sciences Lecture Theatre, UWA, Crawley. \$20. Visit [web](#).

18 Tuesday 12 noon

Development, Integration and Utilisation of Havel Site-vegetation Types in the Southwest Forests talk by Dr J Havel and Dr E Mattiske. Keiran McNamara Conservation Science Centre, Parks and Wildlife, 17 Dick Perry Avenue, Kensington. Contact Danielle by [email](#).

19 Wednesday 9.45am–2pm

Magnificent Magpies and Dabbling Ducks workshop on bird ecology and tour of **Native Animal Rescue** facility, 170 Camboon Rd Malaga. Lunch provided. **BS4Y**.

20 Thursday 9am–12noon

Weeding and planting John Okey Davis Park, Gosnells. Meet at north eastern end of Windsor Drive.

21 Friday 9.30am–4pm

Seabird Conservation Forum on the threats and management strategies for four species of conservation dependent seabird, UWA, Albany campus. Contact Nic Dunlop 0409 014 030 or [email](#).

22 Saturday 9.30am–11.30am

The Good, the Bad and the Beautiful a short walk with Una Bell on the history of Bugle Tree Gully Park, development, conservation and the importance of riparian vegetation. **EMRC**.

29 Saturday 8am–9am

Guided walks and meeting with Friends of **Trigg Bushland**. Meet in car park on south side of St Mary's School (off Elliot Rd) Karrinyup.

29 Saturday 10am–2pm

Quenda Quest – Ecology, Habitat and Health bandicoot ecology workshop for families, **Kanyana** Wildlife Rehabilitation Centre, 120 Gilchrist Rd, Lesmurdie. Lunch provided. **BS4Y**.

29 Saturday 10am–3.30pm

Gardening with Natives NACC workshops in Geraldton and Seabird. [RSVP's](#) essential.

30 Sunday 9am

Planting with **Mullaloo Beach** Community Group, Key West Parking Station. Equipment and refreshments provided. [Email](#).

Please send us your July, August and September events by Friday 2 June 2017.

Highlights

Autumn's Aura a range of nature-based holiday activities for kids. Activities include bush walks, fossil finding, animal encounters, adventure caving, canoeing, Noongar stories and camping. Check out the calendar on the Nearer to Nature [website](#) or [email](#)

Conservation Volunteers.

Opportunities to participate in bushland restoration activities. [Website](#).

March–17 Monday April

Nature Diaries – Tuarts, Terns and Time art exhibition and events, **Bunbury** Regional Art Galleries. [Visit](#).

17 March –17 April

GeoCatch Ringtail Tally records counts of western ringtail possums in backyards, parks or schools. Check last year's [results](#) and register for 2017 with GeoCatch 9781 0111, [email](#) or [web](#).

March–May

Australasian Bat night events to raise the profile of bats, debunk myths and fears and achieve conservation outcomes. To locate or register events [visit](#).

11–21 April & 4–14 July

Rio Tinto **Earth Assist** school holiday program for students wanting volunteer conservation activities in Perth. Contact 9335 2777 or [email](#)

8 Saturday April 10am–3.30pm

Roots the second Bushfood Gardening Conference focussing on Australian

native bulbs, tubers and corms which can be used for food, The Grove Library, Peppermint Grove. [Registration](#), \$175 and [event discussion](#).

9 Sunday –16 Saturday April

Wild pollinator count help build the database of Australian wild pollinators by watching a flowering plant for 10 minutes and [counting native insects](#).

15 Saturday–17 Monday April

Jungka Jungka Woodlands Festival, Norseman. Three days celebrating the ecological significance of the Great Western Woodlands through traditional Aboriginal culture and the arts. [Visit](#).

Month of May

EcoMay where community groups across WA are hosting activities to enjoy nature, build awareness of special places, campaigns, their organisations and activate community members to get involved. The Conservation Council WA will promote your event. List your event on the [website](#) or contact Carolyn on 9420 7266 or [email](#).

11 Thursday May

Living Landscapes Conference with Perth Region NRM. Share your experiences and knowledge, latest technologies and research and celebrate on-ground achievements. Kalamunda Performing Arts Centre, 48 Canning Rd Kalamunda.

