



Department of Environment and Conservation



Western Wildlife

April 2010
Vol. 14, Number 2

NEWSLETTER OF THE LAND FOR WILDLIFE SCHEME

REGISTERED BY AUSTRALIA POST PRINT POST: 606811/00007

CELEBRATE



THE INTERNATIONAL YEAR OF BIODIVERSITY!



BIODIVERSITY
ON
YOUR
BLOCK

EDITORIAL

You will see that this issue is somewhat different from usual – for a start it is in colour! Although funding restrictions may mean that we cannot afford to do this for every issue, we thought we would try it at least once. Colour was also necessary to do justice to the superb images sent in for ‘biodiversity in my backyard’.

You will also notice that the magazine contains only one real article, Una Bell’s notes on growing native grasses. These are a very important component of the understorey, especially in woodlands, and yet people still do not appreciate the need to include them in revegetation. Una discusses what is generally known about growing

Cover pic: ‘Self-propelled lawn mowers’ from the Editor’s kitchen window. (The out of focus red blobs are geraniums, I think.) In this outer metropolitan location in summer the wild roos come up for some green pick, and to drink from the bird baths. If you look carefully at the rear, you can see some of the five younger males that were hopefully following this trio around. Unfortunately the kangaroo population is far too high and they are trashing my bushland, especially during the terrible dry summer we have had in Perth his year. We need an easy to administer roo contraceptive.

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USE OF ARTICLES FROM WESTERN WILDLIFE

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Hello all readers!

them, and asks people if they could help by sending in any information they might have. In the next issue, she will go into specific detail about growing a number of grass genera. In a short note later in the magazine, Una describes how, at a grass workshop at Katanning, she found a new species of spear grass during the field trip. You never know what is out there until you look!

This year is the International Year of Biodiversity, and that really is the theme of the rest of the magazine, sharing the excitement, the interest and the sheer beauty of the living creatures that share ‘your block’. We put out a call to *LFWers* to send us an image and a few words of why that particular bit of biodiversity is special to you. The message went via email networks, though not everybody is on one of those, so many people might have missed out.

There was a magnificent response, with far too many photos and stories sent in to be able to use them all. It is also unfortunate that some images were sent at such low resolution that, although still looking

okay on the computer, when printed they pixilated, so could not be used. But we have held over some contributions to use in the next issue of *Western Wildlife*. If you have not been contacted already, and would like to share something from your place, please send them to me at the email address below.

Thank you so much to everybody, even if I was not able to use your contribution at this time, we really do appreciate them, and enjoyed reading and looking at everything sent in. What a great biodiversity hotspot we live in!

Nb: If you like the change to colour (or if you don’t!), could you please email or phone me to say so? A high positive response would be helpful when I am required to justify exceeding my publications budget!

Penny Hussey

PLEASE NOTE: If you change your postal address, phone number or email, please let LFW know.

Contact details for *Land for Wildlife Officers*

Name	Location	Phone	Email
Heather Adamson	Mandurah	(08) 9582 9333	heather.adamson@dec.wa.gov.au
Avril Baxter	Narrogin	(08) 9881 9218	avril.baxter@dec.wa.gov.au
Fiona Falconer	Coorow	(08) 9952 1074	fiona.falconer@dec.wa.gov.au
Wayne Gill	Esperance	(08) 9083 2100	wayne.gill@dec.wa.gov.au
Claire Hall	Perth	(08) 9334 0427	claire.hall@dec.wa.gov.au
Mal Harper	Merredin	(08) 9041 2488	mal.harper@dec.wa.gov.au
Sheila Howat	Bridgetown	(08) 9761 2405	sheila.howat@dec.wa.gov.au
Penny Hussey	Perth	(08) 9334 0530	penny.hussey@dec.wa.gov.au
Cherie Kemp	Busselton	(08) 9752 5533	cherie.kemp@dec.wa.gov.au
Zara Kivell	Mundaring	(08) 9295 9112	zara.kivell@dec.wa.gov.au
Sylvia Leighton	Albany	(08) 9842 4500	sylvia.leighton@dec.wa.gov.au
Dorothy Redreau	Albany	(08) 9842 4500	dorothy.redreau@dec.wa.gov.au
Philip Worts	Kojonup	(08) 9831 0832	philip.worts@dec.wa.gov.au

www.dec.wa.gov.au/landforwildlife

FLORA

SOME NOTES ON GROWING NATIVE GRASSES

Una Bell

There are about 140 species of native grass in the south-west of WA and while some grasses are widespread and cope with a variety of soils and habitat, others are very specific. Some native grasses are easy to grow, others have dormancy or other mechanisms in place so that all the seed does not germinate at once, if at all. Native grass seed is often kept for a year to overcome dormancy problems, although research is revealing ways to break seed dormancy in some species. Whether you are successful in growing native grasses can depend on a lot of variable factors, such as seed viability and dormancy.

Native grasses grow and spread quite happily if left to their own devices, so in attempting to grow native grasses we are, in fact, interfering with nature. Nowadays I prefer to weed out the introduced grasses, and let the native grasses spread. This seems to work, but it means going back year after year to maintain a bushland reserve or other site. The result is grasses on a site where grasses like to grow, but they are native grasses, and not introduced ones. If grazing or mowing native grasses, remember that they need to drop their seed to survive.

Grasses have a few annoying habits. Most grass seed is produced on the end of a long flowering stem, and grasses like to spread around, so it can be difficult to contain them in a nursery. Grasses are by their very nature escape artists, opportunistic, and they tend to live on the edge.

Winter-active or summer-active?

Most native grasses in the south-west are winter-active, so they flower in spring, and seed is



Feather speargrass (*Austrostipa elegantissima*) in fruit on a road/rail verge south of Coorow. (Photo: P. Hussey)

mature in early summer. During summer they may go dormant. Some brown off completely in a dry year, but once it rains, they will go green and resume actively growing. Winter-active grasses are usually sown in autumn, although some can germinate in hotter weather. Wallaby grass (*Austrodanthonia* spp.) are winter-active.

Summer-active grasses, such as kangaroo grass (*Themeda triandra*) need warmth to germinate and are usually sown or propagated from spring to autumn. Summer-active grasses go dormant over winter.

Seed collection

When collecting seed, take from an area as close as possible to the revegetation site so as to maintain the local provenance. Provenance is very important as different populations of plants within one species can vary considerably. Seed needs to be as mature as possible. Some grasses such as forest rice grass (*Tetrarrhena laevis*) shed the seed rapidly after ripening, and can

be difficult to collect. Remember that you need a licence from DEC to collect native grass seed on public land or permission from the private landholder.

Direct seeding

If direct seeding, broadcast winter-active seed after the first heavy rains in autumn. For summer-active grasses, sow in spring or early summer. Many native grasses grow in disturbed sites such as along tracks and firebreaks, so disturbing and raking the soil usually helps. Generally for native grasses, surface sow uncleaned seed, that is, scatter florets or the whole inflorescence, but for cleaned seed a sowing depth of one cm seems to be the most suitable*. Cleaned seed does not have as long a shelf-life as uncleaned seed.

