

Flora, fauna and fungi

By Neale Bougher, Roz Hart and Aruni Jayasekera



Perth Urban Bushland Fungi

Although often overlooked, fungi are an integral part of long-term bushland management. The Perth Urban Bushland Fungi (PUBF) Project has been increasing awareness and knowledge about local fungi since 2004. The project is an outstanding example of engaging the public, scientists and skilled volunteers. Results are also providing a fascinating and significant contribution to our poorly documented urban fungi.

Free public PUBF fungi forays and workshops during winter have attracted more than 2,100 community participants at 109 public events in 58 different bushlands around Perth. Led by trained volunteer fungi leaders, members of the public search for fungi and help photograph, record and geo-reference. After the foray, the groups meet to discuss and identify the day's finds.

The forays have a strong scientific basis as many specimens are prepared and stored as part of the WA Herbarium's State collections. An exciting aspect of the project is the unveiling of the taxonomic secrets of many species new to science, and the discovery of new fungi records for Western Australia.

This year, PUBF began regular surveys at long-term monitoring sites in Kings Park to build an inventory of the fungi there for the first time. Many new discoveries were made, including some amazing bright orange and violet disc fungi in areas severely burnt by a major fire in January 2009. These fungi, along with the emergence of plants that partner fungi such as orchids, are a significant sign of post-fire recovery of the bushland in Kings Park.

Detailed fungi reports for every bushland surveyed are available on the PUBF website which was



A 2009 PUBF foray at Locke Reserve, Busselton. Crouching is one of PUBF's volunteer fungi leaders Kevin Griffiths. Photo – Roz Hart

designed by volunteers and web expert Brett Glossop. *Fungi of the Perth Region and Beyond* (2009) is a guide to local fungi and is available as a bound book or for download from www.fungiperth.org.au.

The demand for PUBF surveys increases yearly from bushland friends groups and local government bodies who invite PUBF to survey their bushlands. PUBF does not have the resources to satisfy all requests; however community groups are encouraged to continue to survey the fungi in their bushlands, using the fungi fieldbook and PUBF's resources for support.



The orange disc fungus *Pulvinula archeri* at Kings Park provided a stark contrast to the blackened burnt earth. Photo – Neale Bougher

PUBF is a collaborative effort between the WA Naturalists' Club and the Urban Bushland Council in conjunction with the Department of Environment and Conservation's (DEC's) WA Herbarium, with financial support from Lotterywest. Overall leadership is provided by Dr Neale Bougher from the WA Herbarium.

Issue 71

Spring 2009

Time of Kambarang and Birak in the Nyoongar calendar.

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www.dec.wa.gov.au

Urban Nature UPDATE

By Julia Cullity

There have been no staff changes at Urban Nature and we are happy to have been able to retain the expertise of Karen Bettink for a further six months. Kate Brown has recently returned from a study tour of remnant bushlands on the Cape Flats in South Africa and the 10th International Conference on the Ecology and Management of Alien Plant Invasions. This was made possible through DEC's June Craig Scholarship for Women. Congratulations Kate, we can't wait to hear what you learnt.



Summer Bushland News

Summer *Bushland News* contributions should be sent to Urban Nature by **Friday 13 November 2009**.

Compiled and edited by Jo Tregonning.

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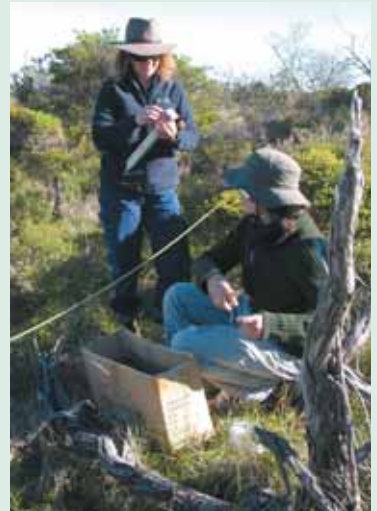
Current and archived issues of *Bushland News* are available at www.dec.wa.gov.au/programs/urban-nature/bushland-news.html

Herbicide trial begins at Burns Beach

Urban Nature is continuing to research an effective herbicide treatment for Geraldton carnation weed (*Euphorbia terracina*) that is selective and shows no off-target effects on native vegetation.

This work follows trials in 2005 in the Threatened Ecological Community (sedgeland in the Holocene dune swales) at Port Kennedy. In this highly restricted but species-poor plant community, we recorded effective control of both adult and seedling *E. terracina*, and a significant recovery of the Threatened Ecological Community. The results were reported in proceedings of the 2007 Geraldton Carnation Weed Field Day and Workshop (visit www.dec.wa.gov.au/programs/urban-nature/publications.html for more information).

In the next phase of this project we are trialing the herbicide in coastal heath invaded by *E. terracina* at Burns Beach. This will provide information on the impacts of the herbicide on native species commonly found in the plant communities most under threat from this highly invasive environmental weed. It will also provide information on the ability of the community to recover following removal of Geraldton carnation weed. We are also hoping to gather information on reproductive biology and rate of spread from the control plots (where no herbicide treatment will take place). Useful results from the trials at Burns Beach will not be available for at least three years.



Urban Nature setting up trial plots at Burns Beach. Photo – Kate Brown

Clay-based wetlands workshop

In July, Urban Nature held a second workshop on clay-based wetlands. The first workshop, in 2008, involved a field day to a series of seasonal clay-based wetlands on the Swan Coastal Plain to look at on-ground management issues and outcomes (see *Bushland News* Issue 67).

This year, the workshop focused on the hydrology of these wetlands and possible management implications. It included presentations on long-term hydrological studies of the Greater Brixton Street Wetlands by Vic Semeniuk, floristic communities of seasonally inundated claypans in Australia and worldwide by Neil Gibson, clay-based wetlands' endemic flora by Bronwen Keighery and Greg Keighery, and a talk on *ex situ* conservation strategies for species of clay-based wetlands by Renee Tuckett. Workshop participants also visited Brixton Street Wetlands to see how hydrology relates to vegetation patterning and species distribution.



Participants examine clay-based Brixton Street Wetland. Photo – Kate Brown

The aim of clay-based wetlands workshop series is to bring together on-ground managers and interested individuals involved in wetlands conservation and management to network, learn and exchange ideas.

BUSHLAND WEEDWATCH:

Local natives can become weeds By Julia Cullity

Some of our local native plants are naturally restricted in the landscape but can still exist, and even thrive, when planted outside of their natural distribution. Eventually these introduced natives can self-seed and out-compete local native plants becoming weeds.