14 Sunday–20 Saturday May

Earthwatch eco-tourism expedition **Project Manta Ningaloo Reef**. [Visit](#).

24 Wednesday –25 Thursday May UAS4RS (Unmanned Aircraft Systems for Remote Sensing) Conference 2017, Hobart. [Registrations](#).

26 Friday May

Sharing Experiences in Environmental Practice, 2017 Environmental Practitioners' Workshop, Leederville Oval. [Visit](#).

16 Friday June

Banksia Woodland Management Workshop Keiran McNamara Conservation Science Centre, Parks and Wildlife, 17 Dick Perry Avenue, Kensington. Latest research, community management and project outcomes from Parks and Wildlife's Banksia Woodland Restoration Project. Contact Julia Cullity 9442 0320 or [email](#).

17 Saturday – 18 Sunday June

Gekkota Mundi world's first gecko specialist symposium. Esplanade Hotel, Marine Tce, Fremantle. \$260, [Registrations](#).

20 Tuesday – 23 Friday June

53rd Australian Society of Herpetologists Conference, Fairbridge Village, South West Hwy, Pinjarra. \$100–580, [Registrations](#) close April 20.

9 - 14 July 2017

12th International Mammalogical Congress, Perth Convention and Exhibition Centre, Perth, [Registrations](#).

May

13 Saturday 9am–2pm

Annual native plant sale with **Eastern Hills** Branch of the **Wildflower Society**, Octagonal Hall, 52 McGlew St, Glen Forrest. Prices mostly \$2-5, Eftpos available. Contact Cathy 0404 959 654 or [email](#).

18 Thursday 8am

Birdwalk Lake Monger, Cambridge between 2–3 hours. Meet at the most westerly car park off Lake Monger Dr. [Birdlife WA](#).

18 Thursday

Weeding and planting Homestead Park, Thornlie. Meet at Community Centre on Glenbrook Rd.

20 Saturday 9.30–11.30am

Cultural Workshop. Explore the traditional practices of indigenous people at Walyunga National Park. **EMRC**.

21 Sunday 8am

Birdwalk Beenup Swamp, Woodvale. Meet in carpark south side of Ocean Reef Road near the old buildings. [Birdlife WA](#).

21 Sunday 9am–2pm

Friends of **Kings Park plant sale** raising funds to support research and projects at Kings Park. Exhibition Ground off Fraser Ave, Kings Park. [Questions?](#)

June

9 Friday 7pm–8.45pm

An Evening with Jane Goodall famous ethologist and environmental activist. 'What separates humans from the other animals' a 20 minute lecture followed by a 40 minute conversation with the host. Perth Convention and Exhibition Centre, \$67–180. [Bookings](#).

11 Sunday 9am–12noon

Planting Wright Brook, Kelmescott. Meet near corner of Connell Ave and Brookside Ave.

15 Thursday 9am–12noon

Planting Fancote Park, Kelmescott. Meet at end of Pries Pl.

18 Sunday 9am–12noon

Planting Ranford Stream, Kelmescott. Meet Kevin Rd, Kelmescott Hills area.

19 Monday 8.30am

The Spectacles, Kwinana. Meet McLaughlan Rd carpark. [Birdlife WA](#).

25 Sunday 9am–12noon

Planting Mary Carroll Lake, Gosnells. Meet at Eudoria Reef car park.

25 Sunday 8am

Tom Bateman Reserve, Thornlie. Meet at playground/sports complex cnr Nicholson and Wilfred Rds. [Birdlife WA](#).

Learning opportunity

Volunteers wanted to survey birds

Birds Australia is looking for people to form a group and survey birds in the Great Western Woodlands this April and May 2017. Surveys consist of 25 Altas searches for 20 minutes each. Groups will need two four-wheel drive vehicles minimum, but efforts will be made to place those without a car or individuals. Birds Australia has nine areas needing to be surveyed regularly with Frank Hahn/Peak Charles and Karroun Hill as a priority. Contact Maris Lauva 0403 029 051 or [email](#).

