bushlandnews urban nature



Issue 85

Swan Weeds

Autumn 2013

Time of Bunuru and Djeran in the Nyoongar calendar.

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www.dec.wa.gov.au

Connecting to country and maintaining Aboriginal culture

By Rozanne van der Heijden

In November 2012 Aboriginal people received legal entitlements, through amendments to the Conservation and Land Management Act 1984 (CALM Act) and Wildlife Conservation Act 1950, to access Department of Environment and Conservation (DEC) managed lands and waters to conduct traditional activities for customary purposes.

The ability to carry out cultural activities on country is an important part of Aboriginal culture and connection to the land. The amendments are the result of DEC working with Aboriginal people over many years, the growing understanding of the intrinsic connection between Aboriginal people and country, and recognition of the need to protect and conserve the value of the land to the culture and heritage of Aboriginal people.

The amendments enable Aboriginal people to undertake customary activities such as:

- collecting and eating food customarily eaten by Aboriginal
- preparing and using medicine customarily used by Aboriginal people
- engaging in artistic, ceremonial or other cultural activities customarily carried out by Aboriginal people
- activities incidental to achieving the above, such as using water and other natural resources such as ochre, stones and soil for ceremonies.

Any activity undertaken for commercial purposes is not considered customary and not permitted under the new entitlements.



Martu people Yuwali Nixon, Yanjimi Rowlands and Thelma Judson search for womala, bush tomato, in Karlamilyi National Park. Photo – Alison McGilvray

Aboriginal people have been permitted to take plants and animals anywhere in the state for food for themselves and their families, without having to seek a licence, since the Wildlife Conservation Act 1952 came into effect. The amendments now enable Aboriginal people to take plants and animals in nature reserves for medicinal, ceremonial and artistic purposes.

The CALM Act regulations can limit access in certain cases, especially where safety is a concern or where there may be significant impacts on the protection of plants and animals.

Aboriginal people can access most areas with vehicles, but there are restrictions regarding accessing wilderness areas or disease risk areas. In these cases, the Aboriginal person will need to get written permission from the local DEC office. Aboriginal people will also need permission to gather threatened plants and animals.

The regulations are, however, also dependent on ongoing 'local area arrangements'. These arrangements will be established between DEC

region and district offices and the local Aboriginal communities and families who would be undertaking the activities in that area. These arrangements will facilitate joint learning and joint management of local conservation values.

The department is running training programs for authorised officers who will be giving the written permission and who will also be part of the local area arrangements. Rangers will also receive training about the amendments, as well as a refresher course on cultural awareness.

A range of communication products were developed to help DEC staff, Aboriginal people and the community to understand the amendments and their impact. A brochure was developed and distributed to the Aboriginal community, and a more detailed online booklet is also available. More information, including copies of the brochure, a FAQ sheet and the online guide can be found on DEC's website at www.dec.wa.gov. au/aca





Swan Weeds: information on the Swan Region's major environmental weeds By Julia Cullity

The Swan Weeds Database, available on the FloraBase website, provides weed management notes for 332 serious environmental weeds of the Swan Coastal Plain and Darling Scarp and Plateau. The weed management notes contain the most current information available on biology, ecology and methods to control some of the region's most serious established and emerging environmental weeds.

There are two ways to access Swan Weeds Database. A full list of the weeds by family is available at http://florabase.dec.wa.gov. au/weeds/swanweeds/. Activate the plant profile link; it's an icon in the shape of a leaf. Another way is to search FloraBase for your species of interest and then navigate to the plant profile. The weed management notes are additional to the descriptive information, distribution map and photos that normally make up the profile. They highlight ecological impacts of the weed and interesting biology such as ability to hybridise, fire response, ability to change soil chemistry, methods of dispersal, vegetative reproduction and seed biology, and include information about place of origin and introduction. Control information is given to help manage these weeds in bushland and wetland situations

and a management calendar is supplied. All information is referenced.

The web-based delivery of information allows Urban Nature to update the weed management notes as new information comes to hand. Over the past year updates have been made to a number of species including Watsonia meriana, Watsonia meriana var. bulbillifera, Carpobrotus edulis, Euphorbia terracina and Asphodelus fistulosus.

The project is a collaboration of DEC's Urban Nature program and the WA Herbarium. Funding was made available through the 2006–08 Invasive Species Project administered by the Perth Region NRM and funded through the federal government's Natural Heritage Trust and as a Specific Nature Conservation Project 2009-10 funded as a targeted investment by DEC.

So spread the word to bushland managers and update your knowledge on weed management. Visit http://florabase.dec. wa.gov.au. If you have questions or know of additional information or references that could be included in the management notes for particular species contact kate.brown@dec.wa.gov.au.



Weedy pigface (Carpobrotus edulis) germinating post-fire at Paganoni Swamp. Recent research at Paganoni Swamp has indicated fire can facilitate germination and establishment of the species in tuart-banksia woodland. Photo – Kate Brown

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Current and archived issues of Bushland News are available at www.dec.wa.gov.au/ programs/urban-nature/index.html.

Winter Bushland News

Winter Bushland News contributions should be sent to Urban Nature at urban.nature@dec.wa.gov.au by

Thursday 23 May 2013.

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

This publication is available in alternative formats on request.



The Society for Ecological Restoration Australasia Conference was held in Perth in November 2012. As well as presenting papers at the conference the Urban Nature team also led a postconference field trip. A large contingent of South Australians participated in the field trip and they were particularly impressed that Perth still has such large areas of intact bushland supporting an amazingly diverse range of plant communities, flora and fauna so close to the city. We visited restoration sites in banksia-tuart woodlands, seasonal clay-based wetlands and marri woodlands on the eastern side of the coastal plain. Here participants discuss the impacts of fire and grazing on banksia-tuart woodland. Photo - Mark Ellis

@ All material copyright DEC on behalf of the State of Western Australia 2013. No part of the contents of the publication may be reproduced without the consent of the publishers. The views and opinions expressed in the articles in Bushland News are those of the authors and do not necessarily reflect those of the Department of Environment and Conservation. Invasion of tuart woodland by South African pigface (Carpobrotus edulis): the role of freeways and fire

By Kate Brown

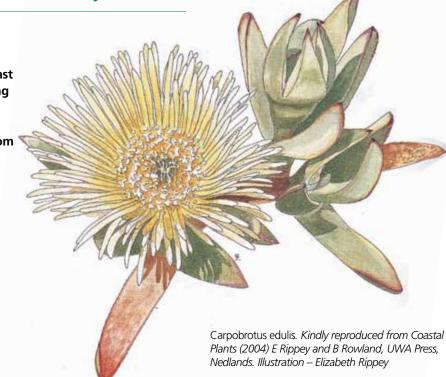
Pigface (Carpobrotus edulis) was introduced into Western Australia from South Africa early in the last century. Recent observations suggest it is spreading eastwards from Perth's coastal areas and fire can facilitate invasion. Introduction of this weed into Paganoni Swamp Reserve may have originated from nearby freeway plantings.

