



Western Wildlife

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NEWSLETTER OF THE LAND FOR WILDLIFE SCHEME

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THE VALUE OF OIL MALLEES AS FORAGING HABITAT FOR THE WESTERN PYGMY POSSUM

Marie Short

Planting trees has become a major component of a farmer's annual program throughout WA. In particular, large areas of farmland throughout the south-west region have been planted to oil mallee species. While revegetation is not usually planted for conservation benefits it has the potential to enhance conservation of wildlife in rural environments. One



A pygmy possum Photo: M. Short

mammal species that has been observed in oil mallee plantations is the western pygmy possum (*Cercartetus concinnus*). The western pygmy possum is a tiny nocturnal marsupial weighing 8-20 g (average 13 g), and has a head/body length of 71-106 mm and a tail length of 71-96 mm. The possums breed in all months of the year and females can rear two or three litters in close succession. On average, 3.5 young survive to the late stages of dependent life. This article reports utilisation patterns of the western pygmy possum in oil mallee plantings determined by observing the movement and behaviour of individual possums.

The research was conducted from May to September 2007 on farms in the shires of Narrogin, Cuballing and Wickepin (approximately 200 km south-east of Perth). Fourteen sites were used during the study. Nine of the sites were oil mallee plantings in either block or belt ('alley farming') configurations, ranging in size from 2 ha (small block) to 11 ha (widely spaced belts within

a pasture paddock). The other five sites were mixed revegetation plantings of Australian natives (block plantings of approximately 2 ha). Remnant vegetation near to the sites consisted of isolated paddock trees and roadside vegetation, but one oil mallee planting was adjacent to a 9 ha patch of remnant woodland.

The possums were captured in pitfall traps which consisted of a series of three 20 litre plastic

buckets buried to the rim (sealed with lids when not in use). The buckets were arranged in a 'Y' configuration with one bucket midway along each of the three 'arms' made of plastic garden edging 10 m long x 15 cm high). The buckets were opened at sunset and examined before 8am the following morning. Trapping periods ranged from one to 10 nights with a total of 39 nights and 92 pitfall traps, 62 in oil mallee plantings and 30 in mixed revegetation.

Radio tracking was undertaken to determine habitat utilisation patterns of the western pygmy possum at sites where they were captured. Selected possums were fitted with a single stage transmitter with a 10 cm trailing antenna weighing 0.55 g. The radio transmitter was attached to the possum's back using non-toxic glue on the fur, making no contact with the skin. At five minute intervals during tracking, the location of the possum was found and marked with flagging tape. At each interval, observations were made of the habitat the possum was

EDITORIAL

PLEASE READ!

Over the years, *LFW* has worked closely with the many groups and programmes whose aim is to help Carnaby's Cockatoos. We have put people in touch with funding sources, prepared award nominations, and run articles in *Western Wildlife* featuring the bird. But for the first part of this year two *LFW* Officers, Mal Harper at Merredin and Phil Worts at Katanning, will be actively looking for landholders who have Carnaby's habitat, and need some funding help for management of same. Whether you have roosting or nesting woodlands, or feeding habitat such as banksia woodland or mixed proteaceous heath, if it needs a fence, or some other management action, call Mal or Phil NOW! Contacts in the table on this page.

INDEX

Are we losing our hard-won 'Sense of Place'?	10
Birds like berries	8
Children take their voices to Canberra	13
Does your backpack transport weeds?	15
Don't walk where seabirds burrow	16
Editorial	2
Huntsman spiders	8
Ladybirds	14
Managing tar spot disease of myrtle hakea	4
New books	20
News	16, 17, 18
Out and about with Tommy and me	19
Potential disaster: <i>Mimosa pigra</i> found near Kununurra	9
Roadside weeds: a world-wide problem	15
Seed collection for revegetation	6
Seeing double	12
Snakes in the roof!	5
The value of oil mallees as foraging habitat for the western pygmy possum	1
Update - red imported fire ants	15

USE OF ARTICLES FROM WESTERN WILDLIFE

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Greetings everyone!

I hope that 2009 finished well for you, and that 2010 will be excellent! *LFW* had another busy year, with visits, talks and workshops being organised in a number of locations throughout the south west. But we still have not found the resources to be able to directly help Broome residents.

This magazine contains some interesting articles outlining recent research, as well as some more great stories from landholders. Sylvia Leighton, who is *LFWO* at Albany, has contributed an article about the importance of stories. It is thought-provoking, and well worth reading.

Best wishes

Penny Hussey

INDEX TO LANDSCOPE

DEC's award-winning magazine, *LANDSCOPE*, has now been running for 24 years, since June 1985. During that time there have been many articles of enduring interest – on the geology, biology, natural history or just the sheer beauty of our wonderful State. Often we in *LFW* are asked questions that can be answered by reference to these articles, but how do you find them? Now there is an electronic searchable database that can help.

To access the *LANDSCOPE* online database, click on the *LANDSCOPE* icon at the bottom, left-hand side of the DEC homepage:

(www.dec.wa.gov.au <<http://www.dec.wa.gov.au/>>).

When the catalogue opens, key in the relevant subject in the keyword box at the top of the screen.

You'll then be presented with a list of relevant articles, including their title, magazine volume number, author and a short subject description. This will enable you to order the magazine containing the required article from the DEC book distribution centre in Kensington or look for it in your existing collection.

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www.dec.wa.gov.au/landforwildlife

*continued from page 1***Pygmy possums****FAUNA***Oil mallees next to paddock wandoo Photo: M. Short*

in, its location and distance from the previous location and its movement and feeding behaviour. During the following day at each of the locations marked by the flagging tape, measurements were taken of leaf litter, vegetation attributes, tree flowering and tree hollows. GPS coordinates were recorded at each of these locations and these were plotted over an aerial photograph.

Seventeen captures of western pygmy possum were made (three of these were recaptures). A total of 10 males and four females were trapped, one of the females was carrying pouch young, and one male and one female were juveniles. The male-biased capture rate may simply reflect differences in activity patterns, with males being more active than females due to greater home ranges, or the possibility that males were searching opportunistically for mates. Eight

possums were radio tracked, five males and three females. A total of 13 of the 14 captures were in oil mallee plantings, with only one made in mixed revegetation. Males were observed to travel further distances (average 196.2 m) than females (average 39.2 m). During tracking, individual possums

were observed to spend longer periods of time in oil mallees that were flowering prolifically than those with no or minimal flowers. The possums moved quickly through the canopies using the non-flowering canopies as a means to reach the flowering canopies without having to move across the ground. Once in the flowering oil mallees the animals were observed moving up and down the canopy from flower to flower feeding on the nectar for up to an hour in each tree. The longest distance travelled while feeding was 343 m over 3 hours and 10 minutes, by a male observed moving rapidly through the oil mallee canopies feeding on the nectar from the flowers, moving up and down the row of trees. Over the trapping period, western pygmy possums were only trapped when the vegetation was flowering, which may be because nectar and pollen are important sources of energy and protein in the diet of small mammals. Nectarivores have the ability to track resources and when the oil mallees were not flowering the western pygmy possums may have been travelling to surrounding vegetation that was flowering at the time.

Six of the eight tracked individuals were traced back to their nesting site. All were

found to use the hollows of white gum (*Eucalyptus wandoo*) trees. Two of the nesting trees were found amongst roadside vegetation, one within a fenced off remnant vegetation strip in a paddock and three were isolated paddock trees. These nest trees ranged from 10 to 70 m from the nearest edge of oil mallee planting. The longest distance travelled from a nest site to an oil mallee planting was 400 m (by a male). Large paddock trees provide important habitat for species in rural environments. The availability of new hollows in the next century and beyond will be directly influenced by whether successful tree recruitment occurs in farming areas and whether ecological processes involved in hollow formation continue to function.

Oil mallee plantings on farms in the southern Wheatbelt region of WA have been found in this study to provide suitable foraging habitat for the western pygmy possum. Planting oil mallees on farms may improve conservation for western pygmy possums in this area, especially when planted in the vicinity of remnant vegetation and suitable nesting trees. Revegetation practices should be encouraged to ensure suitable habitat, including feeding and nesting sites will be available in the future.

[Ref. list available - Ed.]

