

Arresting the spread

By Lindy Twycross (Swan Catchment Council)

COINED the 'biological bulldozer', *Phytophthora dieback* is a significant threat to Western Australia's biodiversity. However, a Natural Heritage Trust-funded cross-regional project – *Project Dieback* – is playing an important role in mapping and managing the disease.

The *Project Dieback* initiative makes funding available to stakeholders in the Swan and South Coast NRM regions and has recently been expanded to the Northern Agricultural and South West NRM regions for dieback mapping, disease management and educational workshops.

In the Swan NRM Region, *Project Dieback* is presently working in partnership with, and will be funding dieback works for, the Friends of Ellis Brook, Friends of Paganoni Swamp, Karakamia Wildlife Sanctuary and the Department of Defence (Bindoon training area).

In the South Coast NRM Region the project has funded the Friends of Twin Creek Conservation Reserve to have their reserve dieback mapped and provide expert practical advice on how to manage the disease. The project has also sponsored the City of Albany for assessment and advice on disease management at Cosy Corner.

Biological bulldozer

This pathogenic plant mould is invading plant communities from Eneabba in the north to Cape Arid National Park near Esperance. However, few people are aware of the magnitude of what is being lost or the devastating potential for what could be lost.

Project Dieback, a NHT-funded cross-regional project, aims to map *Phytophthora dieback* at a strategic scale across the State and, significantly, to indicate what is at risk and what can be saved. It is the first time such a project has been attempted.

Dr Joanna Young has been appointed as project manager to lead *Project Dieback*.

"I have seen many areas of native vegetation that have been reduced to relatively colourless sedgeland supporting only a fraction of the original species," she said.



Left: DEC officer Clarissa van Schie using aerial photography to map *Phytophthora dieback* distribution. Right: DEC officer Susan Ajah Subah sampling for *Phytophthora dieback*. Photos – Lindy Twycross



"My greatest concern is for the banksia woodlands and rich proteaceous heaths."

On-ground dieback mapping wanted

Project Dieback has engaged the Forest Management Branch (FMB) of the Department of Environment and Conservation (DEC) for the strategic scale mapping of the distribution of dieback. FMB has its own collection of historical disease mapping that can be collated, but is particularly eager to incorporate any other accurate on-ground assessments or operational mapping from non-DEC sources. Where no on-ground interpreting has been done, aerial photography and satellite temporal change analysis has been employed together with some on-site sampling and assessments. The final collation of this currently scattered information will indicate the extent of this insidious disease and help highlight the importance of those areas that are still disease-free.

FMB will also run a risk assessment analysis to help determine areas of regional significance that should be nominated for priority protection and management. The analysis includes predictive modelling and an assessment of diversity values under threat.

Project Dieback began in 2006 and has been supported by many stakeholders. Local governments, private landholders, airports, Department of Defence, Telstra, Friends and Landcare groups, mining companies, Landgate and State utilities have all generously contributed their dieback maps and information. The project is currently being extended to the Northern Agricultural and South West NRM regions and the call is out for stakeholders to contribute their dieback mapping and assessments from these regions.

For funding enquiries or to contribute to *Phytophthora dieback* mapping in your NRM region contact *Project Dieback*:

South Coast and South West – Dr Joanna Young on 9840 1068 or 0429 364 900

Swan and South West – Lindy Twycross on 93743333 or 0404 704 722

Northern Agricultural – Jenna Brooker on 0417 960 737.

For information on *Phytophthora dieback* in WA visit www.dieback.org.au or contact the Dieback Working Group on 9374 3333.

Issue 62

Winter 2007

Time of Makuru and Djilba in the Nyoongar calendar.

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Our environment, our future

Bushland News is a quarterly newsletter of Urban Nature, a Department of Environment and Conservation (DEC) program to support community involvement in bushland conservation.

Urban Nature UPDATE

Karen Clarke joined Urban Nature in early June as the new program coordinator. Karen has been involved in bushland protection and management for many years having worked on major projects such as the Bushland Plant Survey Program, Bush Forever, the Perth Biodiversity Project and Swan Bioplan.

She has also spent many hours working as a volunteer and is a founding member and past coordinator of the Friends of Warwick Bushland. Karen is looking forward to working with you all in the future to protect and manage our precious bushland.

Developing a works program for 'Lowlands'



Looking for blackberry in the fringing vegetation along the Serpentine River at Lowlands.
Photo – Jo Gomersall

'Lowlands' is managed by the Lowlands Conservation Association (Inc.) and is one of the largest privately owned bushland remnants on the Swan Coastal Plain. The area protects one of the last sections of intact fringing vegetation along the Serpentine River on the plain. Urban Nature has provided assistance to the group over the past two years developing weed maps and establishing monitoring transects to record regeneration of fringing vegetation

along the river. In May, with the Lowlands Conservation Association and DEC Swan Coastal District Bush Forever crew, we spent a day mapping blackberry distribution along the river. By the end of the day we had all learnt how to map weed populations using a differential GPS and the map produced will be vital for strategically controlling and monitoring blackberry populations in years to come.

Urban Nature bushland works

Over the past few months Urban Nature staff have been working to replace plot markers (that were supposedly fire-proof) and map fire boundaries at a number of field sites that were burnt last summer. At Meelon Nature Reserve, a tiny remnant containing seasonal wetlands near Dwellingup, we had a series of transects monitoring regeneration following *Watsonia* control. A fire burned the area but, fortunately, was not too hot and sufficient pegs survived to easily relocate transects. Working with staff from DEC's Perth Hills District, it took a lot more persistence to relocate randomly placed plots at Burnside Nature Reserve. A detailed mud

map, individual plot photos, geo-referencing of pegs and persistent soil probing for melted pegs helped us relocate 25 of the 30 original plots.

Urban Nature has continued works at a number of Bush Forever Sites. We have also been working with the Friends of Paganoni on a brochure for their bushland. In conjunction with DEC's Regional Parks Unit and staff from the City of Cockburn and Kings Park and Botanic Gardens and Parks Authority we have continued *Juncus acutus* management at Market Garden Swamp and Lake Cooloongup.