Local plants that are becoming serious bushland weeds are mostly trees and tall shrubs. When these plants naturalise they can change the structure of bushland, creating dense canopy or scrub thicket layers. In almost all cases they have become established through amenity plantings, inappropriate revegetation or as garden escapees.

Chamaelucium uncinatum is a well-known native species with two variants. The Geraldton wax variant naturally grows from Kalbarri to Moore River on coastal soils and is widely cultivated as a garden plant. The Wembley wax variant only grows naturally in Bold Park in Perth and in some other populations north to Eneabba. The Wembley wax can be distinguished from Geraldton wax by its smaller flowers and shorter leaves. Both varieties are now present in Bold Park, where interbreeding is affecting the genetically significant gene pool of Wembley wax. But Geraldton wax is not only a problem in Bold Park – it has been introduced to many bushland areas on the coastal plain through amenity plantings, dumped garden rubbish and as a garden escapee.

Rottnest tea-tree or moonah (*Melaleuca lanceolata*) is a widespread coastal and inland species of salt lakes. It is common on Garden and Rottnest islands where it forms forest canopies often in association with Rottnest Island pine (*Callitris preissii*). Remnant Rottnest tea-tree is almost absent from the Swan Coastal Plain, however this species has been widely planted as an amenity shade tree, particularly along the coast. It has become a serious weed of bushlands such as Kings Park where plants were forming thickets as they moved into the bushland.

One-sided bottlebrush (*Calothamnus quadrifidus*) is naturally distributed in the south-west from Kalbarri to Esperance.

This species is a popular and easy-to-grow garden plant and has often been included in generic seed mixes for the revegetation of roadsides. One-sided bottlebrush has invaded Warwick Bushland and Kings Park from roadside plantings and the Friends of Koondoola removed 5,000 seedlings from an area near amenity plantings less than 15 years old.

Peppermint (*Agonis flexuosa*) is a coastal tree naturally distributed from Perth to Bremer Bay. Perth is in the northern-most part of its range and it only naturally occurs in parts of Swanbourne, City Beach and up the Swan River estuary to Dalkeith. Peppermints are extensively planted as shade and street trees. They have been recorded seeding out from amenity plantings in lawn areas into the bushlands and sedgeland at Lake Richmond, and are known to favour controlled burns or frequent fire regimes.

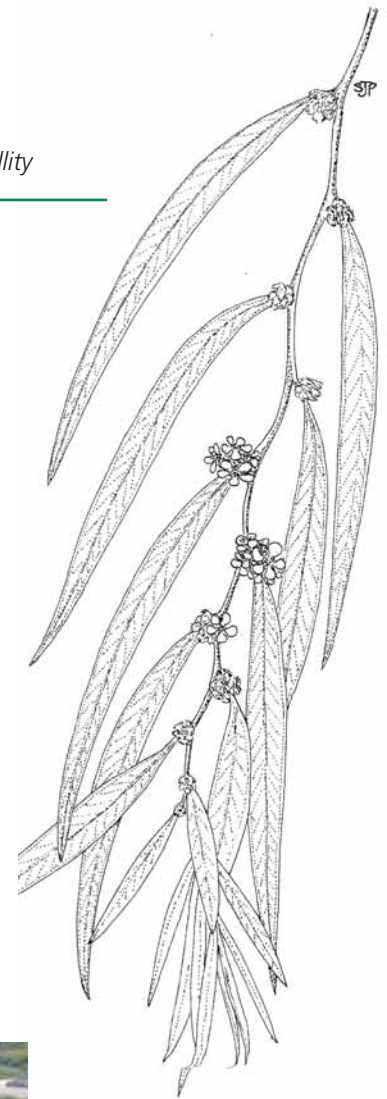


The large, spreading shrub Melaleuca lanceolata is forming a thick, unnatural canopy layer as it invades the open, low, coastal heath at Bold Park, City Beach. Photo – Julia Cullity

Other potentially invasive WA natives to look out for include Rottnest Island pine (*Callitris preissii*), rock sheoak (*Allocasuarina huegeliana*), ribbed hakea (*Hakea costata*), red river gum (*Eucalyptus camaldulensis*), *Melaleuca nesophila* and *Hakea pycnomeura*.

Take care with your planting

When selecting plants, don't rely on general species lists based on soil types. Take time to understand your bushland. Only plant species that are already present in your bushland and use local seed.



Peppermint (Agonis flexuosa). Illustration – Robert Powell (2009) Leaf and Branch: Trees and tall shrubs of Perth, p.57.

Also ask yourself, has the bush already got the capacity to regenerate and is it necessary to replant? Finally, make sure you and your local council and utilities don't use invasive native species in or near bushland, in gardens, amenity plantings or in general seed mixes.

More information

Keighery G.J. (2002) The enemy within: Native environmental weeds in Western Australia. In *Proceedings of the 13th Australian Weeds Conference, Perth* (eds. H. Spafford Jacob, J. Dodd & J. Moore). Plant Protection Society of WA, Perth.

Powell R. (2009) *Leaf and Branch* DEC, Perth.

Barrett R. and Pin Tay E. (2005) *Perth Plants* BGPA, Perth.

Brown K. and Brooks K. (2003) *Bushland Weeds* EWAN, Greenwood.

ECONOTES:

Nice snakes

By David Mitchell

That scuffling you hear in the leaf litter as you walk through the bush is most often a skink, but it could be one of our fascinating snakes. At this time of the year, snakes in the Perth metropolitan area are emerging from their winter hiding spots in search of mates and food. Snakes form an important part of our local ecology and there are many to discover.

Blind snakes

A blind snake, when first unearthed, looks much like a big worm. They have a rounded head and a short tail. The scales are small, smooth, shiny and a purplish-pink to purplish-brown colour. Their eyes are reduced to two small dark spots and they can probably only distinguish dark from light. These snakes are burrowers and nocturnal so are rarely seen, except when accidentally disturbed from underground, captured during a survey, or on the rare occasions they come to the surface.

Blind snakes feed on termites and ant eggs, larvae and pupae, and are sometimes found in ant or termite nests. They are non-venomous, and only have a very small mouth. One of their few protections is the ability to exude an unpleasant odour when captured.

There are three species of blind snake that occur in the Perth region. The most common is the southern blind snake (*Ramphotyphlops australis*) which grows up to 45 cm.

