



# Western Wildlife

January 2012  
Vol. 16, Number 1

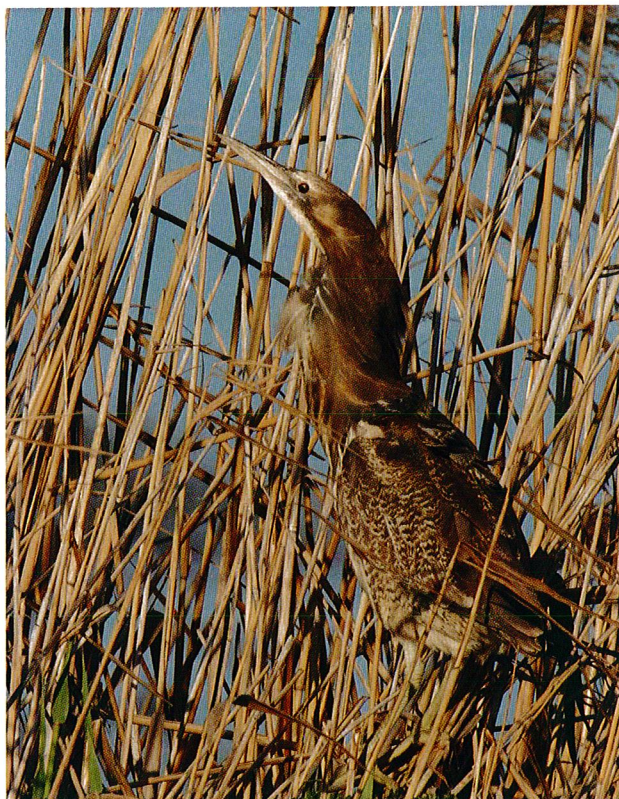
NEWSLETTER OF THE LAND FOR WILDLIFE SCHEME

REGISTERED BY AUSTRALIA POST PRINT POST: 606811/00007

## THINGS THAT GO 'BOOM!' IN THE NIGHT - THE AUSTRALASIAN BITTERN

*Robyn Pickering*

The Bardanitch skulks in swamps and lakes in the south-west of WA and is rarely seen. Boomers use cryptic camouflage to hide in thick rushes and reeds but wake all around them with their foghorn-like booming calls at dawn and dusk. The Bunyip creeps up and devours small creatures in wetlands. So what are these creatures? They're all pseudonyms of the Australasian Bittern (*Botaurus poiciloptilus*), an endangered waterbird mainly found in Australia and New Zealand.



In WA the Australasian Bittern is found in wetlands in the south-west from Yanchep to Cape Arid. Its main strongholds are the Muir-Unicup wetlands (east of Manjimup) and south coastal wetlands from Augusta to Bremer Bay and Esperance to Cape Arid.

A member of the heron family, its mottled brown plumage with vertical stripes on the breast provides perfect camouflage among reeds and rushes. This camouflage helps it stalk prey and is also a defense strategy. When approached by people it will either slowly crouch down below the surrounding vegetation or stand still with its bill raised high to further emphasize the vertical striping camouflage. While it may look a bit snooty, having its long thin nose in the air, it makes it difficult to find!

The bittern's overall appearance is very similar to that of a juvenile Nankeen Night Heron (*Nycticorax caledonicus*), which looks most unlike that of the gorgeous adult Nankeen Night Heron. But the juvenile Nankeen Night Heron is slightly smaller, and it has larger eyes, spots on the wings and finer streaking on the breast than the Australasian Bittern (see page 5).

It seems the female bittern does not call and the male only calls during the breeding season. The call is a deep resonant series of booms or ooms that sound like a foghorn or air blowing over a bottle (listen to the call at <http://www.birdsaustralia.com.au/our-projects/bittern-survey.html>).

The call is often quite loud and can be heard over a kilometre away in still conditions. These loud booming calls allow us to locate this very cryptic bird, and surveys focus on listening for calls during the breeding season of spring and summer.

Bitterns prefer swamps and lakes that have large areas of rushes, sedges or reeds but can at times be found in flooded paddocks and estuaries. These habitat preferences mean that the species is largely confined to fresh to brackish wetlands, particularly during the nesting season when it uses tall sedges to construct its nest. Salinisation of many wetlands in the south-west of

# EDITORIAL

## Greetings all!

Every so often readers send in comments saying how much they enjoyed particular articles, or the whole magazine. Often this includes a request to thank the contributors for their efforts. Indeed, *Western Wildlife* depends on the generosity of contributors sending in text and images, without any financial reward, nor does writing for this magazine give professional scientists ‘brownie points’ to bolster their academic record. We do deeply thank everyone for their contributions so that we can all share new insights and understanding of our wonderful natural environment.

I have just done an analysis of where these stories came from, over the 15 years the magazine has been running. (I only included ‘feature length’ articles of a full page or more, and not ephemera such as ‘news’ or

‘new books’.) The pie chart below shows the figures.

It is not surprising that *LFW* staff themselves have contributed almost a quarter of all articles as they are constantly in touch with landholders and so aware of potential stories. The next four areas relate to experts writing about their particular topic, often summarising for our readership a highly complex research paper, or, in the case of many in the tertiary education sector, reporting on their degree projects. NGOs contribute when they think our readers might be interested, as do NRM people. But look at the proportion of individual contributors! These are *LFWers*

sharing with us the things that they have done or observed. Their stories give me hope for the future of our world.

So, in Australia’s environment with its extremes of cyclones, fires and floods – even hailstorms reported in this issue – we move forward, doing the best we can to build, and rebuild, a sustainable future. To those affected by such events, the *LFW* team offers sympathy and assistance where feasible. To everyone with whom we work, very best wishes for the new year.

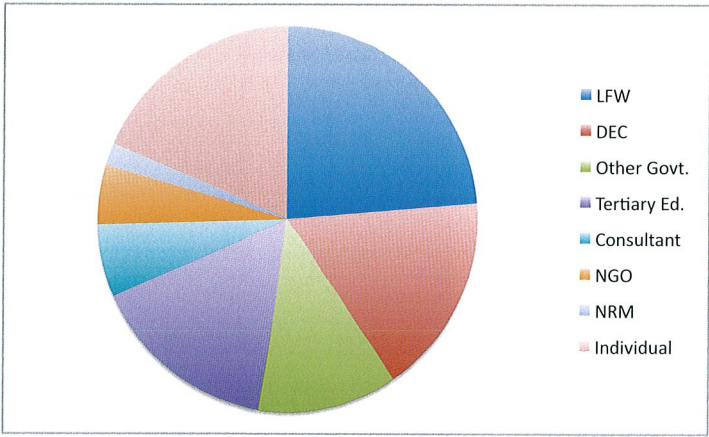
*Penny Hussey*

## INDEX

A 20-year period of observations of King's Skinks living freely in a suburban garden  
 Editorial \_\_\_\_\_ 2  
 Growing and managing Swamp Sheoak for multiple land use \_\_\_\_\_ 6  
 In brief \_\_\_\_\_ 3, 16  
 Malleefowl monitoring \_\_\_\_\_ 10  
 Managing Australia's feral camels \_\_\_\_\_ 8  
 New books \_\_\_\_\_ 20  
 News \_\_\_\_\_ 17, 18, 19  
 Save the minnows! \_\_\_\_\_ 13  
 Things that go 'Boom' in the night - the Australasian Bittern \_\_\_\_\_ 1  
 Twang's story \_\_\_\_\_ 5  
 Weeds \_\_\_\_\_ 12

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

USE OF ARTICLES FROM WESTERN WILDLIFE  
 Material may be reproduced without permission as long as the source is acknowledged and the article is reproduced in its entirety without any alterations - unless it is specifically marked copyright. If you wish to use only part of an article, please liaise with the Editor.



### 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 9240	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) 9834 2242	philip.worts@dec.wa.gov.au

[www.dec.wa.gov.au/landforwildlife](http://www.dec.wa.gov.au/landforwildlife)

## IN BRIEF

### NOTES FROM A SUPER-CUCKOO!

I enjoyed reading the article in *Western Wildlife* on Pallid Cuckoos recently. I would like to add some of my own observations. First, forgive my immodesty, but I must tell you that I am a good whistler and can mimic many bird calls well, and in the case of the Pallid Cuckoo, well enough to deceive the bird into thinking I am one too. I have had a lot of fun with them over the years, as I will explain ...