SFNC training courses

The Skills for Nature Conservation environmental awareness and training workshops offer an exciting array of topics from July to November. Workshops are free and bookings are essential. More details are on page 5 of this issue of *Bushland News*.



Spring *Bushland News*

Spring *Bushland News* contributions should be sent to Urban Nature by Friday **31 August 2007**.

Compiled and edited by Jo Tregonning.

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Previous newsletter issues available at
www.naturebase.net/urbannature

Asparagus weeds in the west



An Australian Government Initiative

DEFEATING
THE WEED MENACE

By Dennis Gannaway (Department of Water, Land and Biodiversity Conservation, SA)

POPULAR with early settlers for the garden, asparagus plants have spread and established in bushland areas to become major environmental weeds.

Bridal creeper (*Asparagus asparagoides*) has long been recognised as a major environmental weed in WA. Large infestations occur in the higher rainfall regions of the south-west. Smaller scattered populations can be found in drier areas with less than 400 millimetres of annual rainfall. In addition to bridal creeper, WA has small-scattered infestations of bridal veil (*A. declinatus*), ground or basket asparagus (*A. aethiopicus*), climbing asparagus (*A. plumosus*) and asparagus fern (*A. scandens*).

Asparagus plants spread via the dumping of garden waste into bushland and movement of seed from gardens by birds, foxes, earth-moving equipment and humans. Many older gardens have asparagus plants growing in them – look carefully and you will probably find some in yours.



Asparagus fern (Asparagus scandens) showing berries.
Photo – Kate Brown

Rust fungus – the biological control

The management of bridal creeper has been boosted with the successful release of a biological control agent in the form of a rust fungus. Field officers from CSIRO's Entomology Office in Perth established the first 'nursery' rust sites in WA in early 2000. Regional weed officers and community groups are



Bridal creeper (Asparagus asparagoides) infestation smothering native vegetation. Photo – Dennis Gannaway

harvesting rust from these nurseries and spreading it far and wide.

The rust has a dramatic effect on the weed. Once infected with the fungus, bridal creeper's ability to create and store nutrients is reduced, weakening the plant and resulting in early leaf fall before the critical flowering and seeding stage of the plants' growth.

The process of establishing rust has been made easier with the development of the spore-water redistribution technique. It simply involves the harvesting of already rusty foliage, washing the rust spores off with rainwater and using the resulting slurry as a spray to infect more bridal creeper.

Integrated management

Rust is unfortunately not the 'silver bullet' when it comes to the management of bridal creeper. The agent certainly plays a part in hampering the development of the weed and restricting its ability to spread, but should not be seen as a single management option. An integrated approach is required which combines the release of bio-control agents in infestations too large to effectively manage, while using herbicide to maintain a buffer zone around the

infestation to contain the plant and prevent spread.

For smaller, isolated infestations, particularly in the drier regions, the use of a biological control agent may not be appropriate. A surer approach is likely to be 'hit it hard' with herbicide and get rid of the plants altogether.

Unfortunately no other biological control agents have been imported for use on asparagus plants other than bridal creeper that are also invading our remnant stands of vegetation. Management is solely reliant on herbicide or the physical removal of these plants.

Resources

Asparagus weeds – best practice management manual. Download at www.weeds.org.au/WoNS/bridalcreeper/. Hardcopies available from Dennis Gannaway (National Asparagus Weeds Management Coordinator) on (08) 8303 9748 or email Gannaway.Dennis@saugov.sa.gov.au.

Can you recognise asparagus weeds? A brochure is available from the above website and included in this edition of *Bushland News*.

A voucher collection should be made of any new infestation of asparagus species and lodged with the WA Herbarium.

Implications of climate change on biodiversity

By Richard McKellar (DEC)

CLIMATE projections indicate ongoing increases in global average temperatures, changes to rainfall patterns and extreme events. These changes must be included in conservation planning and management to avoid or reduce species extinction and ecosystem disintegration.

Climate is a fundamental factor in the distribution of plants, animals, habitats and ecosystems. It largely determines water availability and ambient temperatures that are critical in determining plant life-stages such as germination, flowering and seeding, and for animal habitat and food sources.

Natural climate variation has always helped drive changes and processes in natural systems and biodiversity, including influencing biological evolutionary processes such as speciation and extinction. However, significant and rapid changes in global climate have been caused during the past century by emissions mainly from fossil fuel use, agriculture and land clearing.

Average temperatures in the south-west of WA have increased since 1900 and early winter rainfall has reduced since about 1975 (see trend maps at www.bom.gov.au/cgi-bin/silo/reg/cli_chg/trendmaps.cgi). These changes have resulted in less stream runoff, lower wetland and groundwater levels and less soil moisture available to the region's ecosystems. Other aspects of climate change, such as sea-level rise, flooding, heat waves, storms and drought, have been experienced but few specific impacts have been recorded on natural systems. The effects of associated factors, such as increases in atmospheric carbon dioxide levels, are little understood.

What changes may we expect?

Ecological principles suggest climate change will alter the composition and structure of certain ecosystems, with some species becoming more dominant and others rarer or even extinct. Invasive species are likely to thrive and poor dispersers will be threatened. Many indirect effects will occur as climate change affects fire regimes, salinity, dieback and other diseases. Ecosystem



Reduction in rainfall has led to the reduction of stream flow into our water supply dams. Mundaring Weir in the spring. Photo – Richard Tonkin

function and services, such as water quality and quantity, would be affected. Impacts on marine species will be complicated by increasing marine acidity as marine waters absorb carbon dioxide.

How do we manage for climate change in the future?

Managing for biodiversity now requires that an uncertain future rate and magnitude of local and regional climate change be included in reserve system, ecosystem and species conservation planning. There are three major strategies for dealing with climate change.

Reduce emissions

WA's net emissions can be reduced by protecting existing vegetation and broad-scale revegetation – both already important goals of nature conservation programs. If human-induced greenhouse gas emissions could be immediately reduced to zero, the rate and magnitude of climate change would be reduced. However, climate change would continue for hundreds and possibly thousands of years because of the time needed for climate systems to respond and for carbon dioxide and other greenhouse gases to be removed.