Pythons

Two species of python are found in the Perth region and some people may be lucky enough to encounter the more common carpet python (*Morelia spilota*). Growing up to 250 cm long, they have a gorgeous pattern of brown, cream, yellow and pale brown blotches. Pythons are non-venomous but have many very sharp teeth and strong jaws and can inflict a nasty bite if provoked.

Pythons climb trees and often shelter for long periods (fasting between meals) in tree hollows, or in rock hollows and burrows. The female incubates her three



Carpet pythons (*Morelia spilota*) are nocturnal, but can be found basking in the sun during the day. Photo – Babs and Bert Wells/DEC



Several of the smaller snakes (such as this Gould's hooded snake (*Parasuta gouldii*)) and even some legless lizards have a black head and colouring which mimics juvenile dugites and may provide some protection from predators. Photo – Leonie Valentine



Jan's banded snake (*Simoselaps bertholdi*) is short (up to 30 cm) and robust and has a distinctive pattern of alternating yellow-orange and black bands. These snakes burrow through sand and leaf litter and feed on other reptiles and reptile eggs. Photo – Sarah Althuis

to 30 eggs by coiling around them. Like most pythons, the carpet python has heat-sensitive pits on the lip scales to assist them locate their warm-blooded prey such as mammals and birds.

Loss of habitat as well as predation by introduced foxes has significantly reduced the numbers of carpet python and they are now only found in large bushland areas. The carpet python is a threatened species listed as specially protected under the *Wildlife Conservation Act 1950*.

Venomous

Elapids or front-fanged snakes are the most numerous and common venomous snakes in the Perth region, with 15 species known in the area. Dugites (*Pseudonaja affinis*) and tiger snakes (*Notechis scutatus*) are the most often encountered and are best avoided.

While also venomous, most of the other elapid snakes are too small to be considered harmful, and they beat a hasty and quiet retreat from anything bigger than themselves.

The reticulated whip snake (*Demansia psammophis*) is an active, long (100 cm) and slender snake which has large eyes to locate and chase down its lizard prey.

Gould's hooded snake (*Parasuta gouldii*) is a small (55 cm), orange-brown to reddish snake with a distinct black head and neck. They shelter during the day under cover, such as rocks, bark, old corrugated iron and other human rubbish and emerge at night to hunt for skinks and geckos.

Only large intact areas of bushland are able to support snake species in the longer term and snakes rapidly disappear from small areas. As the area of bushland in the Perth region continues to decline there is less habitat for all our native snakes and so fewer snakes are seen. Our snake species are also very shy, so it is only lucky or patient observers who get to see our 'nice snakes', the blind snakes, pythons and the small and colourful elapid snakes.

Boneseed eradication

This year's Boneseed Blitz was held from 21 to 30 September as part of the WA boneseed eradication program. However, boneseed (*Chrysanthemoides monilifera*) flowers until November and its bright yellow flowers allow for easy identification of this nationally significant weed. You can help by reporting suspected boneseed plants.

In WA, 37 known infestations are under eradication (with only two new sites found during 2008). Known infestations have been reported at Kalamunda, Applecross, Roleystone, Pickering Brook, Armadale, Byford, Pingelly, Wandering, Boddington, Narrogin, Dardadine, Woodanilling, Busselton, Albany and Many Peaks. Contact Hillary Cherry by email (hillary.cherry@environment.nsw.gov.au) or on (02) 9585 6587, or visit www.weeds.org.au/WoNS/bitoubush/.



Bright yellow flowers of boneseed during spring make identification of this weed easy. Photo – Hillary Cherry

Samples required for genetic study on *Arundo donax*

The University of Adelaide is undertaking a project on the genetic diversity in *Arundo donax* (sometimes incorrectly called bamboo). It is a potential biofuel species and a common weed in the Perth area. Samples from WA are required. The collection technique is to cut the top 10 cm of stem, trim leaves to leave a piece about 15 cm long with leaf bases. Seal it in zip-lock bag for transport and post it in an express bag (the fresher the samples the better). GPS points for location are also required. For assistance with identification visit www.iewf.org/weedid/Arundo_donax.htm.

Post samples to Dr Christopher Preston, Weed Management, School of Agriculture, Food and Wine, University of Adelaide, PMB 1, Glen Osmond South Australia 5064. Email christopher.preston@adelaide.edu.au.

Environmental Community Grants

There's been a strong response to the first round of funding for the State Government's four-year \$6 million Environmental Community Grants program. Applications for 2009 closed in May with nearly 300 submissions seeking funding for projects with a total value of \$4.48 million. All but one of the seven categories was significantly oversubscribed and it has taken longer than anticipated to process and assess the applications. The successful grants were announced on 8 September and are listed on www.dec.wa.gov.au/ecg. The second round of funding is expected to open in February 2010.

Brazilian pepper

By Kate Brown

A visit to Moore River in April at the request of Vic and Elaine Macarten, Friends of Moore River National Park, provided a scary insight into what Brazilian or Japanese pepper (*Schinus teribenthifolia*) can do in dryer habitats after fire. Brazilian pepper is usually associated with riverine habitats and is noted for being particularly invasive in wetter areas. The site Vic and Elaine took us to was a dry sandy hill with outcropping limestone. Burnt a couple of years ago, the hillside is now covered in what appear to be hundreds of stems of resprouting and root suckering Brazilian peppers. The site illustrates that Brazilian pepper can invade drier sites and fire probably plays a role in its spread.



Brazilian pepper (*Schinus teribenthifolia*) has the ability to establish in dry, sandy areas following fire. Photo – Kate Brown

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


Please send us your January, February and March 2010 events by Friday 13 November 2009.

Recurrent activities

 **Conservation Volunteers Australia activity schedule.** Overnight country trips or one-day activities. Call Andrew 9227 5711 or visit www.conservationvolunteers.com.au.

 **Research into bird populations** with the Herdsman Lake Bird Banding Group. People are welcome to call Bill Rutherford (ABBBS Coordinator) 0438 910 252 and organise a visit.

Sundays 8am–10am

 **Bushcare activities** every Sunday with the Friends of Shenton Park Bushland. Contact Dani 9381 3470 or bojel@it.net.au.


Sundays 8.30am

 **Bushcare activities** with the Friends of Wireless Hill are on the second and fourth Sunday of each month. Meet at main car park. Contact Margaret 9315 9075 or s3mmatthews@hotmail.com.