Learn to survey birds and assist the Gondwana Link project annually monitor revegetation for ecosystem development. Free training provided 21–25 April at Chingarrup Sanctuary, 1–5 May at Porongurup Range, 22–26 May at Balijup Homestead. Camping and working on sanctuaries that form part of the Gondwana Link, is an opportunity to add to your practical skills and contribute to vital research. Register by [email](#).

Please send us your regional report (200 words) and a photo by Friday 2 June 2017.
Text may be edited in response to volume of submitted reports.

Students to assist in regional conservation *By Clemency Whittles*

"Thanks so much to Earth Assist! The teachers and students had a great day on Wednesday and the bush tucker trail is looking fantastic. We will take good care of the plants and send you an update later in the year". – Margaret Wilson, Bayswater Primary School.

Rio Tinto Earth Assist is a flexible and enriching program that educates students about the environment through outdoor activities, the world's natural living classroom.

Partnering with Rio Tinto, Department of Education, Parks and Wildlife and delivered by Conservation Volunteers Australia, it provides programs for school student of all ages.

Each year, Rio Tinto Earth Assist visits regional Western Australia to engage schools and educate students in remote areas in priority conservation work. In May, we are travelling to the Kimberley to engage schools in Broome and remote communities near Fitzroy Crossing, Purnululu National Park, Derby and Kununurra. Conservation projects will include native sensory gardens, marine debris surveys, erosion control and environmental management education. We also are running school holiday programs in Perth, check *Highlights* (page 7) for details.

Contact: Clemency Whittles, Conservation Volunteers Australia by [email](mailto:info@earthassist.org.au).



Richard McDowell of Conservation Volunteers Australia speaks to students from Bayswater Primary School about bush tucker. Photo – Conservation Volunteers Australia.

Win for the environment and its volunteers *By Christine Burtenshaw*



Local flora display set up at the new Armadale Settlers Common Field Study Centre. Photo – Kim Sarti.

In October 2016, the City of Armadale signed a Memorandum of Understanding with the City's environmental volunteers to create a permanent Environmental Centre at the Armadale Settlers Common Field Study Centre. The Field Study Centre is situated in the western portion of Armadale Settlers Common in Bedfordale.

This is a win for all parties. The Environmental Centre creates a 'spiritual home' for the different groups to meet and discuss important environmental issues. It also provides an opportunity for the groups to have an environmental library, herbarium, a central repository for their various awards and a location to display environmental awareness material. The City has dedicated and proactive environmental volunteer groups that undertake landcare projects in bushland reserves throughout the City. Representatives from the various groups have established a committee to oversee the running of the Environmental Centre including managing bookings for the use of the facility. The Committee has been successful with a submission to hold the WA Landcare Network's 2017 AGM at the Centre in April this year.

Contact: Environmental Services Department, City of Armadale 9394 5000.

Numbat rescue

By Eveline Masco

It's not every day you get to save the life of one of WA's state mammal emblems. Frankie, a baby numbat was rescued mid-September after becoming separated from his mother and is now thriving at Perth Zoo. His survival depended on the dedication of wildlife volunteers Jen Thompson and Laetitia Moritz, the knowledge of Parks and Wildlife staff and the passion and commitment of Project Numbat President Tamara Wilkes-Jones and specialist keepers at Perth Zoo.

Uralla Wildlife Sanctuary overseas volunteers, Jen and Laetitia got the call to rescue a baby numbat that had been found on the roadside near Perup after being separated from its mother. The little 64g critter refused offerings of termites so they gave him some milk they use to feed baby kangaroos, kept him warm and contacted Parks and Wildlife for more advice. With only 1000 numbats left in the wild, finding a baby numbat was greeted with great surprise.

It was Friday afternoon and Tamara was looking forward to a quiet night in front of the TV, watching footy with her husband when she got the call from Parks and Wildlife. They were straight into the car with a hot water bottle, a box and some towels for the four-hour drive down south. Early the next day the baby numbat was safely delivered to Perth Zoo where specialist keepers took over. Perth Zoo is the only place with the expertise to take care of baby numbats, with over two decades of breeding numbats to save them from extinction. 'We had to act quickly to give him every chance of survival' said Tamara Wilkes-Jones.

Contact: Eveline Masco, Project Numbat by [email](#) or [visit](#).