Good weed control is essential. It is often difficult to distinguish between weedy and native grass seedlings, so it may be best to let the grasses flower and then weed. If you cannot identify a plant, don't

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Growing native grasses**FLORA**Windmill grass (*Chloris truncata*). York. (Photo: P. Hussey)

presume it must be a weed. If native grasses are already on site, devise a program of weed control that encourages the establishment of the native grasses while getting rid of the weeds. Some native grasses flower later than many weedy grasses so a window of opportunity may exist. Disturbed and bare patches in or on the edge of bushland can be direct seeded with native grass seed collected on the same or nearby sites.

Germination and seed dormancy

Giberellic acid, heat treatment (30 minutes at 100° C) and smoke water have been tested for breaking dormancy.* Windmill grass (*Chloris truncata*) responded well to gibberellic acid and heat treatment; kangaroo grass responded to heat treatment; Queensland bluegrass (*Dichanthium sericeum*) responded well to gibberellic acid, with the highest rate of germination where just the caryopsis (seed) was used, rather than the whole floret; wallaby grass responded to smoke water at 1% solution, with cleaned seeds having an even higher rate; fresh weeping grass (*Microlaena stipoides*),

whether cleaned or uncleaned seeds, had a high germination rate without any treatment, but uncleaned seed can be improved with gibberellic acid. Heat treatment was generally most effective on summer-active grasses, and detrimental to winter-active grasses.

Smoking, either through direct aerosol smoke or use of smoke water, can assist some native grasses to germinate. First try without smoke and then use it after two to three weeks if there are no results.

Clump division, stolons and rhizomes

Some grasses can be grown by dividing clumps, or from cuttings of above-ground runners (stolons) or rhizomes. Many plants, grasses included, grow well from cuttings and clump divisions taken from areas where a fire has gone through and when the bush is starting to regenerate. Take cutting material in autumn (March-April) after first rains and the season starts to change. Young material will grow faster to establish new plants. Use hormonal gel for dipping stems.*

Translocation

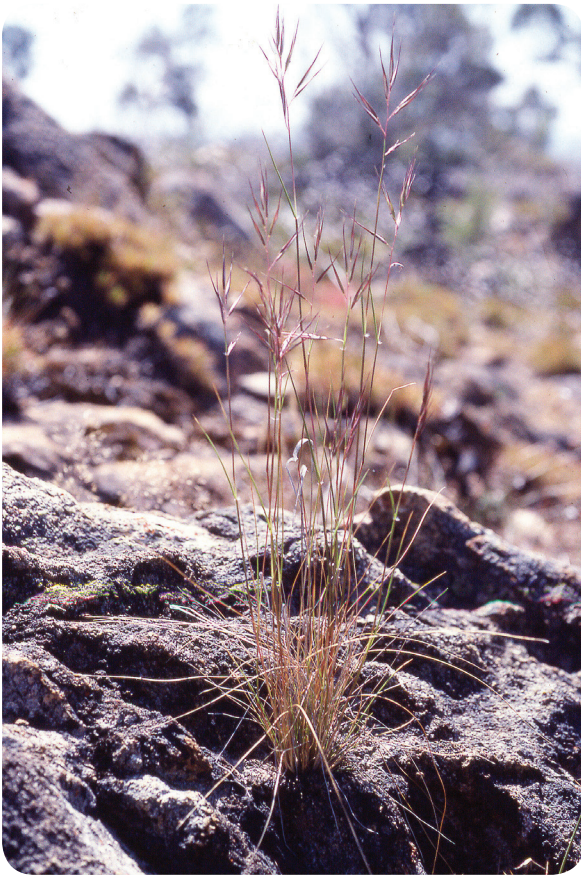
Many native grasses can be transplanted if need be, such as from roadside ditches which are going to be dug out. Often grasses are best potted on and can then be re-established on a site. Some grasses may take a while to recover. I have also rescued a local sedge (*Baumea rubiginosa*), once by the truckload, after being excavated from a roadside drain, and had excellent results in direct transplants to a local wetland rehabilitation site. However, care needs to be taken if soil is taken from one site to another as there is a risk of spreading dieback or other diseases. Often it is better to collect the seed to re-locate the population, if this is possible.

Fertiliser

Native grasses get enough fertiliser in their natural habitat. Higher fertiliser inputs, such as rabbit heaps, often encourage the growth of weeds. When growing native grasses in containers, some fertiliser may be needed. I have used slow-release native plant

Kangaroo grass (*Themeda triandra*). Mundaring. (Photo: P. Hussey)

continued from page 4

Growing native grasses**FLORA**

Wallaby grass (*Austrodanthonia* sp.) Kalamunda. (Photo: P. Hussey)



Wallaby grass seedhead (enlarged) with a detached fruiting spikelet. (Photo: U. Bell)

food, as well as higher nitrogen fertilisers, and a seaweed mix. I usually fertilise the grasses when they are active, often every few weeks if they are really growing and flowering; if it is their dormant time of year, I let them rest. Winter-active grasses are more tolerant of fertiliser than summer-active grasses. Having once nearly killed some kangaroo grass with fertiliser, I rarely fertilise summer-active grasses, and then with caution.

Getting started: an easy native grass to grow

There are seven species of wallaby grass in the south-west. They are important native pasture grasses, good for rehabilitation, can be used for native gardens, and are very easy to grow. Different species of wallaby grass can be problematic to identify, but it is not difficult to learn to recognise the genus of wallaby grass. They are perennial winter-active clumps, from 15 cm to one m high. They flower in spring to early summer, with mature seed ready to be collected in December. Plants produce a lot of seed which is often kept for one year to overcome the dormancy period, but some growers have had success with fresh seed. They are easy to grow without any treatment.

Studies have shown better results with cleaned seed, and 1% smoke water.* Can germinate in hot weather, but usually sown in autumn to spring. For direct seeding, mature seedheads can be

thrown down on disturbed soil, and plants will grow in thick clumps. Alternatively, rake in florets which contain the tiny brown seeds. If using cleaned seed, it must be covered with soil. Note: if storing seedheads, don't throw out the brown dust at the bottom of the paper bag or jar, it's probably the seed!

Have you grown native grasses? If so, please send notes on your methods to LFW. Una would like to collate all this data to provide the best advice. She will acknowledge your contribution.

To be continued ...

[*Ref list available: Ed.]

For Una's grass ID book (see WW 13/2, April 2009) and for posters, go to the Shire of Mundaring website www.mundaring.wa.gov.au.

Una Bell is a volunteer Research Associate at the W.A. Herbarium, specialising in native grasses of south-west W.A.

IN BRIEF

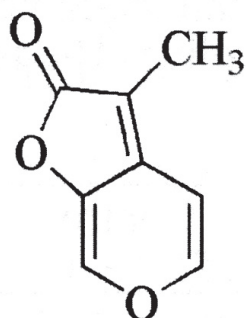
SMOKE GERMINATION CHEMICAL NAMED: KARRIKINOLIDE

One of the most exciting success stories in recent botanical research has been the study of why seedlings come up *en masse* after a wildfire. Since *LFW* first began in 1997, we have watched, enthralled, as scientists at Kings Park and Botanic Gardens (KPBG) and The University of Western Australia unravelled the story of smoke. In *WW* 9/1, January 2005, Kingsley Dixon of KPBG reported that the chemical had been isolated: it is a butenolide. Well, now it has got its own individual person-friendly name, karrikinolide*.