The species is naturalised in Mediterranean ecosystems around the world and is particularly invasive in coastal habitats. Around Perth, tuart-banksia woodlands appear to be particularly susceptible; however, recent observations suggest it is also establishing and spreading in bushland away from the coast including banksia woodland on Bassendean sands and in shrublands on the heavier soils on the eastern side of the Swan Coastal Plain.

Pigface is a succulent mat-forming perennial capable of directly smothering native flora, suppressing regeneration and outcompeting and/or hybridising with native *Carpobrotus* species. Where it becomes established in bushland it forms impenetrable mats that break down over time, increasing soil organic matter, altering nutrient dynamics and so facilitating the invasion of other weeds.

Pigface reproduces primarily by seed and the fleshy fruits are dispersed by rabbits, rats, birds, wallabies and other mammals. Work in coastal dune vegetation in California has found that fire can facilitate germination of seed and establishment of pigface in otherwise undisturbed vegetation. Recent work in the tuartbanksia woodlands at Paganoni Swamp studying the response of the flora of tuart woodland to an autumn prescribed burn indicates that similar processes may be operating on the Swan Coastal Plain. A series of plots established in burnt and unburnt areas in the first spring following the burn indicated weedy pigface seedlings were present only across the burnt area.

Three years prior to the burn there had been quite extensive plantings of pigface just outside the boundaries of Paganoni Swamp along the Perth to Bunbury freeway as part of a bank stabilisation program.



With few adult plants in unburnt areas within the reserve, it is probable seed that germinated post fire had been bought into the reserve by birds and mammals. One likely source is the freeway plantings.

Pigface is still an emerging weed on the Swan Coastal Plain that will have serious impacts as it becomes more widespread. Raising awareness among bushland managers that fire can facilitate invasion is going to be important in preventing it becoming established in large areas of undisturbed tuart-banksia woodland like those at Paganoni Swamp. Avoiding its use in freeway and other amenity plantings as well as replacing existing plantings with less invasive species is also going to be an integral part of any strategy to protect bushland on the Swan Coastal Plain from yet another South African invader.

More information

Carpobrotus edulis (L.) N.E.Br. http://florabase.dec.wa.gov.au/browse/profile/2795 In: Brown, K.L. and Bettink, K.A. (2009–) Swan Weeds: Management Notes, FloraBase–The Western Australian Flora. Department of Environment and Conservation. http://florabase.dec.wa.gov.au/weeds/swanweeds/

2013 Great Cocky Count – Sunday 7 April at sunset

Every April, the Great Cocky Count (GCC) counts as many Carnaby's cockatoos as possible across WA on a single night. This year the GCC is on Sunday 7 April. It's a very easy survey, simply counting all cockatoos flying into their night-time roosting trees at a specific place. It only takes an hour, starting half an hour before sunset. For more information and to register as a volunteer visit www.birdlife.org.au/carnabys/ great-cocky-count.

We need to find more night roosts for all black cockatoos. For more information about the GCC or to tell us about a roost site, contact Tamara Kabat on 9287 2204 or 0457 333 177 or greatcockycount@birdlife.org.au.

econotes

In muddy waters — our freshwater mussel By Michael Klunzinger

South-west Australia's only known species of freshwater mussel (Westralunio carteri) was the subject of a PhD study completed in 2012 at Murdoch University. The distribution, biology and conservation status of Carter's freshwater mussel were the focus of this research.

A two-year analysis of reproduction in W. carteri from the Canning and Collie rivers showed the species breeds seasonally—spawning in late winter, breeding in spring and releasing glochidia (parasitic larvae) in late spring to early summer. Upon release from females, glochidia attach to the fins of mostly native freshwater fishes such as freshwater cobbler (Tandanus bostocki). The research included a quantified analysis of glochidia host fish use from 18 rivers throughout the south-west. Interestingly, goldfish (Carassius auratus) rejected glochidia attachment and did not support the mussel's life cycle. The parasitic glochidia stage lasts for 3–4 weeks and then the young detach from the fish and begin life in the sediments. The mussel is ready for breeding within 3–4 years after detachment.

Growth rates and ages-at-length were really variable between the five populations studied. For example, W. carteri from two different systems (one, a well-shaded forest habitat and the other a nutrient-enriched open drain) were as much as 10 years difference in age even though they were the same size! Growth lines on the internal sections of shells were confirmed as being one year's worth of growth and ages ranged from 1+ to at least 51 years of age.

Salinity intolerance

A comprehensive assessment of W. carteri distribution in relation to environmental variables of habitat, water quality and land use was studied. Four quantified laboratory experiments indicated W. carteri was intolerant of salinity concentrations above 1.9–3.0 g/L and did not manage to withstand drying for more than five days without adequate shade and sediment moisture. The pattern of distribution of W. carteri was best explained by factors which affected salinity and the presence of year-round water resources. W. carteri were absent from systems where average salinity was above 1.5 g/L. (Remember sea water has a salinity of 35 g/L.) Salinity, drying, physical destruction of habitat, feral pig predation and sedimentation were found to have caused localised mortalities of up to 100 per cent in areas as long as 8.5 km and as much as 0.01 km wide. Salinity is by far the largest cause of decline, and several salinised systems throughout the south-west no longer support the species.