Increase resilience

Increasing ecosystem resilience to climate change involves reducing existing threats

and pressures on ecosystems and ensuring ecosystems and their components have an opportunity to disperse to new locations or adapt to new climate conditions. Managers need to understand the risks and to have the capacity to expand programs to ensure conservation areas contain key refuges and core areas under present and projected climate conditions.

Establish off-reserve protection

Establishing off-reserve protection for species that cannot survive in their current locations and are unable to disperse to new appropriate locations will require knowledge about climate and biodiversity thresholds. This will involve experimental determination of climate thresholds for WA species; detailed surveys and monitoring of changes to species distribution and ecosystem composition over time; climate impact modelling and verification; and projection of these findings against existing biodiversity protection measures including reserve system design. Existing off-reserve conservation programs need to be reviewed to ensure they will be capable of dealing with the challenges of prospective species loss under climate change.

Learning opportunities

SFNC training courses

The Skills for Nature Conservation's (SFNC's) environmental awareness and training workshops for Perth volunteers and interested community members offer an exciting array of topics from July to November. Workshops include a series on 'birding'; the opportunity to discover the karsts and caves of Point Walter; technical training to rehabilitate coastal vegetation; native plant propagation for beginners; and understanding rivers for sustainability.

SFNC is a partnership between DEC's Urban Nature program and Greening Australia WA and is supported by the Swan River Trust and the Natural Heritage Trust through the Swan Catchment Council. Workshops are free and bookings are essential. Download the calendar at www.wrc.wa.gov.au/swanavon/pages/training.html. To receive a copy or to register for a workshop contact Jo Gomersall on 9423 2924 or email joanne.gomersall@dec.wa.gov.au.

TAFE environmental courses begin 23 July 2007

Challenger TAFE, Murdoch

Certificates II, III and V in Conservation and Land Management. Certificate II is also available at Peel Campus. Plant and animal conservation. Many study options available.

'Bushland Weed Control' and 'Dieback Protection in Bushland' short courses available. Both courses include completion of the ChemCert WA certificate which makes graduates eligible for a 'Pesticide Operators License' to work voluntarily or seek paid

employment in environmental weed control. Contact Diana Corbyn on 9229 8412 or Steve Ross on 9229 8427.

Swan TAFE, Midland

Wildflower identification. Thursday evenings 5.30pm–7.30pm.

Bushland weed control. Monday evenings 5.30pm–9pm plus three weekend days (dates TBA).

Day classes are also available in the above courses plus animal habitats, plant propagation, bush restoration, bushland assessment, wetlands, seed collecting, fencing and safety with machinery.

Full-time Certificate in Conservation and Land Management study is also available. Contact Ted Johnson on 9374 6314 or email ted.johnson@swantafe.wa.edu.au.

Become a 'City Bush Guide'

The Urban Bushland Council WA (Inc.) (UBC) with funding from the WA Planning Commission is offering a free course to train new volunteer guides to lead walks in bushland reserves. Those successfully completing the seven-week course will be registered by the UBC as 'City Bush Guides' and the subsequent guided walks will help raise community awareness and appreciation of bushland. The course is being offered at two venues:

Henderson Environmental Centre, North Beach from 9am–1pm Saturday 21 July–Saturday 1 September; or

Piney Lakes Environment Education Centre, Murdoch and the Cockburn Wetlands Education Centre, Bibra Lake from 9am–1pm Thursday 19 July–Thursday 30 August. Contact Mary on 9271 5707 or the UBC office on 9420 7207. **Enrolments due 13 July.**



Caring for the Canning – SFNC workshop. Photo – Jo Gomersall

Funding opportunities

Groundworks

Private landholders, groups, and local governments are invited to be part of \$270,000 of projects to improve waterways, wetlands, soils and remnant bush on private land and public reserves in the Geographe, Leschenault and Peel-Harvey catchments. Round one funding included stock-proof fencing, off-stream watering points, gravel pit rehabilitation, weed and dieback control and native vegetation planting. **Round two applications close 27 July.** Land managers can contact Kim Wilson on 0419 196 541 or Glen Byleveld on 0419 912 845. Visit www.peel-harvey.org.au.

Australia Post Landcare Community Development Grants

Community groups, including local Landcare groups across Australia, can now apply for yearly grants of up to \$3300 (including GST) to help improve their local community and environment. **Applications close 14 September 2007.** Visit www.landcareonline.com.

Australia Post Junior Landcare Grants Program

By working with schools and youth groups, these grants of up to \$500 aim to involve families and communities in caring for our environment as well as practical on-ground biodiversity outcomes. **Applications close 3 August and 18 October 2007.** Visit www.landcareonline.com.


Australian Government Envirofund

Natural Heritage Trust grants of up to \$50,000 (GST inclusive) are available for community groups and individuals to carry out 'Coastal and Marine' projects to protect our coastal catchments, ecosystems and the marine environment. **Round 10 applications close 27 July 2007.** Visit www.nht.gov.au/envirofund/index.html.



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

Sundays 8am–10am

 **Bushland regeneration** with Friends of Shenton Park Bushland. Held every Sunday. Contact Dani on 9381 3470 or bojel@it.net.au.

July


1 Sunday 10am–12.30pm

 **Fungi foray** at Bungendore Park. Meet at Bedforddale Hall, Admiral Rd, Bedforddale. BYO lunch. Contact PUBF.

3 Tuesday 9am

 **Fungi walk** with Friends of Paganoni Swamp Bushland. Call Leonie 0439 921 298.


8 Sunday 8.30am–9.30am

 **Fungi walk** with Friends of Dianella Bushland. Meet at car park of Cottonwood Crescent Bushland Reserve. Entrance via Dianella Dr, Gay St and then the Channel 7 Private Rd. Call Jan 9344 2872.

8 Sunday and 22 Sunday 12.30pm–3pm

 **Picture Perfect Photography course**, John Forrest National Park. \$15pp. Contact N2N.

8 Sunday 10am–12.30pm

 **Fungi foray** with Friends of Lightening Swamp and PUBF. Meet at northern end of Della Rd near EMS nursery, Noranda. Contact Kirsten 9271 3549 or kt500@iinet.net.au.