Butenolides are a very broad range of naturally occurring molecules, many produced by the activity of fungi. A term was needed to distinguish the germination stimulating compounds in smoke from other butenolides. A perfect word was found, 'karrik'. This Nyoongar word for 'smoke' was recorded in the Perth area in 1830, at the very start of the Swan River Colony. The '-in' ending is used for many plant growth substances, such as 'auxin' and 'gibberellin'. Karrikins are therefore defined as a class of compounds isolated from smoke with known ability to break seed dormancy or stimulate germination and to promote seedling vigour. The best-known active compound, 3-methyl-2H-furo[2,3-c]pyran-2-one, is to be known as karrikinolide. (Thank goodness – would *you* like to remember its chemical name for everyday use! Incidentally, it is pronounced 'karrik-inolide'.)

Kingsley Dixon comments: "This new name recognises that the scientific discovery was made on Nyoongar land and it reflects the importance of fire and smoke to plant ecology and to Aboriginal culture".

[*For ref. contact Ed.]



LFW SIGN FOR SALE!

Peter Johnson, the *LFW* Coordinator for Victoria, reports that recently a *LFW* (Vic) sign appeared for sale at a weekend market - with a price tag of \$40!

LAKE CLIFTON THROMBOLITE COMMUNITY LISTED AS CRITICALLY ENDANGERED

The thrombolite (microbialite) community of a coastal brackish lake (Lake Clifton), 100 km south of Perth in Yalgorup National Park has recently been added to the Critically Endangered category under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) due to its restricted geographic distribution coupled with threatening processes of rising salinity, altered groundwater flows and increased nutrient levels. (See article in *WW* 10/3, July 2006.)

Thrombolites are a type of microbialite, a rock-like living structure formed by the activities of specific benthic microbial communities. They require access to a carbonate-rich water supply and sunlight for their growth and survival. Historically, the dominant microbe for thrombolite formation has been the cyanobacterium *Scytonema* sp., but recent investigations indicate that *Scytonema* has gone from being a dominant species to no longer being found in Lake Clifton thrombolites.

The Commonwealth Threatened Species Scientific Committee assessing the Lake Clifton thrombolites expressed concern that the rate of development in the surrounding area, and the consequential degradation of the Lake Clifton environment is such that it is likely this ecological community will continue to decline at a significant rate.

For more information access the Australian Government Department of Environment, Water, Heritage and the Arts website: www.environment.gov.au/cgi-bin/sprat/public/publicshowcommunity.pl?id=96&status=Critically+Endangered

Claire Hall

COCKIE HUNTING – WITH A METAL DETECTOR?

Recently Denis Saunders came over from Canberra and joined Peter Mawson and other DEC staff to revisit sites in the Midwest where he first studied Carnaby's cockatoos in the 1980s (see *WW* 9/4 for his comments on the way woodlands have changed since then). He had observed that wedge-tailed eagles occasionally took Carnaby's as prey. So, this time, they decided to visit the known eagle nests in the area and search for bird bands on the ground around the nest. Hence the metal detector! The steel leg-bands made for Carnaby's should give a good, strong signal.

Did they find anything? Watch this space!

NEWS

OFFICIAL OPENING OF STACK-COOPER RESERVE, MOORA

The Friends of Moora Woodlands have worked hard to rehabilitate the block of very good quality woodland in Moora townsite, vested in the Shire of Moora, now called the Stack-Cooper Reserve. In February, a function was held in the reserve to celebrate the completion of the first stage of rehabilitation - rubbish removal, track ripping and fencing.

The project is a fine example of local residents, Shire, NRM (in this case the Moore Catchment Council) and *LFW* collaborating to achieve a jointly agreed aim.



It was also helped along by receipt of an Envirofund grant from the Australian Government that enabled fencing and other works to be undertaken. Mr Barry Haase, MP for Kalgoorlie, was there to receive the Envirofund report and he also presented a *LFW* sign to representatives of the Friends, Jim Pond and Marie Carter, for attaching to the new fence.

A NEW NATIVE GRASS SPECIES

For the past 10 years I have been running native grass workshops with the aim of teaching participants to recognise their local native grasses. The most recent workshop was held last November at Katanning Landcare Centre with funding from a Lotterywest grant. An important part of these workshops is the field trip, and most people are surprised to discover how much native grass there is in their own area.

I was even more surprised than usual when one grass I thought looked very interesting and unusual, proved to be a new species! Now safely tucked away in a folder at the WA Herbarium, and even listed on FloraBase, is *Austrostipa* sp. Katanning. While I cannot guarantee a new species to every workshop field trip, it shows how much there is yet to be discovered in areas of remnant vegetation.

Una Bell

NEW WILDLIFE NOTE



DEC has produced a new Wildlife Note *Managing declining bird species on your Wheatbelt property*. It consists principally of notes on the habitat requirements and suggested conservation actions for a number of birds that are in decline in the Wheatbelt. It will be very useful to help plan rehabilitation and restoration work.

If you live in the inland agricultural area and think you would find this useful, contact your *LFW* Officer and a copy will be sent to you. First come, first served!

WAGIN WOOLORAMA

Once again, Wagin Woolorama was a great success, and the location within the Agriculture pavillion worked well. This event is an opportunity to catch up with people and on this occasion, it enabled several landholders to work with the *LFWOs* to develop Community Environment Grant submissions.

Avril Baxter

Phil Worts talks to a landholder about cockatoos.



Avril Baxter with the Blechynden family - Rochelle, with Henry, Elise and Holly - who were successful in the prize draw.

Photos: Nerilee Boshammer

INTERNATIONAL YEAR OF BIODIVERSITY

The United Nations has designated 2010 as the International Year of Biodiversity. The idea is to promote events that highlight the role that biodiversity plays in maintaining the life support system of Planet Earth.

Biodiversity is the variety of life on Earth, and is essential to sustaining the living networks and systems that provide us all with health, wealth, food, fuel and the vital services our lives depend on. As just one part of this rich tapestry of life, humans have the power to protect - or to destroy - it.

The Convention on Biological Diversity arose out of the Earth Summit in Rio de Janeiro in 1992, and currently 193 parties (nations) are signatories. It is based on the premise that the world's diverse ecosystems purify the air and water that are the basis of life, stabilise and moderate the Earth's climate, renew soil fertility, cycle nutrients and pollinate plants. If any of this gets out of kilter, the future of life on Earth as we know it will be seriously at risk.

Human activity is causing the diversity of life on Earth to be lost at a greatly accelerated rate – said by some experts to be 1,000 times the natural rate of loss. As residents of one of the world's Biodiversity Hotspots, we know how easy it is for an organism to become extinct, how impossible to get it back.



What will you do to promote awareness and encourage responsible management of our remarkable biodiversity?

What resolutions will you make for your own property? Erect a nestbox? Eliminate a particular weed? Revegetate a saline seep?

Throughout the south-west, *LFW* will be running events – talks, bushwalks, campouts etc – that highlight our amazing natural heritage. Join us, or organise your own event; contact your *LFWO* to discuss suggestions.

If we all do as much as we can, the world will be a better place.