As you know, the call begins with four short notes, descending slightly, before the longer series of notes that rises - musically, these are about a quarter tone apart in pitch. I have observed that the number of notes in the rising section is constant for a given bird, but varies greatly from bird to bird, from about 5 to 12 or more. This is where I have fun. When I hear a bird calling with, say, 8 notes, I do a call with seven notes. The bird (a male I presume) will fly straight at me from a distance away, and as long as I call with fewer notes than he does, he persistently swoops and dives over me, providing great amusement to my friends. However, as soon as I switch to more notes than his call, he backs right off, and sits in a tree to watch and listen. Often, in this situation, he produces a long 'scolding' call. My imitation of that seems to wind him up some more, but he doesn't usually fly at me.

So here's my theory: it takes stamina and effort to produce a long call, the production of which indicates age, experience, and reproductive fitness. My shorter call indicates a young male upstart who is moving in the other bird's territory, so action must be taken. But I can produce a super-cuckoo effort, of the sort never heard in the wild, and this makes the most dominant male take pause. I think proving my theory would make a decent honours project for some lucky student - any takers?

*Mike Green, Roleystone*

### CORRECTION TO LAST ISSUE

On page 5, first column, line 11, change the word 'corellas' into 'corollas'. Read the whole sentence to see what an amazing difference it makes! None of the proof-reading team (four people) picked it up – one sees what one expects to see - but now we are chuckling over the images produced by that one misplaced letter! Thank you to the keen birder who pointed this out.

### CORRECTION TO LAST ISSUE

On page 15, in a statement about hare wallabies, the wrong species was cited. The comment should have read: "The Spectacled Hare Wallaby, *Lagorchestes conspicillatus*, has the lowest rate of water turnover of any mammal in the world." Deepest apologies to Prof. Don Bradshaw for misquoting him. It



is this animal that is present on Barrow Island, not the Banded Hare Wallaby as stated in *Western Wildlife*, they are found on Bernier and Dorre islands. This illustration of the Spectacled Hare Wallaby is by Ella Fry from W. Ride's *A Guide to the Native Mammals of Australia*.

*Keep your eyes open - you never know what you might see!*



DEC Barrow Island Nature Reserve Officer Kim Onton stopped for munchies at the Roebuck Plains Roadhouse, 35 km from Broome, looked across the lawn and said "What's that?" It is an Eurasian Hoopoe (*Upupa epops*), never before seen in Australia! No-one is sure how it got here, it must have lost its way and migrated down Asia rather than across to Africa, but one thing is certain, the sighting has generated a twitching frenzy among birders racing from all over the nation to gaze at it! Presumably all you LFWers in Broome have had a look?

*Photo: Kim Onton*

continued from page 1

**Bitterns****FAUNA**

Australasian Bittern. Photo: Peter O'Connell

WA has been a major contributor to the decline of the Australasian Bittern as rushes and sedges cannot tolerate saline wetlands.

Wetlands also need to be shallow enough to allow sedges and rushes to grow. Deep wetlands will often have some sedge and rush on the edges which can provide habitat to feed from but larger areas of sedge are needed for nesting.

Bitterns are omnivorous, and eat a wide variety of fauna including frogs, fish, gilgies, tadpoles, small birds, mice, lizards and insects, but will also eat leaves and other vegetation. Studies in New Zealand show that it eats eels up to 50cm long – imaging

swallowing one of those!

In Australia the species has undergone a major decline in the past half century, largely as a result of habitat loss or lower water levels in wetlands. So while our parents or grandparents who lived near wetlands may recall 'boomers' or 'bunyip birds', younger generations are unlikely to come across them.

The species is listed as endangered at all levels - state, national and international. The 2010 estimate for Australia was 247 to 796 adults. Table 1 shows this estimate on a state-by-state basis.

These estimates were expressed as ranges to account for birds in wetlands

that had not been surveyed. Happily the recent surveys in WA will result in the minimum estimate being pushed up but unfortunately the maximum remains at 154 individuals.

In New Zealand it is estimated that there are fewer than 1,000 individuals, while fewer than 50 are thought to remain in New Caledonia and other Pacific islands. Therefore the global population is less than 2,000 adults. Compare this population estimate to other well-known endangered animals in the IUCN Red Book - 1,000 to 2,000 Giant Pandas, fewer than 2,500 Tigers, and 10,000 to 25,000 Blue Whales! Recently when I was explaining to someone how many are left in WA and Australia they replied 'so they really are endangered then'. Unfortunately this is the sad reality.

In WA decline has been a result of wetland destruction, changing water levels, wetland salinisation, wetland acidification, climate change reducing water levels in wetlands, fires, and introduced species. Unfortunately these threats are continuing. The internationally important Muir-Unicup wetlands are threatened with rising salinity and acidity. Climate change is reducing water availability in wetlands which reduces habitat and also allows fires to destroy vegetation. Feral animals such as foxes are plentiful and land development for agriculture, industry or urbanisation continues throughout the south-west.

**Table 1: Minimum and maximum population estimates of Australasian Bitterns occurring in each state. The numbers relate to mature individuals.**

	Minimum	Maximum
Queensland	3	16
New South Wales (including ACT)	82	162
Victoria	86	248
Tasmania	12	100
South Australia	26	116
Western Australia	38	154
Northern Territory	0	0
Total	247	796

continued from page 4

# FAUNA

## Bitterns



This is a juvenile Nankeen Night Heron. Note finer streaking on the breast and spots on the wings.

Photos: Robyn Pickering



*Excellent Australasian Bittern habitat, Lake Pleasant View, Manypeaks.  
Photo: Robyn Pickering.*

Birdlife Australia\* and DEC are working together with funding from Lotterywest to better understand the species. Our aim is a great booming racket in a swamp near you!! If you think you have Australasian Bitterns in wetlands near you or if you think that they once occurred in your area, please contact me by email

at [r.pickering@birdsaustralia.com.au](mailto:r.pickering@birdsaustralia.com.au) or telephone 0405 395 286.

\*In January 2012, Birds Australia and Bird Observation and Conservation Australia merged to become a single organisation called BirdLife Australia.

*Robyn Pickering is a Project Officer in BirdLife Australia.*

## TWANG'S STORY

*Angie Tonkin*

We have just joined *LFW* and would like to share with *Western Wildlife's* readers a wonder of a Western Grey Kangaroo we call Twang. My partner and I care for orphaned wild animals on our property near Beverley. We slowly release them into the wild, but Twang has insisted on staying with us for three years now.

We still have many a visit from our released roos and one particular male has been quite fond of Twang of late. One day in September Twang was a bit on edge, stamping her feet and looking uncomfortable when she arrived at our front door. We let her in as usual. She stood in the middle of our lounge and all of a sudden started to pee, well, that's what it

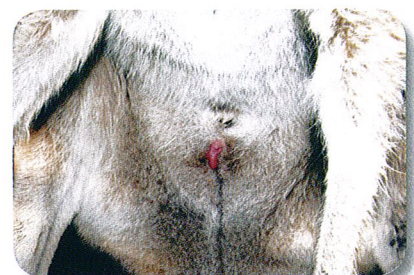
looked like! Then blood appeared, slowly followed by a miniscule pink jelly bean joey.

My partner and I sat down next to Twang stroking and talking her through the birth, just watching as this miracle took place in our lounge room. We felt so honoured that Twang wanted to share such a wonderful moment with us, as roos usually give birth secretly.

The grace with which Twang licked a small path of spit for her tiny joey to follow into her pouch was something to see. She would look down at her baby and then look back at us – we all had smiles on our faces! The little pinky was working so hard going from side to side lifting itself up whilst approaching the pouch,

then it was gone, as if it was never there at all. I would say it found her nipple and attached itself to it.

Twang stuck her head into the pouch to see what was going on, then she lay down looking contented. All the violent mating ritual that she had endured was worth the wait, she now has a purpose in life. I will always remember the birth that only took six minutes - I'm coming back as a Western Grey Kangaroo! Thanks for letting me share such a remarkable moment in nature.



# ECONOMIC VALUE OF BIODIVERSITY

## GROWING AND MANAGING SWAMP SHEOAK FOR MULTIPURPOSE LAND USE

Bob Hingston

Depending on their land-use objectives, landowners who have natural stands or dense patches of Swamp Sheoak (*Casuarina obesa*) on their land may have an opportunity to manage them for multiple-use. This article offers a few ideas for landowners to consider, using some basic forestry skills to thin their sheoaks with positive spin-offs.

Although the idea of cutting trees down may not appeal to some landholders, there are positive land-use options. Thinning is used to maximise the growth of retained trees by removing competition and providing extra space and soil moisture. Without thinning, Swamp Sheoak with tree densities of up to 30,000 trees per hectare will never grow to a large size but remain small, around 1-15cm in diameter. Obviously if you have purely conservation objectives in mind this may not matter but in farm forestry we look at the holistic and multiple-use objectives from our farmland bush or revegetation projects.