Sundays 9.45am–12 noon

 **Bushcare activities** with the Friends of Piesse Brook are on the third Sunday of each month. Email linda@johnstanley.cc or visit www.friendsofpiessebrook.org.au.


Thursdays 8am–9am

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

Saturdays 9am


 **Bushcare activities** with the Friends of Brixton Street Wetlands are on the third Saturday of each month. Call **FBSW**.


October

 **2 Friday 6.30pm Spotlight for wildlife** at Canning River Regional Park. BYO torch and gum boots. Light supper provided. Contact **CREEC**.


 **2 Friday 6.30pm–8.30pm Frog night stalk** at Bibra Lake. \$5pp. Contact **CWEC**.


 **3 Saturday 8.30–9.30am Bush comes alive guided walk** at Landsdale Reserve. Call **CW**.


 **4 Sunday 10am–12.30pm Wetland wildflower walk** at Bibra Lake. Contact **CWEC**.

 **5 Monday 1pm–2pm Raptor Encounters** at Bibra Lake. Contact **CWEC**.


 **5 Monday 7pm–8pm Frog photography** at Bibra Lake. \$5pp. Contact **CWEC**.


 **6 Tuesday 10am–12 noon Bush survival skills** at Bibra Lake. \$5pp. Contact **CWEC**.


 **6 Tuesday 1pm–3pm Snake encounters** at Bibra Lake. \$5pp. Contact **CWEC**.


 **7 Wednesday 7.30am–9am Birds at Bibra Lake.** Contact **CWEC**.

 **8 Thursday 10am–12 noon or 1pm–3pm Bills, beaks and bones** Get up close with the WA Raptor Centre, dissect bird castings and make bird craft. \$8 child (5–12 yrs). Contact **CREEC**.


 **9 Friday 9am–11am Walking Beelihar Wetlands.** Contact **CWEC**.

 **9 Friday 6.30pm–7.30pm Night stalk** at Lake Joondalup, Yellagonga Regional Park. Call **CW**.

 **10 Saturday 8am–9am Guided walk** at Koondoola Reserve. Call **CW**.


 **10 Saturday 8am–9am Pigface removal and wildflower walk** at Wandii Nature Reserve. Call Fred 9397 2232.

 **10 and 17 Saturday 9am–12 noon Bird watching and identification course** with Birds Australia. Part 1: Why watch birds? Part 2: Birds of the Canning River Regional Park. Includes morning tea. BYO binoculars. Contact **CREEC**.


 **11 Sunday 8.30am Wildflower walk** at Cottonwood Crescent Reserve, Dianella. Contact **FDB**.


 **11 Sunday 8.30am–10.30am Bushcare** at Mindarie Park with Quinns Rocks Environmental Group. Meet at Javez Dr near Mindarie Dr, Quinns Rocks. Call Jac or David 9305 9575.


 **13 Tuesday 8pm Native plant breeding program** at Kings Park with guest speaker Digby Growns. Call **WSWA(P)**.


 **14 Wednesday 7.30pm A Naturalist in Borneo** with guest speaker Roz Hart. Contact **BNC**.


 **16 Friday 7.30pm Nocturnal walk** at Lake Gwelup. BYO torch. Contact Wayne 0407 383 425 or folgmailto@inet.net.au.


 **16 Friday 6.30pm Snakes alive family information evening** on how snakes live and how to live with them. Guided night walk through the swamp. \$15pp. BYO torches. Call **WAGL**.


 **17 Saturday 8am Foreshore cleanup** at Point Walter. Contact **BEAG**.

 **17 Saturday 8am Guided walk** at Lake Gwelup. Call **FLG**.

 **18 Sunday 9am–12 noon Bushcare** at the Spectacles Wetlands, Kwinana. Contact **FS**.


 **18 Sunday 9am–12 noon Bush regeneration** at Warwick Bushland. Contact **FWB**.

 **20 Tuesday 6.30pm–8.30 Talk: Frogs and black cockatoos.** Call **FBSW**.

 **21 Wednesday 11am–12 noon Guided walk** at Koondoola Reserve. Call **CW**.

 **23 Friday 7.30pm Nocturnal walk** at Star Swamp. BYO torch. Contact David 9448 9192 or starswamp@hotmail.com.

 **24 Saturday 9am–11am Wetland ramble** (live band) at Brixton Street Wetlands. Call **FBSW**.

 **25 Sunday Threatened Ironstone Communities guided wildflower walk** with DEC botanist Andrew Webb. Taylor's Reserve and Williamson Rd. Lunch at Ambergate Reserve. Contact **BNC**.

REGISTRATION/CONTACT DETAILS

BCF Baldivis Children's Forest
Contact Mary 9524 1150 or mary.rayner@det.wa.edu.au
Wednesdays during school hours.

BEAG Bicton Environmental Action Group Contact Peter Neesham 9339 7795 or pneesham@bigpond.net.au.

BNC Busselton Naturalist's Club
Meet RSL Hall, Causeway Dr, Busselton. Excursion bus departs Pries Ave, Busselton at 9am. Contact Bernie 9727 2474 or bmasters@inet.net.au.

BSFH Bush Skills for the Hills offers free hills-focused workshops. Contact Roberta Circosta 9424 2222 or roberta.circosta@emrc.org.au.

CWEC Cockburn Wetlands Education Centre, Hope Rd, Bibra Lake. Contact Denise 9417 8460 or denise@cockburnwetlands.org.au.

CREEC Canning River Eco Education Centre Kent St, Wilson. Contact Tanya Porter 9461 7160 or tporter@canning.wa.gov.au.

CW City of Wanneroo
Free activities. Call Sharon Rose 9405 5000.

FBSW Friends of Brixton Street Wetlands
Call Regina 9459 2964

FDB Friends of Dianella Bushland
Meet at Cottonwood Crescent Reserve car park. Entrance from Dianella Dr, Gay St. Then Channel 7 private road. Contact Jan 9344 2872 or webrite@crystal.com.au.

FLG Friends of Lake Gwelup
Meet at scout hall, Huntriss Rd, Karrinyup. Contact Christine 9447 2983 or folgmailto@inet.net.au.

FS Friends of the Spectacles
Meet at car park McLaughlan Rd, Kwinana. Contact Lynda Smith 9439 1928 or outback3@inet.net.au.

FSS Friends of Star Swamp
Meet at Henderson Environment Centre, Groat St, North Beach. Contact Christine 9447 2983 or starswamp@hotmail.com.