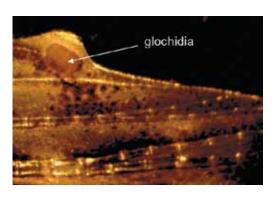
Assessing conservation status

W. carteri is a Priority 4 species under the Wildlife Conservation Act 1950 (WA). A recent review of the criteria for conservation assessment under the Act highlighted that we still do not have enough data to meet many of the conservation assessment criteria.

For example, although the species' 'Extent of Occurrence' has declined by 63 per cent in the past 50–100 years, we do not know the figure for the past 10 years. We currently do not have enough population data to calculate species generation length across the range of habitats and geography, nor do we yet have adequate population estimates for abundance and recruitment. Although research on the importance of



A selection of Carter's freshwater mussel shells from Waychinicup River. Photo - Julie Robert



Glochidia of Carters freshwater mussel attached to the fin and encapsulated in a cyst of a Swan River Goby (Pseudogobius olorum). Photo – Michael Klunzinger

freshwater mussels in ecosystems has been underway in Europe and the USA for more than a decade, Australia lags behind. There is still plenty of work to do to improve our knowledge of this species and as its current Schedule 4 listing (P4) states, the species is "in need of monitoring".

More information

Morgan D L, Beatty S J, Klunzinger M W, Allen M G, Burnham Q F (2011) A Field Guide to Freshwater Fishes, Crayfishes and Mussels of south-western Australia. South East Regional Centre for Urban Landcare (SERCUL) and Murdoch University, Perth.

www.musselwatchwa.com

Ash-grey mouse By Tracy Sonneman

A recent DEC survey of Boonanarring Nature Reserve, north of Gingin, has revealed a persisting population of ash-grey mice (Pseudomys albocinereus). As one of only a few native mice species still found in the southwest of Western Australia, the presence of this native is indicative of the resilience of this species in areas of suitable and appropriately managed habitat.

Arriving on our shores some 1.15–5 million years ago, the ash-grey mouse is considered to be an 'old endemic'. It inhabits low heath and shrubland vegetation on sandy soils in south-western WA. This nocturnal rodent is mainly herbivorous but includes arthropods in its diet during summer.

While the ash-grey mouse is not listed as threatened, its distribution on the Swan Coastal Plain has declined due to threats such as residential development of coastal areas. In other parts of its range, declines are thought to be due in part to conversion of land to agricultural use. Although recorded in multiple locations on the northern Plain in the 1970s, extensive vertebrate surveys by DEC on conservation estate between the Swan and Moore rivers in the late 2000s did not locate any individuals.

The persistence of the ash-grey mouse at Boonanarring Nature Reserve may be attributed to the large intact size of the reserve (9,250 ha) which buffers threats including frequent fire, habitat degradation and predation by introduced predators such as the fox and cat. These threats are likely to have caused local extinction of the ash-grey mouse in smaller urban and peri-urban reserves. It is thought that Boonanarring's size and diverse flora ensures adequate suitable habitat for the ash-grey mouse.

For more information contact Tracy at tracy.sonneman@dec.wa.gov.au or 9423 2924.



Ash-grey mouse (Pseudomys albocinereus) captured at Boonanarring Nature Reserve. Small (25-36 g) with pink paws and silvergrey fur above and white below, it has a pale tail with pigmentation near the base that distinguishes it from the native western mouse (Pseudomys occidentalis). Photo – Karen Bettink

Aquatic weed alert By Julie Robert

Staff from the South East Regional Centre for Urban Landcare have noticed an increase in invasive aquarium plants being found in the waterways and wetlands surrounding Perth.

In July 2012, the aquatic weed water hyacinth (Eichhornia crassipes) was found in Bannister Creek for the first time. This discovery raised the alarm for local community groups as extensive riverine restoration has occurred downstream of this highly invasive species.

In January 2013, a new weed, Amazon frogbit, also known as South American sponge plant (Limnobium laevigatum), was found in the Liege Street Wetlands in Cannington. The arrival of this plant into a Perth wetland/waterway has sparked serious concern as to how these aquarium plants are increasingly appearing in Perth's natural waterway systems.

Many of these potentially serious invasive weeds are sold as aquarium and pond plants and it appears that they may be being disposed of by residents, either directly into our waterways, or indirectly through the storm water drainage system, which leads to natural wetlands and waterways.

These weeds have the potential to overtake rivers, creeks and wetlands and cause detrimental effects to existing wildlife and flora. The potential cost of such an invasion by this new weed is significant and a substantial effort is now required to eradicate this new invasive. Community and all waterway workers need to be extra vigilant in inspecting nearby waterways and wetlands for any signs of this new invasive weed.

For more information contact Julie at julierobert@sercul.org.au or 9458 5664. Visit www.sercul.org.au to download a species information sheet.

Creating new flora and fauna habitats on the Swan Coastal Plain

By Mark Brundrett

DEC's Banksia Woodland Restoration Project is aiming to restore natural banksia woodland in areas formerly dominated by weeds, and to improve habitat for wildflowers and native animals in existing areas of banksia woodland in the Perth metropolitan region.

This restoration work is a result of the federal government's requirement for Jandakot Airport Holdings Pty Ltd to offset the impacts of clearing banksia woodland. Restoration works aim to re-establish self-sustaining local provenance native vegetation, with the eventual aim of incorporating these areas into adjacent nature reserves and Bush Forever sites. A major component of this offset is to create and restore habitat for the endangered Carnaby's cockatoo (Calyptorhynchus latirostris) and grand spider orchid (Caladenia huegelii).

There are two main restoration sites of 11 ha at Forrestdale Lake and 39 ha at Anketell Road in Jandakot Regional Park. Topsoil translocated from Jandakot Airport was spread over 16 ha of these sites in 2012. Weed management, preliminary planting of nursery-raised seedlings and direct seeding were also carried out last year. BirdLife Australia volunteers helped restore habitat for Carnaby's cockatoos by planting banksia seedlings and other native plants at these sites. Planting will continue at both sites in 2013. Direct seeding trials conducted in collaboration with Greening Australia WA in 2012 were successful, so larger areas will be seeded in 2013 and 2014.