*Pitfall traps under oil mallees. Photo: M. Short*

This research was part of an environmental management honours project with Edith Cowan University (ECU). Thanks to Eddie van Etten (ECU) and Patrick Smith (CSIRO) for supervising the research work. The author is grateful to the Gath, Hesford and Nottle families on whose farms this work was conducted and to Steve Zabar (CSIRO), Tim and Pauline Short who assisted with the field work. Marie can be contacted on: marieshort@y7mail.com

RESEARCH - FLORA

MANAGING TAR SPOT DISEASE OF MYRTLE HAKEA

Elaine Davison

The disease problem

Myrtle hakea (*Hakea myrtooides*) is a small spreading shrub with broad leaves and attractive pink, crimson or purple flowers. It is one of the hakeas that resprouts after fire. It grows in small, discrete populations on the Swan Coastal Plain, Darling Scarp, north to Mogumber and east to York.



Hakea myrtooides has brilliant magenta flowers. Photo: P. Hussey

Myrtle hakea leaves are often badly affected by tar spot disease. These spots are black, shiny domed spots, about 1mm in diameter, which are often surrounded by a yellow halo. The spots are immersed in the leaf and penetrate through it. This disease is caused by the fungus *Phyllachora grevilleae*, a parasite that can only grow on a living host. Badly affected plants carry a large number of dead leaves and lack vigour.



Tar spot disease on myrtle hakea, Mundy Regional Park. Photo: Elaine Davison [Black and white does not do this pic justice - the leaves are dotted with black spots - Ed.]

A population of myrtle hakea occurs in the Ellis Brook Valley reserve, Gosnells. It has been badly affected

by tar spot disease for many years, and the Friends of Ellis Brook Valley want to control the disease in order to increase the vigour of the plants. Francis Tay and I at Curtin University of Technology have been trying to find a way to do this.

The effect of burning on tar spot disease

Tar spot disease is spread by spores that are produced in the spots during autumn, winter and spring. Leaves will become infected whenever there is sufficient rain for these spores to be dispersed and the leaves are wet enough for infection to occur. Burning is one way to destroy infected leaves and any residual spores, so that newly developing shoots should be disease free.

In order to find out whether burning does reduce tar spot infection, the plants at Ellis Brook Valley reserve were burnt by the Gosnells Volunteer Bush Fire Brigade in November 2007. The level of tar spot disease on regenerating shoots was measured in 2008 and 2009, and was compared with the amount of disease before the burn, and also with the amount of disease on unburnt plants in Mundy Regional Park and Whistlepipe Gully, about 10 km away. Plants burnt in a wildfire at Whistlepipe Gully were also included in the surveys.

Although burning did not completely eliminate the disease, it reduced the proportion of infected leaves. After 20 months fewer than 8 % of the leaves on burnt plants were affected by tar spot, compared with 29 % of leaves on unburnt plants.

Recommendations from this work are that burning can significantly reduce the incidence, and therefore impact of tar spot disease on myrtle hakea. To be effective the fire needs to be conducted in summer and should be sufficiently extensive to burn, not just scorch the whole population. Kangaroo browsing of the regenerating shoots was a problem at Ellis Brook Valley so regenerating plants must be protected by rabbit guards.

Will this control be effective for other resprouting hakeas?

The success of burning to minimise tar spot disease depends on a number of assumptions:

- The tar spot fungus only infects living plants.
- All of the infected leaves and residual spores are destroyed by the fire.

Members' page

SNAKES IN THE ROOF!

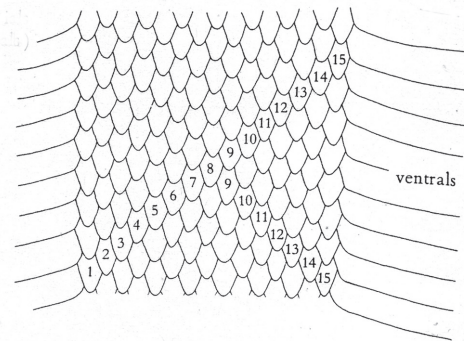


Jane and Marcus Dyke love living next door to their 72 hectares of bushland at Narrogin and occasionally see a snake, but when they recently replaced the roof on their house, they were shocked to find 35 shed snake skins! .

The house was originally roofed in tin, but as the tin began to sag, the previous owners pitched another tile roof directly over the top leaving the 'sags' as nice warm spaces. It was in these spaces that the roofing carpenters collected the sloughs (shed skins) in this photograph. The carpenters were not impressed, saying that if they came across a live snake, the Dykes would have to finish the roof themselves!

The Dykes were curious as to which snake had shed its skin, how many snakes were living in the roof and if they should be concerned for the safety of their young family.

Snakes can be easily classified into non venomous carpet pythons, or the common venomous species such as gwardar, dugite or tiger snakes by counting the scales at mid body. Carpet pythons have 40 to 65 scales in a row whereas the common venomous snakes in the region have around 17 to 19 scales.



methods of counting number of scale rows

Using this method these skins were identified as the non-venomous carpet python. Was it one snake or many? Hard to tell as a carpet python can live for 25 to 30 years and can shed its skin a couple of times a year if conditions are favourable.

This is an amazing collection of skins and shows that snakes have an unnecessarily bad reputation. The snake/s had probably been controlling rodents within the ceiling for years while the owners were blissfully unaware of it/their presence.

Avril Baxter

continued from page 4

Tar spot

- The tar spot fungus is host specific, i.e. there is a different species of tar spot fungus on each species of hakea.
- The tar spot fungus spores are splash dispersed by rain, and only have limited ability to spread from a diseased to a healthy population.

We were not able to test these assumptions, which would have taken much more time and money than was available to us. Careful observation, however, may indicate whether burning is effective at reducing tar spot disease. If you have badly affected hakeas on your property and these are burnt in a hazard reduction burn, just check the amount of tar spot on regenerating shoots in subsequent years. Taking close up photos would be a good way to document what was there before the burn, and follow the health of the new shoots.

Acknowledgements

Many people and organisations assisted with this work. The Friends of Ellis Brook Valley (Inc.), City of Gosnells, Perth Biodiversity Project and Lotterywest® provided funding, and the Gosnells Volunteer Bush Fire Brigade conducted the burn. Greg Bremmer, Peter Davison, Tracey Dinwoodie, Alycia Illing, Skye Kuyper, Toby Rees, Maggie Robertson, Gemma Schryver and Mark Short assisted with the field surveys and the burn.

Elaine Davison is Adj. Associate Professor in the Dept of Environmental and Aquatic Sciences at Curtin University.

PRACTICALITIES - REVEGETATION

SEED COLLECTION FOR REVEGETATION : GUIDELINES FOR DETERMINING THE REQUIREMENT FOR LOCAL SEED

Melissa Millar

The collection of seed from natural populations is an important issue for revegetation programs. Current approaches tend to follow the precautionary principle where seed is collected from 'local provenance' or 'local' populations only.

The precautionary principle

When collecting seed from natural populations for revegetation the precautionary principle has generally been followed for a number of reasons:

- Natural populations may possess genetic adaptation to local environmental conditions including climatic (temperature, rainfall), edaphic (soil) and other environmental variables (aspect, hydrology). Seed collected from 'local' populations is therefore likely to have a 'home site advantage' being well adapted and displaying enhanced long term viability, fitness and survival at a nearby revegetation site.
- Natural populations located further away may not be well adapted to the environmental conditions at the revegetation site. Seed collected from them may perform poorly on the revegetation site.
- Seed collected from populations located further away may pose a risk to nearby natural remnant vegetation via pollen contamination. Pollen contamination from genetically divergent plants may result in the production of hybrid progeny within natural remnants. If outbreeding depression occurs in the hybrid progeny, hybrid seedlings may have reduced viability, fitness and survival and this may threaten the overall health and long term persistence of the remnant population.
- Lastly, the use of local provenance seed in revegetation is also considered to prevent a range of other negative ecological interactions with nearby remnant vegetation such as invasiveness, displacement of the local form, and changes to the community structure.

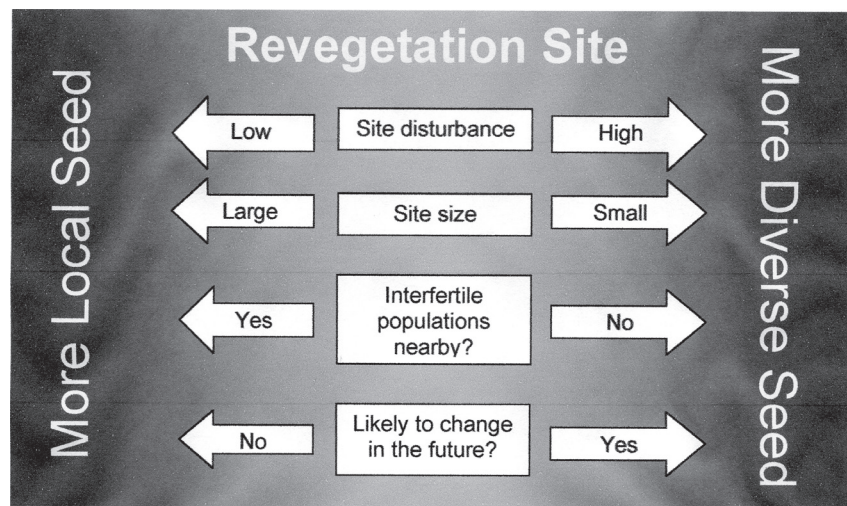
Although the term 'local' is not well defined, limiting seed collections to 'local' populations has led to highly geographically restricted seed collection zones, anecdotally as small as 15 km. In some cases, however, the use of strictly 'local' seed collection zones is not possible, nor may it be the most appropriate approach for all revegetation programs and species.

