

Wildlife and Native Plants Study Group Newsletter

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Dear Members,

Welcome to 2005 and another issue of Wildlife & Native Plants. May you find much pleasure in our native flora and fauna, and in the establishment and management of your garden as it undergoes the changes of the seasons.

Thankyou to those that sent me Christmas and New Year greetings. No doubt you managed to spend some time in the garden appreciating the fruits of labour, or in relaxing and planning for the future. Some of you may have undertaken bush walks to appreciate the values of our unique Australian flora and fauna. For those, who did manage to get away on holiday, hopefully the weather was kind to you wherever you went, and that none were caught up in the terrible Tsunami, or bushfires and floods that occurred just before and after Christmas. More importantly, I hope that the time spent with family and friends was an enjoyable one of relaxation and appreciation. So much seems to happen at Christmas /New Year that we all need a break of a few days to get over it all.

Each year the time seems to go faster, and the days and months just slip away. I'm told this is old age and it's just catching up with us! However, understanding the need for change and stepping out of the conventional square, may bring forth new ideas in gardening and may bring great pleasure. Today more than ever, planning, landscaping and designing gardens seems to be the way to go rather than haphazard random plantings. Perhaps it's more a question of breaking free of gardening traditions and letting go of all the cultural baggage that we carry about with us, such as what gardens should look like, what they should contain, and what they stand for in our place and lifestyle. Do we accept the 'problems' as challenges and opportunities

towards creative approaches particularly for low water use or low maintenance gardening in our land of extremes. We should make an effort to work with our climate and our existing natural wealth- to be on friendly terms with some of the inhabitants of the bush, or to sit quietly and enjoy watching the birds' delightful antics and songs. We must appreciate what we have in the Australian landscape, to re-create areas for nature in our very own backyards.

'Dream the new dreams of creating gardens that make the most of the flowers of autumn, winter and spring; dream of a summer spent relaxed and cool in a subtle garden of deep shade made cool with varied greenery and enlivened with the gentle drip and splash of water. Dream of being at one with the place where you live, of working with the climate and developing a sense of place.' (Nottle, T. (1996) *Gardens of the Sun* pp.9)

In this edition we have a personal story of recreating a garden, and other bits and pieces which I'm sure most of you will enjoy. So, Happy reading and happy Gardening to all members!

Cheers Chris

IN THIS EDITION

- Alphabet Soup by Leigh Murray
- Understanding the Value of Fungi from Malleefowl Matter Iss 35
- Help Our Wildlife
- The Sting on the Nettles by Phil Watson
- Media articles and.....much more

Alphabet Soup

by Leigh Murray

This is a soup of alphabetical snippets. We have a few acres at Queanbeyan, where I'm revamping the garden after 15 years of neglect, and a six-year-old holiday place at Tuross Head. The main aims are to attract wildlife, screen fencelines and cope with drought.

Acacias

Acacia rubida is the dominant acacia on our rocky Queanbeyan ridge; we love to see Yellow-tailed Black-Cockatoos drop in to dine on the borers in the older ones. *A. implexa*, another local, tolerates not only dry and frosty conditions in Queanbeyan but also slightly salty, gale-force winds at Tuross Head. It's one of our most reliable trees, ideal for a tight space (and it can be pruned to suit); our biggest trees are 6 metres tall and a couple of metres wide. Also good for a narrow area is *A. boormanii*, used as a light screen along fencelines. It looks stunning in flower – masses of golden balls – and its seeds are said to be fancied by Common Bronzewing pigeons. (For ages one spring we were puzzled by what sounded like a monotonous mechanical 'oom', finally tracked down to a male Bronzewing calling.)

Amble

The most enlightening thing I've done in years was to take the dog for a mid-winter early-morning amble around our land at Queanbeyan while the temperature was still at the minus 5 level. What an eye opener that was – there was frost on the ground where I didn't expect it and none where I thought there'd be a heavy layer. I promptly revised the planned locations for all new plantings. Similar ambles at Tuross just after downpours were also most instructive.

Banksias

Many banksias are excellent wildlife attractors but we used to have great trouble raising them, possibly because they can be slowish to establish. Recently I've begun to grow them more successfully by better soil preparation (bigger holes, some organic matter), more effective watering (deeper), and guards (made of gutter guard) to protect them from munching wallabies and rabbits. I've concentrated on the top performers: *Banksia ericifolia*, *B. integrifolia*, *B. marginata* and *B. spinulosa*.

Books

Two books I rely on for design ideas and plant selection are "*Birdscaping Your Garden*" by George Adams and "*Creating a Native Garden for Birds*" by Frances Hutchison.