8 Sunday

 **Planting** with Friends of Mandoon Reserve, Greenmount National Park. BBQ provided. Contact CVA.

10 Tuesday 8pm

 **Plants of the Banded Ironstone Formations**. Neil Gibson guest speaker. Contact WSWA.

14 Saturday

 **Planting** at Jandakot Regional Park. BBQ provided. Contact CVA.

15 Sunday 9am–12 noon

 **Bush regeneration activities**. Contact FWB.

 **15 Sunday 10.30am–12.30pm 'Busy bee' at Piesse Brook**, Kalamunda. Contact FPB.

15 Sunday 9am–4pm

 **Fruit and nut tree field day**, Cuballing. Field walk and practical demonstrations. Contact GS.

15 Sunday 11.30am–3.30pm

 **Family Frog Fest**, Yanchep National Park. Six frog-themed activities. \$22 pp, suitable for all ages. BYO picnic lunch. Contact N2N.

21 Saturday 9am

 **Activity morning** with Friends of Brixton Street Wetlands. Call Regina 9459 2964.



21 Saturday 9am–2pm

 **Understanding rivers for sustainability**, Kent Street Weir, Wilson. Contact SFNC.


21 Saturday 8am

 **Guided nature walk** at Lake Gwelup. Contact FLG.


21 Saturday 9am–12 noon

 **Fungi foray, workshop and field walk**. Chidlow Sports Pavilion, Old Northam Rd. Contact BSFH.


22 Sunday 9am

 **Bushcare morning** with Friends of Coolbinia Bushland. Meet Coolbinia Primary School car park. Call Niall 9242 1470.

22 Sunday 10am–1pm

 **Fungi foray** at Murdoch University. Meet car park 8 off Murdoch Dr. Contact PUBF.


23 Monday–27 Friday

 **Erosion control along Swan River foreshore**, Heathcote. Contact CVA.


29 Sunday 1pm–3pm


 **Tree planting in Bungendore Park**, Bedforddale. Meet at Admiral Rd entrance and follow Wattle Rd. BYO afternoon tea to share. Call Kim 9470 2297.


August

 **6 Monday–10 Friday Planting along Sandringham foreshore**. Contact CVA.

 **11 Saturday 9am–1pm Heavenly Hectares Mini Expo**. Mandurah. Introduction to smarter management of your home, garden and property. Contact GS.


 **11 Saturday 9am–12.30pm Bush block management in the eastern hills**. Fauna habitat, dieback control, conservation. Contact BSFH.

 **12 Sunday 11am–12 noon Swan View Tunnel presentation** by park ranger, John Forrest National Park. Call Michael 9295 9107.


 **12 Sunday War on Watsonia** at Aldersyde Rd upstream of Piesse Brook, Kalamunda. Community event. Contact FPB.


 **14 Tuesday 8pm The Little Sandy Desert**. Eric McCrum guest speaker. Contact WSWA.


 **18 Saturday 9am Activity morning** with Friends of Brixton Street Wetlands. Call Regina 9459 2964.

 **18 Saturday 8am Guided nature walk** at Lake Gwelup. Contact FLG.


 **19 Sunday 11am–11.30am Nyoongar history presentation** by park ranger, Walyunga National Park. Call Michael 9295 9107.


 **19 Sunday 2pm–3.30pm Global Warming – Unlocking the Science**. A lecture and discussion with scientists. Gravity Discovery Centre, Gingin. \$20 adults. Call 9575 7577 or visit www.gdc.asn.au.


 **19 Sunday 9am–12 noon Guided wildflower walk and bush regeneration activities**. Contact FWB.


 **19 Sunday 8am–12 noon Lupin pull at Lake Gwelup**. Work location map posted on scout hall door after 9.15am. Contact FLG.

 **19 Sunday 10.30am–12.30pm 'Busy bee' at Piesse Brook**, Kalamunda. Contact FPB.

 **19 Sunday 4.30pm–7pm Frog and tadpole search** with Friends of Brickwood Reserve, Byford. Contact Kristy 9526 0199 or kristy@landcaresj.com.au.


 **19 Sunday 8am–5pm Subterranean Safari, exploring karst and cave systems**. Point Walter golf course, Bicton. Flora, fauna, hydrology, geology. Contact SFNC.

 **20 Monday–24 Friday Planting, weeding, track maintenance of artificial wetland**, Cockburn Cement. Contact CVA.

 **25 Saturday 9am–12.30pm Birding for Beginners** with Birds Australia. WA Ecology Centre, Bold Park, Floreat. Contact SFNC.

 **25 Saturday Planting** with Friends of Spring Road. BBQ lunch provided. Contact CVA.

 **25 Saturday–26 Sunday 10am–5pm Fungi photo competition and exhibition**. Henderson Environment Centre. Visit www.wanats.iinet.net.au or contact Jolanda 0431 979 603 or jolanda.keeble@vanguardenviro.com.au.

 **26 Sunday 9am–12 noon Lupin pull** at Star Swamp. Contact FSS.

 **26 Sunday 9.30am–5pm Family fun day at the Gravity Discovery Centre**, Gingin. Cost: \$12 adult, \$8 child. Call 9575 7577 or visit www.gdc.asn.au.

 **26 Sunday 11am–12 noon Guided wildflower walk** with park ranger, Mundaring National Park. Call Michael 9295 9107.

 **29 Wednesday 5.30pm–9.30pm Heavenly Hectares Mini Expo**. Byford. Introduction to smarter management of your home, garden and property. Contact GS.

REGISTRATION/CONTACT DETAILS – Organisations providing a series of activities:

BSFH **Bush Skills for the Hills** offers free hills-focused workshops. Contact Robbie 9424 2216 or roberta.circosta@emrc.org.au.

CVA **Conservation Volunteers Australia**. 7/7 Yampi Way, Willetton. Contact Steve 9354 8711 or perth@conservationvolunteers.com.au.