Guidelines can be used in determining the requirement for strictly 'local' seed collections for a given revegetation task and in determining the possible size of seed collection zones for a given revegetation species. These guidelines incorporate assessment of a range of characteristics regarding

- the aim of the revegetation program,
- current and future aspects of the revegetation site,
- the known or likely patterns of genetic variation or of local adaptation in the revegetation species, and
- the availability and quality of seed sources.

The aim of the revegetation program

Revegetation programs are conducted with a range of goals and the appropriate seed collection strategy will vary for different programs. The goal of some revegetation projects is the restoration of degraded land with the rapid establishment of plants with a high survival rate. Others may focus on the restoration of a specific endangered species in which case the availability of seed for revegetation may be limiting. Other revegetation goals include the provision of specific habitat, the prevention of invasion by exotics and the re-establishment of select ecological functions, and these goals may have different seed requirements. The aim of many present day revegetation programs is the re-establishment of fully functional and compositionally biodiverse, self-sustaining ecosystems, that survive well into the future. Each of the factors affecting seed collection strategies is discussed below in the context of this kind of sustainable revegetation program.



continued from page 6

Seed collection

REVEGETATION

Current and future aspects of the re-vegetation site

In any revegetation project an 'eco-geographic' or 'habitat matching' approach should always be used. This means seed collection sites and revegetation sites should always be matched as closely as possible for environmental variables including temperature, rainfall, soil, aspect and hydrology, regardless of the geographic distance between them.

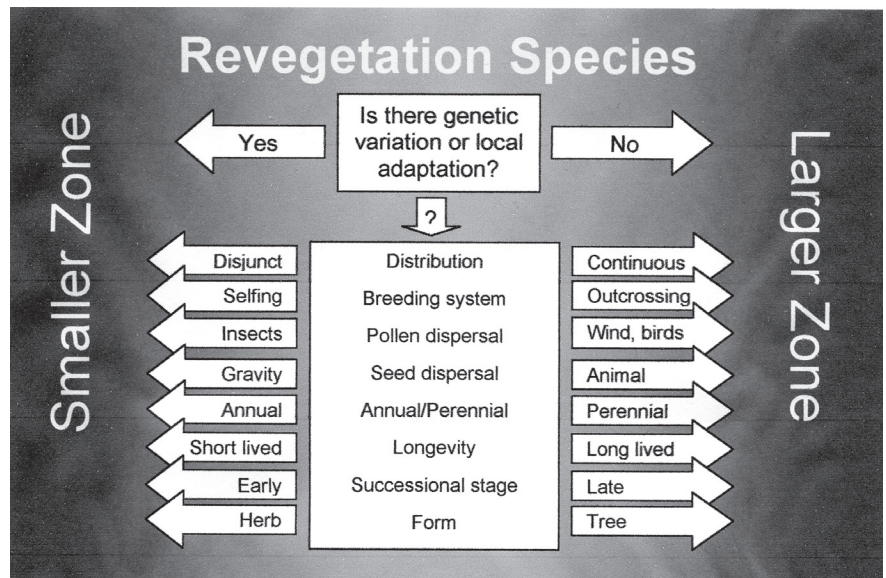
Using a habitat matching approach means that 'local' populations are often well suited as seed collection sites. Further factors that influence the appropriate seed collection strategy include the degree of disturbance at the site, the size of the site, its proximity to remnant populations, and the likelihood of future environmental changes at the site. The requirement of collecting seed from 'local' populations is reduced when:

- disturbance at the revegetation site increases, for example, with highly altered hydrology or soil chemistry. In this case environmental conditions may be significantly altered or completely novel compared to the original state and 'local' seed may no longer be well adapted to the site,
- the revegetation site is only small in relation to nearby remnants,
- there are no suspected interfertile remnant populations of the same or a closely related species nearby. In the case of a small site with no interfertile populations nearby the risk of genetic contamination into remnant populations is greatly reduced, and
- the potential for future environmental changes at the revegetation site, including climate change, increases.

For smaller revegetation sites not in close proximity to interfertile natural populations and those that are highly disturbed and/or predicted to undergo significant future changes, the size of seed collection zones can be expanded. For these sites an approach that makes use of seed lots collected from a number of large healthy populations with more diverse origins and a mixture of genotypes which will have greater levels of genetic diversity and may be more successful in both the short and long term.

Genetic variation and local adaptation in the revegetation species

Assessment of the aims of the revegetation program and of aspects of the revegetation site may indicate a strong requirement for revegetation with seed of 'local' provenance.



In this case, how exactly do you determine a specific geographic scale or size of a 'local' seed collection zone? For some species there may be information on genetic diversity or local adaptation and this can be used to determine seed collection zones. For most species there is no such information. Following the precautionary principle can also be important if little variation in morphological and physiological traits is observed, as strong genetic diversity may still be present among populations with significant adaptation to local conditions.

When information is not available, a range of life history traits can be assessed to give an idea of the likelihood of significant levels of genetic diversity or local adaptation. Factors affecting patterns of genetic diversity include the distribution of populations and individuals, breeding system, pollen and seed dispersal mechanisms, successional stage, whether it is annual or perennial, whether it is short-lived or long-lived, and its life form, such as herbaceous, shrub or tree.

Greater levels of genetic diversity between populations and hence local adaptation may be expected for species with limited distributions and highly disjunct populations; those that are predominantly self pollinated; have limited seed dispersal mechanisms (seed falls to the ground and is not dispersed by animals) and pollen dispersal mechanisms (small insects); are short lived (a shrub that lives five years), and those of early successional stage (small annuals and herbaceous perennials) and more herbaceous forms. For these species 'local' seed collection zones should be smaller.

Levels of genetic diversity between populations are often lower and local adaptation would be expected

In Brief

BIRDS LIKE BERRIES

William Davis and Harry Recher have been studying birds in the Great Western Woodlands (GWW) for many years, and in the process have built up a vast knowledge of the natural history of the area. A recent article in *The Western Australian Naturalist* illustrates one such case*.

The native cherry (*Exocarpos aphyllus*) is an important food source for birds in the GWW in late winter and spring. Thirteen species took berries and 12 species foraged for invertebrates on foliage and bark, including five species that took no fruit.

Because of its importance to birds, anyone undertaking revegetation in the Wheatbelt should consider including this species or its close relative, broom ballart (*Exocarpos sparteus*) in their projects.

[*For ref, contact Ed.]

The illustration is of Exocarpos sparteus, drawn by Margaret Pieroni, and is taken from the book Leaf and Branch (reviewed last issue).



continued from page 7

Seed collection

to be less pronounced for common species with widespread distributions and large continuous populations, those that are predominantly outcrossing (most trees), have long distance seed dispersal (animal dispersed, river dispersed) and pollen dispersal mechanisms (bird pollinated, wind pollinated), perennial species, long-lived species and those of late successional stage including many long-lived woody perennials, shrub and tree species,. For species such as these, 'local' seed collection zones may be expanded however seed collection zones and revegetation sites should not be interrupted by physical barriers that may limit gene flow among populations such as rivers and large areas cleared of native vegetation.

Availability and quality of seed sources

In most revegetation situations, quality of the seed source is more important than sourcing from the nearest local population. Seed should always be collected from large healthy populations that are not suffering from effects of small population size such as poor seed set, or exhibiting poor flowering or excessive predation. Only 20 % of available seed should be collected from a natural population in order to ensure future health of the population.

Seed collected from a range of habitat matched populations with high levels of genetic diversity will almost always be more appropriate material for revegetation than seed collected from a restricted number of 'unhealthy', small or isolated populations on a local geographic scale.