Thinning dense stands of Swamp Sheoak can provide short-term income from the sale of tool handles, wood turning, fire wood or fence posts whilst promoting the extra diameter growth on the retained trees. We all know how tough farming was last year, so alternative income may be welcome to some who need to diversify their income stream. If thinned, these dense blocks have potential as future use for timber and may be suitable for high value cabinetry, furniture and perhaps flooring. The timber is described as straw to creamy brown with reddish hues.

On farmland, native stands of Swamp Sheoak have often been left unmanaged (Photo 1) and mostly used



Photo 1: Prior to thinning, and typical of what is seen on farms.  
Photo: Bob Hingston

by landowners for stock shelter, shade or conservation purposes. There is usually little or no understorey or pasture in these stands due to the high tree stocking and lack of light. Thinning can also provide useful fodder (see Table 1) from fallen foliage and coppicing stumps and the increase in light would promote pasture growth or native shrubs (Photo 2).



Photo 2: Six months after thinning - shows pasture and coppice regrowth from stumps with stacked drying firewood logs. Photo: Bob Hingston

Landowners have an opportunity to manage these native stands, providing they meet legislative clearing protocols set out by DEC and especially if they wish to sell the timber.

Swamp Sheoak is also promoted as a useful tree crop option on salt-affected farmland and as a key revegetation species on duplex sands to heavy wet clays. As a seedling it is heavily browsed by stock, kangaroos and rabbits, although it recolonises freely and is often seen as a dense stand of between ~7,000 and 30,000 trees per hectare on farmland or reserves. It is also subject to periodic stem and tip damage by 28 parrots resulting in multi-stemmed trees.

In 2007, I set up a demonstration site on Clinton Wise's property at Woodanilling to show how landowners are able to do this thinning. 17 years previously, Clinton had used a grader to form up four metre wide 'raised beds' and sow local Swamp Sheoak seed with his combine as part of his landcare strategy to ameliorate a highly saline non-productive area of farmland. The soil type was a waterlogged and saline shallow loam over heavy clays. Soil salinity (ECe) across the site averaged 285 mS/m (EM 38 vertical dipole mode) measured with an

# ECONOMIC VALUE OF BIODIVERSITY

continued from page 6

## Swamp Sheoak

EM 38 electro-magnetometer.

When I visited the 17-year-old site with local NRM officers Jill Richardson (Katanning) and Danielle Perrie (Wagin/Woodanilling) we were surprised how much colonisation or regeneration had occurred from natural seed fall and from mature trees in the adjacent road reserve (Photo 1).

With Clinton's permission, I thinned plots to six tree stocking rates - 100, 200, 400, 600, 800 trees per hectare and a 2 row belt, plus an un-thinned control to monitor growth response. Many trees that had bird nests were retained as crop trees in the tree selection process (Photo 3). All thinned material was measured for firewood as this commodity was scarce in the Katanning region. Locals often take firewood illegally from conservation reserves, so firewood would be the most sought after product, making it easy marketing.



When thinning from 5,200 to 400 trees/ha, about 44m<sup>3</sup>/ha of firewood resulted. This equates to about \$4,413/ha gross of dry firewood using a conservative figure of \$100/dry tonne. From the total area of the demo site of 0.64ha

Photo 3: Tree with bird's nest.  
Photo: Bob Hingston

a total volume of dry firewood cut was 151 m<sup>3</sup>/ha or a gross return of about \$23,590/ha.

Swamp Sheoak will coppice when thinned and sunlight encourages strong growth from the stump (Photo 2). The young coppice was analysed for palatability levels and it was found that coppice is suitable as stock feed without supplementary feed (Table 1).

Although this thinning strategy may not be everyone's cup of tea, it does offer an alternative land use with potential grazing in autumn. With a dry season like 2010, there is that opportunity to provide income by freeing up those thickets of Swamp Sheoak and grow individual trees larger for the next drought - or perhaps your children's future income.

Having been involved in landcare for 20 years, Clinton Wise has seen some of the many benefits of thinning his previously unmanaged Swamp Sheoak bush. His sheep were much healthier by winter as they had green feed and better shelter during the hot autumn months. As well, gross firewood values over the thinned area averaged \$2,500/ha. Following thinning the site had much more grasses and understorey (Photo 3) and provided timber options for the future.

This work was funded by the South West Catchment Council with assistance from Private Forestry Development Committee, Trees South West.

*Bob Hingston is a Farm Forestry Development Officer in DAFWA's Science and Industry Development Group. He has more than 40 years experience in forest research and extension in farm forestry. For further enquiries: bob.hingston@agric.wa.gov.au or 0409 109 051.*

**Table 1. Fodder analysis comparisons of 17 y.o. *C. obesa* with adjacent dry paddock feed sources and regular feed types**

Feed source	Metabolisable Energy (mj/kg DM)	Crude Protein (%)	Dry matter (%)	Digestible Dry Matter (%)
<i>C. obesa</i> (coppice foliage) <sup>1</sup>	9.1	15.7	34.2	65.2
<i>C. obesa</i> (old crown foliage) <sup>2</sup>	7.2	8.4	58	53.8
Wheat stubble <sup>1</sup>	5.0	2.4	94.5	41.1
Dry pasture <sup>1</sup>	5.5	3.6	91.7	44.4
Lupins	12-14	25-35	90	-
Pasture hay	6-10	4-25	90	-

<sup>1</sup> measured 148 days after thinning (March 2008)

<sup>2</sup> measured at time of thinning (November 2007)

Note. ME (Metabolisable Energy) is well below level required to maintain dry stock (sheep) ie, at least 9 mj/kg DM needed

# FERAL ANIMALS

## MANAGING AUSTRALIA'S FERAL CAMELS

Quentin Hart

Many Australians understand only too well the impact feral camels can have on the environment, their livelihoods, our flora and fauna, and important Aboriginal sites.

With more than one million feral camels found across more than 3 million km<sup>2</sup> parts of WA, SA, the NT and parts of western Qld, and a \$10 million annual damage bill, there is an urgent need to act to reduce their impacts. Funding of \$19 million from the Australian Government's Caring for our Country initiative for the Australian Feral Camel Management Project unites a broad group of people in working together to manage feral camels.

### Camels in Australia

Camels played an important role in the development of central Australia in the late nineteenth and early twentieth centuries. The advent of motorised transport resulted in camels being released into the wild and a feral population emerged. Feral camels breed unchecked as they have no natural predators and they often inhabit large tracts of sparsely populated, semi-arid and arid areas and are therefore largely 'invisible'.

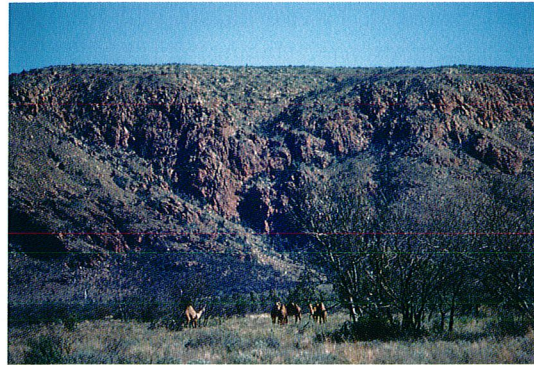
Feral camels have a low mortality rate, generally only dying from 'old age' and in prolonged drought events. Over time, the feral camels have increased to such an extent that their numbers are now estimated to be in the vicinity of 1 to 1.2 million and doubling every nine years. The issue is not just the large number of animals but the damage they cause, particularly where densities are high.

### Feral camel damage

Feral camels cause more than \$10 million in damage to infrastructure, lost production, and direct management



Disaster in a drought. Destruction of a waterhole, death of many animals and extreme distress of others, combined with overgrazing and destruction of the surrounding area. Photo: Australian Feral Camel Management Project



Feral camels in the Petermann Range, on the eastern edge of the Gibson Desert. Photo: Penny Hussey

and control costs.

Where feral camels are found in high densities they can have a devastating impact on vegetation through feeding behaviour (browse on trees) and trampling resulting in erosion. Where this occurs in wetlands the fouling, trampling and subsequent sedimentation can destroy vital waterholes. Feral camels can cause the local extinction of populations of preferred species such as the quandong (*Santalum acuminatum*), bean tree (*Erythrina vespertillo*) and curly pod wattle (*Acacia sessiliceps*). They compete with native animals for food, water and shelter, and also contribute to greenhouse gas emissions.

Feral camels can cause significant damage to sites of cultural significance for Aboriginal people: water places (water holes, rock holes, soaks, springs, etc) are special places for desert Aboriginal people. Many of these sites are sacred, and damage to them constitutes damage to their social and cultural life. The destruction of sources of bush tucker and water holes can have a profound impact on remote Aboriginal communities.