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

JHS Jarrahdale Heritage Society
Informative guided walks of natural heritage in Jarrahdale. Meet at Old Post Office. \$5/adult or \$10/family (2A+2C). Call Joy 9526 0121 or Sheila 9525 5352.

WAGL WA Gould League
Herdsman Lake Wildlife Centre. Bookings 9387 6079. Visit www.wagouldleague.com.au.

WSWA(N) Wildflower Society of WA (Northern Suburbs Branch). Meet at Henderson Environment Centre, Groat St, North Beach. \$2 entry and door prize. Call Christine 9447 2983.

WSWA(P) Wildflower Society of WA (Perth Branch)
Subiaco Community Centre, Bagot Rd, Subiaco. Call Nina 0427 936 566.




25 Sunday 8.30am

 **Grab-a-gladi-day** with the Friends of Wireless Hill. Wear protective clothes and bring a water bottle. Contact Margaret 9315 9075 or s3mmatthews@hotmail.com.

25 Sunday 8am–9am

 **Guided walk** at Marangaroo Conservation Reserve. Call **CW**.


25 Sunday

 **Star gazing open night** at Gingin Observatory. Bookings 9575 7577 or bookings@gdc.asn.au.

25 Sunday 10.30am

 **Identifying forest flowers guided 5 km walk**, Jarrahdale. Call **JHS**.

27 Tuesday 7.30pm

 **Flora of New Caledonia** with guest speaker David Bright. Call **WSWA(N)**.


30 Friday 6.30pm–7.30pm

 **Night stalk** at Countryside Park, Two Rocks. Call **CW**.

31 Saturday 6.30pm–8.30pm

 **Guided night stalk** at Baldivis Children's Forest. Halloween theme. Light supper included. \$5 adults, \$2.50 (child 6–16 yrs). Contact **BCF**.

31 Saturday 10am–2pm

 **Watering stations workshop**. Piesse Brook, Mundy National Park. Three sessions on riparian plants and animals, restoration and weed management. Barbecue lunch provided. Contact **BSFH**.

31 Saturday 5.30pm

 **Ghost walk in the moonlight**, Jarrahdale. BYO barbecue and torch. Call **JHS**.


November**6 Friday 7pm–8pm**

 **Night stalk** at Koondoola Regional Bushland. Call **CW**.

7 Saturday 7.30pm

 **Endangered species breeding program** at Perth Zoo with guest speaker Helen Robertson. Contact **BNC**.

7 Saturday 8am

 **Weeding** along Bicton foreshore. Contact **BEAG**.

7 Saturday 9am–11am

 **Flora walk** at Brixton Street Wetlands. Call **FBSW**.

8 Sunday 7.30am–8.30am

 **Bungendore bush breakfast** at Bungendore Park, Admiral Rd, Bedforddale. Enjoy a cooked breakfast in the bush. Birds of Bungendore Park report will be launched. Bookings Margaret on goffmarg@bigpond.net.au.


14 Saturday 7.30pm

 **Night walk** at Cottonwood Crescent Reserve, Dianella. Contact **FDB**.


15 Sunday 11.30am–1pm

 **Concert in the forest amphitheatre**. Local school choirs and soloists. BYO picnic. Contact **BCF**.

15 Sunday 8.30am–10.30am

 **Bushcare** at Quinns Rocks Primary School, Gumblossom Park. Meet school car park, Rees Dr, Quinns Rocks. Call Clair 9305 1580.

15 Sunday 10.30am–1.30pm

 **Nature walk and end of year party** at Warwick Bushland. Contact **FWB**.

21 Saturday 8am

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

21 Saturday 9am–12 noon

 **Bushcare activities** at the Spectacles Wetlands, Kwinana. Contact **FS**.

22 Sunday

 **Guided wildflower walk** along Milyeannup Rd. 12 km easy–moderate. Bus \$12pp. Contact **BNC**.


24 Tuesday 7.30pm

 **Climate change: the end of life as we know it** with guest speaker Jim Barrow. Call **WSWA(N)**.

26 Thursday 5.30pm–8.30pm

 **Introduction to seed collection** workshop on fruits, seeds, hygiene and licensing requirements. Swan TAFE, Lloyd St, Midland. Contact **BSFH**.


28 Saturday 9am–12.30pm

 **Collect seed from a seed orchard and bushland**. See the results of broadcast seeding and natural regeneration. Joanna Seabrook Seed Orchard, Ryecroft Rd, Glen Forrest (SuperBlock). Contact **BSFH**.


28 Saturday 8am

 **Guided walk** at Star Swamp. Contact **FSS**.


29 Sunday 9.30am–12.30pm

 **Family orienteering treasure hunt** using a GPS to find clues and solve the puzzle. Morning tea and lunch included. Suitable 8+ years. \$10 adults \$5 child (8–16 yrs). Contact **BCF**.


December**5 Saturday 8am**

 **Shell bed clean-up** at Bicton Baths. **BEAG**.

9 Wednesday 5.30pm–8.30pm

 **Seed processing workshop** includes separation, cleaning, labelling and cataloguing. Octagonal Hall, McGlew Rd, Glen Forrest. Contact **BSFH**.

13 Sunday 8am–10.30am

 **Coast walk and Christmas morning tea** with Quinns Rocks Environmental Group. Meet at picnic shelters, Quinns-Mindarie Surf Life Saving Club, Ocean Dr. Call Renata 9305 9382.

19 Saturday 8am

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

January**16 Saturday 8am**

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

Activities key

Hands on – bushland and wetland management activities.



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



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



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

Highlights**7 Wednesday–9 Friday October**
Whose coast is it? Adapting for the future.

Western Australian Coastal Conference, Fremantle. Sea level rise, climate change, coastal planning/vulnerability and associated risks, population impact and ecological sustainability. Visit www.keynotewa.com/wacoastal2009. Contact Carolyn Jenour 9374 3317, Erin Wright 9374 3309 or erin.wright@water.wa.gov.au.

14 Wednesday October
7.30am–11.30am**Legislated Landscapes – the purpose and future of environmental compliance.**

Burswood, Perth. Tracking the history of policies, legislation, environmental and water management plans – their impact on developers and community. Visit www.everlastingconcepts.com.au, contact Kate Lugg 9371 3004 or admin@everlastingconcepts.com.au.