Scientific trials established in collaboration with Murdoch University are also underway to investigate the best methods for restoring banksia woodland to maximise biodiversity and survival

For more information contact Mark at mark.brundrett@dec.wa.gov.au or 9423 2955.

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

Bushcare activities with the Mt **Henry** Conservation Group are on the fourth Saturday of each month. Email Jan.King@acquinas.wa.edu.au.

Saturdays 15 minutes before sunrise

Research into bird populations with the Herdsman Lake Bird Banding Group. Contact Bill Rutherford (ABBBS Coordinator) on 0438 910 252 or calidris@iinet net au.

Saturdays 8am-9am

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

Saturdays 8am-9am

Guided walks and meeting with Friends of Landsdale. First Saturday of the month. Meet at third gate Landsdale Rd, east of Landsdale Farm School, Darch.

Saturdays 9am

Bushcare activities with Friends of Brixton Street Wetlands. Third Saturday of the month. Meet Alton St, Kenwick. Contact Regina 9459 2964 or tjdrd@bigpond.net.au.

Saturdays, Sundays 9am-12 noon Koala maintenance at Yanchep National Park. Call Ciara 9303 7771.

Sundays 9am-11am

Work morning with Wilson Wetlands Action Group. First and third Sunday of the month. Contact WWAG 9258 7301 or wilsonwetland@gmail.com.

Sundays 8am-9am

Guided walks with Friends of Marangaroo. Fourth Sunday of the month. Meet at Gate 3, Decourcey Way.

Sundays 8am-10am

or bojel@it.net.au.

Bushcare activities every Sunday with Friends of **Shenton Park** Bushland. Contact Dani 9381 3470

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 s3mmatthews@ hotmail.com.

Sundays 8.30am-9.30am

Guided walks followed by meeting with Friends of Mirrabooka. First Sunday of the month. Call Jan 9344 2872.

Sundays 9am-11am

Bushcare activities with **Cottesloe** Coastcare. First Sunday of each month. Contact COTT.

Sundays 9.45am-12 noon

Bushcare activities with Friends of Piesse Brook. Third Sunday of each month. Contact Gerry 9293 2517, bhogarth@ozemail.com.au, linda@johnstanley.cc.

Sundays 9am-12 noon

Bushcare activities with Friends of the Spectacles (Kwinana). Third Sunday of each month. Contact Lynda Smith on 9439 1928 or outback3@iinet.net.au.

Mondays 8.30am-10am

Bushcare activities with Friends of Mary Carroll Lake (Gosnells). Volunteers also work the fourth weekend of each month. Call Unice 9398 71269 or unicerobinson@gmail.com.

Mondays, Wednesdays, Fridays 9am-12 noon

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

Thursdays 8am-9am

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

Thursdays 9am-2pm

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

Thursdays 9am-11am **Bushcare activities** at

Baldivis Children's Forest. Fourth Thursday of the month. Contact Jo 0410 341 087 or jo.tregonning@education.wa.gov.au.

Conservation Volunteers activity schedule. Free one-day local activities or overnight country trips. Call Jodi 9335 2777 or visit www.conservationvolunteers.com.au.

Coastal planting in winter. Contact Cambridge Coastcare at www.cambridgecoastcare.com.au and Joondalup Community Coastcare Forum at www.joondalupcoastcare.com.

April

6 Saturday, 11 Thursday, 21 Sunday 9am

Guided walk with Friends of Bold Park Bushland Volunteer Guides. Contact FBP.

9 Tuesday 8pm Plants of Ravensthhorpe and Fitzgerald River with quest speaker Merle Bennett. Contact WSWA(P).

13 Saturday 9am-12 noon

Cockatoo Cluedo, Gooseberry Hill Hall. Identify the feeding signs of our three cockatoo species and learn how to do a qualitative feeding survey. BBQ lunch provided. Contact BSFH.

23 Tuesday 7.30pm

Drought mortality in the southwest and banksia woodlands with guest speaker Ray Froend. North Beach. Wildflower Society of WA. Contact Christine 9447 2983.

May

3 Friday 7.30pm

Goodale Sanctury with guest speaker Bob Goodale. Contact WA Nats(P).

4 Saturday, 9 Thursday, 19 Sunday 9am

Guided walk with Friends of Bold Park Bushland Volunteer Guides. Contact FBP.

7 Tuesday 6.30pm (arrive 6pm)

Are we losing our endemic sense of place? Guest speaker Glenn Allbrecht looks at population growth and impacts on biodiversity. Urban Bushland Council. City West Lotteries House, Delhi St, West Perth.

14 Tuesday 8pm

NatureMap with guest speaker Paul Gioia. Contact WSWA(P).

18 Saturday 9.30am-12 noon

Native tree decline workshop, Gooseberry Hill Hall. A focus on the decline of marri (Corymbia calophylla). Contact BSFH.

19 Sunday 8.30am-12 noon

Native plant sale with the Friends of Kings Park. A rare chance to buy unusual native plants. Funds raised support projects and research in Kings Park and Botanic Garden. Visit www. friendsofkingspark.com.au.

19 Sunday 9.30am-12.30pm

Insects and vegetation in Talbot Road Bushland Reserve with guest speakers Fred and June Hort. Salisbury Rd, Swan View. Contact Jan Lynn 9374 0548.

24 Friday 7.30pm

Nocturnal walk, Star Swamp Bushland. Meet at Henderson Environment Centre, North Beach. Bring a torch. Contact Christine 9447 2983 or www.friendsofstarswamp.org.

25 Saturday 9am-11am

Guided walk at Manning Park. Includes morning tea. Contact CoC.

26 Sunday 2pm

Planting at Tom Simpson Park, Mullaloo. Contact MBCG.

27 Monday 9am-12 noon

Planting at Cottesloe Native Garden, corner Broome and Jarrad Sts. Morning tea provided. Contact COTT.

31 Friday 9am-12 noon

Planting at Napier Street foredune, **Cottesloe**. Morning tea provided. Contact COTT.

June

1 Saturday 9am

Planting at Korella St, Mullaloo beach access path. Contact MBCG.

1 Saturday, 13 Thursday, 16 Sunday 9am

Guided walk with Friends of Bold Park Bushland Volunteer Guides. Contact FBP.