For up-to-date information, visit:

www.cbd.int/2010/welcome

Celebrating Biodiversity on Your Block

To celebrate the International Year of Biodiversity, we asked as many *LFWers* as we could reach to send us an image and a story that encapsulated for them the fascinating organisms that share their property. We didn't manage to reach everyone, so perhaps there are more people who would like to send in a pic and a story for the next issue?

The following pages contain some of the stories and images sent to us by *LFWers* throughout the State. It is unfortunate that we didn't have room for everything that we were sent, but thank you all for your wonderful response.

Please note that the images used in this section may be copyright. If you wish to use any of the articles in your own local newsletter, please contact the editor, who will put you in touch with the author and/or photographer to obtain permission.



“We have only seen these pink-eared duck once as visitors. They were swimming on the big dam for about three days and then moved on.”

Colin and Margaret Tonkin, “Hanson’s Brook”, Wellington.

[These attractive ducks are specialised feeders on microscopic invertebrates and algae found in shallow lakes and floodplains. They are highly nomadic and not at all common south of Perth.]

You've heard about wolf whistles to attract the ladies?

Well, this animal does a moth whistle!

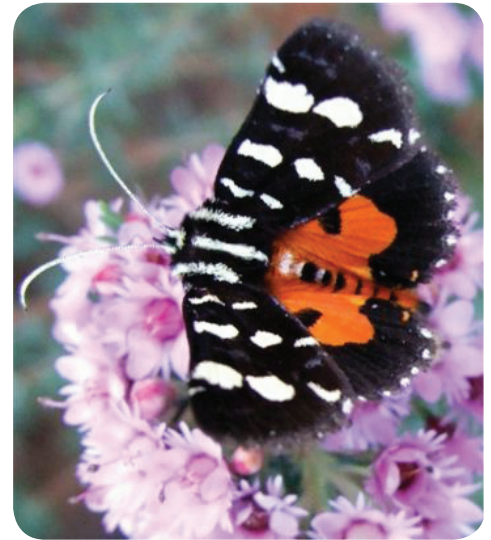
Nigel Smith photographed this colourful insect on *Verticordia plumosa* at his property near Margaret River, and sent it in for identification. Matt Williams from DEC's Science Division* identified it as a whistling moth (*Hecatesia exultans*).

There are three whistling moths (*Hecatesia*) in Australia and all are similar in colouration and natural history. Their most notable characteristic is indicated by their common name - they whistle. One, *H. fenestrata*, is common from Qld to Tasmania, *H. thyridion* occurs from NSW to southern WA while the pictured species, *H. exultans*, is restricted to western Victoria and south-western WA. In Victoria it is listed as 'Near Threatened'. In WA it appears to be quite common in coastal regions.

The males of these moths have a knob on their fore wings, behind which is a translucent, ribbed area of wing membrane. In flight the knobs can be struck against one another above the body, flexing the ribbed membrane of the wings. The rapid

succession of clicking sounds produced resembles whistling, and is audible up to 100 metres away. The production of the sound is under voluntary control. The males of the first two species make a continuous whistling as they fly to and fro in small forest clearings, while our pictured species gives short bursts of sound while it is at rest. Presumably, all this is to attract a lady-friend.

The larvae of these moths feed on the parasite, dodder-laurel or devil's twine, *Cassytha* spp. They are quite brightly patterned black and white and make no attempt at concealment. They pupate in a cell formed in thick bark or rotting wood. The adults fly during the day, or at least in late afternoon. The bright colours of both adult and larva are considered a warning to predators that they may be distasteful or toxic. However, some recent work by UWA zoologists** seems to indicate that the animal does not store the toxic alkaloids found in its dodder food



plant, it's all a sham. Indeed, the wolf spiders and singing honeyeaters used by the researchers to test for palatability ate all the moths they were presented with, to no ill effect. They concluded that adult moths avoid predation by flying quickly and with rapid changes in direction.

So, if you have dodder on your block, look in winter and spring for caterpillars and, in early summer, look and listen for a whistling moth.

[*Read about Matt's study of urban butterflies in *WW* 13/4, October 2009.

** For ref. contact Ed.]

"It is quite a spectacle to sporadically see flocks of 10 to 15 red-tailed black cockatoos and more often flocks of 30 to 50 white-tailed black cockatoos that regularly visit our property and surrounding bushland. Both varieties of bird seem to visit in the cooler months particularly winter and spring and appear more prevalently with the onset of rain. They would appear to be particularly partial to making an appearance just before the onset of heavy rains and at times thunderstorms. The loud squawks they make form a choir in unison as if to provide a warning for the rest of nature to prepare.

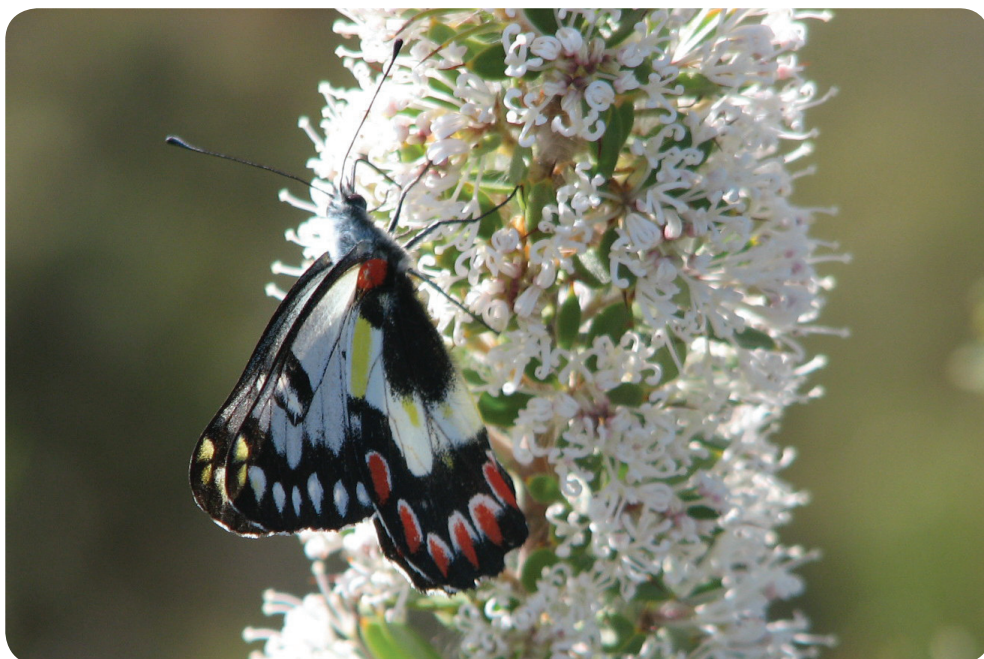
On occasion we have been privileged to see them feeding their young and they seem to just love gum nuts from the big red gums (marri trees) with the remnants of many of these strewn over our driveway and garden with beak marks cut out.

When the cockatoos visit, you are left buzzing with an overwhelming feeling of amazement at how awesome our natural environment really is, particularly its intricate design."

Phill and Fiona Langley, Parkerville

Cockie capers!





Colour coordinates

"The reason why this photo is special to me is that both the spotted jezebel and the grasstree are common, widespread species, yet the combination of such diverse colours is uncommon. Together, they highlight the species biodiversity of WA's south-west."