23 Thursday–24 Friday October

Tackling the tough issues – engaging for results! International Association of Public Participation Annual Australasian Conference, Esplanade Hotel, Fremantle. Learn innovative ways to engage people and deliver genuine/practical community engagement. Contact Amanda van Loon 6467 5144 or visit www.iap2conference.org.au.

26 Monday–30 Friday October

School freshwater festival Full day of hands-on environmental and Indigenous activities. Wildlife theme linked SCI/SOSE learning areas. Early childhood to early adolescence. \$15/student. Call WAGL.

27 Tuesday–30 Friday October

Changing environments – new challenges for the living country conference. Geraldton. Contact Jackie Gill 9964 9774 or 0409 886 982.

9 Monday–10 Tuesday November

Revegetation challenges and solutions, 2009 Revegetation Industry Association of WA Seminar, Technology Park Bentley. Climate change, seed sourcing, species selection, training and quality control, budget planning, completion criteria, weed management and plant biology. Contact Monica Durcan 0418 934 870 or mdurcan@iinet.net.au.

regional reports**Wind erosion trials in Eneabba** *By Andrew Soltys*

Conservation Volunteers Australia joined with the Northern Agricultural Catchment Council during July, to combat wind erosion on the northern sandplains at 'Judeen', 31 km south-east of Eneabba. Volunteers planted seedlings using treatments such as water holding crystals, worm castings and other water retention methods to ensure seedling survival. A windbreak of shrubs and trees

was also planted to protect against south-west and easterly winds.

Community participation in projects with CVA has resulted in more than 1.2 million trees being planted in the past 12 months. To become involved call Andrew 9227 5711, freecall 1800 032 501 or visit www.conservationvolunteers.com.au.

Please send us your regional report (150–200 words) and a photo by Friday 13 November 2009. Text may be edited in response to volume of submitted reports.

Happenings at Lake Gwelup Reserve *By Wayne Eddy*

It has been some time since the Friends of Lake Gwelup have presented a report to our favourite publication. If you haven't caught up with us in 2009 there are still opportunities.

In 2008, 46 attendees of the Perth Urban Bushland Fungi survey team collected, vouchered and prepared specimens for the WA Herbarium. Among the 53 fungi species recorded, one species of the genus *Megalocystidium* was identified on the day. This was remarkable, as only one occurrence had been recorded in the Perth metropolitan area, and this was some 40 km south at Lake Cooloongup in Rockingham. A drier 2009 saw much less fungi species recorded at a follow up survey, though many fruiting bodies have been observed throughout autumn and winter.

A large contingent of the WA Naturalists' Photography Group took advantage of this year's winter months to focus on fungi in the reserve, following on from last year's focus on birdlife.

Our annual Bush Care Day was held in August and again focused on lupins. Ten years ago, lupins thickly covered much of the reserve.



Black shouldered kite (Elanus caeruleus) and fungi (Mycena clarkeana) at Lake Gwelup Reserve. Photos – Wayne Eddy

Successive years of manual culling have dramatically reduced the populations in a 9 ha target area and this year only 26 individuals were pulled. We also removed *Pelargonium capitum*, mapped woody weeds such as pampas grass, Japanese peppercorn and blackberry, and discovered some of the local orchids and reptiles. The City of Stirling recently thanked the Friends group and volunteers for their efforts, and for providing GPS coordinates for the larger woody weeds that the city has started to eradicate.

For more information on events visit <http://home.vicnet.net.au/~folgf/>, email folgmail@iinet.net.au or call Christine on 9447 2983.

Western swamp tortoise

A 2009 WWF Threatened Species Network Community Grant will enable the Friends of the Western Swamp Tortoise to restore approximately 9 ha of the critically endangered western swamp tortoise habitat. Areas will be direct seeded and planted with local provenance tube stock.

During winter, the tortoises leave their aestivation tunnels and enter temporary shallow swamps in Ellen Brook and Twin Swamps nature reserves. They feed on small crustaceans and insect larvae to build up their body mass.

The Friends are currently working to raise awareness of the effects of pollution entering the untreated stormwater system and into tortoise wetland habitat. We are encouraging people in the Ellensbrook area to use low phosphate fertilisers, wash their cars on the lawn, resist blowing lawn clippings onto the road and to pick up dog faeces. We will be involving schools in stenciling tortoises on the drains to remind residents of the problem.

July marks the fifth anniversary of the formation of the Friends of the Western Swamp Tortoise. Call Jan Bant on 9344 2872, email westernswamptortoise@yahoo.com.au or visit www.westernswamptortoise.com.

Jewel in the crown *By Kristy Gregory*

Located amidst encroaching urban development, beautiful Brickwood Reserve is situated in the Serpentine Jarrahdale Shire, south of Byford. It is the most extensive example of open marri and Kingia woodland left in the metropolitan area and is home to rare wetland communities and stands of *Eucalyptus lane-poolei*. The reserve has been recognised for conservation by the Australian Heritage Commission and the National Trust of Australia, and is also a Bush Forever site.

Given the importance of the site, the Shire and Serpentine Jarrahdale Community Landcare Centre have been coordinating a number of projects within the 50 ha reserve. Significant external funding has been sought since 2005, initially to increase community awareness, and to carry out

much-needed on-ground management activities.

More recently, the shire received funding from the South West Biodiversity Project to implement seed collection from the reserve. The seed is being stored for future use in direct seeding programs and to propagate for revegetation in areas where weeds have been removed.

A wildfire burnt 5 ha of the reserve in early 2009. We have been photographing and monitoring native species' regeneration, and will use the opportunity to eliminate weeds from the burnt area.

The Shire Environmental Services team has been working hard to develop a management plan for Brickwood Reserve, to preserve and enhance its biodiversity



Serpentine Jarrahdale Landcare and Shire staff carrying out rapid bushland assessment in Brickwood Reserve with DEC's Geoff Barrett. Photo – Jo Garvey

conservation values in the face of increasing development. A public comment period has just been completed, and a revised plan is currently being drafted to reflect community input. The management plan can be viewed on the shire's website www.sjshire.wa.gov.au.

Contact Kristy Gregory on 9526 0012 or kristy@landcaresj.com.au.

Cockburn Wetlands Education Centre *By Denise Crosbie*

The Cockburn Wetlands Education Centre was established in 1993 to provide information to the public about wetlands and their management. Since then, the centre has created a holistic program incorporating landcare, education and training.