Wildlife volunteers Jen and Laetitia with Gunther from Project Numbat and zookeeper Renee meet up with Frankie one month after his rescue. By that time Frankie weighed over 150g and had changed his diet from special milk to termites with custard. 'He is massive' said Jen remembering how Frankie fit in the palm for her hand when they first saw him. 'And he has much more fur, especially on his tail' said Laetitia. Photo – Project Numbat.

New biocontrol tool for rabbits rolled out across the country

By Susan Campbell

For the first time in two decades, land managers have access to a new biological control tool to assist in the battle against pest rabbits. During early March 2017, individuals, community groups, land care organisations and other agencies participated in the national release of a new strain of rabbit haemorrhagic disease virus (previously called calicivirus) known as [RHDV1-K5](#). In WA there were 135 registered release [sites](#).

RHDV1-K5 is a naturally occurring variant of the original RHDV1 strain released 20 years ago and the new strain is anticipated to work better in wetter and cooler regions. No form of biological control provides a silver bullet solution. The biocontrol will be most effective when supported by integrated and conventional rabbit control methods.

Sue Metcalf from Chittering Landcare Centre said her area had seen significant rabbit activity in the past, with some sites devastated by rabbits.

"Rabbit numbers are low at the moment due to the RHDV2 virus that reached WA last year, but we expect the new RHDV1 strain will be just as effective in keeping numbers down," she said.

Members of the public are encouraged to report rabbit sightings and any signs of disease or dead rabbits and contribute to knowledge about the new biocontrol release by using the [RabbitScan](#) (FeralScan) app.

Contact: Susan Campbell, Department of Agriculture and Food by [email](#).

Funding opportunity

Swan Alcoa Landcare Program provides funding for Perth revegetation and rehabilitation activities in 2018. Keep an eye on the [website](#) for further details.

AMP Tomorrow Fund offering amazing Australians doing great things the chance to share in \$1 million in grants. [Applications open 3 April](#).

Churchill Fellowship offers the opportunity to travel overseas to investigate a topic of issue that you are passionate about. [Applications close 28 April](#).

Local Government community grants

These local governments provide small grants to their communities which can fund environmental groups' management and restoration projects. Eligibility varies. [Busseton](#) will close **28 April**, [Canning](#) will close **16 April**, [Cottesloe](#) will close **15 May**, [Harvey](#) will close **20 April**, [Joondalup](#) opens **6 March**, [Narembeen](#) will close **30 April**, [Rockingham](#) will close **5 May**.

State NRM Community Capability Grants

supports volunteers to improve their capability, governance and management performance. [Grants](#) are awarded until funds are allocated or the round closes **29 May**.

Australian Ethical Community Grants \$10,000 or \$20,000 for not-for-profit or registered charities based in Australia working for the benefit of people, the environment and/or animal welfare. [Applications close 31 May 2017](#).

Australian Bird Environment Foundation grants up to \$5000 for practical on-ground conservation activities for Australian birds. [Applications close 31 May](#).

Indigenous Grant for Bird Research and Conservation provides Birdlife Australia resources and training workshops on Important Bird Areas, bird identification and monitoring and on-ground conservation to indigenous groups. [Applications close 31 May](#).

Australian Geographic Society sponsors Australian adventurers, scientific and environmental research and community projects up to \$10,000. [Applications close 30 April](#).

Alcoa Sustainability Fund providing grants over \$5000 delivering sustainable community benefits in [Harvey](#) applications close **13 April** and [Waroona](#) applications close **5 May**.

Minara Community Foundation funds projects \$1000–\$100,000 in the northern Goldfields. [Applications close 7 April](#).

Aurizon Community Giving Fund \$1000–\$20,000 for environmental projects in Geraldton, Perth, Kalgoorlie, Esperance. [Applications close 28 April](#).

Norman Wettenhall Foundation small environmental grant scheme funds research and education projects in biodiversity conservation. [Applications open 21 March](#).