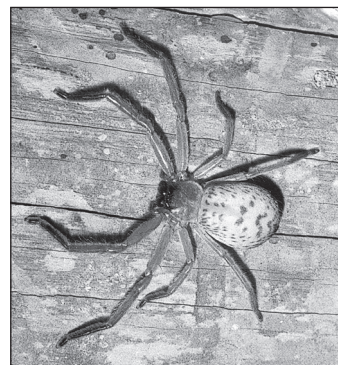
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HUNTSMAN SPIDERS

After the article on wolf spiders last July, a number of readers contacted the Editor to ask if they are the same as huntsman spiders, and if not, is there an easy way to tell the two groups apart? Volker Framenau from the WA Museum provided an answer:

“They are in two different families, wolf spiders are in the family Lycosidae, huntsman spiders in the family Sparassidae. There are three easy ways to tell them apart.

- Look at the eyes. Wolf spiders have four small frontal eyes and four large eyes in almost a square on top of the carapace. Huntsman spiders have two rows of eyes, four and four, almost equal in size.
- Positioning of the legs. Wolf spiders' legs have two pairs pointing more or less forward, two more or less backward, whereas huntsman spiders' legs stretch out sideways and they tend to scuttle sideways like a crab.
- Broodcare. Wolf spiders carry their egg sac around with them, but huntsmen spiders make a silken brood chamber in which they deposit their egg sac. They will remain beside this chamber to guard it.

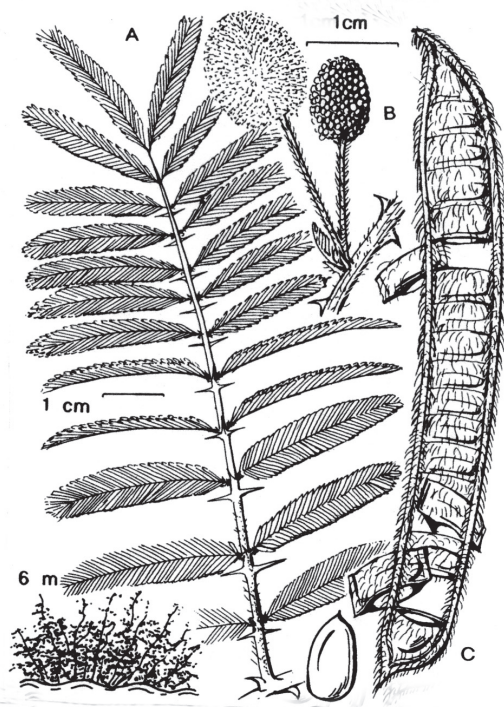


Hope this helps, folks!”

Thank you, Volker.

WEEDS

POTENTIAL DISASTER - *MIMOSA PIGRA* FOUND NEAR KUNUNURRA



Mimosa pigra looks like a leafy wattle shrub (it is in the same family, Mimosaceae) with pink fluff-ball flower-heads. Its main claim to fame, however, is that when touched, its leaves immediately fold up, giving it the common name of giant sensitive plant. A native of tropical America, this extraordinary characteristic led to it being planted as a curiosity in botanic gardens worldwide – it is

known to have been cultivated in Darwin well before 1900, for example. From there it has spread out to colonise creeks and wetlands across the top end of the Northern Territory and into Queensland.



Leaf showing spines. Photo: DAFWA

The plant is a spreading shrub that can grow to six metres high, with feathery leaves and prickles on both stem and leaves. It produces pods that break into segments each containing one seed - one

plant has been recorded as producing 220,000 seeds annually. The pod segments float, and can be carried long distances by floodwaters, germinating on the strand-line.

by traditional owners. All in all, it poses a very real and serious threat to the integrity of northern wetlands, with all that implies for biodiversity, cultural identity and tourism.

Until very recently, this plant was not known to occur in WA (so you will not find it illustrated

*Northern residents and travellers
- be on the lookout for this!*

It forms dense impenetrable thickets along waterways and across floodplains, transforming them from sedgeland and grassland into monotonous tall shrublands. No native plants can compete, nor are these thickets habitat for native animals (though feral pigs are reputed to utilise them). They also disrupt hunting

in *Western Weeds*, for example) however, a patch has been found near Kununurra. It is hoped to eradicate the infestation.

All travellers in the area should look out for plants, and report suspected sites to DAFWA's Pest and Disease Information Service on 1800 084 881 (Freecall).

More information can be found on: www.weeds.org.au/WoNS/mimosa/ or www.agric.wa.gov.au/declaredplants

[For an emailed one-page ID poster, contact the Editor.]

Illustration from "Weeds of Natural Ecosystems, Northern Territory".



Mimosa pigra bushes Photo: DAFWA

SOCIAL and HISTORICAL ISSUES

ARE WE LOSING OUR HARD-WON 'SENSE OF PLACE'?

Sylvia Leighton

I presented this as a poster paper to the 2009 Geraldton Landcare Conference. It relates to a change in our rural communities as changes in agricultural production favours corporate ownership over the family farm operation. Not only does this depopulate the landscape – leading to many social problems – but there is often a great loss of historical property information and records. This is very damaging to Landcare and to the natural and cultural heritage of our country.

How important is human presence in our landscape in relation to the long-term conservation of our remnant bushland? On one side of the fence some environmentalists would say the most powerful thing we can do is keep humans out of the landscape as our mere presence seems to encourage the introduction of feral species and the spread of damaging environmental disease and degradation. On the other side of the fence we acknowledge that Australia has a long and rich cultural heritage of human connection to land not only in a physical sense but also in a spiritual sense contributing to our cultural 'sense of place'.

As we look further into this topic, the main issue that keeps on being highlighted to us is that having people in the bush brings us 'stories' about the functioning of the land. They provide us with the long-term observational information and knowledge which can only be gained by living in the bush and watching it over a long period of time. At this point I would like to emphasise and acknowledge that the most important layer of information was, and is, that of the Indigenous people. It is one of the greatest tragedies that when Europeans entered this country they did not think to seek out and record the information on the natural heritage of this land that had been accumulated by the indigenous peoples over thousands of years. For all of us involved in Landcare it is this layer of information that we most truly miss as we stumble along the path of trying to live in this landscape more sustainably.

LFW Officers talk to lots of people who live on their properties and have a passion for looking after their remnant bushland. They are the kind of people who have a strong interest in nature and like to observe it and try and understand it a bit better. *LFW* is in its 13th year of operation in Western Australia and is a permanent conservation programme of the Department of Environment and Conservation. Currently it has a membership of 1761 property owners who manage about 1.2 million hectares of agricultural and range lands in the state, of which over 300,000 hectares are remnant bushland. The philosophy of employing local people

as *LFW* Officers has been invaluable in providing a professional level of service with in-depth knowledge of the natural heritage of an area and building a 'sense of trust' in the permanency of the programme (the average length of employment for *LFW* staff in WA is 8 years. We must enjoy our jobs!!!)

Each registered property is surveyed by a *LFW* Officer using standardised quantifying measurements, to observe biodiversity parameters of the bushland and record them on a GIS database. The assessment not only records the details of the physical health of the remnant bush but also notes the land owners' motivation and aims for the conservation of the bushland on the property. Update inspections and liaison with property owners by *LFW* Officers provide the opportunity to compile long-term data detailing ownership status, landholders' attitudes, physical health conditions and conservation issues related to remnant bush. It is from this base that the *LFW* programme can observe changes in land management and possibly see trends in long-term bushland conservation across the landscape.

One change we are observing in recent times is the rapid change in land ownership and management from the traditional family-based broadacre agricultural operation to one that is corporately owned. The south coast region shows this very dramatically. Here, the agroforestry industry has converted thousands of hectares of privately managed agricultural land into corporately managed lands. In 1988 there was only 800 ha of land planted to agroforestry in the Great Southern Region of Western Australia (land between Walpole to Katanning and across to Jerramungup). Twenty years later, in 2008, the same area now has over 160,000 ha of agroforestry, mainly dominated by bluegum plantations.

With the recent economic downturn and other market impacts we have also seen two of the major plantation companies collapse in the past six months and this will again cause a shift of land ownership and management. Of course a major percentage of the plantation properties will remain as commercial plantations but there will be

*continued from page 10***Sense of Place****SOCIAL ISSUES**

Todd Edwards of Mouluyinning took the LFW Officer to his favourite place on the farm, where he used to play as a child, and he is really keen to make sure it remains beautiful and healthy. Photo: A. Baxter

some properties that will revert back to private ownership by small family businesses and will also move out of plantation production.

The point of all this is to provide background to the issue of major shift in land management in a very short period of time. It is very difficult to get statistics (from either Landgate, the Valuer General's office or the Census) which indicate the shift of land titles from private family management agricultural production into corporate plantation management and to find out whether anyone is actually living on the property. To gain any insight into this issue requires direct communication with the land manager.