Branch stacking

Last year I began planting multiple plants in the one hole, say a ground cover, a shrub and a tree; or two complementary eucalypts, or two plants of the same species, to give a bushier effect or a better chance of a surviving plant. So far this scheme is working well and it's a great effort-saver (one hole, one guard).

Cockatoos

To attract cockatoos we've planted *Hakea eriantha*, *H. sericea*, casuarinas, *Banksia integrifolia* and *B. spinulosa*. We also have many (indigenous) *Acacia rubida* and *Eucalyptus goniocalyx* at Queanbeyan. There we've watched Sulphur-crested Cockatoos feast on *A. rubida* seeds, Yellow-tailed Black-Cockatoos gather eight to a tree to extract the seeds from the fruit of *Hakea eriantha* (ignoring other hakeas) or *Banksia spinulosa*, and Gang-gang Cockatoos eating the fruits of *Eucalyptus goniocalyx*. At Tuross, the Blacks favour casuarinas and *Banksia integrifolia* on the golf course, so I planted some at our place too.

Cram planting

Planting to a very high density is excellent for wildlife, especially if the layers overlap. We think it's the 'cram planting' – once it'd reached critical mass – that attracted a whipbird to the densest part of our garden at Tuross. An echidna also pottered through (eating, helpfully, an entire batch of biting ants).

Downpours

At Tuross Head, much of the rain falls in 100mm dumps separated by long, dry periods. We've had sudden deaths soon after downpours: two 4m *Acacia pycnantha*, *Philotheca myoporoides*, *Kennedia retrorsa*, *Grevillea* 'Austraflora Copper Crest', *Eucalyptus albida* and *E. dielsii*. In case a soil fungus caused these losses, I've replanted with species listed in the "*Encyclopaedia of Australian Plants*" as tolerant of *Phytophthora cinnamomi*, such as *Banksia integrifolia*, *Melaleuca nesophila*, *Eucalyptus leucoxylon*, *Grevillea arenaria* and *Epacris longiflora*.

Eucalypts

We have many indigenous eucalypts at Queanbeyan (mainly *Eucalyptus goniocalyx* and *E. polyanthemos*), but not one on our land at Tuross Head. I've squeezed in as many small, nectar-rich ones there as I can, concentrating on long flowering (eg *E. leucoxylon* and *E. caesia* which flower throughout winter) and year-round flowers (eg *E. incrassata* for autumn flowers, *E. torquata* for summer and *E. nutans* all year).

Frogmouths

I've seen an *animated* Tawny Frogmouth in daytime! A pair returns for short sojourns on a branch near one of our ponds at Queanbeyan. Once I forgot they were back and directed a hose onto nearby foliage. Apparently spray drifted onto one frogmouth because soon afterwards it began preening vigorously (the other frogmouth didn't, as usual, so much as twitch).

Grevilleas

A few long flowering, nectar-rich grevilleas have proved outstanding at attracting birds. *Grevillea* 'Coastal Glow', G. 'Honey Gem' and G. 'Superb' are mainstays at Tuross (where they flower virtually all year round), and G. 'Coastal Glow' is looking promising at Queanbeyan although the plants have been slow to establish during the drought. Amongst our top attractors are G. *arenaria*, G. 'Forest Rambler', the many forms of G. *juniperina* and G. *victoriae*, and the ground covers G. 'Poorinda Royal Mantle' and G. 'Bronze Rambler'; all are very hardy.

Honeyeaters

Those marvellous characters, Noisy Friarbirds, love the toothbrush-flowered grevilleas and the fruit of *Solanum linearifolium*, New Holland Honeyeaters are said to be especially fond of banksias, and wattlebirds and lorikeets just plain dote on any nectar-rich grevillea (eg. G. *arenaria*). *Anigozanthos flavidus* and *Correa glabra* are also favourites. So too are callistemons during their relatively short flowering periods. Avoiding wattlebirds, the delightful Eastern Spinebills pop around amongst dense grevilleas or hover in front of *Epacris longiflora* flowers.

Insects

Grevillea 'Poorinda Jennifer Joy' is by far our biggest bee drawcard. Three at Tuross flower for most of the year (a beautiful mauve-pink) and they're constantly attended by bees both exotic and native. *Eucalyptus viridis* attracts clouds of insects in summer, and native bees like *E. diversifolia*. Of the many butterfly attractive plants we've tried (eg *Olearia* sp., *Lomandra* sp.) none has yet rivalled *Westringia* 'Wynyabie Gem'. In Queanbeyan, three indigenous species also attract them: the yellow daisy *Xerochrysum viscosum*, *Bursaria spinosa* and a local leptospermum (possibly *Leptospermum brevipes*), which is a butterfly magnet for a few weeks each summer.