Our landcare program involves sustainable collection of seed from our dry and wet seed production areas. This year, 74 species were propagated in our nursery under the watchful eye of volunteer Norm Godfrey. We are just finalising a manual on his nursery practices to permanently document his efforts. This is the first year that the centre's regular 'vullies' haven't planted seedlings and they are worried they have been done out of a job! Numerous volunteers planted 5,000 seedlings by the end of July as part of four major events.

Our newest educational achievement is the 'Wild About Wetlands: a series of eco walks, talks and night stalks' for the community (see What's On). The series is a partnership with the City of Cockburn with funding by DEC.

A volunteer and training program is supervised two days per week and attracts community volunteers, TAFE and university work experience students, cadets and work-for-the-dole participants. This is a mutually beneficial program, as we gain assistance with our weekly tasks and, in turn, provide training and social benefits to the community.



Corporate planting day at Bibra Lake. Photo – Denise Crosbie

Of current major concern and an issue consuming much of our time, is the proposal to extend the Roe Highway. The proposed extension will carve a path through sites of Aboriginal significance and three wetlands in the Bibra and North Lake reserves. With more than 80 per cent of our wetlands on the Swan Coastal Plain drained, filled or cleared we find this proposal unacceptable.

Visit www.cockburnwetlands.org.au. For more information on the 'Save Beeliar Wetlands' campaign email felicity@cockburnwetlands.org.au or visit www.savebeeliarwetlands.com.

Plans to rezone part of Paganoni Swamp

By Leonie Stubbs

It has come to the attention of the Friends of Paganoni that the WA Planning Commission has marked approximately 48 ha of Paganoni Swamp Reserve for rezoning 'from Parks and Recreation to Urban to support Keralup precinct development' (in the draft Southern Metropolitan and Peel Sub-Regional Structure Plan).

Paganoni Swamp is one of the most significant conservation reserves in the metropolitan region south of the Swan River. It is managed by DEC's Community and Regional Parks Branch on behalf of the WA Planning Commission (WAPC). The reserve was purchased by the WAPC in 1991 amid community concerns over a previous plan to rezone the area. Eighteen years later, despite proof of both the intrinsic and environmental value of bushland to the community, we once again have to fight plans to rezone and develop part of this precious reserve. The bushland is of such significant conservation and heritage value that it is listed as a Bush Forever site and is on the Register of the National Estate.

Call Leonie on 0439 921 298 or email Friends_Paganoni_Swamp@westnet.com.au. For information on volunteering opportunities with Rockingham Lakes Regional Park call 9431 6500.

Environment group looking for a home *By Caroline Barr*

The Earth Solutions-Avon Valley group is a sub-committee of the Avon Valley Environmental Society. Major environmental initiatives during the past 20 years include halting two regional toxic waste dumps, creating Dorntji Koorliny Walk Track and Kep Track, revegetating riparian zones of the Avon River, the Burlong Pool project and Avon Valley Solar Cooperative and liaising with Indigenous communities.

After successful 'Earth Solutions' expos in Toodyay (2007) and Northam (2009) we have decided that the development of an environmental education centre, rather than one-day expos, would be a more effective way to deliver environmental initiatives.

A suitable building, perhaps with some

land, is yet to be found. The centre would operate with part-time paid staff and volunteers. A high level of support has been expressed by regional shires and other stakeholders. General agreement is to begin some activities to test consumer response, and then begin planning the purpose-built centre.

Proposed activities for the centre include recycle/reduce/re-use workshops, organic gardening/composting, solar oven workshops, displays about feral animals, endangered species and bio-security, Aboriginal culture, speakers, eco-films, mini expos, sustainable products and student activities.

Visit www.earthsolutionsexpo.com.au or email Caroline on crbarr@primus.com.au.

Turtle treasures

By Gary Tate

Retirement in November 2005 has afforded me the time to discover the biodiversity of my local wetlands. Our freshwater long-necked turtle is endemic to the Swan Coastal Plain and provides a fascinating study for nature-lovers.

In August and September, baby oblong or long-necked turtles (*Chelodina oblonga*) emerge from sandy nests and endeavour to make their way into wetlands of the Swan Coastal Plain. These tiny, perfectly formed freshwater reptiles are only about the size of a 20 cent piece and are endemic to the South-west of WA.

During winter, mating behaviour can readily be observed from the observation deck located on the lake at Neil Hawkins Park in Joondalup. The males have a fatter tail and tend to be a little smaller in size than the females. There are two egg-laying events – the first in late October, followed by a second event in December to January. These events tend to coincide with low pressure systems passing over the Perth region.

The females lay up to 16 eggs in a sandy area that could be as far as a kilometre from the water's edge. It is believed by some that she returns to the same area in which she was born, to excavate the nest using her hind legs. After laying and positioning each egg, the nest is filled-in with the hind legs and the soil is tamped flat utilising the bottom (plastron) of the shell. When completed, there is no sign of her nest. Incubation is approximately 200 days, with both egg-laying event groups emerging in August–September.

These interesting reptiles feed on a varied diet of mosquito larvae, insects, crustaceans, tadpoles, frogs and aquatic plants.

Wetland ecologist Dr Jacqueline Giles has completed her PhD on the turtle's underwater vocalisations, identifying an extraordinary range of 17 different sounds. Dr Giles has assisted me with scientific advice.

Predation

During the 2008–09 season, nests located along the dual-use paths around Yellagonga Regional Park have been heavily predated by feral foxes. Predation occurs from the moment eggs are laid and throughout incubation. Regular visits resulted in the following predation observations:



Female long-necked turtle (*Chelodina oblonga*) laying eggs (top left); hatchling (top right); and fox predation on turtle eggs in Yellagonga Regional Park. Photos – Gary Tate

- More than 100 nests along 2 km between Neil Hawkins Park and Picnic Cove;
- 50 nests along 500 metres of the path south of Picnic Cove; and
- 13 nests along 100 metres on the eastern side of Lake Goollelal.

Baiting for foxes, with appropriate publicity, is the only real solution to this massive problem. A small survey of five dog owners in Yellagonga resulted in unanimous support for fox baiting.

Cat predation on young long-necked turtles is an added unnatural burden on the sustainability of these unique WA reptiles. State cat laws would assist in lessening turtle mortality rate.

How can you help?

Please assist in preserving these protected endemic turtles by reporting sightings of foxes and feral cats to your local council and/or DEC. Keep dogs on leads while you are visiting any of our magnificent wetland and bushland areas.

More information

Observations gathered during the past three years on long-necked turtle biology and behaviour has been compiled into a DVD. For more information on the DVD or Friends of Yellagonga activities call Gary on 9342 4685 or visit www.yellagonga.org.