### About the Australian Feral Camel Management Project

The Australian Feral Camel Management Project is a national approach which brings together for the first time all of the relevant state and territory governments (SA, WA, Qld, NT), Aboriginal organisations across the four jurisdictions (land trusts, corporations and land councils), NRM boards, conservation groups, the pastoral industry and commercial interests to protect identified refuges for biodiversity in northern and remote Australia that are under threat from feral camels.

The Australian Feral Camel Management Project is supported under the Australian Government Caring for our Country initiative and has been set up to reduce the densities of feral camels in areas of high conservation



continued from page 8

# FERAL ANIMALS

## Feral camels

and cultural value. Methods to be used include mustering for sale (for live export and meat processing) and aerial shooting. Exclusion fencing is used at high value sites where appropriate. Some project activities will support the National Feral Camel Action Plan, developed as a plan to provide, 'comprehensive, coordinated management of camels and their impacts that maintains and promotes the biodiversity, agricultural assets and social values of the rangelands for all Australians'.

### Commercial operations

Moves to establish a sustainable camel industry can contribute to the reduction of feral populations, particularly where commercial approaches are viable and provide employment and economic activity in arid Australia.

A significant challenge for the establishment of such an industry is that feral camels are located in very remote parts of the country and there are long distances to domestic markets, let alone international markets. Commercial camel operations will need to be driven by economic considerations and address animal welfare issues associated with mustering and transporting camels over large distances. Successful commercial activities will depend on the development of secure markets that are prepared to pay the real costs of harvesting and transport of camel products and live animals.

### Community support and action

The Australian Feral Camel Management Project is a major logistical exercise, involving expert teams of people using sophisticated equipment and all following standard operating procedures which incorporate strict animal welfare and safety protocols. Generally there is little scope for the general public to be involved in on-ground management.

The opportunistic shooting of feral camels by members of the public is not condoned on the grounds that strict codes of practice and standard operating procedures cannot be enforced to ensure feral camels are killed quickly and humanely. In addition, landholders are generally not comfortable with firearms being used on their land without their permission, including along public roads that traverse their land. That does not mean that community support is not vital in tracking and monitoring feral camel numbers and damage. CamelScan has been developed as a free Google mapping tool available at [www.feralscan.org.au/camelscan](http://www.feralscan.org.au/camelscan) to help Australians report sightings of feral camels in their area or seen while travelling.

CamelScan has been developed by the Invasive Animals CRC, NSW Department of Primary Industries and Ninti One Limited (which manages

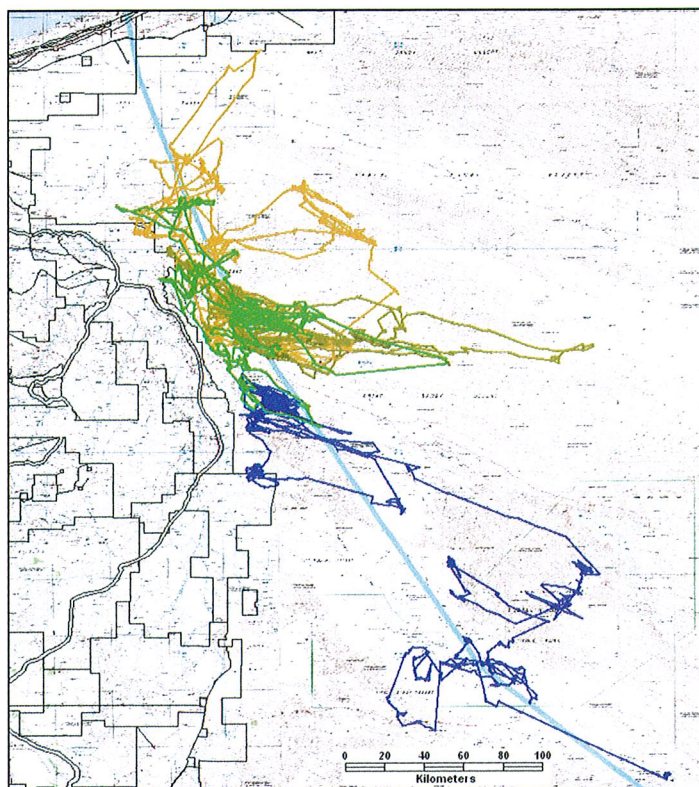
the Australian Feral Camel Management Project), and is part of the FeralScan program being rolled out across the country.

*Quentin Hart is National Manager of the Australian Feral Camel Management Project.*



*How far do camels travel? East of Marble Bar, a camel is caught and fitted with a collar that will report its position daily via a satellite. The map below shows the tracks, over approximately one year, of four collared camels. Clearly, one community or one property owner cannot undertake control on this scale. It requires a coordinated approach.*

*Images: Australian Feral Camel Management Project*



## CITIZEN SCIENCE

# MALLEEFOWL MONITORING

Liz Manning and Suzanne Dennings

*Are you concerned about our environment and threatened species and want to do something about it?  
Do you enjoy bushwalking with like-minded people?  
Are you fit enough to walk up to eight hours a day over challenging country, looking for Malleefowl mounds?  
If you answered yes to these questions, then why not join a Malleefowl survey and enjoy an unforgettable experience in some of the most attractive country Western Australia has to offer.*

### An extraordinary bird

Unique to the arid and semi-arid regions of Australia, the Malleefowl (*Leipoa ocellata*) is justifiably acknowledged as an 'icon of the Mallee'. It is adapted to survive and persist in the harshest conditions, helped by its longevity and ability to breed and produce many eggs whenever conditions become favourable. Moreover, the unique lifestyle of this extraordinary ground-dwelling bird sets it apart.

Shy, hardworking and leading a largely solitary life, the Malleefowl dedicates nine to 11 months of the year to building and tending a large mound of soil, leaves and twigs. Pairing for life, male and female birds work tirelessly, raking ground litter to build the mound. The eggs are laid in the heart of the mound, covered over and left to incubate in the heat of the composting litter. The male Malleefowl diligently maintains the core temperature of the mound, moving up to 50 buckets of soil a day to achieve this. His devotion to his task is extraordinary. Committed to this annual work program and dependent on seasonal conditions for success, the Malleefowl is a perfect example of how the survival of our plants, animals and land are intricately linked.

Mallee country makes prime habitat for these birds, whose presence indicates healthy bushland. These landscapes consist of low growing scrub and trees including *Acacia*, *Melaleuca*, *Hakea* and *Gastrolobium* species. Malleefowl do best in country that has not been burned for many years. Accumulation of bush litter

from these plants provides enough composting material for incubating the eggs in the mound and a good supply of seeds, insects and other food.

### Under threat

Once common throughout the agricultural and pastoral areas of southern Australia, the Malleefowl's continued existence is under serious threat. Mass land clearing, agriculture and mining have destroyed vast tracks of prime habitat, pushing the Malleefowl into isolated remnants of mallee and mulga woodland. Foxes, cats, wild dogs, rangeland grazing and hot fires have exacted a further toll on declining populations. Gazetted as threatened in Western Australia and regarded as vulnerable nationally, is the Malleefowl heading close towards extinction?

### Help is at hand

However, the plight of this strange bird has captured the hearts and minds of ordinary folk, uniting community efforts to bring it back from the brink. The Malleefowl Preservation Group (MPG), established in 1992, is a rural-based volunteer community group committed towards finding practical ways to protect the Malleefowl and its natural environment. Boasting an extensive membership, including farmers, landowners, nature lovers,

scientists and retirees, the MPG conducts field surveys and research to describe Malleefowl distribution, understand its habitat requirements and monitor population trends across Australia.

The group also works to raise community awareness through school education programs. The Malleefowl has become an emblem for preservation and protection of our environment; because saving it leads to saving our bush, saving our native fauna and saving our heritage for future generations.

### WA malleefowl survey and monitoring

Since 1993, the MPG has done surveys with the help of community groups and corporate bodies to identify Malleefowl breeding mounds for long-term monitoring, in areas which Malleefowl inhabit. Surveys usually take place between May and September, conducted over the course of one week. The area is surveyed in a systematic manner to

*An active mound where plant litter is being accumulated. Photo: Alan Thompson*



# CITIZEN SCIENCE

*continued from page 10*

## **Malleefowl monitoring**

national standards using the human chain technique and a recognised monitoring and recording system for both searching and monitoring. Leading on from these surveys, mounds that show recent activity are revisited and monitored for signs of breeding activity. Monitoring to national protocols provides data on current Malleefowl populations and a means to measure national population changes over time. Continued monitoring will help identify what is causing declines and assist the MPG develop successful management actions to reverse the decline.