FLG **Friends of Lake Gwelup**. Meet at scout hall car park Huntriss Rd, Gwelup. Call Betty 9444 5640.

FPB **Friends of Piesse Brook**. Meet at gate to Kalamunda National Park, Schipp Rd. Bring gloves. Call Linda 9293 3102. Visit www.friendsofpiessebrook.org.au.

FSS **Friends of Star Swamp Bushland**. Meet at Henderson Environment Centre, Groat St, North Beach. Call Christine 9447 2983.

FWB **Friends of Warwick Bushland**. Meet at bowling/tennis club car park, Lloyd Dr, Warwick. Contact Janina 9447 9494 or nee@ext.uwa.edu.au.

GS **Green Skills Inc.** Contact Michelle 9360 6667 or myeomans@greenskills.green.net.au.

N2N **Nearer to Nature**, DEC. Affordable prices for all activities. Bookings 9295 2244 or www.naturebase.net/nearertonature.

PUBF **Perth Urban Bushland Fungi project**. Visit www.fungiperth.org.au. Contact Roz 9334 0547 or roz.hart@dec.wa.gov.au

SNC **Skills for Nature Conservation**. Free training courses by DEC's Urban Nature and Greening Australia. Bookings 9423 2924 or joanne.gomersall@dec.wa.gov.au.

WSWA **Wildflower Society of WA**, Perth Branch. Subiaco Community Centre, 203 Bagot Rd. Contact 9448 5419 or echidnawrx@westnet.com.au.



September

3 Monday–14 Friday
Track maintenance and fencing, Yellagonga National Park. Contact **CVA**.

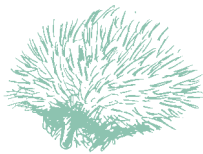
8 Saturday–9 Sunday
Tiwest Biodiversity Bush Walk, Gravity Discovery Centre, Gingin as part of Open Garden events. Call 9575 7577 or visit www.gdc.asn.au.

8 Saturday 9am–4pm
Property design and planning workshop. Mandurah. Contact **GS**.

9 Sunday 8.30am–9.30am
Orchid walk with Friends of Dianella Bushland. Meet at car park, Cottonwood Crescent Bushland Reserve. Entrance via Dianella Dr, Gay St and then the Channel 7 Private Rd. Call Jan 9344 2872.

9 Sunday 11am–12 noon
Guided wildflower walk with park ranger, Avon Valley National Park. Call Michael 9295 9107.

9 Sunday 9.30am
Victoria Plains wildflower walk, Wyening Mission Farm, between Bolgart and Calingiri. \$30 includes morning tea and lunch. Afternoon optional Calingiri/New Norcia LCDC Landcare Drive (map and CD). Contact 9628 7004 or reception@victoriaplains.gov.wa.au.



11 Tuesday 8pm
The Pilbara Biological Survey. Steve van Leeuwen guest speaker. Contact **WSWA**.

15 Saturday 9am
Activity morning with Friends of Brixton Street Wetlands. Call Regina 9459 2964.

15 Saturday 8am
Guided nature walk at Lake Gwelup. Contact **FLG**.

16 Sunday 11am–11.30am
Guided wildflower walk with park ranger, John Forrest National Park. Call Michael 9295 9107.

16 Sunday 9am–12 noon
Watsonia workshop. Herbicide preparation, safety and application. Meet cnr Coulston Rd and Scott St, Boya. Contact **BSFH**.

16 Sunday 8am–12 noon
Lupin pull at Lake Gwelup. Work location map posted on scout hall door after 9.15am. Contact **FLG**.

16 Sunday 9am–12 noon
Guided wildflower walk and bush regeneration activities. Contact **FWB**.

16 Sunday 9am–11am
Guided flora walk with Friends of Brickwood Reserve, Byford. Contact Kristy 9526 0199 or kristy@landcaresj.com.au.

21 Friday 9am–12 noon
Planting sedges with Friends of Brickwood Reserve, Byford. Contact Kristy 9526 0199 or kristy@landcaresj.com.au.

23 Sunday 2pm
Spring wildflower walk at Star Swamp. Contact **FSS**.

23 Sunday 11am–11.30am
Guided wildflower walk with park ranger, Walyunga National Park. Call Michael 9295 9107.

24 Monday–28 Friday
Wetland planting, Beeliar Regional Park, Contact **CVA**.

30 September
Annual bush to beach walk with the Friends of Allen Park, Lake Claremont and Shenton Park Bushland. Guided bushwalk from Allen Park to Point Resolution via Lake Claremont. Contact Dani 9381 3470 or bojel@it.net.au.

Highlights

Men of the Trees 2007 planting schedule. Overnight country trips to smaller one-day plantings. Also needing cooks to help feed the hungry mob. Visit www.menofthetrees.com.au. Contact Erin 9274 4842 or mottplanting@iinet.net.au.

6–9 August
National Wildlife Rehabilitation Conference. Esplanade Hotel, Fremantle. Visit www.nwrc.com.au, email nwrcperth@westnet.com.au or call 9316 8526.

2–5 September
11th International Mediterranean Ecosystems Conference—MEDECOS XI. Perth, Western Australia. Visit www.medecosxi2007.com.au or email medecosxi2007@bgpa.wa.gov.au.

9–13 September
Seed Ecology II: Second International Society for Seed Science Meeting. Visit www.seedecology2007.com.au.

10–13 September
Invasive Plants of Mediterranean Type Ecosystems. Visit www.congresswest.com.au/emapi9/index.html.

14–15 September
Weed Risk Assessment workshop. Visit www.congresswest.com.au/emapi9/index.html.

16 September 9.30–4pm
Earth Solutions Expo, Toodyay Racecourse. Practical ideas for greener living. Eco product displays (solar panels/pumps/desalinators), alternate farming practices, great speakers. Call Caroline 9622 8043. Also on the same day WA Festival of Health, Healing and Harmony. Stalls, environmental art exhibition, musical items. Call 9572 9806.

17–21 September
Ecology and Management of Alien Plant Invasions (9th International Conference, 2007). Visit www.congresswest.com.au/emapi9/index.html.