Bernie Masters, West Arthur

"We have around 200 hectares of magnificent south coast bushland on our farm at Wellstead. It supports a wide diversity of flora and fauna. Whenever we travel about the farm, in a typical division of roles I look at what's flowering or happening in the bush whilst Steven checks the paddocks, but we couldn't enjoy the one without the other to complement it. This colourful one-sided bottlebrush is a favourite with honeyeaters in spring."

Joyce and Steven Hall, Wellstead

[Botanist Alex George, who has recently reviewed the taxonomy of this genus, writes: "This is *Calothamnus gracilis*, a common species along the south coast from the Stirling Range and Cheyne Beach to Israelite Bay. It grows in white sand in kwongan, often with mallees such as *Eucalyptus pleurocarpa*. Flowering is at almost any time, with a peak in winter and spring."]

A shrub layer is vital habitat



This is my place!

"We live on the Carnamah-Perenjori Road. I like watching birds and Peter likes photographing them. We encourage birds around the house with water stations, but also observe birds over the whole farm. This inland dotterel would not leave her nest, despite the threat of the photographer. How tenacious is that! A symbol for all of us who stay on, maybe ..."

Pauline and Peter Wittwer, "Wittwer Farms" Carnamah

Courtship



"After living in a suburban block at Esperance for a few years, some four months ago we bought and moved to a 2.81 hectare block on the north side of Pink Lake. Our own *Land for Wildlife* property! The remnant vegetation is a mixture of banksia heath on the sandy rises going into wetland and halophyte vegetation on the flats and gullies.

Once we moved out there in early November, I started to make daily observations regarding the species displaying, courting, appearing and disappearing. The hardest to miss are the tiny but loud red-eared firetails (*Emblema oculata*) which up until late December would make several displays per hour from a dead stick just above the *Melaleuca striata* dense heath outside our sliding glass door. He would call with a large piece of grass dangling from his mouth as if to show off his strength and parental potential. Once a female appeared he would duck his head, show her his beautiful red tail whilst bobbing up and down. If his display was successful the two of them would disappear into the shrub layer for a 'quickie'. Hilarious to watch!"

Wayne Gill, Esperance.

Studying moths

"Gwambygine Pool Conservation Reserve is a small reserve on the Avon River south of York. Vested in the Shire, it is managed by the River Conservation Society (RCS) and has been registered with *LFW*. Early in 2009, the society considered the possibility of mounting a major study of the insect population of this reserve – a study which would compliment an earlier study of the Gwambygine Pool that was carried out by the society nearly 12 years ago.

We approached Terry Houston, President of the WA Insect Study Society and asked him for his advice. He suggested we get in touch with David Knowles, one of WA's best-known zoologists and insectologists. David immediately expressed an interest in the project and we then approached the Avon Catchment Council (now Wheatbelt NRM) for

funding through their Network Support and Development Incentive Scheme. Funding was confirmed later in the year and the project was under way.

The first full survey was carried out on the weekend of 17-18 October. A very large collection was obtained, with a total of 228 individuals collected. The second full survey was carried out on the weekend of 15-16 November and once again a very high number of insects were captured. David's methodology involved a variety of well-known trapping techniques including pit-fall traps, hand netting, examination of tree bark and leaf litter, water traps hung in trees and light tent trapping at night (see photo).

All specimens are photographed and preserved, with selected specimens being sent to the WA Museum. While another full survey is required in the autumn to bring the project to a satisfactory conclusion we are confident that the final outcome will reveal some interesting and surprising results about the biodiversity of the Avon River and its riparian zones."

Tony Clack, York.

Young helpers at the light tent © River Conservation Society



Salt creek



"The Ewlyamartup Creek runs east through our small farm with billabongs and abundant bird life to Lake Ewlyamartup and then into the Coblinine River system that moves north to Lake Dumbleyung. Adjoining the site the land shows the impact that salt from over 100 years of farming has had on what must have been a truly unique wetland system. To us this epitomises the challenge ahead to repair and restore the adjoining land with a diverse suite of plants so that once again it will support our wonderfully biodiverse fauna and flora."

Chris Burton and Cathy Campbell, Katanning

Don't forget the fungi!

"We have amazing bird, reptile and frog life at our door step, literally. Possums living in our garden trees, an abundance of fungi, wildflowers, native orchids and many native tree species. We keep our cats in a 'cat run', they do not free range, hence the amazing wildlife experience here."

Julie-Anne Davies and Jason Wos, Albany



Neale Bougher, the mycologist at the WA Herbarium, says: "This is the rhubarb bolete (*Boletellus obscurecoccineus*). It is a large, colourful fungus that has pores rather than gills under its cap. It is widespread in forest and woodland where it is mycorrhizal with shrubs and trees. It is a Fungimap target species and is known from south-east Asia and Japan, as well as Australia."

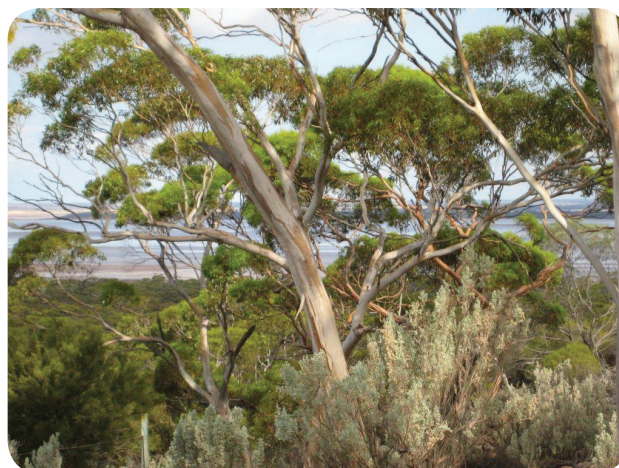
Working with a Shire



"This piece of bush is very precious because it is one of the last remnants of the salmon gum/York gum forest that used to cover this area. It is also part of a wildlife corridor coming up from the river. It is aesthetically pleasing and we really enjoy it – and so do the birds that feed and nest there. A precious piece of heritage."

Marie and Harry Carter, Friends of Moora Woodlands.

Great Western Woodlands



"It is an amazing experience to be ensconced in these Great Western Woodlands and to see such diversity in the flora. We have more than 20 different types of eucalypts with extensive stands of *Eucalyptus corrugata*, *E. sheathiana*, *E. salubris* and *E. salmonophloia*. Some parts of the station are a type of sandplain and these produce a bevy of plants which bloom in a spectacular fashion in the spring. But always there is a eucalypt in flower or a stunning grevillea or hakea. How lucky we are!"

Peter Knight, Ennuin Station, Bullfinch

A widespread but seldom seen resident



"Echidnas are special to me as whenever my mother visits she always sees them. This one we discovered and observed for about 15 minutes. When we see echidna diggings in the revegetated areas we take that as an indicator that those plantings are adding to the biodiversity."

Sarah Mason, "Carrah Farms", Calingiri.

Revegetation for biodiversity



"In 1995, on my York property, I began a revegetation programme which has continued until this year. My objective was to increase fauna habitat and to increase the diversity of local flora. A survey by Birds Australia in the years 1995 to 1998 identified 40 bird species. Since then there has been an increase of 50% bringing species numbers to 62. As an example of revegetation work, photo 1 shows an area being planted with seedlings in July 2008. Photo 2 shows the same area 18 months later in February 2010."