What has become apparent to the *LFW* Officers is that when visiting a plantation property there is usually no 'human face' connected to it. There is no human caretaker to show you around the land and tell you the 'heart connection to land stories' covering history, seasonal trends, nature observations and reflecting a gentle care of the land. Like most corporate bodies the plantation companies have a high staff turn-over. From a *LFW* perspective we can see that this is possibly going to contribute to the loss of heritage knowledge attached to these large tracts of land in our landscape.

Of course there have also been some shifts of properties into corporate ownership which have a very strong heritage and conservation ethos and these properties fall under the umbrella of programmes like Bush Heritage, Gondwanalink, Greening Australia or the Indigenous Land Corporation. We could write a whole report alone showcasing the understanding that

has already been achieved on these properties, especially looking at the powerful impact of handing back country to the indigenous peoples so that they can carry out culture and ceremony and try to fully encompass 'human sense of place' whilst carrying out inspiring bushland conservation.

But the fact remains that in many cases we are seeing the depopulation of rural areas and as people leave they take many precious stories with them and possibly also 'connection to land'. We will lose the stories about where the family went to have picnics, the special place where the echidna scratchings were seen, the story detailing the effect of the flood, the story of the huge regeneration of the wandoo, the story of the tall tree where the wedgy nested every year, the time the bush turkey moved across the property, granddad's story of the bilby burrows up on the sand ridge, the memory of when the last brush

wallaby was seen on the block.....these details may walk away with the people as they exit out of the family owned property.

So I throw these questions out to you. If corporate ownership is to be a large part of the future of broadacre farming in the state, what is the future of a 'human sense of place and connection' with these bits of land? Is this important to Australian heritage and culture or doesn't it matter? Do we provide longterm effective Landcare management if there are no humans with a longterm heart connection to the land or a longterm duty of care? Will the natural heritage of that land survive a lack of personal human connection? How are we going to record all those special 'land connection' stories which can so quickly vanish with time? We have already felt the immense loss of much of the indigenous knowledge of this country. We know this cultural tragedy and know how quickly this information can disappear. What are we going to do about the lessons that we have learned from our past about the importance of 'human connection to land' in this country?

The 2009 State Landcare Conference had all types of speakers from many and varied backgrounds. One common theme running through most presentations was examining how humans are dealing with changing environments in relation to proposed climate change and environmental change. I felt very lucky to attend this conference and thank NACC and Lotteries West for their sponsorship.

Sylvia Leighton is LFWO at Albany; contacts on p.2.

Members' Page

SEEING DOUBLE DOUBLE

Mike Murphy



This rare photograph of a kangaroo with two joeys in its pouch was taken at a *LFW* property near Walpole. What makes it rare is that the joeys are not twins but from different mothers. They are part of a small mob of hand-raised kangaroos that have been released into the wild but return frequently to the home of their carers, Mike and Penney Murphy.

Three females had joeys about the same time and on this occasion one of them, called Tingle, appeared at the house clearly distressed and making a coughing sound. Mike and Penney went out to find the cause and discovered Tingle's joey was missing from its pouch. They began searching the bush, following tracks the kangaroos regularly take to a nearby creek and along firebreaks. Tingle went with Penney and at one point stopped and indicated she wanted to go down a particular track. Penney followed and Tingle led her to Tallulah, another female, standing in a clearing in some thick bush. Mike joined them and he and Penney began searching the area, presuming something had happened near there to cause Tingle to lose her joey.

Coming back to the clearing, where Tallulah and Tingle were still standing, Penney noticed that Tallulah's pouch looked bigger than usual. As Tallulah is used to being handled, Penney approached and inspected the pouch, finding two joeys inside. Presumably Tingle's joey had either jumped into Tallulah's pouch by mistake or it had become separated from its mother and Tallulah had found it and taken it in. Tallulah was not giving up her new acquisition, however. When Tingle approached she got a box round the ears with one of Tallulah's paws.

Mike and Penney set off back to the house and the two females followed. On the back lawn Tallulah lay down with Tingle close by, watching her closely. Soon the two joeys began moving. Several legs appeared, then one head with four legs and eventually two heads.

Coincidentally, Mike and Penney then received a phone call from a friend who reported he had a joey whose mother had been shot. Would

they take it and look after it? Penney thought it might be a solution. Perhaps Tallulah could keep her two, which she seemed reluctant to give up, and Tingle could have the new one. But by now Tallulah was showing signs that there was not enough room in her pouch for two and the joeys were squashing each other, with Tallulah's joey, the slightly younger and smaller of the two, looking as if it might be in trouble.

Deciding it was time for expert advice, Mike called Carol Lander at Roo Gully, near Boyup Brook who said the second joey had to be removed from Tallulah's pouch or one or both of them would not survive, and the new joey should not be put in another mother's pouch. There was only one working teat in the pouch, Carol said, and it could not supply two joeys. Also, the milk Tingle was supplying might not be appropriate for the age and development of the new joey. Fortunately, Carol also had advice on how to remove the two joeys from Tallulah's pouch. Mike offered her some dried apple, one of her favourite snacks, and held it down near the ground so that she had to bend down to eat it, allowing her pouch to fall open. Penney then pressed gently from the back of the pouch and put her hand in very carefully to pull out the tangle of arms, legs and heads. Tingle was watching all this with close attention.

The two joeys popped out, looking a little startled. Tallulah made a small grunting noise and her joey rolled back into the pouch, with Tingle's joey also quickly finding its rightful home. For a long time the two mothers stood still, looking rather dazed at the experience they had shared, and then they hopped off together into the bush.

When the incident was reported to another kangaroo expert, Lynda Staker, in Queensland, who has written the 'bible' on how to hand raise macropods,

Members' Page

CHILDREN TAKE THEIR VOICES TO CANBERRA

Jo Tregonning



*Children from Baldyvis Primary School meet Hon Julia Gillard in Parliament House to discuss funding opportunities for their projects.
Photo: BCF Inc.*

Ten years ago in the face of radical change from rural to urban living, children at Baldyvis Primary School determined to preserve some of the region's fast diminishing natural environment. From early beginnings in 2001 when the site became a *LFW* property, children and the community have transformed the former farmland block into a vibrant educational centre surrounded by beautiful bushland. It is now known as Baldyvis Children's Forest and hosts annual planting events, educational programs for schools and community, and boasts an excellent diversity of flora and fauna.

continued from page 12

Seeing double

Lynda's response was: "It is quite uncommon for a female to allow another's joey near her, let alone allow it into her pouch! I think you are very lucky to have witnessed such an event."

Meanwhile, the other joey was brought in and Mike and Penney cared for it that night but decided not to keep it and found another carer who was prepared to take it over the next day.

Mike Murphy is a retired journalist and part-time editor of 'The Walpole Weekly'. His wife Penney is a Silver Chain nurse in Walpole. They live at Crystal Springs, 14 km from Walpole. Email: mjmurphy@westnet.com.au

A whopping 25,700 seedlings have been planted in the degraded tuart woodlands and Outridge Swamp, and the past four years has seen a 70–90 % seedling survival rate. A successful feral bee control program and installation of wildlife nest boxes has seen possums and large monitor lizards recolonise the old treated hollows. The excitement of children spotting these animals on night stalks is great to hear. Aboriginal cultural learning has formed an important part of developing the Forest and a bush tucker garden, artwork, mia and development of the district's dreamtime trail are physical evidence of Aboriginal learning at the Forest.

Since 2006 the multi-award winning Children's Forest project has been recognised in State, national and international arenas for biodiversity conservation, education and Aboriginal cultural reconciliation. Children speak at numerous events and conferences, the most recent being at the International River Health Conference in Canberra during October 2009 where 'kids teach kids'. Twenty-nine Baldyvis Primary School children presented workshops on the Forest project and their work studying water quality in local wetlands and the Serpentine River. They also met with Environment Minister Peter Garrett and Education Minister Julia Gillard in Parliament to highlight a need to fund environmental educational programs such as the Forest project and the Department of Water's Ribbons of Blue program. Visit www.baldyvis-childrens-forest.com.au for more information.

Jo Tregonning is the Project Officer, Baldyvis Children's Forest.

FAUNA

LADYBIRDS



Ladybird beetles are one of the few groups of insects that most people can recognise, and nearly everybody actually likes to see them. They don't sting people and they have a great reputation as the gardeners' friend, eating aphids and other pest insects.