Lizards

Plants we grow because they're listed as attractive to Blue-tongue Lizards include berry plants (eg, *Enchylaena tomentosa*, *Solanum linearifolium*, *Austromyrtus dulcis* and *Dianella revoluta*) and, for their tasty flowers, *Eremophila maculata* and *Brachyscome multifida*. (I keep a beady eye out for berry plants showing weed potential.) We also provide logs and rocks for shelter and sunbathing, and (most importantly) fresh drinking water. We have a resident Blue-tongue at Tuross and itinerant ones at Queanbeyan, and many smaller skinks.

Mixed Mob

Outside the breeding season, a large group of small birds (the 'mixed mob') gets around en masse in the upper canopy of our Queanbeyan eucalypts. The group varies in its make-up but thornbills always form the basis. Extras include pardalotes, fantails, spinebills, fairy-wrens, scrubwrens and occasionally finches. Sometimes when I'm hosing plants they'll pop down for a shower, and soon tiny birds surround me, zipping back and forth through the spray or dangling upside down in it with wings outstretched. Such joy, eh?

Rosellas

The Crimson and Eastern Rosellas at our places eat a wide variety of foods, including grass seeds, grevillea flowers and acacia seeds (eg, *Acacia rubida*). Crimson Rosellas are particularly fond of *Grevillea jephcottii* flowers, and over the years they've pruned a very gangly bush into a better shape.

Treecreepers

We love to hear the piping call of the treecreeper (it travels with the mixed mob) and see it working its way up the trunk of a *Eucalyptus goniocalyx* probing the bark for insects. When our *E. sideroxylon* develop their furrowed bark, these too should attract them.

Vines

To increase bushiness, cover fences and provide nesting sites for small birds, we grow many climbers such as *Clematis microphylla*, *C. aristata*, *Hardenbergia violacea* and *Kennedia rubicunda*. When young, *C. microphylla* has a marked tendency to drop all of its leaves if peeved but it recovers brilliantly from bare stalks.

Water

Nectar-seeking birds and insects only favour plants that are adequately watered – when there's little moisture, there isn't enough nectar-flow to attract them to the flowers. A select few plants were kept well watered throughout the drought as food plants. For water, I set up small crate ponds (based on 50 or 60 litre recycling crates) at both places. Stocked with White-Cloud Mountain Minnows – which eat mosquito larvae but not many tadpoles – native pond plants (*Vallisneria spiralis*, *Potamogeton* sp.) and rocks, these are a big hit with wildlife: frogs and froglets breed, birds bathe, and birds, insects, kangaroos and wallabies drink from them. These small ponds use little water and have proved much more popular and easier to look after than the large pond we have at Queanbeyan. When the drought is over, I'll try a small muddy area or two, for such creatures as wasps and peewees that make mud nests.

UNDERSTANDING THE VALUE OF FUNGI

By Neale Bougher, CSIRO, Perth, *Malleefowl matter* Iss.35

Fungi are generally a mystery to most people and knowledge about native fungi in Australia is limited. We do know however that there are many times more fungi than plants in Australia, and the majority of Australian fungi, some unique to this country are yet to be discovered or named. In the poor soils that dominate much of Australia, fungi have many roles including decomposing vegetation and litter. As beneficial partners they act like an extra root system delivering nutrients to plants as well as providing for animals such as woylies, malleefowl and potoroos.

The fruit bodies of large fungi such as mushrooms, toadstools, puffballs, brackets and truffles are the most commonly recognised above ground species however it is their vast networks of threads below ground that provide valuable ecosystem benefits.

Hundreds of native fungi occur in, and support the health of Australia's woodlands but these fungi take a very long time, if ever, to self-establish in revegetation of badly degraded sites. It is known that less than 1% of large native fungi found in remnant bushland have returned to revegetated areas even after 20 years. In response to addressing some of the challenges CSIRO is developing and testing ways of assisting native fungi back into bushland revegetation on former farmlands. This research is encapsulated in FungiBank at www.Fungibank.csiro.au The site aims to raise awareness, encourage and demonstrate responsible application of fungi in natural and restored vegetation. increase knowledge and

help select the appropriate types of fungi for revegetation projects. The website also highlights some "do's and don'ts" - ie. do not collect soil with a shovel or a front end loader from natural vegetation. This may cause irreversible damage to the precious remnants and may risk spreading diseases.

Once re-introduced, fungi will do their amazing and essential part in maintaining the health of the vegetation and soil by kick starting and sustaining soil nutrient cycling thus assisting the health and growth of native trees and shrubs particularly eucalypts, acacias and sheoaks.

The natural reservoirs of native fungi are rapidly depleting as natural woodlands diminish in number, and quality. It is therefore a race against time to re-introduce our remaining native fungi with minimal disturbance of existing natural vegetation. Most importantly we must preserve native fungi sources for the benefit of ecosystem health and contributions towards future revegetation project successes.