GROUPPROFILE:

The Spectacles has friends

By Mandy Grubb, Lynda Smith and Angela Jakob

Born from a community information meeting held in response to fires during Christmas 2007, the Friends of the Spectacles has gone from strength to strength.

The Friends began in May 2008 following a workshop on the fires that burnt more than 800 ha of bushland in the Town of Kwinana. At the Spectacles, only the area immediately around the lakes was left untouched. The workshop highlighted the effects of fire on the landscape, its relationship with weed establishment and the Indigenous use of fire. After the workshop, a group of interested individuals were encouraged to meet and form a Friends group.

The group of dedicated individuals decided to take an on-ground approach and successfully sought funding from DEC to continue re-vegetation of degraded areas. Over the past year the Friends have organised a variety of activities including talks from Birds Australia and a seed collection expert. They have undertaken seed collection, weed control activities, and more recently a series of planting days. The latest day on 5 August involved 100 primary and TAFE students planting more than 500 wetland and woodland species. The Friends hope to propagate the seeds they have collected for future plantings. The Friends have also ventured out on 'fact-finding missions' to see how other groups and land management agencies undertake their activities, and to gain valuable first-hand information.

The Spectacles Wetlands comprises 360 ha of natural bush and wetlands, including two freshwater lakes and an extensive stand of paperbark trees. The wetlands are home to more than 80 bird species and small mammals such as the quenda (*Isoodon obesulus*). It is in the southern-most part of the Beelir Regional Park and is co-managed by DEC and Alcoa Australia.

Nyoongar links

The Wetlands is part of the Wajuk peoples' traditional land and is known as the Beelir territory and area of tribal elder Midgegooroo. Midgegooroo and his people were transitional and moved within the Beelir territory according to the seasons. The area is part of the greater Nyoongar language group that encompasses the south-west of Australia.

It is a significant place for Nyoongar people being part of the ancient trade route connecting the Swan and Murray rivers' peoples. It is said that the site could have been a corroboree place, close to fresh water, with plenty of bush food. The site of the amphitheatre near the lake has a powerful feeling too. It lies in a small depression sheltered from the coastal winds surrounded by the whispering sheoak and paperbark trees.



Elder Trevor Walley explains a Nyoongar fire story to workshop participants at the Spectacles Wetlands. Photo – Angela Jakob

Since 2004, the Town of Kwinana, in conjunction with the Medina Aboriginal Cultural Community and Alcoa Australia, has coordinated the Spectacles Yargan Tours at the amphitheatre and around the lake area. The tours are a forum for Aboriginal people to share their knowledge, language and history and to preserve the traditional vibrant Indigenous culture. Equally important, the tours are a tool for passing on culture from Elder to younger Aboriginal people. The logo of the tours is Yargan, the Nyoongar word for tortoise, and is one of the Aboriginal totems of the Spectacles Wetlands area.

The next season of tours start in spring with the Gudjal Yira (Two Up There) Star Tours to coincide with 2009 International Year of Astronomy. The tours will offer a Nyoongar perspective on the stars and the night sky. Aboriginal people have related stories of the stars for thousands of years. The stories set down cultural and social rules and provided information about the natural environment, hunting and gathering. The Star Tours relate a traditional story particular to Nyoongar culture with connections to our Spectacles Wetlands.



Volunteers planting at the Spectacles. Photo – Mandy Grubb

More information

The next Friends of the Spectacles activities will be on Sunday 17 October and Saturday 21 November. Contact the Friends of the Spectacles via email fotsmail@gmail.com or phone Lynda on 9439 1928. For information about the Spectacles Yargan Tours, which run from August 2009 to April 2010, contact the Town of Kwinana on 9439 0200 or www.spectaclestours.com.au.

Resources

New Publications

Leaf and branch: Trees and tall shrubs of Perth (2009) Powell, R. DEC, Perth. 248 pages. RRP \$29.95. This book aims to help readers appreciate and become familiar with 79 of Perth's larger plant species. Extensively revised to include additional information on associated ecology (particularly insects and fungi), 11 name changes, species distribution, and chapters on conservation threats, cultivation, study and leisure. Exquisite line drawings by Margaret Pieroni and Susan Patrick complement species descriptions. Highly readable, this book is suitable as a reference, for nature-lovers or visitors to WA.

Saving Hepburn Heights Bushland (2009) Lloyd, A. and Marwick, B. Published and sponsored by the City of Joondalup. 218 pages. A historical story of community courage and determination to save 53 ha of bushland in Padbury from development in the late 1980s to early 1990s. Recounted through newspaper clippings, letters, photographs and personal experiences. The campaign included petitions and court action, to stop the then State Government rezoning the land from special use to residential. Efforts by the Hepburn Woodland Preservation Group and the community resulted in protection of 38 per cent of the area. To purchase, send a cheque for \$36 (including postage) to The Treasurer, Friends of Hepburn Heights, 31 Drummer Way, Heathridge 6027.

Website watch

The new **Swan River Trust website** provides up-to-date information on environmental issues, maps, recreational and volunteering opportunities, river health. Visit www.swanrivertrust.wa.gov.au.

Wandi Landcare website has been updated with photos, videos, information and a new native tree decline section with instructional videos. Visit www.wandilandcare.org.

Fishing for *Phytophthora* website was launched in June. It catalogues the *Phytophthora* species found in WA's rivers, dams, streams and estuaries. Currently more than 100 locations are being monitored. Visit www.fishingforphytophthora.murdoch.edu.au.

Dieback Working Group website has been updated to include more information, a journalist's section and photo gallery. Visit www.dwg.org.au.

Recent research

Cahill D.M., Rookes J.E., Wilson B.A., Gibson L, and McDougall K.L, (2008) Turner Review No 17. *Phytophthora cinnamomi* and Australia's biodiversity: impacts, predictions and progress towards control. *Australia Journal of Botany* **56**(4):279-310.

Rokich, D.P., Harma J., Turner S.R., Sadler R. J., Tan B. H. (2009) Fluazifop-p-butyl: Implications for germination, emergence and growth of Australian plant species *Biological Conservation* **142**:850-869.

Turner P.J. and Virtue J.G. (2009) Ten year post-fire response of a native ecosystem in the presence of high or low densities of the invasive weed, *Asparagus asparagoides*. *Plant Protection Quarterly* **24**(1):20-26.



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