*“Ladybird, Ladybird, fly away home,
Your house is on fire and your children are gone.”*

First recorded in Tom Thumb's Pretty Song Book, 1744

What does the above chant refer to? As a child in England I used to entice a ladybird onto my hand, then recite these words while slowly turning the hand upside down, being entranced when the insect raised its brightly covered elytra, unfolded the gauzy wings beneath and – flew away. Where did this tradition come from? Did it make it to Australia? (Friends whose parents, or even grandparents, have an English background, tell me yes.) One suggestion for the origin of the rhyme is that it was chanted by farmers before burning stubble after harvest, as they wished the good insects – the ladybirds – to be safe.

The name 'ladybird' is probably of great antiquity, as the 'Lady' in this instance does not mean just any female, but 'Our Lady', the Virgin

Mary. So the name has come through the language from at least mediaeval English if not earlier and implies definite approval for the insect in the human scheme of things. Did the early monks tending their herb gardens recognise it as a friend? Probably!

Ladybirds are beetles and the Ladybird Family (Coccinellidae) has about 6000 species in 370 genera and is found worldwide. There are around 500 species from 57 genera in Australia. Most of the adults have a characteristic bowl shape and are often brightly coloured. The traditional image of a ladybird is a small bright red beetle with black spots, but there are other colours as well – orange, yellow, greenish and even black. Eggs are laid on the underside of leaves of a suitable host plant. The larvae are quite ugly and often spiny, have well formed legs and are highly mobile. Both larvae and adult are voracious predators, in fact larvae have been observed cannibalising pupae of the same species. When ready to pupate, the larva does not make a cocoon but merely attaches its tail to a leaf or twig. Some adult ladybirds feign death when they are alarmed and discharge drops of yellow blood from their leg joints. This is toxic to vertebrates, and so the discharge is presumably a defensive action.

There are two red and black species that are likely to be seen in the south west of WA. Two-spotted ladybird (*Coccinella undecimpunctata*) is introduced from Europe and is only found

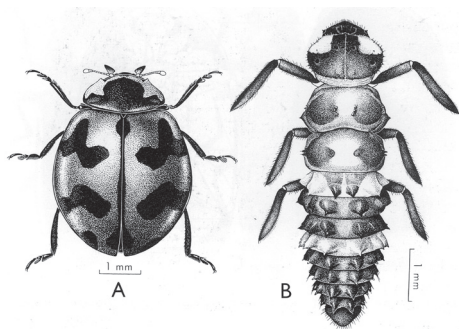
in WA and Tasmania. *Coccinella transversalis* (drawing above) is the most common ladybird species in Australia, and is also widespread in Asia. One or other of these are likely to be the ladybird you find eating aphids on your rose bushes. Both adults and larvae eat aphids but during spring and autumn the adult can also feed on nectar and pollen from various flowers.

A ladybird featured in one of the earliest and most spectacularly successful examples of biological control of a pest. In the 1880s, citrus plantations in California were being wiped out by the cottony cushion scale (*Icerya purchasi*) that had arrived from Australia - no-one knows how. It was a potential disaster. In the area around Adelaide, Albert Koebele found the cardinal ladybird (*Rodiola cardinalis*) eating the offending scale insect, and sent five shipments, a total of 514 individuals, to Los Angeles between November 1888 and March 1889. They were bred up and then distributed to growers. A year later, by the end of 1890, the scale was no longer considered a threat to citrus growers in California. Another Australian species, *Cryptolaemus montrouzieri*, has been successfully used to control mealy bugs in Hawaii.

So think of ladybirds when you get out the insecticide for crop or garden spraying – the sprays kill the good guys as well as the bad ones.

Note: For the really keen, a very technical book has recently been published: Adam Slipinski. 2007. Australian Ladybird Beetles: their biology and classification. CSIRO. It is a very, very, VERY detailed taxonomic reference, leavened by excellent colour photos.

Penny Hussey



Coccinella repanda, A adult, B. larva.
From *Insects of Australia*. 1970. CSIRO.

Weeds and Ferals

UPDATE - RED IMPORTED FIRE ANTS

Back in 2001, red imported fire ants were first reported to have reached Australia, having established for perhaps 10 years in Queensland, and a snippet in *Western Wildlife* (WW 5/3) asked readers to watch out for them. Although small, they form huge colonies and, unlike most ants, they don't bite, they sting, raising nasty pustules and, in people who are allergic to them, causing toxic shock and occasionally death. They are considered the world's worst ant pest; stinging people, ruining hay crops, blinding cattle and damaging public electrical devices – including airfield landing lights. They can even kill fish - when the flying reproductives land in water and are eaten by fish, they sting the fish internally, sending it into shock and death.

In Jan 2002 (WW 6/1) we reported that a five-year programme to eliminate the ants had been set in

place, at a projected cost of \$123 million. (Although this sounds a lot, compare it with the State of Texas, for example, which annually spends US\$1.3 billion to try to control this ant.) Peter Davis of DAFWA provided *LFW* with the following update.

"Eight years on, the programme in Queensland continues. Although there has been good control in some areas, new infestations continue to be found, and detection of colonies by remote sensing seems a useful technique. It appears that the ant is mostly transported by vehicles, in garden rubbish, or even through the soil in pot plants. So far, \$210 million has been spent on control, WA contributing a small portion of this as part of the nationwide biosecurity agreement. Primarily a tropical ant, it could be a major threat in the Kimberley and has the potential to establish in Perth, around wetlands especially. So do continue to keep a look out, and report strange ants to DAFWA's Pest and Disease Information Service on 9368 3666 or email info@agric.wa.gov.au".

DOES YOUR BACKPACK TRANSPORT WEED SEEDS?

A recent study in the Northern Territory* has shown that when traveling through areas infested with the serious weed gamba grass (see WW 12/2), people on foot can inadvertently collect lots of seeds, even though this grass's seeds have neither hooks nor sticky bits to attach to clothes. Instead, the seeds fall into open receptacles such as pockets, shoes and especially outside pockets on backpacks (in the reported experiment, these were designed to carry water bottles). So, if you have been walking through weedy sites, check all possible places on your clothes or backpack for unwanted hitch-hikers before moving on.

[* For ref contact Ed.]

ROADSIDE WEEDS - A WORLD-WIDE PROBLEM

This photo shows two increasingly problematic roadside weeds, on the left tambookie (*Hyparrhenia hirta*) and on the right fountain grass (*Pennisetum setaceum*). Both are of great concern to land managers in WA – but this pic was taken in Namaqualand, South Africa! The tambookie is a local, they are not bothered about that one, but the fountain grass comes from East Africa. Imported as an ornamental and for mining rehabilitation, it is spreading like crazy along road- and railsides throughout the Republic of South Africa. Yet another example of the globalisation of environmental pests.



[In 2004, the Cooperative Research Centre for Weed Management produced an excellent leaflet on *Pennisetum* species control. I have a few available in my office – first come, first served! Ed.]

In Brief

DON'T WALK WHERE SEABIRDS BURROW

Do you remember Wes Bancroft's article on wedge-tailed shearwaters at Rottnest in January 2004 (WW 8/1)? The birds construct a nesting burrow in sandy coastal cliffs. In order to study them, Wes had to walk into the breeding colony, inevitably, despite all care, treading on some burrows and collapsing them. In other areas, recreational access paths may cross the breeding colony and people using them may likewise cause burrow collapse. Is this foot traffic adversely affecting breeding success?

Wes analysed data from Rottnest and elsewhere in the world, and came to the conclusion that yes, it is having an effect.* He recommends that management authorities construct boardwalks or otherwise define public access paths to confine human trampling to specific areas (as is done, for example, at Penguin Island). As for researchers, they should immediately dig out any burrows that collapse beneath them, and consider treading only on spoil heaps at the burrow entrances.

So, when visiting the coast for your summer holidays, please take especial care and stick to defined paths if possible.

[For ref. contact Ed.]*

WA FUNGI PHOTO COMPETITION AND EXHIBITION

The Perth Urban Bushland Fungi project, in collaboration with the WA Naturalists' Club and the Urban Bushland Council, will be holding their third (and biggest) photo competition this year. It will be held in May 2010. Despite the title, the competition is not confined to the Perth area, so get out your camera and go looking for fungi (or slime moulds). There are sections for both adults and juniors (under 15), so this could make a good school project. Categories include:

- fungi in their natural habitat
- camouflage
- macro or detail
- my favourite photo

Photos must be submitted as A5 or larger prints and should not be digitally manipulated.

For further information, contact Jolanda Keeble by email on wanats@iinet.net.au or by phone on 0439 978 550.