Rivers 2 Ramsar; Connecting River Corridors for Landscape Resilience at Lowlands Nature Reserve

By Megan Sheehan, Heidi Bucktin, Karl Brennan & Kate Brown

Lowlands Nature Reserve, located approximately 50km south east of Perth, has recently come under the management of Parks and Wildlife. Managed by the Richardson family for over 150 years, Lowlands contains 1310ha of intact remnant bushland and the Serpentine River. Threats to Lowlands include *Phytophthora* dieback, altered hydrological regimes on the riverine system, introduced weed species, invasive animal species, unmanaged access and potential impacts of wildfire. The Peel-Harvey Catchment Council provided funding that enabled significant work across the site as part of its \$3.5 million *Rivers 2 Ramsar: Connecting River Corridors for Landscape Resilience* project, funded by the Australian Government. With support from partners, Parks and Wildlife is implementing control measures as well as restoring areas of bushland and aquatic habitat to ensure the reserve's values remain intact.

On-ground works for the Rivers 2 Ramsar project took place between January 2014 and March 2017 achieving milestones of 30km of fencing, 1030ha of feral animal control, 1030ha of *Phytophthora* mapping and control, 81.5ha of revegetation including planting of 1000 dieback resistant jarrah seedlings, 148.5ha of weed control, and collection and establishment of a seedbank for the reserve. Lowlands has significant areas of mature banksia woodland (90 per cent of the reserve), an ecological community recently [listed](#) as threatened under Federal legislation. Its wetland vegetation along the Serpentine River contains herblands, sedgelands and shrublands and includes species rarely found on the Swan Coastal Plain such as the Lowlands creeper (*Parsonia diaphanophleba*) and maidenhair fern (*Adiantum aethiopicum*).

Mapping and control of weed species within Lowlands has focussed on infestations along the Serpentine River and within revegetation sites, targeting arum lily (*Zantedeschia aethiopica*), blackberry (*Rubus fruticosus*), bridal creeper (*Asparagus asparagoides*), cotton bush (*Gomphocarpus fruticosus*), freesia (*Freesia alba x leichtlinii*), black flag (*Ferraria crispa*) and watsonia (*Watsonia meriana*). An important outcome of the project has been continuing control of invasive species and planting native seedlings to increase refuge, breeding and food sources for native terrestrial and aquatic fauna that traverse the landscape.

Approximately 67,000 seedlings have been planted along the Serpentine River with species including flooded gum (*Eucalyptus rudis*), swamp paperbark (*Melaleuca rhaphiophylla*), pale rush (*Juncus pallidus*), *Lepidosperma persecans* and *Astartea fascicularis*. Degraded areas surrounding the Banksia Woodland have been revegetated by planting approximately 61,000 seedlings with species including marri (*Corymbia calophylla*), jarrah (*Eucalyptus marginata*), sheoak (*Allocasuarina fraseriana*), modong (*Melaleuca preissiana*) and tuart (*Eucalyptus gomphocephala*). The riverine system at Lowlands retains a diversity of freshwater fish including night fish (*Bostockia porosa*), marron and gilgie (*Cherax cainii* & *C. quinquecarinatus*), western minnow (*Galaxias occidentalis*), western pygmy perch (*Nannoperca vittata*) and Swan River goby (*Pseudogobius olorum*) and provides spawning grounds for the threatened Carter's freshwater mussel (*Westralunio carteri*), and priority pouched lamprey (*Geotria australis*). The river also provides important habitat for threatened mammals including rakali (*Hydromys chrysogaster*) and quenda (*Isoodon obesulus* subsp. *fusciventer*).



Project partners Peel-Harvey Catchment Council, Parks and Wildlife and representatives from the Richardson family get together following the Peel-Harvey Catchment Council's 2016 Annual General Meeting which included a guided tour of activities completed as milestones of the Rivers 2 Ramsar Project at Lowlands Nature Reserve. Photo – Roz D'Raine.

Introduced fauna including foxes (*Vulpes vulpes*) and cats (*Felis catus*) are a threat to native fauna within Lowlands, with 1080 fox baiting carried out as a milestone of the project.

Recent dieback interpretation has shown that while *Phytophthora cinnamomi* is present, much of the reserve remains uninfected. A Hygiene Management Plan to guide future works has been developed and four dieback vehicle wash-down bays have been installed along major access tracks within the reserve in order to protect the dieback-free area. Dieback signage has also been installed at the wash-down bays and along access tracks in order to provide advice on hygiene protocols to staff and contractors undertaking works within the reserve.