7 Friday 7.30pm

Pseudoscorpions with guest speaker Mark Harvey. Contact WA Nats(P).

8 Saturday 9am-3pm

Coastcare planting at Kwinana Beach. Contact CC.

9 Sunday 2pm

Planting at West View Bvd, Mullaloo coastal car park. Contact MBCG.

Activities key



Hands on – bushland and wetland management activities.

Walks and tours - look, listen and enjoy guided walks and excursions.





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

Registration/contact details

BSFH Bush Skills for the Hills Bookings 9424 2216 or environment@emrc.org.au.

CC Coastcare Contact craig.wilson@kwinana.wa.gov.au.

CoC City of Cockburn Bookings 9411 3444 or 'events' at www.cockburn.wa.gov.au.

COTT Cottesloe Coastcare

Visit www.cottesloecoastcare.org or contact Robyn on 9384 7668 or info@cottesloecoastcare.org.

FBP Friends of Bold Park. Bookings 9480 3996 or friendsbp@bgpa.wa.gov.au or www.bgpa.wa.gov.au.

MBCG Mullaloo Beach Community Group Contact Sharon McArthur smcarthur63@gmail.com.

WA Nats(P) WA Naturalists Club (Perth) Hew Roberts Lecture Theatre, UWA Extension. Clifton St, Nedlands. Email info@wanaturalists.org.au.

\$2 door entry. WSWA(P) Wildflower Society of WA (Perth) Subiaco Community Centre. Email wildflowers.perth@ozemail. com.au. \$2 door entry.

Please send us your July, August and September 2013 events by Thursday 23 May 2013.

bushland news

Highlights

18 April-18 May

Western Australian Heritage Festival. There's Nothing Like Australia's Heritage: Community Milestones. Register online at www.nationaltrust.org.au and click on 'Get Involved'.

31 July-2 August

2013 WA State Coastal Conference, Esperance. 'Balancing Communities and Coasts'. Visit www.2013wacoastalconference.

Bibbulmun Track Foundation events suit all ages and most fitness levels. From guided walks to learning how to cook on a fuel stove. Visit www.bibbulmuntrack.org.au/walk-the-track/events-calendar/.

Nearer to Nature events. Visit www.dec.wa.gov.au/n2n.

- 9 Sunday 9am—1pm
 Planting at Market Garden Swamp,
 Pennlake Living Stream. Lunch
 provided. Contact CoC.
- 12 Wednesday 9am—12 noon
 Planting at Napier Street foredune,
 Cottesloe. Morning tea provided.
 Contact COTT.
- 15 Saturday 9am
 Planting at Key West Parking Station,
 Mullaloo. Contact MBCG.
 - 15 Saturday 9am-3pm Coastcare planting at Singleton Beach, Rockingham. Contact CC.
- 22 Saturday 9am-3pm
 Coastcare planting at Coogee
- Beach. Lunch provided. Contact CC
- 23 Sunday 2pm Planting at West View Bvd, Mullaloo coastal car park. Contact MBCG.
- 29 Saturday 9am-3pm Coastcare planting at Fremantle. Contact CC
- 30 Sunday 9am-12 noon
 Planting at Mosman Beach,
 Curtin Avenue. Contact Heidi bco@
 mosmanpark.wa.qov.au.

Threatened freshwater fishes in the spotlight

By Stephen Beatty

A collaborative research project funded by a State NRM grant has begun to examine the distribution, ecology and threats faced by three of south-west Australia's most unique and threatened freshwater fishes.

The freshwater fish fauna of the region has a very high rate (estimated 82 per cent) of endemism. It includes fascinating examples of adaptation to unique habitats such as salamander fish (*Lepidogalaxias salamandroides*) that aestivate to survive in seasonally inundated wetlands and Balston's pygmy perch (*Nannatherina balstoni*) that can leap from the water to catch terrestrial invertebrate prey.

Recently, Murdoch University's Freshwater Fish Group and Fish Health Unit discovered the little pygmy perch (*Nannoperca* sp. nov.) in an isolated area near Denmark. We suspect this new species has a very restricted distribution; however, almost no information exists on its biology or the threats it faces.

The western trout minnow (Galaxias truttaceus) and Balston's pygmy perch will also be the

focus of this three-year study. They are listed as Critically Endangered and Vulnerable respectively under the *Environment Protection* and *Biodiversity Conservation Act 1999*. *G. truttaceus* is known only from the Goodga and Angove rivers (east of Albany) and a population in the Kent River. Increases in river salinity have reduced the distribution of *N. balstoni*. In the Blackwood River *N. balstoni* is highly restricted to low salinity habitats that are maintained through the contribution of fresh groundwater.

The project will examine species distribution and ecology (such as migration patterns and spawning habitats) and then undertake a full risk assessment of threats such as those associated with climate change and habitat loss. The project will be conducted by Murdoch University, The University of Western Australia (Albany) and Department of Fisheries as well as project partners including DEC, Department of Water, South Coast NRM, South West Catchments Council, Blackwood Basin Group and Denmark Environment Centre.

For more information contact Stephen at S.Beatty@murdoch.edu.au or 9360 2813.



Little pygmy perch (Nannoperca sp. nov.) is a new species which was recently discovered at Denmark. Photo – Stephen Beatty

Seeking environmental labourers By Andrew Joske

Ecojobs Environmental Personnel is the environmental labour hire division of Green Skills Inc, a not-for-profit organisation with a long record of successful environmental projects and ventures throughout WA. Ecojobs Perth completed more than 28,500 hours of environmental restoration and rehabilitation work throughout the metropolitan area in 2012.

Ecojobs is a great source of hands-on paid work experience for up-and-coming environmentalists, and provides opportunities for TAFE and university students to come into contact with various industry professionals from local government, NRM groups and the private sector. In 2012, we employed a total of 141 field staff.