HELP OUR WILDLIFE

1. By encouraging our wildlife you are also helping to make your garden flourish. Many birds and lizards eat insects and garden pests, and the birds aid in the pollination of some types of flowers and fruit trees.
2. Never use rat or snail bait, or poisonous sprays, there are any non-poisonous options.
3. Before mowing your lawn in late spring and summer, check for sun baking lizards.
4. Plant trees and bushes that attract fauna and will also provide food. Avoid plants that are poisonous to wildlife.
5. Avoid cutting down old trees, where possible, as these may have holes and hollows that are used by birds and possums.
6. Planting trees close together so their canopies can meet with those outside your boundaries will enable possums and koalas to travel more safely from tree to tree without the risks associated with crossing cleared land.
7. Bats often reside in the bark of trees. When removing branches, check for bats.
8. Provide nesting boxes of varying sizes in trees for birds, bats and possums to nest in.
9. Have a birdbath situated in a shady area of your garden.
10. Most importantly, keep your cat indoors, especially at night.



The Sting on the Nettles by Phil Watson

Stinging nettles are known as tenacious weeds, able to live in the toughest of conditions, notoriously known for inflicting unforgettable pain. Their hanging pinkish flower clusters impart agonising stings into unsuspecting walkers or gardeners who dare exposure their bare legs, arms or hands to its armoury. Close examination of these stinging heads reveal a myriad of tiny hollow hairs with swollen bases and needle-like tips. All are filled with formic acid, which when touched, act like syringes. This weed (*Urtica dioica*) along with its Tassie native cousin (*U. incisa*), have an unexpected set of attributes which deserve recognition.

Many of the stinging nettle's attributes are common to their 500 member Nettle family, (*Urticaceae*) which is made up of native and exotic trees, shrubs and herbs. Prominent members include the feared, tropical Giant Stinging Trees, (*Dendrocnide excelsa*), the indigenous Smooth Nettle or Shade Pellitory (*Parietaria debilis*), the attractive indoor plant and/or tropical groundcover Aluminium or Friendship Plant (*Pilea sp.*) and the toughest and silkiest of all natural fibre producers, China Grass (*Boehmeria nivea*).

Nettle tonics are nutritious

Both the native and exotic stinging nettle is very nutritious, provided their stings are neutralised by cooking or drying. A delicious vivid green, cream-of-nettle soup can be made using their tender, young shoots spiced with a touch of lemon. A superb nettle tea, wine or beer can be brewed from infused extracts of the young leaves. Due to their high Vitamin A, C and iron content, quenching nettle drinks act as a health tonic. Herbalists report that nettle tea can improve blood coagulation and haemoglobin formation. The roots of the nettles contain 'Phytosterols' which can be extracted to synthesis steroidal drugs. It is used for inhibiting the growth of tumours and regulating blood cholesterol.

Rich moist soils, preferably fertilised with chicken manure, allow gardeners to grow crops of lush nettles, whilst the best native nettles can be found thriving in damp, shady forests. In the native and vegetable gardens, they act as companion plants and provide nutritious supplements for the compost heap. A nitrogen-rich foliar feed can be brewed by soaking them in a bucket.

History reveals strange uses

Urtification is the process of deliberately stinging the skin with nettles.

Roman soldiers, chilled by the cold, often rubbed their feet and hands with nettles to bring back their circulation, whilst convicts were punished by lashing large nettle bushes across the bare backs. *Urtification* has been used successfully for treating rheumatism and arthritis by tricking the nervous system into overlooking the deeper pain.

Nettles are the pretty Australian Admiral Butterfly larva's food plant. These larva carry a row of spiny hairs down their backs. They construct, prior to pupating, protective tents, from silk spun around leaves. Larva pupates into powerful, darting butterflies which are strongly attracted to colourful *Buddleia sp.* flowers. Being well camouflaged at rest, they happily bask on sunlit garden walls in the summer.

Nettle can yield excellent **silky fibre**, traditionally used to make fishing nets, rope, paper and cloth. The fibres were considered superior to cotton when making velvet and a more durable type of linen. Cloth was often coloured with the yellow dye that could be extracted from their roots.

Little known nettle relatives

Aside from the Stinging nettle, the native Small Shade Nettle (*Australina pusilla*), found in damp cool forests, are attractive, non-stinging nettles ideal for growing with ferns. Along with the native Shade Pellitory, both produce tasty spinach-like leaves.

The **Asthma Weed** (*Parietaria judacea*) is a weed nettle often found lurking in moist urban bushland sites. The hairs on this woody herb can induce skin rashes whilst its pollen causes asthma, conjunctivitis and hay fever. Ironically it is grown for its medicinal properties, which may be inadvertently helping it invade bushland sites.