Peel Harvey Catchment Council Chairman Andy Gulliver said, "We are so pleased to be able to fund this important work. Lowlands is a jewel, one of the largest intact areas of bushland left on the Swan Coastal Plain in our region and we welcome the partnership with Department of Parks and Wildlife to protect this patch. The regional delivery model provides a powerful example of government working closely with community to provide results that neither could achieve alone."

Contact: Megan Sheehan, Parks and Wildlife, 9303 7750 or [email](#).

Further reading:

Floristics of Lowlands: part X in the series Floristics of reserves and bushland areas of the Perth region (System 6) / by Keighery, B.J., Keighery, G.J. and Gibson, N.

Klunzinger, M.W., Beatty, S.J., Morgan, D.L., Allen, M.G. & Lymbery, A.J. (2011). Ecology of aquatic fauna in the Serpentine River in response to land use practices & recommendations for improving freshwater ecosystem health. Murdoch University, Centre for Fish & Fisheries Research, [Report to Lowlands Conservation Association, Serpentine River Group and the Government of Western Australia](#)

Friends of John Forrest National Park *By Jan King*

In its current form, the Friends of John Forrest National Park began in 2009 in the Priest Creek Catchment in the south-west section of the park. About 10 years previously a friends group had been active, but circumstances brought their attempts at controlling watsonia to a halt and the watsonia happily spread. A couple of "flatlanders" who had been working with the Mount Henry Peninsula Conservation Group for about 20 years moved up to the hills on the border of John Forrest National Park in their retirement. They could not bear to see the iconic John Forrest National Park succumb to a take-over by weeds.

Consultation with staff at Parks and Wildlife resulted in the provision of herbicide, backpack and garden spray equipment to the Friends. *Watsonia meriana* was chemically treated, hand-dug and flower/seed heads removed in areas nearby Throssell Road and near catchments of creek lines and at the source of Priest Creek tributaries. Parks and Wildlife then came with a 400L rig to spray large areas where watsonia dominated and the results were dramatic. Those areas have now regenerated with native vegetation. Follow-up backpack control by the Friends group has prevented watsonia re-establishing. Many woody weeds have been removed, and herbaceous weeds tackled as they arose in many areas of John Forrest National Park.

By 2010, a 300 litre spray rig with 100 metres of hose, mounted on a trailer towed with the park's Kubota buggy was made available to the two volunteers. Areas along and beyond firebreaks could now be tackled. Then in 2011, a 400 litre Quickspray® rig mounted on a tandem trailer with dual hoses and remote control rewind was made available. By joining hoses to give a length of 600 metres, remote infestations of watsonia down steep, rocky, heavily vegetated valleys were reached. About 50,000 litres of various herbicides to control weeds has been applied since 2009 with no observable off-target damage. Monitoring has shown that the bush soon regenerates and clumps of corms deteriorate. An added bonus was finding and reporting several previously unknown populations of the threatened wild native rose (*Diplolaena andrewsii*) among wandoo trees in remote rocky outcrops.

From 2013, three successful applications were submitted for State NRM Community Action Grants with Jane Brook Catchment Group as sponsor, for a contractor to work on watsonia from 2014 through to 2017. This enabled management of further areas between Park Road Scenic Drive and the Heritage Trail, and this year, the western sector north of Rocky Pool. Concurrently a three-year Perth NRM Resilient Landscapes Grant has been obtained by Jane Brook Catchment Group for a major ecology project along the Heritage Trail, for which Friends of John Forrest National Park have made a major volunteer in-kind co-contribution (see page 2).



Val English, Jan King and Liz Middleberg removing Lavender. Photo – Cathy Levett.



Joe King spraying heavy infestations of Watsonia. Photo – Jan King

Work has proceeded from Clutterbuck and Mahogany creeks in the east, along Jane Brook as far as Pechey Road in the west and has included the old Hovea Station site, and around the picnic and tavern area.