Ecojobs continues to complete Bushland Maintenance over 20 reserves for the City of Melville and has been doing monthly

green stock maintenance in the City of Cockburn to ensure a high survival rate from last winter's plantings. Over the hot summer months, Ecojobs has continued with wetland planting projects in South Perth and Victoria Park, and rabbit baiting for the City of South Perth. They also completed a mass weeding project for the City of Joondalup focusing on the hand removal of species including *Pelargonium capitatum*, *Euphorbia terracina*, *Tetragonia decumbens* and *Moraea flaccida*. Ecojobs is looking forward to taking on more casual staff in the lead up to winter and spring.

For more information contact Andrew on ajoske@ greenskills.org.au or 9360 6667.

regionalreports

Please send us your regional report (150–200 words) and a photo by Thursday 23 May 2013.

Text may be edited in response to volume of submitted reports.

Protection of flora and fauna at Coogee Beach By Linda Metz

In 2011, in partnership with Conservation Volunteers, the City of Cockburn received a Coastwest grant to rehabilitate Coogee Beach dune system and carry out control of feral animals. An osprey nesting pole was also installed.

The project complemented a University of Western Australia research project at Coogee Beach trialling PVC tube quenda refuges similar to those established at Challenger Beach in Kwinana. The quenda population was assessed prior to the instalment of the artificial burrows. Four treatment approaches were used to determine if placement would impact use by quenda: open vegetation cover – above ground; open vegetation cover – below ground; within dense vegetation cover – above ground; and within dense vegetation cover – below ground. Hair samples and photos from a covert fauna

camera indicated that the burrows were being used.

Quenda behaviour indicated a preference for burrows located among existing vegetation, with almost no use of those burrows out in the open and above ground. It appears that predators such as foxes could track the scent or activity of quenda and were found to investigate around a burrow.

A series of community activities and workshops were delivered including a seed collection workshop, guided coastal walk and community planting events. A total of 9,000 native tubestock were planted across a 1.4 ha site. The planting program was supported by local volunteers, Coastcare and Conservation Volunteers.

For more information contact Linda at Imetz@cockburn.wa.gov.au or 9411 3632.



The erection of a 15 m osprey nesting pole at Coogee Beach involved two cranes and much wringing of hands but the outcome is impressive. The pole is being monitored by the community for any new arrivals. Photo – Steve Harwood

Feral bee invasion By Kaylene Watts

The Friends of Black Cockatoo Reserve, Mundaring, are experiencing a problem: feral bees are inhabiting natural tree hollows as well as nest boxes. Some time ago, the group received a grant to install nesting boxes for cockatoos. Over the years, these have been removed at great expense as the feral bees moved in. The only nest box left is inhabited by a family of possums.

The Friends worked with a local school to build and install bat boxes and these appear to be untouched by bees. However, phascogale nest boxes made in conjunction with the Men's Shed and a high school class only lasted 12 months before the bees moved in. The bees have since been treated.

Treating the bees is not easy. The 32 ha reserve has limited tracks, as well as dieback. A fauna survey report has documented all habitat trees using GPS coordinates and noted trees with bees, but this information needs to be updated. The perfect solution would be a person with knowledge of bee eradication and who can climb trees! If bee eradication is possible, we hope to apply for a grant to carry out this work. Can anyone advise us please?

For more information contact Kaylene at kaylene1045@hotmail.com or 9295 2946.

Friends of Talbot Road Bushland Reserve by Jan Lynn

Our small group of dedicated Friends have completed some special projects in 2012.

Seeds from our Calothamnus and Allocasuarina were gathered in 2011 and grown by APACE. These seedlings were planted in June 2012 along a weed-free area bordering O'Connor Road. Survival

numbers have been excellent despite a really hot summer. Three members of our group completed a three-day course at APACE in November on gathering, processing and germinating native seeds. We are hoping to practise these skills in our bushland. Other general activities last year included handweeding along Blackadder Creek and monthly rubbish collections.

Well-known entomologists Jean and Fred Hort led an interesting insect walk in October. The day was unseasonably hot which suppressed insect activity;



Joe Tonga explains the construction and installation of a bat box to the Friends of Talbot Road Bushland Reserve and City of Swan bush crew. Photo – Jan Lynn

however, some sun moths were observed. We also watched a termite nest that was occupied by two bull ants rivalling each others' territory. A lecture and film display by Jean and Fred will held be on Sunday 19 May (see 'What's on').

Our final activity for the year was the installation of six bat boxes in December. An evening walk will be arranged soon to discover if any bats are in residence.

Contact Jan Lynn on 9374 0548 or mikjanlyn@ gmail.com.

Platform opened at Alfred Cove By Cathie O'Neill

A viewing platform was recently opened at Alfred Cove Nature Reserve, one of the three A-Class reserves in the Swan River Estuary set aside for flora and fauna conservation. Designed by Charles Bellamy from DEC, the platform nestles quietly into its environment, allowing the community the opportunity to reflect on the natural beauty of the cove without disturbing birdlife or trampling habitat. It has a comfortable bench seat and allows for wheelchair access.

Its construction was facilitated by the Swan Estuary Reserves Action Group Inc with funding received through a partnership between the federal government's *Caring for Our Country* program and the state's Coastwest program. As part of the funding agreement, volunteers have spent many hours restoring the surrounding native vegetation. They have also educated the



Brad Gardner (from left), Charles Bellamy, Alison Sampey and Catherine O'Neill join Christopher Lukes to cut the tape marking the completion of the Alfred Cove platform. They celebrated with community members over refreshments provided by SERAG Inc. Photo – Steve Turner

wider community about the importance of the nature reserve to local bird life, trans-equatorial visitors and general river health. The platform will help to protect and enhance the ecological values of Alfred Cove for future generations.

For more information contact Cathie at oneillc@westnet.com.au.

Funding opportunities



Caring for our Country Sustainable
Environment stream: Target Area Grants
2013–14 will fund projects to maintain
ecosystem services, protect conservation
estate and enhance the capacity of
Indigenous communities to conserve and
protect natural resources. Target area: southwest WA. Funding: \$50,000–\$1 million
(1–5 years). Closes: 2pm AEST 10 April
2013. Visit www.nrm.gov.au.