Tree size nettle relatives

The Giant Stinging Tree is an important primary colonising tree (scab plant) which grows quickly within sub tropical East Coast rainforests, following a disturbance, like a landslip or a tree fall. They are also the home of the spectacular Splendid Ghost Moths, whose exquisite females display rich green forewings and pink hind wings whilst the males exhibit beautiful blue tones. Interestingly, the male moth produces a strong female attracting, pheromone scent from its glandular brush of hairs on its rear hind legs. This is opposite to most moths, in that the females disseminate the pheromone. Interestingly they have tunnelling larva, which bore into the young trees, after initially living amongst the forest floor litter.



STATE EMBLEMS



VICTORIA – The Garden State.
ANIMAL – Leadbeaters Possum.
FLORAL – Pink Heath.

BIRD – Helmeted Honeyeater.
QUEENSLAND – The Sunshine State.
ANIMAL – Koala.

FLORAL – Cooktown Orchid.
BIRD – Brolga.

NEW SOUTH WALES – The First State.
ANIMAL – Platypus.
FLORAL – Waratah.
BIRD – Kookaburra.

SOUTH AUSTRALIA – The Festival State.
ANIMAL – Hairy-Nosed Wombat.
FLORAL – Sturt's Desert Pea.
BIRD – Piping Shrike.

WESTERN AUSTRALIA – The State of
Excitement.
ANIMAL – Numbat.
FLORAL – Red and Green Kangaroo Paw.
BIRD – Black Swan.

TASMANIA – The Holiday Isle.
ANIMAL – Tasmanian Devil (unofficial).
FLORAL – Tasmanian Blue Gum.
A.C.T. – The Nation's Capital.
FLORAL – Royal Bluebell.

BIRD – Gang-Gang Cockatoo.
NORTHERN TERRITORY – Outback Australia.
ANIMAL – Red Kangaroo.
FLORAL – Sturt's Desert Rose.
BIRD – Wedge-Tailed Eagle.

Australians all let us rejoice;
For we are young and free;
We've golden soil and wealth
for toil;
Our home is girt by sea;
Our land abounds in nature's gifts
of beauty rich and rare;
In history's page, let every stage
Advance Australia fair.
In joyful strains then let us sing.

ADVANCE AUSTRALIA FAIR

Underneath our radiant
Southern Cross
We'll toil with hearts and hands;
To make this Commonwealth of ours
Renowned of all the lands;
For those who've come across
the seas;
We've boundless plains to share;
With courage let us all combine
to Advance Australia Fair.
In joyful strains then let us sing
ADVANCE AUSTRALIA FAIR

Chorus

We are one, but we are many
And from all the lands on earth
we come
We share a dream and sing
with one voice
I am
You are
We are Australian

1. I came from the dreamtime
From the dusty red soil plains
I am the ancient heart, the keeper
of the flame
I stood upon the rocky shore
I watched the tall ships come
For forty thousand years I'd been
The First Australian.

2. I came upon the prison ship
Bowed down by iron chains
I cleared the land, endured the lash
And waited for the rains
I'm a settler. I'm a farmer's wife
On a dry and barren run
A convict then a freeman
I became Australian.

3. I am the daughter of a digger
Who sought the mother lode
The girl became a woman
On the long and dusty road
I'm a child of the depression
I saw the good times come
I'm a bushie, I'm a battler
I am Australian.

4. I'm a teller of stories
I'm a singer of songs
I am Albert Namatjira
I paint the ghostly gums
I am Clancy on his horse
I'm Ned Kelly on the run
I'm the one who waltzed Matilda
I am Australian.

5. I'm the hot wind from the desert
I'm the black soil of the plains
I'm the mountains and the valleys
I'm the drought and flooding rains
I am the rock, I am the sky
The rivers when they run
The spirit of this great land
I am Australian.

Chorus

Music by Bruce Woodley
Words by Bruce Woodley & Rob Newton

MEDIA ARTICLES

CLEVER BIRDS- In recent research, "birds have emerged as rivals to chimpanzees and dolphins for the title of the most intelligent non-human animals," reports 'The Sunday Times' of London. A Cambridge University team put a hole in the side of a transparent tube, mounted the tube horizontally with the hole facing downward into another tube, and placed food inside it next to the hole. Primates tried to push the food out, losing it down the hole. But woodpecker finches used a stick to draw the food out without losing it. Earlier, Oxford University researchers watched a New Caledonian crow named Betty make hooks from garden wire and adapt the shape of the hook to suit a particular job- a task that primates have never been known to perform. Such findings "contradict years of received wisdom" that only primates are capable of toolmaking, comments the 'Times'.