News

A GET-TOGETHER AT "NUKARA"

Forget coffee mornings! Donna and Phil Blakeway hosted a very successful afternoon tea on their property "Nukara" at Nanson in the Chapman Valley. As well as conventional farming, the Blakeways operate a caravan park/campsite and the facilities area proved ideal for the 30 or so attendees to chat and discuss local issues.



The landscape in this northern part of the Wheatbelt is unique in WA, with mesas dissected by steep valleys containing springs and fresh running streams. The breakaway edges and steep slopes usually remain uncleared and carry dense and locally restricted vegetation, colourful and attractive for fauna. The group walked up onto a breakaway to discuss management, then back down along a running stream under the shade of huge old river gums.

But the highlight came later in the afternoon, as we travelled in convoy to another of the Blakeways' properties, where a bird hide had been constructed overlooking a freshwater lake that had once been a wheat paddock. The revegetation around the new lake was looking superb, the hide was as good as anything you will see internationally and the birds cooperated perfectly!

Thank you to Fiona Falconer and to Donna and Phil for a beautiful and inspiring occasion.

Penny Hussey



Sacred ibis from the (back row) of the hide. Phil told the story of putting in crop across this valley, when he felt the ground wobble beneath him ...! When the water depth stabilised, the edges were planted with shrubs and the hide constructed.

Congratulations from the LFW team!

...to **Mike Kerkmans**, farmer and *LFWer* for winning the **Australian Government Western Australian Individual Landcarer Award**. Mike will go on to compete at national level next year.

This award is in recognition of Mike's efforts as a 'champion' of landcare who has set an example of a profitable enterprise that successfully integrates nature conservation, commercial native perennial crops and conventional broad-acre farming. Mike has also been active in the Pindar/Tardun Mallee Fowl Group and the Oil Mallee Association.

Mike registered his property with *LFW* in 1998. He had a specific goal in mind to encourage native fauna back; and an overall goal for the property to restore natural bush and farm sustainably without harming the environment.

The landscape of "Marlingu" has changed dramatically over the years; over 500,000 oil mallee trees and 20,000 biodiverse species have been planted. Despite harsh, dry conditions excellent survival rates have been achieved, greater than 90 % in most years. Six hundred hectares of bush have been fenced.

Terrific achievements in what must be one of the most challenging environments in South-west WA. Well done!

For more information about Mike and his property, read *With Wildlife in Mind*, *LFW's* tenth anniversary publication, where it was one of the special stories featured. If you have not got, or have mislaid, this book, you can now download it as a pdf from the *LFW* website (see p. 2).

...to **Cecily Howell** for being awarded the inaugural **Kwongan Medal for outstanding achievements towards conservation of Australian native plants**. Cecily is a noted York identity, founder of the River Conservation Society and the Vale of York Reserves Committee. When being presented with the medal, the Hon Hendy Cowan said that Dr Howell had been active in gathering and sharing knowledge about our unique flora and had provided leadership and expertise in the local community, thus helping to teach the next generation of plant conservationists.

The Kwongan Foundation was founded to provide the expertise to develop scientific knowledge of kwongan (sandplain) vegetation, understand its biology and scientifically research actions that lead to sound management. It annually holds a Colloquium to showcase recent research on plant conservation matters.

...to the **Nell's Block** people for winning the **Bush, Land and Waterways Award** in the **WA Environment Awards**.

A magnificent collaboration between industry and community to restore a piece of degraded land near Harvey. Read the detail about this project in October's *Western Wildlife* (WW 13/4, page 19).

...to **Gaynor and David Clarke** of Cape Howe Cottages, Albany, for winning the **Hosted Accommodation** category of the **WA Tourism Awards**.

Their achievement is made even more outstanding as they won the same category last year! They will now progress to represent WA at the Australian Tourism Awards in Hobart in February 2010. Wish them luck!

FIRE AND YOUR BUSHLAND

After a disastrous series of bushfires over the last few years, residents of the Blackwood Valley turned out in force to attend a 'Fire and your Bushland' workshop at Sheila Howat's property, Tortoiseshell Farm, near Bridgetown. Organised jointly by DAFWA's Small Landholder Information Service, Blackwood Valley Landcare Zone and *LFW*, the workshop focused both on the ecological effects of fire, and on fire management for personal and property protection. The importance of considering fire in all aspects of property management was emphasised.

Several useful ideas arose out of the discussions, including the need for Shire Councils to control roadside grass weeds to reduce fire hazard, and the importance of providing specialist 'ecological burning' training for

volunteer bushfire brigade personnel. It is hoped that these will be progressed further.

Congratulations to Sheila Howat and Cheryl Hamence of Blackwood Valley Landcare for arranging a most informative and useful event.

Penny Hussey

Did you know that... ?

... turtles and tortoises have a skeletal plan different from all other vertebrates? The spine and ribs are fused to the bony plates that form the shell. This means that the limb girdles lie inside the rib cage, rather than outside it (consider the location of your shoulder blades, to realise how different they are).

NEWS

TOODYAY AND GIDGEGANNUP SHOWS

The Toodyay Naturalists Club invited Harmony (the educational Carnaby's cockatoo from the Black Cockatoo Rehabilitation Centre) and myself as a *LFWO* to join them at this year's Toodyay Agricultural Show and provide a *LFW* display.

What was particularly enjoyable about the day was not only meeting new people, and hopefully future *LFW* members, but also meeting current *LFW* members whom I hadn't met before and who introduced themselves to me. It was great to be able to put faces to names, and I enjoyed having a chat.

Visitor numbers were down at this year's Gidgegannup Show landcare display, and we were wondering if it was the result of the recession, or if it was because of the fine weather. In previous years with heavy rainfall, visitors to the show have taken the opportunity to shelter in the display area. A captive audience!

I would like to take this opportunity thank the Woorooloo Brook Landcare Group for having included *LFW* over the years, and thank them all for the hard work that they have undertaken.

Zara Kivell

NEWDEGATE FIELD DAYS

The Annual Newdegate Field Days are the usual hive of activity one expects from such community events. They are a great venue to meet people from all ages, and from a vast array of backgrounds, knowledge, observations and interests. This year our DEC display focused on updating the community on the works being done in the Lake Bryde Recovery Catchment, the Western Shield

program and of course the vital role *LFW* plays in assisting landholders preserve or enhance their piece(s) of Australia's natural heritage. The interdependence of *LFW* sites with the Nation's reserves being very important in assisting the long-term survival of our biodiversity.

As usual the stuffed animals in the display were a drawcard for children and adults alike, resulting in many good conversations with people who had seen various rare and priority fauna and flora in the wild. And of course the badge maker always works overtime when children stop for a look! It is encouraging to meet children with a great knowledge and understanding of the natural world around them - they are the people on the land or in various other professions who will have a desire to pass on our natural heritage to the next generation in ever improving health and sustainability.

Phil Worts

NEIGHBOURS AT BLACKBOY SPRINGS

Blackboy Springs, a rural subdivision in the rolling hills southwest of Wandering, is an attractive place for people wanting to get away from the city. Some people are full time residents, others have built a weekend retreat, all appreciate the values country living can bring, from misty winter mornings to the awareness of bushfires in summer.

After four landowners joined *LFW*, it became apparent that by meeting and discussing common issues many outcomes could be achieved. Following the success of coffee mornings held in the more closely settled areas, *LFW* member Fiona Motas took up the challenge and hosted a coffee morning for members and others within the estate who had an interest in nature

conservation.

Fiona and Charles' place was chosen as it was at the top of the catchment and has lovely bushland on granite outcrops which could inspire others as to the variety of local plants available for revegetation programs.

The connections made were worthwhile. Some landowners were busily removing exotic rushes from their creekline and wondering where to get the native variety only to find that they were growing profusely on a neighbour's property who was happy for them to collect rhizomes.

Pigs were seen as an increasing threat to the area and it was noted that they were mainly found in upland areas and especially on properties visited occasionally by their owners. One of the landowners who enjoys a walk every morning around the estate will now alert the Wandering Declared Species Group if she sees any pigs in the area.

Experiences in tree planting were shared including attacks of Rutherglen bugs on young seedlings planted next to canola crops, and marri and flooded gum tree decline.

Thanks to Fiona for supplying a wonderful morning tea and sharing the delights of her property with us.