Chris Pullin, York.

Too beautiful to be a native?

"Part of our recently acquired bushland block on the edge of the Margaret River was burnt last autumn. I am keeping a close eye on the area's miraculous and rapid regeneration to ensure I control any weeds that appear at the same time. At the height of summer, large white flowers like this began to appear. On long single stalks they stood out dramatically against blackened logs.

I was suspicious. To my unpractised eye, the admirable flowers looked domestic enough to be escapees from a garden - maybe daisies of some kind. Before taking the situation in mortal hand, though, it is best to be cautious. I sent a photo to Busselton LFW Officer, Cherie Kemp. Promptly, I received a return message: "These are *Trichocline spathulata*, the native gerbera. They are spectacular and you're very lucky to have them." We are delighted with this news, of course. They are splendid denizens of the marri/jarrah undergrowth at a time of year when many of the other wildflowers have disappeared, and are welcome to stay."

Stuart Hicks, Margaret River.

(Note: the LFW identification was confirmed by Andrew Webb, the Regional Flora Officer at DEC, Busselton. Thanks Andrew!)

[Every year LFW receives queries about this one, either during visits or through phone calls or email. It is so striking and large that it looks as though it ought to be a garden subject, and the fact that it flowers in early summer when little else is out makes it very obvious. It is certainly related to southern African daisies, but this is our own, home-grown version.



Native gerbera grows over a wide area from Jurien to Albany, preferring lateritic jarrah woodlands. It is a perennial, forming an inconspicuous rosette of long narrow leaves that often wither just as the flowering stalk develops in early summer. The stalk can grow to 50cm in height and is surmounted by a large flowerhead with stark white petals. It stores food in root tubers. These can become quite large in a shorter, stouter variant that occurs around seasonally wet areas (especially wandoo wet flats) in the eastern side of the Darling Range.

Native gerbera produces seeds attached to a parachute, as do many daisies, but I do not know anyone who has tried to grow them, despite the fact that the plant would look gorgeous in a bush garden. It is possible that they need a smoke signal to get them germinating, perhaps karrikinolide could be tried? If anyone has grown this plant successfully from seed, could you please let LFW know? - Ed.]

Our chirruping southern boobooks

"About a fortnight back I heard the unmistakable calls of two boobook owls. It is such a comforting sound. I called my wife, Marie, and Jan, her friend visiting from England. We listened enraptured. Jan thought they sounded like cuckoos.

"Maybe they are back living on our block?" suggested Marie.

"I doubt it. That tornado six years back knocked down those three lovely old trees with spouts and hollows the size boobooks require. The remaining trees do not have hollows big enough. They are probably nesting further down the valley where there are a few bigger and older trees. But, it is a great sign that our jarrah forest ecosystem here in Roleystone is still operating to some extent."

We explained to Jan: "You know the *Land for Wildlife* sign at the top of the drive nailed to the tree? It was boobooks that stimulated us to apply for *LFW* status for our block. *LFW* Officer Emma Bramwell inspected the property. Not long after, on the 5th July 1997, we became full members of the scheme. Our sign number is 36."

The story runs:

Early evening on the 8th January 1997, whilst sitting on our deck admiring the sun sliding down a gold and pink sky into the Indian Ocean south of Garden Island, we once more heard the unfamiliar chirruping of crickets. We had heard the chirruping the evening before but could not pinpoint the sound.

This time I was determined to find the cause of the sound. The trill chirruping was coming from a large marri tree up near the beginning of our driveway.

"This sound is too loud and penetrating for crickets."

Then I saw perched on a spout high in the tree two small owl faces looking down at me. On a branch

above them were two mature owls. They were surely the parents of these fledglings? They looked very boobookish to me.

The babies flew off to the marri tree next to the house. As they flew the chirruping followed them and so did their parents, and so did I. The babies/teenagers were learning to fly. They flew in a circle over the house three or four times chirruping as they went. Each landing back in the marri was less ungainly than the last. They were obviously finding their landing legs. Both were definitely chirruping like crickets, calling to each other and their parents.

I rushed indoors to search through my bird book. I wanted to check whether these really were boobook owls. The drawings indicated they were. There was no mention of chirruping.

I phoned my friend Tony Start who lives in Roleystone. At that time Tony was Senior Research Officer at CALM. He would know about this chirruping bird. He did not! He doubted it was being made by boobooks.

"OK. Come for 'sundowners' tomorrow evening. Hopefully they will do for you what they did for me."

Tony arrived with his wife and his 10x40 Zeiss binoculars. We had just started to get our 'laughing gear around the amber fluid' when the chirruping started.

"There they are Tony, look, in the marri tree."

He trained his binoculars on them. Then they did what I wanted them to do. They took off and flew in an arc in front of us, then swerved overhead to fly over the roof. They were chirruping, and the sound was most definitely coming from them. Tony shook his head in amazement.

"They are definitely southern

boobooks" he said, "and they were definitely chirruping like crickets. I have never experienced this before."

The owls flew over again just to prove it was they making the noise. I was elated!

"I will do some research and report back," called out Tony as he and his wife left.

The chirruping and the flights continued for a few more evenings after that. I also heard the parents making their boobook calls.

Just over a month later Tony did report back. His research did not show of any recordings of chirruping from boobook owlets in the south west of Australia, but apparently there were records of fledged young chirruping in Victoria.

"Your name will go in the record books as the discoverer of this previously undocumented phenomenon" explained Tony. Not too long after, Tony delivered to me *Western Australian Bird Notes*, No 81 March 1997. Inside was a short description of the January chirruping episode. It was written by Mr A. N. Start, and next to his name... my name! Not long after I came across the *Land for Wildlife* Scheme. I had to join to protect my boobooks. And my western greys, and my bandicoots, and my possums. Sorry... ours!"

Fettes Falconer, Armadale



Photo: Julie-Anne Davies, Albany

The River



Grandkids April and Imogen (with dogs Jock and Daisy) in the mud after the flood, Murchison River protected remnant, "Riverside Sanctuary", Ajana. Photo: Bob Porter.

We have a double frontage
Of a total fourteen K.
An arid shrub land river
In the state of W.A.

It runs fresh and muddy
When a cyclone gives it feed
Then it becomes quite brackish
As the water does recede.

The river goes real salty
And for that I give my thanks
Or we would have a city
Built all along its banks.

The pools are full of weed
And small invertebrate
The water birds are thriving
On what their ancestors ate.

The water fowl were taken
For almost any reason
And a later institution
Of the duck shooting season.

The birds were not equipped
For the hundred years duck war
And were very disadvantaged
When the "Season" became law.

Once on New Year's Day
Before the sun was hot
We counted nearly twenty score
Of rapid shot-gun shot.

The best thing that ever happened
Was the banning of the gun
The Government closed the season
Back in Nineteen Ninety One.

Some blokes kept on shooting
And they had quite a ball
They didn't think the law
Was made for one and all.

I followed them one day
I had to show my hand:
"You'll need to leave the gun at
home,
To walk upon my land."

They didn't like it much
The words I did deliver
But they stopped unlawful poaching
All along our river.

When I think of the beginning
Of the river we protected
It has turned out even better
Than we ever had expected.

We have made a Sanctuary
Where the public do detect
And I'm proud of what we did
When I look in retrospect.