MYCOTOXINS FROM COMPOST

A report from the International Archives of Occupational and Environmental Health 1993;65:113-117) raises more concerns about commercial composting products. We are already aware of Legionella and its capacity to affect human life, and here is another gem!

Although it is well known that exposure to mycotoxins in food can cause ill health effects in humans and animals, mycotoxin toxicity from the respiratory route has been questioned. A study of 5 Aspergillus and Penicillium species found in German composting facilities found that these fungi produced large quantities of mycotoxins including Verruculogen, Fumagillin, Sterimatocystin, Penitrem and Roquefortine. These mycotoxins were found to be very toxic to human lung, liver and nerve cell cultures. Other studies have noted that inhaled mycotoxins may be up to 40 times more toxic than the same mycotoxins taken orally.

LOCUST THREATENS ENDANGERED

BIRD. from *Deniliquin Pastoral Times (NSW) Southern Weekly Magazine 31/1/05 p.5*

Special precautions in the treatment of plague locusts, are recommended in areas known to be habitat for the endangered Plains Wanderer. The DPI, the Australian Plague Locust Commission and the Dept. for Environment and Conservation had recently developed a set of guidelines for treating locusts in Plains Wanderer areas around Conargo, Jerilderie and Hay. The aim of the guidelines is to minimise agricultural and

environmental damage from locusts. Wherever possible control teams have treated locust outbreaks in Plains Wanderer habitat areas with Greenguard, a fungus based agent designed for environmentally sensitive areas.

DANGER FROM LOCUST CHEMICALS

A report in Queensland Country Life (27/1/05 p.5) reminded landholders of the importance of an awareness of the types of chemicals sprayed and their potential impacts such as the chemical residues in livestock and grain. Landholders were urged to be precise when mixing chemicals and to follow instructions relating to application rates and withholding periods. They were also urged to keep records of any spraying activity and to inform neighbours of any spraying undertaken, along with reporting any further outbreaks of locusts.

NEW GUIDE ON LOCAL TREES & SHRUBS

The Riverine Grazier (26/1/05 pg.4) reported on the release of a new Glove Box guide titled 'Useful Trees and Shrubs for Central West NSW'. There are 75 trees and shrubs shown in the book with many of the species listed also common in the Hay plains area. The authors are Peter Milthorpe and Margaret Wynne of the NSW DPI. The book is based on research carried out at the Condoblin Research Station.

OLD TREES SAVE WIMMERA BIRD

A new study revealed that keeping old buloke trees might be a key to saving the threatened red-tailed black cockatoo, was reported in the 'Wimmera Mail Times - The Farmer' (26/1/05)

Researcher Martine Maron said farmers needed to carefully manage the keeping of old bulokes to maintain farm productivity because much of the remaining nesting and feeding trees were on private land. She stated that "Only about three per cent of the original buloke woodland remains in the Wimmera. The large, mature buloke trees that cockatoos prefer now mostly occur as scattered paddock trees."

Because buloke trees only grew slowly, they could be more than ninety years old before cockatoos would feed on them. Grazing areas and roadsides might be crucial in protecting the cockatoo...

The red-tailed black cockatoo is one of seven threatened species being studied by a joint DPI-DSE project called Threatened Species and Farming.

'70 of our bird species in grave peril'

an article appearing in *The Australian* (8-9/01/05).

It was reported that an international authority on endangered bird species (Dr. Cagan Sekercioglu) predicted that Australia has 12 times as many bird species facing extinction, and that 14% of the world's 9787 bird species will become extinct this century if, environmental degradation continues. Given that Australia's woeful record is 45 threatened species and 27 near-threatened. "*Habitat loss and species extinctions are usually correlated with population and population density and Australia is very low in both.*" Seventy five per cent of Australia's threatened birds are unique only to Australia and yet we have eight extinct bird species- 20 times that which would be expected for a nation of 20 million people. Some species under threat: Abbott's booby and four other species are critically endangered on Christmas Island, their numbers decimated by crazy ants. On Lord Howe Island several birds became extinct in the 1800s because of rats from shipwrecks. The wandering albatross and other seabirds in Australian waters are threatened by tuna fishing. In North Queensland the southern cassowary is fast disappearing, killed by dogs and cars.