During 2011, surveys were conducted at Mt Jackson (north of Bullfinch), Remlap Station (north of Beacon), and Parker Range (south west of Southern Cross). The Remlap survey for the Mount Marshall Shire community was very exciting in view of the number of active mounds found and the sighting of a pair of birds tending their mound. A proposed survey south of Yalgoo was cancelled due to inclement weather and is now planned for 2012. To date, 14 monitoring sites have been established across the north, central and eastern wheatbelt and rangelands regions and are being monitored annually.

## **The volunteer experience**

The success of the survey and monitoring depends heavily on the commitment and cooperation of volunteers. Acceptance requires participants to register for one week; to be fit enough for all day bush walking, carrying lunch and water in a backpack; to be self sufficient in camping, food, and equipment; and to be a willing team member.

For most volunteers, the survey begins at a pre-arranged mustering spot, prior to forming a convoy out to the camp site. They arrive to the welcome of a well set-up camp site, bush showers and toilets constructed

by a dedicated (volunteer) set-up crew. Susanne and Alan Dennings coordinate and manage the surveys, running a tight and extremely well organised camp. On the first evening the volunteers receive an information pack, an hour of induction and training and a barbeque prior to the survey commencement. Instructions and guidelines on familiarisation, survey technique, personal and team safety are talked through and any questions answered.

The program typically follows a set daily routine. The team (comprising about 20 people) line up each morning, forming a human chain that forges its way through scratchy bush looking for Malleefowl mounds and tracks. After six to eight hours they return to camp, hot, tired and scratched, but motivated and excited about the day's discoveries. It's now time to relax with a welcome cup of tea, a beer, or under a hot shower. Camp manager Alan Dennings is indispensable in keeping the campfire burning, copper topped with hot water and showers running 'problem-free'.

The evening debrief around the campfire affords the opportunity to discuss the day's events, resolve any issues and share such discoveries as how many nests were found, bird sightings and other flora and fauna findings. Chocolate frog and dummy awards are presented for such quirky deeds as finding a particularly good mound or losing equipment (notebooks, GPS or safety glasses). They inspire camaraderie and amusement. The roaring fire warms weary bodies, whilst the magnificence of the Milky Way illuminated in the night sky is truly magical. On the last evening the final tally of results is given (distance walked, area searched, number of mounds recorded). Susanne always acknowledges the efforts of each volunteer and the evening rounds off with the showing of photos, and a singsong and storytelling. The next morning heralds the pack up and

breakup of camp, before people leave to drive home.

## **The results are impressive!**

These surveys cover a lot of country and provide important data regarding the number of mounds deemed to have shown recent activity as well as estimates of bird population per hectare. If feathers or eggshell are found, they are collected, recorded and sent off for DNA analysis at the University of Melbourne.

At Remlap, the total distance walked by the volunteers was 710 kms, covering an area of 936 hectares over four and a half days. A total of 95 mounds were located, of which seven showed recent activity and are likely to be active this season. A number of very old and large mounds were also recorded. The age and significance of these large mounds is yet to be determined and worthy of future research.

## **How you can help**

Malleefowl survival depends on long-term conservation efforts. The bird needs its volunteers and supporters to help secure its future. You can get involved and help the MPG in a variety of ways:

- Become a member / supporter of the MPG.
- Attend Malleefowl bush campout surveys and help search for malleefowl mounds.
- Get involved with monitoring a site. All it takes is two to three people per site, once a year for one day.
- Report any sightings of Malleefowl by contacting the MPG or visiting their website to complete a Malleefowl Sighting Form.

For more information please contact the MPG office in Ongerup on (08) 9828 2007, email [malleefowl.wa@wn.com.au](mailto:malleefowl.wa@wn.com.au) or visit the website [www.malleefowl.com.au](http://www.malleefowl.com.au).

**See new book on page 20**

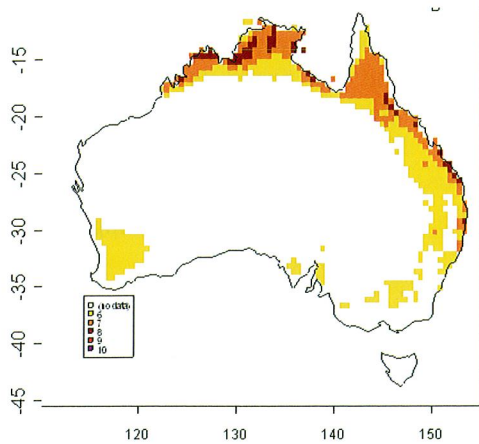
# WEEDS

*Northern WA residents and travellers - here are two new nasties to watch out for!*

## TROPICAL SODA APPLE

Native to South America, Tropical Soda Apple (*Solanum viarum*) has now naturalised across many areas of the world. In the USA it started off in Florida in 1987 but it has now spread to nine other states and is known as ‘the plant from hell’. A few small infestations have been found in NSW and Qld, but it has the potential to spread much further (see map).

Tropical Soda Apple is a very prickly shrub growing to one metre tall. The flowers are hidden under the newer leaves. They have five white petals that are bent backwards. The golf ball-sized fruit go from mottled green (like a miniature water melon) to yellow as they mature. The seeds



Potential distribution in Australia, the darker the colour, the more likely that it could establish in that area. Illustration: Rod Randall

are dispersed by animals. In the USA each plant produces an average of 45,000 seeds!

It is a very aggressive species that reduces biodiversity in natural areas by displacing native plants and disrupting normal ecological processes. It is unpalatable to stock and reduces the carrying capacity of infested pastures; in the USA it has had a very negative impact on cattle properties by taking over pasture. Because it is so prickly it can

## PARTHENIUM WEED FOUND AT KARRATHA

Parthenium Weed (*Parthenium hysterophorus*) is a Weed of National Significance currently established in Qld and NSW where it causes the local beef and cropping industries more than \$22 million/year in lost production and control measures. In September 2011, a small patch of plants was found on a roadside near Karratha, probably having been transported there on a vehicle. These plants have been treated, but will all northern residents and travellers please keep an eye out for this? For more information about this plant, see [www.weeds.org.au/WoNS/parthenium](http://www.weeds.org.au/WoNS/parthenium).



Parthenium Weed. Photo: DAFWA

also create a physical barrier restricting animals' access to shade and water. The plant is a host for many diseases of cultivated crops and it contains solasodine, which is poisonous to humans.

Eradication is being attempted, but WA residents

should keep an eye out for this, especially where cattle are yarded after being trucked in from the eastern states. There are other problematical prickly solanums found in the south-west, including Apple of Sodom (*S. linnaeanum*) and Afghan Thistle (*S. hoplopetalum*) but they are quite distinct – see *Western Weeds* for ID photos.



## MEMBERS' PAGE

### SAVE THE MINNOWS!

*Margaret Tonkin*

Minnows have been of interest to us for many years. Our previous LFW property had a seasonal creek which ran for eight to nine months of the year. Waterholes dug in the creek line retained permanent water all year round and the minnows were always there.

Our new LFW property, however, has a creek which only runs for about four months of the year. We had seen evidence of coonacs in it, but no other sign of water wildlife. We cleaned out an old dam site which had a washed out wall and then repaired the wall and installed an overflow pipe at the level required to maintain the pool and the creek flow. Last winter the creek didn't run at all, because there was insufficient rain to create run-off. You can imagine our surprise when, after heavy rains in September, we checked the creek and found that a 600 mm deep washout about one and a half metres in diameter had formed about 600mm below the outlet pipe. In the pool was a large school of minnows—with no way of moving up stream!

Reflecting back to a recent trip to Canada, our brainstorm came up with, 'Build a fish ladder'. We had no real idea of how to go about this, so approached a few people whom we thought may have some information. This didn't really enlighten us much. We went to a meeting where a booklet on native fish was to be released. It had a picture of a large concrete construction. We deemed it unbuildable in the time we had left to save our minnows from a drying pool. We eventually took a walk around the farm scrap heap and came back to the shed with a number of short lengths of 'H' iron 200 mm by 150 mm and about a metre long.

Colin set to work with the angle



grinder and the welder, working from the top down. Two prongs were welded on to hold the 'H' onto the end of the overflow pipe. A trial fitting was a bit exciting. Colin stood in the pool, trying not to fill his gum boots with water and launched forward to test the fit onto the pipe. Great, it fitted. Retrieving it to continue the building of it was a different matter. It slid off the pipe easily, but supporting the weight in a bent over position was not so easy. It was drop it, or take a dive! When lifting it out the water, his hand was followed up by a very snappy pair of nippers. The pool was not just housing minnows!

The retrieved fitting was taken back to the shed and several 'H' irons were added in a zig zag fashion until it was long enough to dip into the water. Cutouts were then made between the layers to make a continuous water path from the pool up to the overflow pipe. The minnows had all disappeared within a few days. Colin was lucky enough to see one on the ladder, so we knew it was working.