Avril Baxter

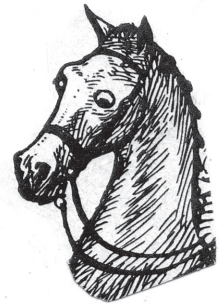


Jo and Geoff Clough, Linda Wilkins, Fiona Motas, Joanne Lockwood and friend enjoy the splendours of a granite outcrop in springtime. Photo: A. Baxter

The Way We Were

OUT AND ABOUT WITH TOMMY AND ME

Charles Fitzgerald Fraser took up land at Dowerin in 1905. Between March and September 1913 he went walkabout and the *Western Mail* published a series of essays concerning his adventures with his horse Tommy, through what is now the northern and north-eastern Wheatbelt. He was a good writer, entertaining and often amusing. Here are some brief extracts concerning the places he saw.*



Moorra: One point that strikes the visitor is the fact that a great deal of the large timber has been left standing in and around the town and this largely increases the prettiness of the place.

Marchagee: Impressions of this country as passed over along the telegraph line are easily summed up – the abomination of desolation, and my advice to anyone who wants to follow our footsteps from Watheroo north is, first make your will, say goodbye to all your friends, and then change your mind and stop quietly at home.

Dongara: The crayfish are retailed at 1½d each, and are not quite as large as those landed at Fremantle.

Geraldton: Geraldton has the makings of a fine town. It already has good buildings and a fine situation; but, like Moorra, it has no good water supply and, although it has a daily train connexion with Perth, the distance is such that one might well consider oneself to be in the principal town of another State.

Mullewa: On first impressions one's idea might be summed up after the style of the school geography, thus: Mullewa on the Wooderarrung River (not navigable). Industries: calling at post office for mails, discussing rainfall, and farming. Principal import: bottles (full). Principal export: bottles (empty).

South of Mullewa: The charts we navigate by are those attached to the annual report of the Water Supply Department and while the fairy tales therein are good enough

for the purpose for which they are intended (viz., the information of Members of Parliament) I feel that Tommy can justly blame me for not getting more reliable information about the country than that contained in the official plans.

Near Gunyidi (Mr Murray's farm): This was the first farm we found with flowers in bloom in the garden, and a very pleasant relief they were to eyes tired of dirty green scrub and brown land: there were creepers being trained up trellis-work and on the verandah, and some Tree Lucerne [= tagasaste, Ed.] looked remarkably healthy.

Near Dalwallinu: Close to Mr Harris's is a new Government well, beautifully fitted up and finished off by a man who evidently was a tradesman. This is one of the best Government jobs to look at that we have struck so far, and it evidently has not long been completed. The fact that the water in the well is totally impossible for the consumption of man or beast is, of course, a minor detail.

Near Wongan Hills: It seems hard to pick up the accurate pronunciation of the native names in this district. For instance, on the Wongan Hills line there is a siding known in the timetable as Konnongorring. To pronounce this word properly say Konno – and then sneeze.

Dowerin: The language of the Aboriginal is, so it is said, limited to 300 words; one can get along in Dowerin on a much smaller vocabulary, "cultivation,

superphosphate, seed, will we get some (or no) rain, harvest, bags are a shocking price, I sold for three one and a half, pay you after the next harvest." The foregoing phrases comprise all that would be necessary for a foreigner to know, in order to be able to follow an ordinary conversation in the district, except at election or Melbourne Cup time.

In the more easterly part of my wanderings I saw very few sheep indeed; after leaving Dowerin one could count on one's fingers the settlers who have sheep.

Near Trayning (Mr Lewis's at the end of Lake Wallambin): This is an extraordinary farm, for the only horses on it are the two used in the buggy. The whole of the farm work has been done with a tractor for the last three years, and Mr Lewis is convinced that motors are going to be the tractive force for farms in the future.

* *Out and About with Tommy and Me* 2008. Charles Fitzgerald Fraser. Collected and edited by Peter J. Bridge and Angela Teague. Hesperion Press.

Did you know...?

that the honey possum has the largest sperm recorded for any mammal? It testes are big too, weighing in at 4.2% of body weight – that would be equivalent in human males of a scrotum weighing 4 kg!

Kate Bryant, Murdoch University

NEW BOOKS

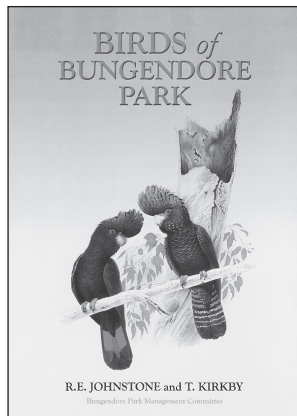
Birds of Bungendore Park

Johnstone, R.E. and Kirkby, T.

Bungendore Park Management Committee, 2009.

\$20.00.

Bungendore Park is located in Bedfordale, about 5 km south-east of Armadale and provides an important backdrop to the City of Armadale. It is extensively used by the general public, tourists and the scientific community. The book, compiled by local ornithologists Ron Johnstone and Tony Kirkby, details the diversity of 98 species of birds reliably recorded in the park and gives information on relative abundance, habitat preferences, breeding and movements. It also summarises the changes in status of many species following environmental changes, both natural and man-made, the impact of the devastating wildfire in 1994 and invasion of some exotic species into the park. The book includes some exquisite artwork by Rob Fleming that was commissioned for the book.



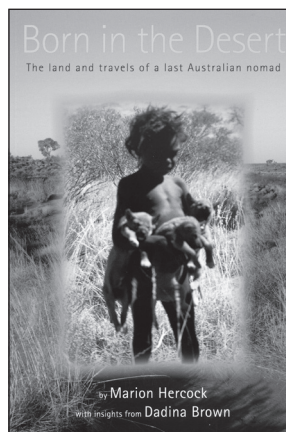
The book can be purchased in person from Armadale Visitor Centre, Jull Street, Armadale or from SERCUL, Horley Street, Beckenham. Alternatively, purchase by mail from Bungendore Park Management Committee, PO Box 538, Armadale WA 6992 for \$22.00 (including P&H).

Kim Sarti 9470 2297 [H] Projects Co-ordinator

Born in the Desert: the land and travels of a last Australian nomad

Marion Hercock with insights from Dadina Georgina Brown
Hesperion Press email: books@hesperionpress.com
\$30.00.

This is a book of stories, but it is much more than just that. The noted artist, Dadina Georgina Brown, is niece of the famous Warri, and she was the last person to be born and reared in the WA desert. She and geographer Marion Hercock bring the landscape and history of the desert to life and so illuminate what it was like to live a lifestyle that has now passed away. If you are interested in seeing our world through the eyes of a different culture, you will find this book fascinating but also in some parts disturbing.



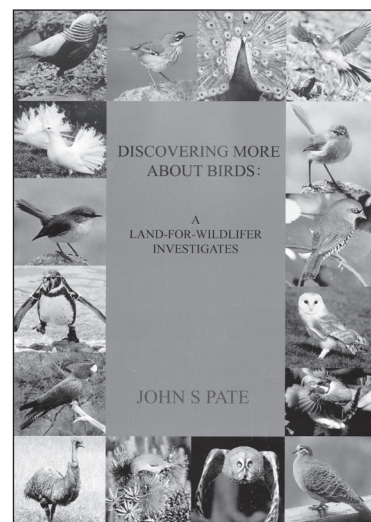
Penny Hussey

Discovering more about birds: a land-for-wildlifer investigates

John S. Pate

Pate's Patch Press.

\$20.00 - special price for LFWers, to cover both the book and P&H. Send a cheque to the author at: 681 Mount Shadforth Road, Denmark, WA 6333.



When John Pate retired from a distinguished career as Prof. of Botany at UWA, he went to live at Denmark. But that did not stop him observing, researching, recording and writing about the natural world around him.

Many readers will already be familiar with John's earlier book *A long-standing love affair with birds* published in 2003. It described encounters with wild creatures on the Denmark block and elsewhere. This current volume continues in the chatty, readable, story-telling style, but concentrating entirely on birds.

The first part of the book discusses and illustrates a number of features that make birds unique. There is some interesting stuff on bird evolution, for example, as well as how the respiratory and circulatory system is designed to get sufficient oxygen to the wing muscles during flight. The second half of the book is detailed case studies of local birds. These sections are well illustrated and describe the natural history of the birds, with lots of personalized observations of life history, feeding and behaviour that make one resolve to observe more carefully. For example, apparently John's button-quails scrape their 'plates' (see WW 7/2 p 2) in a clockwise direction – he wonders if all button-quails do this, or if some scrape anti-clockwise? Left-footed, or right-footed?

And what about the advice to have an untidy garden, as it encourages scrubwrens? "I love it when laziness can be justified" says the author!

This is a book for reading a section at a time, savouring and enjoying. It will increase both your appreciation and your understanding of the wildlife that shares our land with us. And maybe, like me, it will inspire you to buy yourself a 'nature diary' for Christmas - and use it!

Penny Hussey

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.

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