23–25 September
Parks and Protected Areas Forum 2007; A Sense of Place, For All People, For All Time. Fremantle. Visit www.promaco.com.au/2007/parks/.

26–30 November
Ecological Society of Australia – 2007 Conference, Perth. Visit www.ecolsoc.org.au/Conferencelisting.html.

3–5 December
Fourth Biennial Australasian Ornithological Conference, The University of Western Australia. Avian research, conservation, post-conference field excursions. Visit www.birdswa.com.au or contact S. Mather on 9389 6416 or aoc2007@birdswa.com.au.

Please send us your October, November and December events by **31 August 2007**.

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.

Kings Park needs friends like you

The Friends of Kings Park was established in 1993 and currently has more than 850 members who support the park through membership subscriptions. Of these, more than 200 volunteer their time to assist in fundraising, growing native plants in the nursery, bushland restoration and research.



Membership includes 20 per cent off native plant sales; subscription to the quarterly magazine *For People and Plants*; and invitations to special events such as bush walks, bike rides, photography workshops and guest speaker events. For more information contact Jo on 9480 3643 or email jwalker@bgpa.wa.gov.au.

Concern for the rare graceful sun moth

By Nicole Willers (DEC)

The Swan Region of DEC is carrying out a NHT-funded project for the Swan Catchment Council that focuses on three rare insect species found in the Swan Region.

One species, the graceful sun moth (*Synemon gratiosa*), is known from bushland reserves in the northern suburbs of the Perth metropolitan area. The graceful sun moth is a medium-sized diurnal flying moth that is only active in March-April each year, and has been recorded from just eight sites. These sites are isolated pockets that are subject to a range of pressures such as fire, weeds, recreation and climate change. Monitoring during the past five years has highlighted a decreasing number of



The rare graceful sun moth (Synemon gratiosa) has been found at only eight bushland sites in the metropolitan area. Photo – Terry Houston (WA Museum)

observations of the sun moth. The sun moth is thought to only move up to 300 metres, which would make it unlikely to

disperse between populations, or recolonise sites of local extinction. Therefore, it is of great concern that several populations have not been sighted at all for two consecutive years.

The graceful sun moth is known from banksia woodlands on sandy soils. All sites contain mat rush (*Lomandra hermaphrodita*) which the sun moths use the base of to lay its eggs on. Male sun moths are the easiest to observe as they tend to perch on branches in open vegetation or close to the ground often adjacent to tracks. Adults of both sexes have brightly coloured orange hind-wings. If you think you have seen the sun moth, are interested in getting involved, or would like more information contact Nicole Willers on 9423 2900.

regional reports

Please send us your regional report (150–200 words) and a photo by 31 August 2007. Text may be edited in response to volume of submitted reports.

JCCCF lobbies against environmental vandalism By Mike Norman

'Shame' sign results in community involvement

Successful lobbying of Joondalup Mayor, Troy Pickard, by Joondalup Community Coast Care Forum (JCCCF) resulted in the installation of a 'shame' sign in June 2006, in a vandalised coastal reserve at Kallaroo. A 400-metre area of the reserve was cleared and burnt presumably to enhance ocean views of nearby houses. A meeting in March 2007 with the mayor, JCCCF members and about 20 residents enabled discussions on how to resolve the situation. The mayor informed residents that the sign notifying people that the vegetation had been damaged by illegal vandalism would be removed only when the site had been suitably revegetated in accordance with the Coastal Management Plan and no reshaping of the dunes would take place to enhance ocean views. Residents have agreed to assist with replanting and site maintenance in partnership with the city and JCCCF if plant species and planting layout is arranged as best as possible to minimise impact on ocean views. Discussions are underway and the city has begun weed control in readiness for planting in 2008.

Sump spraying a disaster for remnant trees

The death of vegetation including many old remnant trees inside and up to a 30-metre radius around drainage sumps in the cities of Joondalup and Stirling were observed by JCCCF in January 2007. The group networked with the Urban Bushland Council, the Western Suburbs Regional Environment Network (WREN) and conservationists from other local government areas and discovered herbicide containing hexazinone had been sprayed by contractors last winter at up to 370 sumps. In addition to vegetation loss in sump areas, deaths have also occurred in nearby Bush Forever Sites, landscaped areas around sump fences and in residential gardens. We are concerned that winter rainfall will distribute the herbicide and cause further vegetation loss. This is very distressing to the many volunteers who have worked hard to improve and conserve bushland areas. We have facilitated media coverage of this 'environmental disaster' and await the release of independent consultant's reports contracted by the cities of Joondalup and Stirling.



Large tuart tree at Craigie Open Space impacted by herbicide containing hexazinone. Symptoms are slow to appear and bushes or trees can take 12–18 months to die. Several regrowths (refoliation three to four times) will occur during this period as the plant's food reserves are exhausted. Photo – Mike Norman

If you are interested in joining JCCCF in community planting and hand-weeding work at sites in Sorrento, Mullaloo and Iluka contact Mike on 9448 1978.

'Veldt Grass Vendetta'

By Diana Corbyn

The Friends of Murdoch Bushland at Challenger TAFE registered the 'Veldt Grass Vendetta' as an official event for Conservation Week (17–25 March 2007). It was an opportunity for students and staff to become bush regenerators for an hour or so, and learn how to wield a bread-knife against perennial veldt grass (*Ehrharta calycina*) when it is at its physical weakest in March.

We pinned colourful posters up around campus and gave all participants a demonstration on technique and a leaflet with information on why veldt grass is such a threat, how bush regeneration works and what to look for in banksia woodland in March. We covered over 1200 metres of woodland trails, chasing veldt grass into the bush where necessary.

For more information on activities contact Diana Corbyn on 9229 8412 or email diana.corbyn@challengertafe.wa.edu.au.