Records and GPS photo points had been kept from the outset, but the grant criteria prompt substantial administration input, so brochures, invitations and newsletters have been produced. Regular community involvement has increased from two to 12, with weekly Bush Care Days each Saturday morning 8am to 10am, finishing with morning tea, from July through November. Our willing members are variously and professionally skilled, contributing with expertise in wildflower identification, chain sawing, youth work, ecology and electronic device application use. The future looks bright for the natural regeneration of John Forrest National Park in the care of this sound Friends group.

Contact: Jan & Joe King, Friends of John Forrest National Park by [email](mailto:jan@johnforrest.org.au)

Resources

New publications

30 Years of Urban Environmental Volunteering in Western Australia – Friends of Brixton Street Wetlands, Kenwick – Glimpses and Insights.

Dhakai, P. Subas, *Friends of Brixton Street Wetlands*, 2016. \$22 plus postage.

This book utilises conservation photography as a tool to appreciate the environmental volunteering of the Friends of Greater Brixton Street Wetlands. The photographs illustrate the main features, seasonal changes, and fauna, flora and fungi found within the wetlands as well as the history and accomplishments of the Friends group. [Email](#) the Friends to purchase.



A Global Compendium of Weeds. Randall, RP. Third edition. *RP Randall*, 2017. [Free download](#). Data for over 40,000 weeds are listed in genus, species order and record a risk score, preferred climate, dispersal and references for the species behaviour as a weed.

Bush Heritage Australia: restoring nature step by step

Martin, Sarah. *Sydney: New South Publishing* 2016. \$40. Bush Heritage Australia is on a mission to own or manage one per cent of Australia for nature conservation by 2025. Started by Bob Brown in 1991, Bush Heritage was born from an urgency to protect pristine land from logging. Twenty-five years later, with more than one million hectares across Australia in its care, Bush Heritage's achievements are celebrated in this book.

Central to this story are the ecologists, researchers, land managers, local Indigenous groups, staff, donors and a brigade of volunteers who have helped the organisation to thrive.

Running out: water in Western Australia.

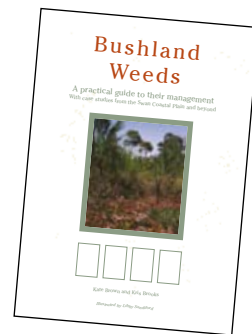
Morgan, Ruth A *UWA Publishing*, 2015. \$35.00 Ruth Morgan explores Western Australia's fear of running out of water - a fear that has long concerned the region's inhabitants and loomed large on the State's political agenda. It has shaped how urban and rural Western Australians learned to live with the effects of a variable climate on their water supply, lifestyle, and livelihood. An engrossing environmental history that offers a new understanding of the past, this book questions this way of life as we approach an uncertain future in a drying climate.

Banksia woodlands - A restoration guide for the Swan Coastal Plain

Stevens, Jason C, Rokich, Deanna P, Newton, Vernon J, Barrett, Russell L and Dixon, Kingsley W. *UWA Publishing*. 2016. \$45. Using a restoration science approach, the guide integrates concepts such as restoration target definition, genetic guidelines, seed-plant-soil interactions and their practical application to assist banksia woodland restoration activities and decisions.

Website Watch

Bushland Weeds A practical guide to their management with case studies from the Swan Coastal Plain and beyond Brown K and Brooks K *Environmental Weeds Action Network* 2002 has found a [new home](#) on the Urban Nature web page.



This [video](#) gives a window on the work of volunteers at **Kanyana Wildlife Rehabilitation Centre**.

Wildlife Watching in Perth Region [blog](#) by WA naturalist Ry Beaver.

Lookout for

Pelicans *By Gary Tate*

At this time last year I was cycling around Lake Monger and witnessed a water bird feeding frenzy. Firstly I noticed a very large flock of blue-winged shovelers, frantically feeding. Then I observed a huge flock of pelicans, over 200, also in a feeding frenzy. They moved fairly close to the shore and I was able to take a good number of photos. On viewing the images at home, I could see that they were feasting on what appeared to be feral carp. This lucky pelican has five carp! Not bad even when you have the bird world's largest beak. I guess we could say they are 'carp pet cleaning'.



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