There's a sequel to this story. Colin was checking the stream

flow as the weather warmed. Water was now trickling from the overflow pipe, just missing the ladder, which was now above water on the bottom end as well. Much to Colin's surprise, climbing the embankment, right along side the pipe, was a juvenile marron. He tried to assist it by catching it on a piece of netting to take back over the bank to the dam. No luck! It back-flipped into the water. Being a resourceful person, he picked up a small trap net, covered the base with shade cloth and put it in the pool. Next morning, his catch was nine juvenile marron, two coonacs and three night fish, all of which he transported to the dam. Three weeks later he is still transporting marron, coonacs and night fish. He has the distinct feeling that some of their faces are getting very familiar, and he's looking forward to the small trickle through the pipe ceasing so that his daily retrieval trek across the dam wall becomes unnecessary – until next year ...

*Colin and Margaret Tonkin have a property east of Collie.*

## MEMBERS' PAGE - FAUNA

# A 20-YEAR PERIOD OF OBSERVATIONS OF KING'S SKINKS LIVING FREELY IN A SUBURBAN GARDEN

Carolina Masters

In 1982, my husband Bernie and I moved into our newly built house at Peppermint Grove Beach, about 200 kilometres south of Perth. At the time ours was one of few houses in this urban subdivision, and only some of the native dunal vegetation remained. This vegetation consisted mainly of peppermint trees (*Agonis flexuosa*) with a low understorey mixture of native vegetation and introduced weeds. We retained a sizable portion of this mixed vegetation at the back of our block.

We saw an occasional King's Skink (*Egernia kingii*) in the garden soon after establishing a small area of lawn. However, it wasn't until 1991 that we regularly started seeing an adult pair, each more than 200 mm snout-vent length, on a stack of jarrah fitches between the grassed area and the mixed vegetation. These fitches, each between 3 and 4 metres long, were left over from fence building. We created spaces between some of them using strategically placed bricks. The end result was a shelter site which allowed the skinks to move freely between the fitches, and provided them protection from potential predators. Since then this shelter site has been left untouched.

In January 1993, I started to keep records of these two skinks. By then I was convinced we were seeing the same two animals. One of the skinks had lost its tail at some stage of its life and the re-grown tail was very distinctive. As well, both skinks had become used to our presence and enjoyed an occasional handout of cheese. I decided to keep written records as, during January, I'd



Copulation between the breeding pair. Photo: Carolina Masters



18 King's Skinks, including the breeding pair and at least four generations of their young. The two adults are in the centre of the photo, the male on the right. Photo: Carolina Masters

observed the two skinks at the shelter site with eleven newborns. From that observation I concluded that we had a breeding pair and the 11 young were their offspring. It wasn't until much later that, having seen copulation on two occasions near the shelter site, I was able to determine the sex of each of the adults. This, of course, was after we had named the male Gertrude and the female Harold!

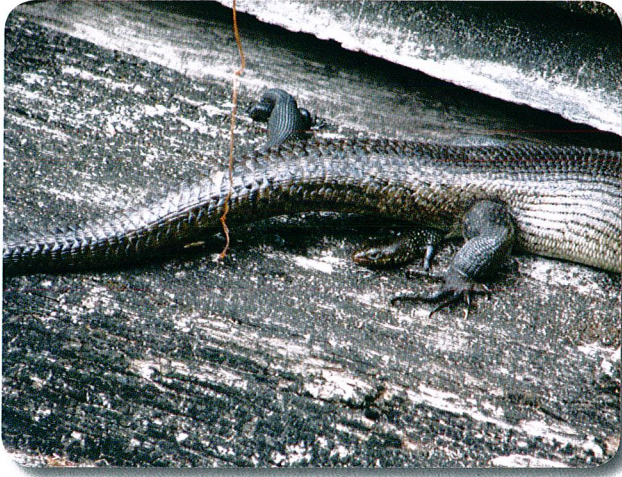
Since my first observation of newborns in January 1993 and the last in March 2010, these two adults have produced 14 generations of young with litter sizes ranging from six to 11. Although I have no genetic evidence to prove that they are the young of the same two adults, it wasn't until November 2011 that I saw another skink of breeding size (i.e. greater than 185 mm snout-vent length) in the garden. As well, until November 2011, I had only observed copulation between Harold and Gertrude.

Based upon my observation of a live birth at the shelter site and the size of the newborn, all neonates were likely to be first seen at the site within days of birth. Over the years the fecundity rate has fallen from a high of 11 neonates in the earlier years, to a low of six in 2009 and 2010. The survival rate for neonates seen at the shelter site in the period between birth and late autumn (March to the end of May) is about 50%. Since the first neonate sighting in 1993, as many as four generations have been observed together at the shelter site. They enjoy basking communally, often in close physical contact with each other.

## MEMBERS' PAGE - FAUNA

continued from page 14

### King's Skinks



Adult giving birth. Photo: Carolina Masters

I have seen encounters between the two adults and possible predator species close to the shelter site. On each occasion small juveniles were present. My husband once observed one of the adults chasing and biting the tail of a Bobtail Lizard (*Tiliqua rugosa*). Previously we had not seen these two species interact with each other. On another occasion we both saw one of the adult skinks interact with a juvenile Tiger Snake (*Notechis scutatus*). The snake was about the same length as the skink; both reptiles were entwined and rolling sideways over each other. When they parted, the skink chased the snake into the vegetation behind the shelter site. I was worried that the skink had been bitten but it soon appeared back at the shelter site, none the worse for the encounter.

In March 2008, a week after the birth of her latest progeny, the adult female was basking at the shelter site with four neonates, when she suddenly moved rapidly towards a Grey Butcherbird (*Cracticus torquatus*) which had landed on a nearby bird bath; the bird flew off. I think it is fair to assume that both adults were exhibiting protective behavior towards their offspring as these animals would not have been a threat to the adults, but could well have posed a threat to the juveniles.

During the breeding season in November, I've observed the adult skinks at the shelter site chasing and sometimes biting the tails of their larger progeny. It is not often that I see those skinks back at the shelter site. It could be possible that the adults were protecting nearby food resources for the young which would be born in a few months time.

In March 2011, no young were born and I saw the adult female for the last time in early April 2011. We always saw the two adults intermittently during

winter, and then regularly during spring and summer of each year. In 2011, the adult male was seen occasionally during winter and regularly during spring, but the adult female was never seen.

On November 5, 2011, I observed an adult skink of breeding size (about 185 mm snout – vent length) at the shelter site. This skink was larger than any of the other eleven skinks seen regularly with the adult male in the preceding two months. The adult male and two juveniles were also present. The adult male was clearly interested in this new female as he approached her twice, both times touching her body with his nose. He chased away one of the juveniles when it showed an interest in her.

A week later, I saw the adult female again when I observed copulation between her and the adult male on the lawn in front of the shelter site. Since then, I have observed them basking together, and separately, at the site. I have not seen any other skinks there since November 12, 2011 and both adults have been observed, on different occasions, chasing a large juvenile who approached the site. We are now looking forward to a new generation of skinks next year.

During this 20-year period of observation it has been both a pleasure and a privilege to share our garden with these fascinating reptiles.

---

*Carolina Masters describes herself as an amateur naturalist; she can be contacted on [ctm@iinet.net.au](mailto:ctm@iinet.net.au).*

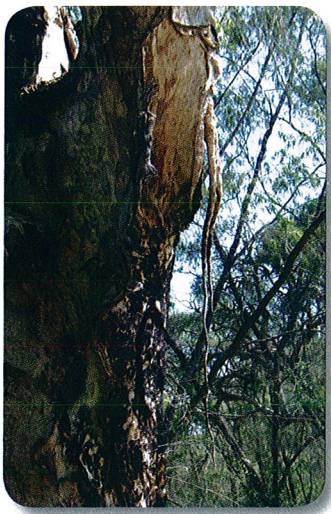


Adult breeding pair with at least three generations of their offspring. Neonate on bottom plank was probably born on the same day the photo was taken. The adult male has his head on the back of the adult female. Note the adult male's larger head size compared to the female's. Photo: Carolina Masters

## IN BRIEF

### MORE ABOUT AERIAL ROOTS ON PAPERBARKS

Several readers sent in observations and/or photos concerning substantial aerial roots on paperbarks. Interestingly, they were reported from both Modong (*Melaleuca preissiana*) and Freshwater Paperbark (*M. raphiophylla*), as well as the *M. strobophylla* we had featured in the last issue. The photo below comes from Geoff Tothill of Binningup, it shows a *M. preissiana* with a high root going nowhere. It is not known whether the root is still growing. Geoff notes: "In the past I have done limited harvesting of bark for use in hanging baskets and have sometimes observed a network of small roots throughout the moist areas of bark."