Biodiversity Fund Round Two 2013–14 will invest over four years to restore and manage Australia's biodiversity and improve carbon outcomes across the landscape. Target area: south-west WA. Funding: <\$2 million. Closes: 2pm AEST 10 April 2013. Visit www.environment.gov.au/ cleanenergyfuture/biodiversity-fund/index. html

lan Potter Foundation Environment and Conservation program grants support Australian urban and regional communities to live sustainably and preserve biodiversity. Funding: <\$20,000. Closes: 28 May 2013. Visit www.ianpotter.org.au/environment-conservation.

Swan River Trust and Alcoa Landcare Program provides funding for community groups involved in onground revegetation and rehabilitation projects in the Swan–Canning catchment. Application packages for the 2014 funding round will likely be released during April visit http://www.perthregionnrm.com/pr-nrm-programs/swan-river-trust-alcoa-landcare-program.

State Natural Resource Management Community Grants provides funding for community-based projects that target on-ground action at a local level. Closes: June 2013. Visit www.nrm.wa.gov.au/ grants/state-nrm-program.aspx.

aspx.

Norman Wettenhall Foundation Small Environmental Grant Scheme supports Australian biodiversity projects concerned with monitoring, collecting and recording data; community education; community capacity building (training); and research and science. Four rounds annually. Next round closes: 12 July 2013. Visit www.nwf.org.au/grants/grants-conditions/.

SJ Shire and Byford and Districts
Community Bank® Branch of Bendigo
Bank: Locality Funding Program will
fund revegetation of public lands within
the Shire. Closes: 1 July 2013. Contact the
Community Development Officer on 9526
1139 prior to submitting application. Visit
www.sjshire.wa.gov.au/grant-funding/.

Coastwest Grants 2013/14 funds community groups and coastal manager partnerships for projects that aim to improve the condition and amenity of WA's coast. Funding: up to \$150,000. Closes: 24 June 2013. Visit www.planning.wa.gov.au/ coastwest.

City of Melville Community Partnership Funding is open to community organisations or individuals for innovative projects which raise awareness and take action on climate change and environmental sustainability within the City of Melville. Grants up to \$5,000 are assessed monthly. Funding: \$5,000–\$10,000. Closes: May 2013. Visit www.melvillecity.com.au/community/community-grants/community-partnership-funding.

Murujuga National Park By Judymae Napier

Murujuga National Park covers 44 per cent of the Burrup Peninsula (4,913 ha) and is located in the Dampier Archipelago in the Pilbara region of Western Australia. It has the distinction of being the 100th national park gazetted in WA. It is also the first Aboriginal owned and jointly managed national park in the state.

The creation of the new park is the result of the 2003 native title settlement between the state and the traditional custodians of Muruiuga. The land is vested with the Murujuga Aboriginal Corporation (MAC) comprising traditional custodians the Ngarluma-Yindjibarndi, the Yaburara-Mardudhunera and the Woon-goo-tt-oo. The freehold land is leased back to the

state government as national park, and is jointly managed by MAC and DEC under the guidance of the Murujuga Park Council.

The name Murujuga means 'hip bone sticking out'. It is the name given to the area by the Ngarda-ngarli (local Aboriginal people). Murujuga National Park management plan 78 (2013) will guide the management and protection of the park. One of the key objectives of the plan is to involve Ngarda-ngarli in caring for the park and providing employment opportunities. Six Aboriginal trainee rangers have been employed to help manage the park's natural and cultural features. There is the potential for more employment in wildlife research; documenting Aboriginal sites to increase base knowledge; providing facilities for park visitors; and tourism opportunities to guide, educate and interpret the park's magnificent cultural values.



The Burrup Peninsula hosts the largest concentration of ancient rock art in the world, dating back more than 30,000 years. It is estimated that there are in excess of one million petroglyphs within the park as well as associated archaeological materials including shell middens, stone artefact scatters, quarries, stone arrangements, ceremonial and mythological sites, graves and petroglyphs.

These sites tell the story of human habitation, dating back to when the land was some 100 km inland from the sea, and records the lore for Aboriginal people from many different tribal groups to the northwestern tip of Australia, south past Carnarvon and east as far as Alice Springs. The rock art has deep meaning for the local Aboriginal people and is a record of the sea levels rising over time, depicting extinct land animals and then sea animals as the local Aboriginal population adapted to the changing land. Such is their significance that the Burrup Peninsula and nearby islands of the Dampier Archipelago lie within a National Heritage Place, listed in 2007.

Landscape and biodiversity

The Burrup Peninsula was formerly an island of the Dampier Archipelago, separated from the mainland by shallow tidal waters and mud flats. It became a peninsula in the mid 1960s with the construction of a causeway. The massive gabbro and granophyre



Soft spinifex (Triodia pungens) hummock grasslands dominate the peninsula. There are also a large number of smaller vegetation associations that contribute to the diverse terrestrial flora. Photo - Cliff Winfield



Petroglyphs are the area's most prevalent and visible archaeological feature. The abundance, density and variety of subject matter and styles are a large part of what make the Burrup Peninsula remarkable. Photo – Mike Bodsworth

boulder piles form the archipelago's most distinctive topographic feature, giving the landscape a unique and characteristic appearance.

The park is ecologically and biologically diverse. It includes many landforms and habitats such as steep scree-strewn granophyre and gabbro hills which provide refuge to fire-sensitive plants, narrow valleys, pockets of tall dense vegetation, seasonally wet areas and watercourses, coastal grasses, samphire communities, sandy and rocky shores, mangroves, mudflats and sea cliffs. The present landforms are the result of very long periods of weathering and erosion.

It is this unique assemblage of landforms and habitat that contribute to the diverse terrestrial fauna found on the peninsula. More than 14 native ground mammal species, at least 14 species of bat, 58 reptile and two frog species are recorded from the area. Notable species include the Pilbara olive python (Liasis olivaceus barroni), Rothschild's rock wallaby (Petrogale rothschildi) and a number of shorebirds protected under international agreements.

The management plan can be downloaded at www.dec.wa.gov. au/publications/2/doc_download/8114-murujuga-national-parkmanagement-plan-78-2013.html.

groupprofile

Friends of the Western Swamp Tortoise

By Jan Bant and Tanya Marwood

The Friends of the Western Swamp Tortoise began nine years ago after a Green Corps team worked to improve the habitat of Australia's most critically endangered tortoise Pseudemydura umbrina.