And I say to Mother Nature
It's the best thing we could give her
When we protected fourteen K.
Of an arid shrub land river.

Bob Porter



© Jessica van der Waag, MPG

Grevilleas are made for birds



"We plant grevilleas around the house and in corridors as they are a magnet for birds. In this photo, taken by Eric McGinn, a Scottish visitor, you can see how the flower is designed for bird pollination."

Sheila Howat, "Tortoiseshell Farm", Bridgetown.

The marvellous malleefowl

"Australian communities have in the past, and are continuing to take an increasing leadership role in driving malleefowl conservation particularly in WA. Indeed, the charismatic lifestyle of the malleefowl has captured hearts and minds across the country. Several *LFWers* are lucky enough to have malleefowl in their *LFW* sites. The Malleefowl Preservation Group (MPG) based in Ongerup has operated on a 95% volunteer basis since 1993 and is fast approaching 20 years of age. Its successful conservation program has elevated the malleefowl's status to a species now driving landscape changes."

To find out more and how you can help, visit the website: www.malleefowl.com.au

Susanne Dennings, MPG, Ongerup.

Sheoak serenity

“After a long, dry summer-autumn, one of the most special places is a sheoak stand. What better place to wander through on a winter morning, footsteps muffled by a thick carpet of needles? Rock ferns re-appear and the rough bark of the trees provides ideal footing for fascinating lichens; even more so after death, as the decomposition process begins. By mid-winter, fallen trunks and branches are transformed, becoming home to an amazing and colourful display of mosses, lichens and fungi. Scattered rocks and stones, and other inert objects, also succumb to this soft invasion, their real identity becoming temporarily obscured. Around August, when the flower-bearing male sheoak sheds its pollen, changing to an extremely attractive rust colour, the contrasting effect is stunning!”

Lyn White, Darkan



The jewels in the crown



"Emu eggs are an unexpected burst of colour when you come across them in bushland, shining brilliantly like jewels in a crown.

Usually the male is sitting unseen on the nest, until you walk too close and disturb him. He runs away and you jump in surprise. A zoom lens on the camera allows the eggs to be photographed, a few moments of admiration and the walk takes a detour leaving the nest in peace."

*Avril Baxter, "Knotwood", Williams
Photo: Lance Mudgway.*

The dwarf spider orchid (*Caladenia bryceana*) is a Declared Rare Plant. No wonder – it is so small (less than 100 mm high) that even when you go looking for it you can easily step on it. It is found among wandoos, sheoaks or mallees or adjacent to water courses. On our block, we have a population of about 20 in a lovely sheoak grove on high ground on the edge of the flood plain of a large creek. When we first saw them in late September 2008, we were thrilled to bits as we had been looking for them at the other end of the property near the main road for some years without success. It flowers in August-September and is probably pollinated by a thynnid wasp, though this has not been observed.

*Eddy Wajon, "Chingarrup Sanctuary",
Gnowangerup*

Rare orchid



Planting for the future

"At Coogee every year we go out near the school and plant trees. It is very exciting because the whole school goes down at the same time to plant them. Some of them like the tuart trees grow very quickly (we have planted 5,000 of those joining Beeliar and Woodman Point regional parks with the school) and some of them are now big. The school first planted 120 tuarts in 1994 to celebrate 100 years of Coogee Primary School. By 2004 those tuarts had increased the biodiversity at the school as the bugs that grew in them brought in the pardalotes that nested in the roof of the school. This was fun to watch."

"It is great to watch the trees we plant in pre-primary grow while we are at school and by the time we are ready to go to high school the tiny trees we planted are much bigger than us and we have made a



difference to the environment. We have a nursery at the school and one of our neighbours whose family started a market garden opposite the school in 1938 looks after the plants for us."

"We like to watch the golden orb spiders during the day. Sometimes they build their webs right next to the school buildings so we can keep an eye on them."

"One of our students came back to the school to do his Year 11 work experience. He looked after

some of the trees we had planted and prepared a chart showing the 36 birds that can be seen from the school. This will be put in the display cabinet that has just gone up on our *Land for Wildlife* shelter."



[These comments were sent in by teacher Keith Brown, but unfortunately we do not know which students wrote them, or who are in the photographs.]

Is it a lichen?



To learn more about fungi and to create your own fungi field book, see:

www.fungiperth.org.au

"This photo was taken in November 2008 by our son Tyler (aged eight at the time) on our property in Denmark where we are lucky enough to have approximately 60 acres of karri forest. Tyler and his Mum were out looking around the property for sites to test different strains of rust on blackberry for CSIRO, when Tyler spotted this lichen and took his first ever photo with a digital camera. When we printed the photo we noticed that there is a slug eating the orange flesh."

Michael Anthony, "Southern Edge", Denmark.

[This is a very good photograph, Tyler, but its not a lichen, its a fungus. Mycologist Neale Bougher says it looks like the hairy stereum (*Stereum hirsutus*). This is a common fungus which grows on dead wood and is an important agent of wood decomposition. This is a Fungimap target species.]

[P.S.: Where's Wally? Can you find the slug? It is very well camouflaged! - Ed.]

Pygmy possum



“Pygmy possums are common in the karri forest and the garden. They are omnivorous, feeding on nectar, insects and anything small enough to eat. In a state of torpor the soft ears fold over, when fully awake they are erect and firm to aid hearing. The one in my hand was rescued from the letterbox, where they are commonly found in the district.”

John Pate, Denmark.



Old tree - new lover!



*Peter Smith at "Eagle Ridge", Greenhills.
Photo: Adelphe King*

Tree of life - and death



“In my backyard is this big tuart. At night you can look up though the branches and see the stars twinkling and dancing between the leaves. The stars are the ancestors. They come back to earth sometimes – you might have seen one, falling – and a tree like this is just where the spirits would like to rest, watching over and guarding the people below. But the tree also has a more bloodthirsty role, as a resting site for one of the Coastal Plain’s aerial predators, a peregrine falcon, here seen devouring a dove.”



Trevor Walley, Rockingham.

A puzzle solved



“On my block in the Helena Valley - and indeed throughout the south-west, wherever granite is exposed - silver banjine (*Pimelia argentea*) grows after fire or other disturbance. A spindly, upright shrub to two metres, with small cream flowers in a spike among leaves covered with silvery hairs, it grows quickly but is short-lived. I noticed that the young, soft, flowering branch tips tended to shrivel and die back in late spring, and wondered what was causing this. Well, this year, I found the answer! The plants were infested with dozens of these colourful insect nymphs, sucking the plant sap. Terry Houston from the WA Museum suggested that they are a juvenile jewel bug, from the family Scutelleridae in the order Hemiptera. (The adults look somewhat like ladybirds.) This illustrates why I find WA’s biodiversity so fascinating, there is always something new to find out about – even in your own backyard!”

Penny Hussey

Learning about country



The property "Lake Pleasant View" at Manypeaks was bought by the Indigenous Land Corporation in 2005 and placed under the management of the Albany Heritage Reference Group Aboriginal Corporation. The area has a long history of Indigenous use and it is being revegetated (with the assistance of South Coast NRM) as a conservation area and cultural meeting and learning place. Here, students from Manypeaks Primary School are being shown a 'scar tree' by Shandell Cummings, the Cultural NRM Coordinator at South Coast NRM.