Prof. Tim Colmer commented: "Perhaps if the paperbark remains wet itself, then this could stimulate the root growth through the moist paper bark." Since several of the examples seem to originate from a fork where a substantial branch joins the trunk, perhaps water collects among the bark in such a hollow, and this somehow stimulates the tree so that it thinks it is flooded, and it starts to make roots? Maybe a student will be interested enough to design a study to try to find out?

### CARNABY'S BLACK COCKATOOS KILLED BY HAIL

Perth residents will probably remember the extraordinary hailstorm on 22/3/2010, and even if you weren't in Perth, it was well reported in the media. Apart from damage to hundreds of cars in dealers' display yards, the storm also killed 81 Carnaby's Cockatoos, while 24 were so badly injured that they were taken to wildlife rehabilitation centres. It seems that most of these birds had been roosting in banksia trees, which did not provide them with sufficient protection from the hail.

A recent paper\* discusses this and other events – including the heat wave at Munglinup – that have had a deleterious effect on this species.

[For ref, contact Ed.]

### DRYANDRA WOODLAND MANAGEMENT PLAN RELEASED

All conservation lands in Western Australia are vested in the Conservation Commission of WA and managed for the Commission by DEC. Significant sites have approved management plans. The one for Dryandra Woodland (also incorporating the Highbury blocks) has recently been updated and published. It is a detailed prescription for how this magnificent area of wheatbelt woodland will be managed for the next 10 years. Interested persons can view the document on DEC's website, and hard copies may be available on request, while stocks last.

Dryandra Woodland.  
Management Plan No. 70, 2011.  
DEC.

### ATLAS OF AUSTRALIAN BIRDS

When the RAOU (now BirdLife Australia) started its continent-wide records of bird sightings by interested birders in 1977, they probably did not realise just how successful it would be. It offered an opportunity to enjoy watching birds and, by collating all the records into a central database, to contribute to the scientific study of them as well. Recently, the Atlas of Australian Birds has reached an important milestone, it has logged the ten-millionth record! This vast database is now used regularly by researchers, policy-makers and land managers to help provide information to assist in the conservation of birds and their habitats in Australia.

Truly citizen science in action! If you are already a bird atlasser, great work folks, and keep going. If not, why not start contributing – it is not difficult! Visit the website: [www.birdata.com.au](http://www.birdata.com.au) to find out more.

### *Congratulations!*

... to the Wellstead Historical and Heritage Committee (WH&HC) who won the *Community Achievement (Regional) Award* at the 10th annual WA Environment Awards.

In 1987, responding to the community need to know more about the natural heritage components of their landscape, an extraordinarily resourceful and creative group of local residents, the WH&HC, started the process of investigating their environment. Calling in experts to help where necessary, they carried out surveys on over 100 properties throughout the Wellstead district, compiling the data into six published natural heritage books. They have also organised family events, installed interpretive facilities and started the process of 'building bridges of friendship' with the traditional custodians of the land.

From all of us at LFW, well done everyone!



# NEWS

## STAY ON THE TRACK!

Plant enthusiasts recently walked a section of the Holland Track, led by *LFW* member Cathie Kelly from Newdegate.

In 1893 John Holland, Rudolph and David Krahouer and John Carmody took two months to cut a 300-mile track through bushland from Broomehill to Coolgardie in order to provide thousands of prospectors access to the goldfields. Although use of the track by prospectors was short lived owing to the completion of the Perth to Coolgardie Railway in 1908, pioneer families in the Lakes District, still used it until the 1930s. During the 1940s much of the southern end of the track disappeared as farms were developed.

Imagine Malcolm and Cathie Kelly's surprise when they were clearing their new land block in 1969, and discovered a compacted track which was subsequently revealed to be the Holland Track. Today there are several sections of the track still visible in remnant bushland on the Kellys' property and in nearby reserves. The Kellys are seeking to preserve the remaining walking sections of this track, which to them represent life from a bygone era, and they offer accommodation and walking tours on their Holland Track Farm. They actively encourage people to walk the track to help keep it open.



## BOREHOLES, BUGS AND BIRDS: A FIELD WALK AND WORKSHOP

This event, hosted by the Waddy Forest LCDC and supported by the Northern Agricultural Catchments Council, brought together researchers from Curtin University, DEC and DAFWA. It was all about learning the value of bugs and birds and native habitat preservation in maintaining a healthy and productive environment that complements agriculture and how it might be impacted by climate change.

The morning field walk included three sites (on *LFW* properties) where we were able to compare the bugs and birds to be found in different habitats - remnant bush land in the upper catchment, on a saline drainage line

But it's hard to keep plant enthusiasts on the track! Three hours and a two km round trip later, walkers had had the chance to see more than 200 plant species, particularly in the species-rich heaths.

Anne Rick, a member of the local rare flora group said, "We are lucky to have large areas of bushland remaining in this part of the Lake Grace Shire. As clearing happened as late as the 1980s we have large nature reserves that are still connected by wide roadside reserves. When you go for a walk in the bushland around here, you commonly find plants that are poorly known or rare."

Whilst spring time is great for seeing wildflowers, walking the track at any time of the year is a great experience for bushwalkers, birdwatchers and adventurers. In our short visit we were treated to the sight of honeyeaters, eagles, falcons, white browed babbler, an echidna and the very showy Wheatbelt Spotted Sand Dragon. Malleefowl also inhabit the bushland, but were not seen during our visit.

*Avril Baxter*



Above: the Wheatbelt Spotted Sand Dragon, *Ctenophorus maculatus griseus*. Photo: Louisa White

Left: botanising. Photo: Avril Baxter

and revegetation. The windy wet weather meant that not many birds were seen but there were plenty of bugs, interesting plants and weeds to talk about.

The afternoon workshop had five presentations that encompassed topics related to long-term sustainability, ranging through hydrological and climate trends in the northern agricultural region, insects and invertebrates as environmental indicators on farms and implications for agricultural productivity, birds on farms, biodiversity monitoring 'Grain and Graze' project, and pests and beneficial insects of crops and pastures.

It was a great day, we just could have done with more time!

*Fiona Falconer*

# NEWS

## CONGRATULATIONS TO LFW ALICE SPRINGS!

*Land for Wildlife* in Alice Springs won the *Toshiba Community Group* category of the NT Landcare awards for 2011 and will go on to represent NT in the national awards. This is not just recognition of the hard work of coordinators and members of the program but recognition of the worth of the program itself - it really works! So far this year, the area of land covered by members of the Central Australian *LFW* has grown from around 14,000 ha in January to 16,404 ha at the last count. The network of members has grown to include schools, commercial properties, several new large private properties, the Tennant Creek Pistol Club, Tennant Creek Airport, and the Alice Springs Correctional Centre - perhaps the first corrections centre in the country to join the *LFW* program.



A *Spinifex Pigeon* (*Geophaps plumifera*) among *Hard Spinifex* (*Triodia basedowii*) on a *LFW* property. Photo: Chris Watson

Through the year, *LFW* Alice Springs has been successful in acquitting a feral dog trapping and monitoring project to protect

colonies of the Black-footed Rock Wallaby and we have continued the feral Spotted Dove trapping program with several trap-building workshops and many more traps put out onto members' properties. We have also started to connect with members, and the wider community, through social networking media and have established a good following on Twitter, Facebook, and we have built a solid readership for our blog at [www.landforwildlifealicesprings.blogspot.com](http://www.landforwildlifealicesprings.blogspot.com).

In the highly variable climate of Central Australia we hope that the *LFW* program will remain a constant presence for many years to come. Cheer for us in the National Landcare Awards in 2012!

You can contact Chris Watson, *LFW & Garden for Wildlife* Coordinator, Alice Springs, on email: [LFW@lowecol.com.au](mailto:LFW@lowecol.com.au)

## BEVERLEY HARVEST FESTIVAL AT AVONDALE

Spring can be unpredictable as far as weather is concerned, but conditions were perfect for this year's Beverley Harvest Festival held at Avondale Discovery Farm on 20 November 2011. The farm, which contains a superb granite outcrop registered with *LFW*, has recently been transferred from DAFWA to the National Trust (WA). The Festival has been held at Avondale every year since 1995 and features demonstrations of harvesting techniques from the 1800s to the present day. There were various displays including vintage machinery, blacksmithing, wood chopping, and working sheep dogs.

Although the total number of visitors was down compared to previous years, meeting and talking to folk revealed that the festival had plenty to offer with people coming from as far afield as Wooroloo,



Bicton and Wickopin. Whilst the adults enjoyed refreshments at the old homestead and browsing the market stalls, the kids enjoyed face painting, the small animal farm and rides on the wagon pulled by a team of Clydesdale horses.