AUSTRALIA'S MOST ENDANGERED BIRDS

- Chestnut-breasted whiteface
- Noisy scrub bird
- Rufous scrubbird
- Southern cassowary
- Eastern bristlebird
- Western bristlebird
- Red goshawk
- Gouldian finch
- Christmas Island frigatebird
- Lord Howe woodhen
- Albert's lyrebird
- Star finch
- Orange bellied parrot
- Regent honeyeater
- Red-lored whistler
- Abbott's booby
- Plains-wanderer
- Night parrot
- Princess parrot
- Golden shouldered parrot
- Western whiptail

AUSTRALIA'S EXTINCT BIRDS

- Norfolk Island starling
- King Island emu
- Kangaroo Island emu
- Lord Howe gerygone
- New Zealand little bittern
- Lord Howe swamphen
- Paradise parrot

Plants and weeds database

Charles Sturt University Virtual Herbarium is a useful tool for anyone interested in native flora. The database lists some 3500 plant and weed species found in the Murray Darling Basin. The site also provides handy information on the distribution, ecology and propagation of many species. The focus for the herbarium in the near future will be on native grasses.

Visit the site at:

<http://www.csu.edu.au/herbarium/>

KNOW YOUR WEEDS

Parthenium: This weed of national significance is present in Central Queensland with outbreaks at Highfields, Warwick and Cambooya, supposedly caused by the use of stockfeeds from infested areas.

Giant rats tail grass: this aggressive weed that can reduce pasture productivity and out compete desirable pasture grasses. It was introduced from South Africa in the 1960s and has adapted well to large areas of Queensland.

Boxthorn: the spiny South African perennial shrub is an aggressive weed in some districts, and produces a dense thicket armed with spines to form an impenetrable barrier.

CARPET PYTHON AT RISK IN VICTORIA

Some of the most important habitat for the shy, slow moving, tree dwelling, non-venomous snake are in the red gum forests between Swan Hill and the South Australian border. This habitat includes the Nyah Forests and is currently the subject of a Victorian Environment Assessment Council investigation into Riverine Redgum Forests along the Murray River.

The Inland Carpet Python or Inland Carpet Snake, is a slow-moving, nocturnal snake that has an average adult length of 170 to 190 cm. Snakes in the southern portion of the range, the Murray River drainage basin in Victoria, are essentially black and grey, although some individuals may have a tan colouration on the sides. The inland carpet python is one of only two pythons to occur in Victoria, the other being the closely related diamond python. Hollow logs or trees plus thick litter or shrub cover are essential to the reptile's existence. The environment is used for shelter, to avoid predators, ambush prey and thermo-regulation. While juvenile inland carpet pythons are thought to feed mostly on lizards, the adults prey upon small to medium sized mammals as well as birds, particularly those roosting in tree hollows. The radical alterations in the abundance and distribution of mammals since European settlement have impacted on prey availability, frequency of breeding and the number of young pythons produced. A variety of processes have

Biodiversity hotspots

AUSTRALIA is one of the most biologically diverse countries in the world. It is home to more than one million species of plants and animals, many of which are found nowhere else.

Some 85% of Australia's flowering plant species, 82% of mammals (excluding whales), more than 45% of birds, 89% of reptiles and 85% of temperate zone inshore marine fish are found only in Australia.

This country's remarkable biological diversity – the plants, animals, micro-organisms and their ecosystems – is threatened by the impact of human activities. Since European settlement, more than 50 species of animal and more than 60 species of plant are known to have become extinct in Australia.

Biodiversity hotspots are areas under immediate threat from impacts such as development pressures, land clearing, weeds, feral animals and salinity, and are strongholds for large numbers of Australia's unique plants and animals.

The hotspots are home to many 'endemic' species – in other words, native flora and fauna that are mostly restricted to one geographic locality.

Internationally, biodiversity hotspots have been identified for



Cape Barren Geese. Photo by A. Tatnell

some time (with South-West Western Australia on an international list).

However, this is the first time Australia's biodiversity hotspots have been identified. They were identified by the Australian Government's Threatened Species Scientific Committee, the Humane Society International and the Australian Museum, with input from recognised biodiversity experts from across Australia.



Bridled nailtail wallaby. Photo by M. Evans

The purpose of the hotspots is to put a spotlight on areas where, if the country acts now, it can slow down or avert environmental damage before it happens, and get the most value from its conservation dollar.

The hotspots also help to raise public awareness of the environmental heritage at risk and promote strategic action to conserve it.

As a priority in hotspot regions, Natural Heritage Trust funding is being directed to implementing hotspot conservation actions.