Photo: Sylvia Leighton

Noisy frogs

"Motorbike frogs (*Litoria moorei*) are our favourite visitors, though their call, like a revving motorbike, can be very noisy at times!"

Mirjana Basic, Denmark



[These frogs are common and widespread across the south-west. Being a tree frog they can move across land and often turn up in backyard ponds. A full chorus can be deafening! Unfortunately, they are quite susceptible to chytrid fungus. - Ed.]

Tawny frogmouth

"We live in Mt Helena on 3.1 hectares of mostly replanted grazing land with a little bit of bush in the middle. Our *LFW* number is 039 and we have been revegetating the land for 25 years. There is a jarrah with a branch at just the right angle for a tawny frogmouth to build a platform. In the summer of 2008-09 two beautiful chicks were raised, and again in 2009-10. We noticed that our big orb weaver spiders vanished from their webs leaving a large hole - we suspect they made a tasty morsel for the family. The bird on the nest is in very heavy camouflage, but if you can find the triangle of her beak she can be seen."

Mike and Jenny Mackintosh, Mt Helena

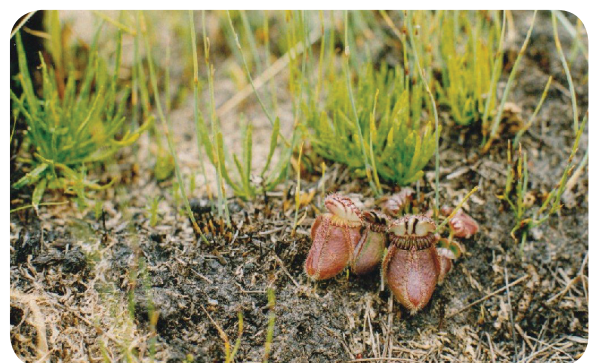


A truly extraordinary plant

"The Albany pitcher plant (*Cephalotus follicularis*) grows on our property on the edge of a 'hanging swamp' feature. They are usually found in wet areas where water is continually moving through the soil. They are insectivorous, with some of the leaves being modified into these extraordinary insect-catching pitchers."

Noeline Goodsell, "Valley of the Giants Ecopark", Walpole.

[This is one of the absolute gems of WA's biodiversity. But it could, alas, be threatened by climate change ... Ed.]



NEW BOOKS

Aquatic invertebrates and waterbirds of wetlands in the Avon region

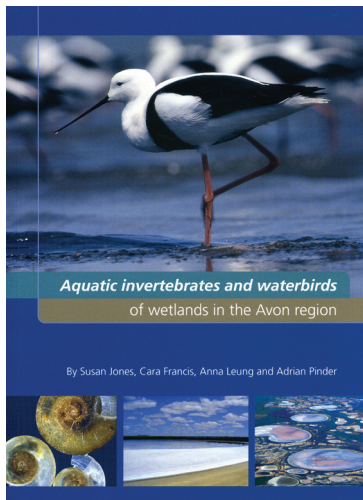
Susan Jones, Cara Francis, Anna Leung and Adrian Pinder

Wheatbelt NRM and partners.

Free

We tend to think of the inland area of south-west WA as being rather dry and waterless, but in fact it contains thousands of watercourses and wetlands of various sorts, supporting a fascinating array of animal life. The Wheatbelt NRM, with financial support from the Australian and WA governments, has produced this book to help people identify that fauna.

It starts with a section on the characteristics of wetlands, including



problems, threats and brief comments on management, but the major part of the book is devoted to the identification of invertebrates and waterbirds. The whole is very well illustrated and easy to read.

Although designed specifically for the Wheatbelt NRM Region, most of the information would also be applicable to the inland portions of the northern agricultural region, the south coast and the upper Blackwood. If you have a property in these areas that has wetlands – lakes, claypans, rivers or swamps; salt or fresh – and think that you would use a copy of the book, please contact your LFWO. A copy will be sent to you – first come, first served!

Treasuring wandoo – such a marvellous tree A tribute to Joanna Seabrook

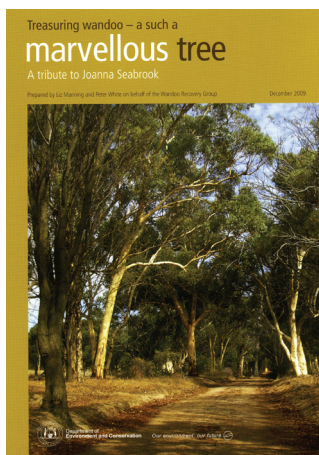
Liz Manning and Peter White on behalf of the Wandoo Recovery Group

Free

“What a magical thing is a tree. They are so beautifully constructed and can do so many marvellous things, yet we take them for granted. Are we as a people, losing our love and passion for the Australian environment, ecology and ecosystems? We think we treasure our native plants and animals, but what are we doing for them?”

The magnificence of wandoo as one of South Western Australia’s most important trees for wildlife is portrayed in this highly readable booklet. Widely recognised as a premier timber tree, cherished for its aesthetic beauty and immeasurable ecological value, wandoo’s virtues are emphasised along with the need to safeguard its dwindling remnants. This booklet should be read by all people who treasure wandoo and its woodland communities, as well as those responsible for their protection and management.

For more information contact your LFWO or Wandoo Recovery Group Executive Officer, Liz Manning on 0427441 482 or email Elizabeth.Manning@bigpond.com



Mammals of the Avon Region

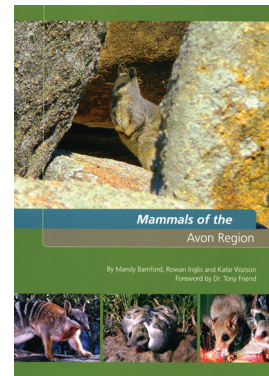
Mandy Bamford, Rowan Inglis and Katie Watson

Wheatbelt NRM and partners

Obtainable from: Wongan Hills Bushcare Group (9671 1051); Mukinbudin Conservation Society (9047 0018); River Conservation Society York (9641 1842)

Cost: \$20.00 + \$3.50 p&h.

Another title in the Wheatbelt NRM’s biodiversity identification series, this excellent book gives a lot of information about mammals in the Avon region, including some that were recorded in historical times but are now, sadly, extinct. Well written and beautifully illustrated, this book will give pleasure to anyone who reads it, no matter whether they live in the Avon region or elsewhere.



Playing cards with native grass illustrations

A pack of playing cards, Top Deck Native Grasses, with illustrations showing native grasses, has been produced in South Australia. Hearts and diamonds show summer-active C4 grasses, while clubs and spades show cool-season C3 grasses. A second pack of 52 cards gives more detail for identification. Although not all of the species illustrated occur in WA, the item is nicely produced and might make a quirky yet useful present for anyone wishing to learn more about native grasses.

More information, including cost, from: deck52@bigpond.net.au

This newsletter is a compendium of articles written by many different people. The views expressed are those of the authors, not necessarily those of the Department of Environment and Conservation.

Published by the Department of Environment and Conservation, Perth.

All correspondence should be addressed to: The Editor 'Western Wildlife', Department of Environment and Conservation, Species and Communities Branch, Locked Bag 104, Bentley Delivery Centre, WA 6983.