Congratulations to Warwick Bushland volunteers

By Janina Pezzarini

Warwick Bushland covers 60 hectares of woodland containing tuart, jarrah and banksia woodland and incorporates the Warwick Open Space Conservation Area (managed by the City of Joondalup) and the Warwick Senior High School Bushland (managed by the Department of Education and Training). In December 2006, 'Certificates of Appreciation' were presented to the founders and coordinators of the Friends of Warwick Bushland, Robyn McElroy and Karen Clarke. Robyn and Karen have retired after nine years of hard work, negotiation, frustration and everything else that goes with being a Friend's group coordinator! Without the fantastic efforts of these two very special people the bushland would have deteriorated into a weed patch. The sacrifices and determination of Robyn and Karen in dedicating so much of their time and effort has been the community's gain. Thank you again from everyone.

The Friends are very active and have been compiling a herbarium for the past nine



A presentation ceremony for Robyn McElroy (middle) and Karen Clarke (right) recognised their nine years of voluntary work with the Friends of Warwick Bushland. Janina Pezzarini (left) is the new coordinator for the Friends group. Photo – Mark Brundrett

years and surveying fungi for the past five years. They hold regular activity days (weeding, rubbish removal, planting, seed collection), assist with research projects e.g. graceful sun moth survey and enjoy regular walks and picnics.

For more information on activities contact Janina Pezzarini on 9447 9494 or by email neen@ext.uwa.edu.au.

Bushfire in Star Swamp

By Christine Curry

A massive bushfire swept through Star Swamp Bushland in North Beach on Sunday 4 March, threatening adjacent houses and burning about 50 per cent of the reserve. The Fire and Emergency Services Authority (FESA) and volunteer fire fighters battled throughout the night to bring the deliberately lit fire under control and continued to mop up further small outbreaks for several days.

In the wake of the fire, FESA and the City of Stirling undertook a damage assessment that resulted in approximately 20 dangerously burnt trees being felled. Sections of the fire were very hot and have done lasting damage to the already overburdened tree canopy. The local Community Association called a public meeting 10 days after the fire, to update nearby residents and to outline strategies to assist the bushland to recover. Representatives from FESA, the City of Stirling and the Friends of Star Swamp Bushland spoke to the 100 attendees about the fire and recovery plan.



Weed control and monitoring are the focus of work at Star Swamp after a bushfire in March burnt 50 per cent of the reserve. Photo – Christine Curry

Weed control will be the most important issue to be dealt with over the coming months. From experience, it is known that weeds quickly respond to newly burnt and degraded areas and seed stocks are already beginning to germinate. In particular, veldt grass, Geraldton carnation weed, wild pelargonium and black flag will need to be

controlled. The City of Stirling has indicated that it will increase its weed-spraying program.

The Friends group will be monitoring the progress of recovery, targeting its monthly weed-pulling activities where most needed and assisting with regeneration work in areas that are slow to recover.

As is nature's way, the bushland has already begun its own recovery process. Grass trees and zamia palms were the first to shoot, with various creepers and smaller shrubs quickly following. The ghostly, blackened paperbark trees in the dry swamp bed are now covered in soft green growth and fire fungi have appeared in abundance after the recent rains. The Star Swamp Bushland will recover from this serious burn but experience shows that it is never quite the same as it was before a fire. Too-frequent fires are slowly changing the flora of the bushland forever.

For more information contact Christine Curry on 9447 2983.



Rottnest reptiles

By John Dell (DEC)

Rottnest Island contains unique reptile populations that have been separated from their mainland counterparts for about 7000 years. As a result some have undergone considerable morphological change and are described as separate subspecies to those on the mainland. Although only 19 reptile species are now found on the island they are important to biodiversity conservation.



West coast ctenotus (*Ctenotus fallens*) is a common diurnal lizard found in most habitats on Rottnest Island. Photo – Brad Maryan

Seven thousand years ago the sea level was more than nine metres lower than present and Rottnest Island would have been connected to the mainland via Garden Island and Point Peron. As sea levels rose, Rottnest became isolated and the environment gradually changed with the strong probability that a number of reptile species became extinct on the island. Accordingly, Rottnest is now relatively depauperate (has a low number of species) compared with the adjacent mainland. The occurrence of 19 species – two geckos, two legless lizards, 13 skinks and two snakes – is only a small subset of the 71 reptile species known from the Perth Metropolitan Region.

Distinctive groups of reptiles represented on the adjacent mainland, but absent from Rottnest, include dragon lizards, monitors or goannas, pythons and burrowing snakes (the latter group has five species on the mainland coastal dunes but none on Rottnest).

Most Rottnest reptile species lay eggs except for five species of skinks that give birth to live young. This high number of egg-layers reflects the general aridity of the island, as egg-laying reptiles are a feature of arid hot summer climates. Most egg-layers breed in spring with eggs being laid at the beginning of summer. High

ambient temperatures in summer incubate the eggs, which hatch from late January onwards. By contrast the live-bearers carry developing young through summer and births take place generally later in autumn.

Two of the larger species, the dugite and bobtail, are sufficiently distinct from mainland populations that they are described as separate subspecies and are listed as threatened under the WA *Wildlife Conservation Act 1950*. Further genetic studies are needed to determine whether all the Rottnest species are sufficiently genetically distinct from mainland populations to warrant similar subspecific separation and conservation listing.

Until recently little information was available on the status or distribution of reptiles on Rottnest and whether management practices needed to be amended to ensure reptile populations were maintained. In 2002 a survey utilising a number of volunteers was initiated to intensively sample six different vegetation types across the island by pitfall trapping. Each site comprised nine pitfall traps (20-litre buckets) arranged on a three-by-three grid with 10-metre spacing between each pitfall trap. A 10-metre long flywire drift fence that was 30 centimetres high, was placed vertically over each pitfall to direct reptiles into the

bucket when the traps were open and operational. Sampling was mainly concentrated in spring to early summer, and late summer to autumn when reptile activity was at its greatest.