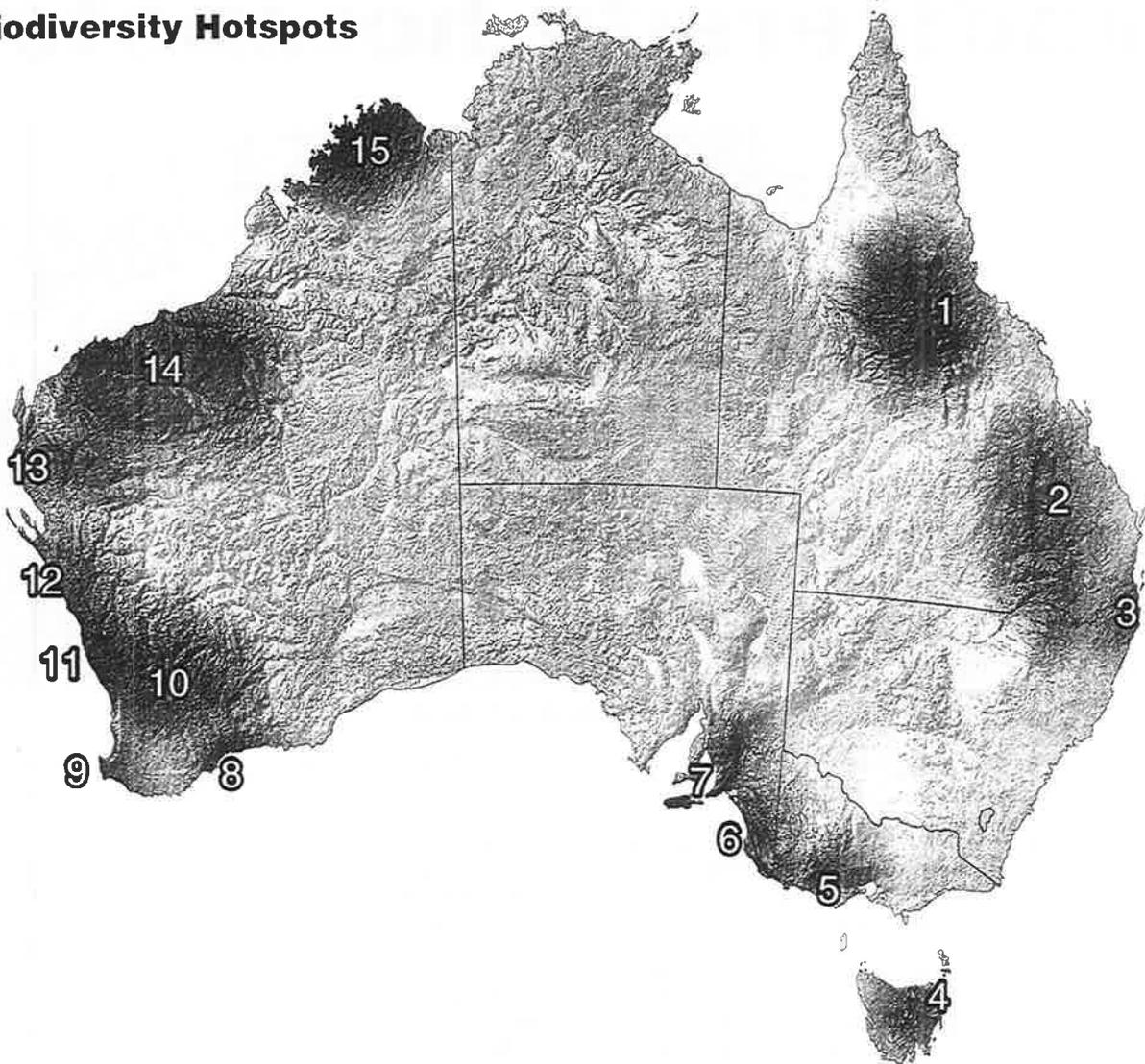
These national hotspots are not designed to replace priority-setting by states, regions or local communities. Rather, they provide important information to guide decision makers in developing strategic plans and identifying priority actions for biodiversity conservation, and provide guidance on cost-effective investment under the Natural Heritage Trust.

Information packages have been prepared for each natural resource management (NRM) region that overlaps with a hotspot.

Australian Government and regional NRM facilitators will assist communities to develop approaches to conserve biodiversity hotspot values and reduce threats to biodiversity through their regional investment strategies.



Biodiversity Hotspots



- | | | |
|---------------------------------|---|---------------------------------------|
| 1 Einasleigh and Desert Uplands | 6 South East of South Australia and South West Victoria | 11 Mount Lesueur Eneabba |
| 2 Brigalow North and South | 7 Mt Lofty / Kangaroo Island | 12 Geraldton to Shark Bay sand plains |
| 3 Border Ranges North and South | 8 Fitzgerald River Ravensthorpe | 13 Carnarvon Basin |
| 4 Midlands of Tasmania | 9 Busselton Augusta | 14 Hamersley / Pilbara |
| 5 Victorian Volcanic Plain | 10 Central and Eastern Avon Wheat Belt | 15 North Kimberley |

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Australia, Digital Elevation Model (DEM) 9 seconds (c) Geoscience Australia, 1996. All rights reserved.
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More information on these areas can be found on the Department of the Environment and Heritage web

site at: <www.deh.gov.au/biodiversity/hotspots/index.html>.

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