The *LFW* display with its taxidermied native animals created a lot of interest, but the star attraction was "Harmony the Carnaby", a female Carnaby's Cockatoo. Meeting Harmony, who is representative of south-western

Australia's unique and iconic wildlife gives people the take-home message of the importance of habitat for wildlife, and measures that can be undertaken to protect or create it.

The festival is a great way for city and country folk alike to catch a glimpse of what it was like to farm in years gone by and the unique relationship between farmers, their animals and the land.

Zara Kivell and Claire Hall



Photo above: an 'artist's palette'  
 Photos on page 19:  
 Top: bringing in the traps  
 Middle: measuring a possum's foot  
 Bottom: Wow! Look at that possum go!

# NEWS

## SOUTH COAST LFW SCHOOLS ART COMPETITION – THE YEAR OF THE FOREST

This year is ‘The International Year of Forests’ and LFW invited students to create a drawing or take a photo representing the forest theme, accompanying it with some words explaining what forests meant to them. Fifty-eight students of all ages submitted art pieces, and 15 prizes were awarded. The entries were displayed for two weeks in a window gallery on the main street in Albany. They attracted lots of positive feedback.

*Sylvia Leighton*



*First prize, Junior Category: Stella Hitsert (8), from Borden Primary School. She said: “This forest is in my imagination that’s why I love it so much because I can access it whenever I want to. Whenever I need to access my forest I simply close my eyes and take a deep breath.”*



*Second prize, Special Category: Emilija Lozenicins (15) Mt Barker Community College. She said: “The dead tree in the tingle forest near Walpole reaches up to the bright blue sky. It is piercing into the sky where the foliage once was, surrounded by life of the continual height of the tingle forest trees. Gone but not forgotten.”*

## SCIENCE AND ART COME TOGETHER IN HOLIDAY FUN!

Local Natural Resource Management Officer Michelle Gooding wanted children in the Darkan area to have some holiday fun and gain an appreciation and understanding for some of the excellent patches of bushland in their shire.

The bushland chosen was a 240-hectare patch owned by Land for Wildlife members Jodie and Lyn White from Dardadine.

Lyn White and Val Crowley, local plant enthusiasts who are the main stays of the Darkan Regional Herbarium, led a bush walk in the afternoon identifying plants and vegetation associations on the property. This walk led to a trapline design which was laid out under the supervision of Mat Harding from DEC’s Great Southern District.

Next morning after a camp over, 12 very excited children helped Mat check the traplines. Although red-tailed phascogales are known to inhabit this bushland, the overnight trapping only resulted in one very relaxed possum, who allowed himself to be weighed, measured and released.

Then it was Land for Wildlife’s turn to turn the focus on the plants and their environment which we did by becoming artists for the morning. With the landowner’s permission, the children were encouraged to look around and collect material from the bush which they adhered to contact paper attached to their ‘artist’s palette’ (see p. 18).

Some children noticed different colored soils, others grasses, leaves, seed pods, flowers, insect exoskeletons or rusty metal. Each child was encouraged to talk about the work they had created and what they saw when they looked closely at the bushland.

This led on to a general discussion including the characteristics that are used for plant identification, windblown weeds and where they are found in the bushland, soil types and human usage of bushland areas.

This technique and many others are available in *Exploring Wheatbelt Woodlands a Guide*, teaching activities for upper primary school and *Exploring Woodlands with Nyoongars*, teaching activities for Primary and Secondary Schools.



Copies of these publications are available by contacting Avril Baxter on 9881 9240 or [avril.baxter@dec.wa.gov.au](mailto:avril.baxter@dec.wa.gov.au).

*Avril Baxter*

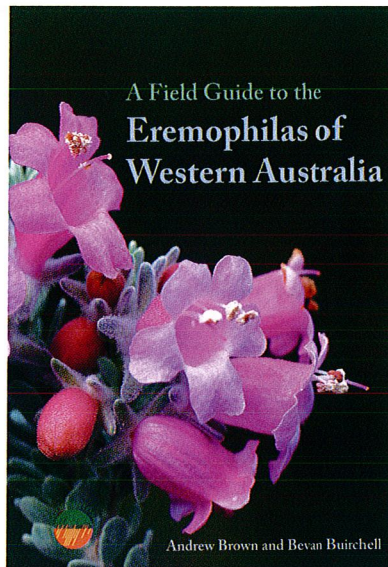
*All photos: Carolyn Telfer*

## NEW BOOKS

### **A Field Guide to the Eremophilas of Western Australia**

Andrew Brown and Bevan Buirchell  
Simon Nevill Publications. 2011.  
\$35.99 + p&h from Wildflower Society of WA, phone/fax: (08) 9383 7979 or email: wildflowers@ozemail.com.au

If you have ever been into the wheatbelt or goldfields woodlands, or out into the mulga or spinifex country, you will have seen eremophilas, or poverty bushes as they are sometimes called because some species grow well on poor, rocky soil. *Eremophila* means 'desert-lover' and they are an important part of the flora of the drier regions of Australia, especially as understorey in woodlands, mallee and mulga. In flower they are often very showy and many species are grown in bush gardens. There are some 300 species,



subspecies and varieties in WA, and this book will help you identify them all. A botanical key is not provided, for that you should go to the detailed work 'Eremophila and allied genera' by Bob Chinnock, published in 2007. Instead, look through this book until you find something that matches your specimen.

And what a pleasure it is to look through this lavishly illustrated book! Each species has a page containing information about the plant, a distribution map and stunning photos showing flowers and the plant in its habitat. There is also an introductory section giving details of the genus *Eremophila*.

If plants give you pleasure, then so will this book.

Penny Hussey

### **Plants of the West Australian Wheatbelt: based on and around the Koorda Shire**

Rachel Storer  
Self-published. 2011.  
\$35.00 + \$4.00 p&h obtainable from author (david.storer5@bigpond.com), good bookstores or Koorda Shire

This book is a labour of love. The author, who has resided in Koorda for much of her life, decided in 1989 to put together a regional herbarium for the Koorda Shire. It proved to be a very much bigger job than she had realised! Not only did she have to collect the plant specimens (the easy bit), she then had to get them identified, prepare the herbarium sheets, and finally, she decided to collate the information into a book. All this in addition to coping with family, farm and schoolteaching! But finally it is reaching completion. The regional herbarium will be stored in the Koorda Shire landcare office, and the book has been published.

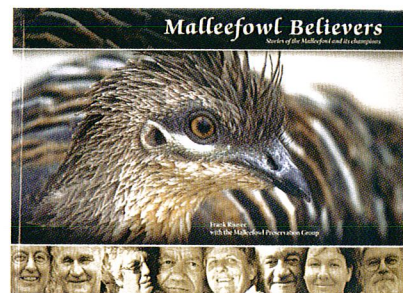
The book describes some 400 plants, most illustrated by photographs. The species are arranged in alphabetical order by genus, often with interesting snippets of information, such as Aboriginal use, included in the generic description. Each species is described in detail. At the rear is a list of the specimens held in the Koorda regional herbarium, which provides precise locations for the collection sites.

If you live in or visit the north-eastern wheatbelt, you will find many of your favourite species described here. It is a notable addition to regional botanical knowledge. But most of all, it is one

person's way of passing on to future generations her love of the land in which she lives and works. Rachel hopes that someone will carry on from her, and take over stewardship of the Koorda herbarium, and others like it. "This is our heritage," she says, "and it is full of such awe-inspiring diversity and beauty. We must work to keep it."

Penny Hussey

Below: Rachel Storer signing a copy of the book for Pat Leeke, widow of Tex Leeke, whose encouragement started Rachel off on this mammoth task.  
Photo: Penny Hussey



### **Malleefowl Believers: Stories of the Malleefowl and its champions**

Frank Rijavec with the MPG  
Malleefowl Preservation Group Inc. 2009.  
Order form for book (and DVD) is available on the home page of MPG website [www.malleefowl.com](http://www.malleefowl.com) or from the MPG office 9828 2007, [malleefowl.wa@wn.com.au](mailto:malleefowl.wa@wn.com.au) \$29.95 + \$12 p&h WA & \$16 interstate.

*Malleefowl Believers* is a collection of stories of people who, through determination, effort and belief, are making a huge contribution towards looking after the land and its wildlife. The malleefowl has become an emblem, whose preservation is both protection for habitat and the myriad life that clings to it.

Told from the heart, these stories reveal snippets of experiences, achievements, aspirations and personal motivations. Beautifully illustrated and photographed, this special book reminds us that many species cannot look after themselves, nor guarantee their own long-term survival. An inspiring and enriching read.

Liz Manning

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.