This survey has recorded 18 of the 19 species known to occur on Rottnest. A large amount of data has been recorded and it is apparent that most species are present in high numbers at most sites and are maintaining breeding populations. The only exception is the southwestern crevice skink (*Egernia napoleonis*) that was not located in any of the sampling sites or in other suitable habitat throughout the island despite intensive searching. This species had been captured in the 1960s on the island



WA Museum's Ric How (left) and John Dell measuring and recording reptiles at Bickley Bay, Rottnest Island. Photo – Julia Burns

including some individuals caught by domestic cats from the settlement. Both domestic and feral cats have now been removed from the island. An exciting finding of this study was that this species is not regionally extinct as a few individuals were located on a tiny islet a few metres off the main Rottnest coastline.

The survey of Rottnest reptiles has compiled important baseline data that will enable future surveys to assess changes in populations and determine whether current management is appropriate in ensuring the long-term survival of these significant island populations.

GROUPPROFILE:

Friends of Hepburn and Pinnaroo Bushland (Inc.)

By Ralph Henderson

THE STRUGGLE to preserve Hepburn Heights has spanned a decade of determination and campaigning by the Friends of Hepburn and Pinnaroo Bushland. The outcome is a beautiful 20-hectare area of banksia woodland saved from destruction for future generations to enjoy.

The Friends group, originally called the Hepburn Woodland Preservation Group, was formed in 1987 to try to prevent LandCorp from developing Hepburn Heights – a 53-hectare area of urban bushland. The group collected a 15,500-signature petition and presented it to Parliament followed by a long and protracted legal battle, which went all the way to the High Court. Despite this, the State Minister rezoned the land and, in 1992, sent the bulldozers in. This angered the community resulting in some brave individuals fronting the bulldozers and 'tree-sitting'. The rest is history, with the outcome being that 20 hectares was saved and is now an 'A' Class Reserve and part of the larger Whitfords Avenue Bush Forever Site. The publicity surrounding the fight to save this bushland was the spark that led to the formation of the Urban Bushland Council and many other friends groups.

In the early days the Friends were very 'hands on', having to rehabilitate some of the bushland destroyed by the bulldozers. Many 'busy bees' resulted in these planting areas now being indistinct from the rest of the natural bush. Much hand weeding was also carried out, particularly of large areas of pelargonium. Fortunately, the City of Joondalup in whose name the area is vested now employs a Natural Areas Group who does much of the weeding.

The campaign resumes

The focus of the group changed in 1996, when it was decided that we needed to resume the fight against further threats to the remaining bushland area. This was due to LandCorp having originally excised two sites within the area for a fire station and a power sub-station. We quickly had to become a lobby group and begin engaging stakeholders with the view to relocating these two utility sites.

The first one proposed for development was



Grass trees within our bushland illustrating why we have fought so hard to preserve this area at Hepburn Heights. Photo – Ralph Henderson



Left: Yellow leschenaultia (Lechenaultia linarioides) (left) and dwarf wedding bush (Ricinocarpos glaucus) (right), significant species in the Hepburn bushland. Photos - Mark Brundrett

the 0.3-hectare fire station site. So we approached the local council to relocate it to one of their community sites. This failed when the local community objected. We then became involved with FESA and the Department for Planning and Infrastructure. These agencies organised a workshop in 2002 for stakeholder representatives to consider alternative sites, rank them and select the most appropriate. This resulted in the fire station being built on a site across the road.

Hardly had this battle been won, when we were informed that Western Power was proposing to develop their site. This was going to be an even bigger challenge, as Western Power had actually bought its site, which was more than one hectare. So the group met with Western Power and the local MLA to identify other sites and select

the most suitable. Finally in 2005, Western Power, with some political assistance, was able to negotiate a land swap with the Metropolitan Cemeteries Board. The outcome being that the sub-station has been built on a site that would eventually have been cleared for burial sites.

Time to recuperate

It seems that now the 'war' has been won, we are all suffering burnout and are tending to rest on our laurels. The main lesson learnt from these experiences is that utility providers, government departments and some politicians are now more environmentally aware and are prepared to negotiate on this basis.

For more information contact Ralph on 9401 3115 or email ralphh@iprimus.com.au.

Resources

Publications

Threatened Animals of Western

Australia (2004) By Andrew Burbidge. WA Naturally Publication, DEC. 208 pages, full colour soft cover, RRP \$32.95. This book documents the state of current research and management of threatened animals in WA. It looks at the factors that led to their decline and presents a vision of what needs to be done to conserve WA's amazing biodiversity. To order phone (08) 9334 0481 or visit DEC's online bookshop at www.naturebase.net.



Western Australia's Threatened Flora

(1998) Edited by Andrew Brown, Carolyn Thomson-Dans and Neville Marchant. WA Naturally Publications, DEC. 220 pages, full colour, soft cover, RRP \$32.95. The most comprehensive guide to endangered flora in this State. Twenty-four leaders in the field have contributed to the description of the 350 taxa currently listed. To order phone (08) 9334 0481 or visit DEC's online bookshop at www.naturebase.net



Set of two books available to *Bushland News* readers for \$51.95. Over 20 per cent discount!

Albany and the Great Southern: A Region of Diversity (2006) By Alan Carter. Published by Green Skills (Inc.). A guide to the natural wonders of the Great Southern Region of WA and its extraordinary range of nature-based tourism opportunities. Colour photographs. Useful website links and references also provided. RRP \$10 plus postage. To order contact Green Skills (Inc.), Murdoch on 9360 6667.

Reptiles and Frogs in the Bush: Southwestern Australia (2007) By Brian Bush, Brad Maryan, Robert Browne-Cooper and David Robinson. UWA Press. RRP \$39.95. A practical field-guide to the herpetology of Southwestern Australia. Scientific descriptions, distribution maps, preferred habitats and colour photographs. Answers questions such as 'What does a frog dropping or lizard burrow look like?', 'How do you read a snake track?', 'What do you do when you find a snake in your garden?' and 'What is the correct way of handling a frog or photographing a reptile?'

Website watch

Asparagus Weeds Best Practice Management Manual.

Contains management techniques for all asparagus weeds. Copies available from the National Asparagus Weeds Management Coordinator and an electronic version can be downloaded from the bridal creeper website. Contact details are available at www.weeds.org.au/WoNS/bridalcreper/.

Gravity Discovery Centre, Gingin. Science, educational and community events visit www.gdc.asn.au.



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