Dallas Lynch from the Ellen-Brockman Integrated Catchment Group called for members of the public to start a Friends group to continue and extend the good work. An information seminar was held at the Perth Zoo in July 2004, and over a sausage sizzle and presentation the group began. Early meetings identified the necessity of raising public awareness of the plight of the tortoise. Habitat issues were under the control of DEC (formerly the Department of Conservation and Land Management) Swan Region, and the Perth Zoo was making great strides in captive breeding, but public knowledge of the possibility of extinction for this iconic reptile was sadly lacking.

With funding from the World Wide Fund for Nature (Threatened Species) and Lotterywest, work began on revegetation projects and education. Early photos by Lesley and Alex Stone formed the basis of a bright display and member t-shirts featuring a large design drawn by Guundie Kuchling (wife of the Chief Scientific Investigator, Gerald Kuchling) added to our sense of cohesion as we hit schools, festivals, fetes, shows and other public events to distribute our brochures and talk to everyone we could.

Several founding members have moved on but the group has maintained its focus. We assist DEC with on-ground work





Left: Friends of the Western Swamp Tortoise releasing juveniles, August 2012. Right: juvenile captive-bred tortoise (Pseudemydura umbrina). Photo – Mike Stokes

and Perth Zoo with the captive breeding facilities, as well as scientific monitoring and research with the Australian Research Council Linkage project through The University of Western Australia and others. We also participate in the Western Swamp Tortoise Recovery Team, which draws all stakeholders together for biennial information sharing sessions.

Sponsorship through companies such as Edgecombe Brothers Winery and, more recently, the Margaret River Chocolate Company has allowed us to expand our education package, preparing and presenting many interactive games and displays to engage children through school visits and talks. During 2014 we will see an interactive Smart Board presentation distributed to all schools in the area to further raise awareness.

Tortoise distribution

There are still less than 50 western swamp tortoise adults living in the wild. Their preferred habitat is ephemeral swamps with clay or clay-and-sand bases that hold water for a several months of the year. The western swamp tortoise is only found at Twin Swamps and Ellen Brook nature reserves in the Swan Valley. Both sites are now surrounded by electric fencing to control predation by foxes and feral cats. Recent releases of captive-bred juveniles have taken place at Mogumber and at Moore River National Park, which are new locations that meet the tortoises' habitat criteria. Current research is focussed on finding further locations for the release of juveniles which appear to manage quite well after release.

Become involved

The Friends of the Western Swamp Tortoise has an extensive email contact list and members join us for on-ground works including seed collection, revegetating habitat, fundraising lunches, movies, trips and the release of juveniles. Jan Bant (Chairperson) or Tanya Marwood (Vice Chair) would welcome the opportunity to address any groups who would like to learn more about this critically endangered reptile. For more information contact Jan on 0408 024 800 or westernswamptortoise@yahoo.com.au. Visit www.westernswamptortoise.com.au.

Learning opportunities



Two-day accredited waterwise and fertilise-wise training specifically tailored for a school ground environment. Other dates on demand. Contact 1300 300 252 or education@watercorporation.com.au.

DEC volunteer programs visit www http://www.dec.wa.gov.au/community-andeducation/volunteer-programs.html.

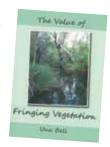
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Resources

New publications

Giblett, R. (2013) *Black Swan Lake: Life* of a *Wetland* traces the life of the plants and animals, relationship to the Nyoongar seasons, natural and cultural history and the seasonal rise and fall of Forrestdale Lake in south-west WA. Published by Intellect Ltd. Visit www.footprint.com.au..

Bell U (2012) *The Value of Fringing Vegetation* provides descriptions of native species, from fungi and slime moulds to rushes, grasses and trees that are absolutely integral to the healthy functioning of any



creek line or river bank. Free publication. To order contact the Environmental Services officer at environment@emrc.org.au.

Guide to the Great Western Woodlands

(2012) will help readers to explore and appreciate almost 16 million ha containing more than 3,000 native plant species. The area—which stretches



from Southern Cross to Kalgoorlie-Boulder, south towards Esperance and east to the edge of the Nullarbor—is a great place to visit granite outcrops, secluded bush camping areas and historic attractions.

Published by DEC. RRP \$29.95. Order online

at www.dec.wa.gov.au/ shop or phone 9334 0481.

French M (2012)

Eucalypts of Western Australia's Wheatbelt describes all 159 species

of eucalypts in the

Wheatbelt. Includes 1,300 images to ensure identification, comprehensive descriptions, distribution maps and historical information. Online taxonomic key. \$49 + postage visit www.eucalyptsofwa.com.au/index.html.

Apps

Dangerous Land Snakes of Western

Australia helps you identify the 54 species of venomous land snakes known to inhabit WA and also contains First Aid information. Western Australian Museum. Available from the iTunes store for \$1.99.

Skinks of the Perth Region has images, maps, habitat, descriptions and general observations for 29 species of skinks located around the Perth region. Western Australian Museum. Available from the iTunes store for \$1.99.

Website watch

Bassendean Preservation Group Inc.

Visit www.bpginc.info.

Australia's Native Vegetation Framework

(2012) is a revised framework to replace the National Framework for the Management and Monitoring of Australia's Native Vegetation (1999) and acts as a subsidiary document to Australia's Biodiversity Conservation Strategy 2010–2030. Download at www. environment.gov.au/nvf.

Indian Ocean Climate Initiative website was formed to support informed decision-making on climate variability and change in WA. CSIRO, Bureau of Meteorology and state government. Visit www.ioci.org.au/.

Database of Australian Pollinators provides images and distribution maps of Australian native bees. Search by area, taxonomic group, host species, description and more. Visit www. padil.gov.au/pollinators/Search?queryType=all.

Redmap invites citizens to help researchers monitor how marine ecosystems are changing in response to ocean warming. Visit www. redmap.org.au/news/2012/12/11/welcome-to-redmap-wa/.

Jean Hort's photos on Flickr.

Visit .www.flickr.com/photos/jean_hort/

Videos of peacock spiders. Visit www. youtube.com/user/Peacockspiderman/videos.

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