



# Western Wildlife



NEWSLETTER OF THE LAND FOR WILDLIFE SCHEME

Registered by Australia Post Print Post: 606811/00007

## DRYANDRAS – THEY ARE NOT ALL PRICKLY SHRUBS!

by Margaret Pieroni

**D**RYANDRAS are usually described as “prickly shrubs”. However, not all of the many different kinds of dryandras are prickly, but it must be admitted some are horrendously so, with sharp points on the lobes of their leaves. Their growth habit varies from prostrate and spreading to densely mounded shrubs to small trees. At any time of year there will be some species flowering.

Dryandras, in the Proteaceae family (which also includes the genera *Banksia*, *Grevillea*, *Isopogon*, *Petrophile* and many South African ones) are confined to the south west of Western Australia. Some are quite rare and restricted to one or two small areas. An exception to this rule, *D. arborea* is found at a distance from the others, near Koolyanobbing and in the Die Hardy Ranges and near Mt Jackson. It is a small tree which grows on ironstone ridges and flowers all year round.

Stands of dryandras on roadside verges give the south west scenery much of its unique character. Driving along almost any road with good roadside vegetation, you are likely to find, often on the tops of hills in gravel, almost pure stands of one or several dryandra species. Where dense colonies appear after fire or other disturbance, it often indicates that the species is one

that has seed capsules that open during the hottest part of the year, around February. Most can be collected at any time of year.

There are some 92 species and 34 subspecies and varieties of dryandra currently described. Some of these have their largest populations on private property, such as one property in particular near Badgingarra, where a great deal of the natural vegetation has been lovingly preserved. This is possibly the richest area in dryandra species after the Stirling Range National Park, which has a number of endemic

species that are in danger of extinction from too-frequent fires and dieback fungus diseases.

Dryandras, like banksias to which they are closely related, have inflorescences containing from about 20 to 200 or more individual flowers, according to the species. Flower colours range from yellow, some also with pink forms, to gold, red and brown. The surrounding bracts (which in some species are longer than the flowers) are an outstanding feature having a resemblance to South African proteas rather than banksias. As with most genera in the Proteaceae family they are pollinated by birds and marsupials as well as insects.

Another of the characteristics of these intriguing plants is the beauty and variety of the foliage. Those that tend to hide their flowers are still an excellent attribute in the garden, and are probably the most beautiful for form and foliage. Some of these are *D. drummondii*, *D. nivea*, *D. catoglypta*, *D. octotriginta*, *D. shanklandiorum* and the various subspecies of *D. ferruginea*. The blue-grey colour of the leaves of the latter two make a beautiful contrast with other shrubs in the garden – or the bush.

There are about 24 dryandras which have underground branches. The buds form at the



*Dryandra blinnatifida*  
(M. Pieroni)

## EDITORIAL

PENNY HUSSEY returns from her overseas sojourn and resumes her *Land for Wildlife* duties in October. During the last few months whilst acting in Penny's position I have been very heartened by the response of landowners in seeking to participate in the *Land for Wildlife* program. Clearly, *Land for Wildlife* is filling an important niche within the land management/conservation role on privately owned land and thus helping to ensure the sustainability of Australia's biodiversity. In June six new *Land for Wildlife* officers started, and I would like to take this opportunity to publicly thank them for their enthusiasm and

dedication to *Land for Wildlife* program. Since late May 1998 1,559 hectares of land has been added to the *Land for Wildlife* 'estate' and 34 landowners have requested an assessment of their properties.

In this spring edition of *Western Wildlife* we look at the diversity of form found within the genus *Dryandra*. Over 90 species are known, but they are restricted to southern WA. We also have several articles on birds, namely the elusive bush stone-curlew and some housing renovations for osprey at

Aquinas College in Perth. We also have an article on the yellow admiral butterfly that visits many of our gardens in search of native pellitory. And the never-ending struggle against weeds is also featured in a story of the Green Corps battle with Bridal Creeper.

Its NHT funding application time again! Guidelines and application forms are now available. Information regarding this year's grants is contained within.

Thanks for your interest in *Land for Wildlife*, as Penny has returned I'm back to the 'Roadsides'.

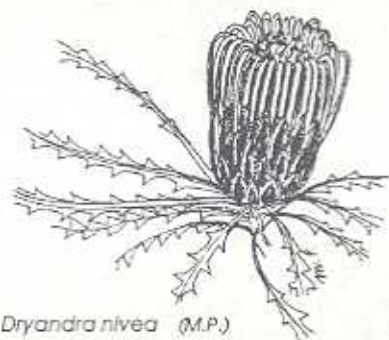
David Lamont

continued from page 1

ends of the stems, beneath the soil, and pop up around the perimeter of the plants when the flowers are ready to open for pollination. All of these plants have attractive, upright leaves and make excellent groundcovers. The leaves usually have more or less triangular lobes on each side of the mid-rib, however those of *D. bipinnatifida* are forked and look quite fern-like and many people do not recognise this plant as a dryandra. The flowers of this particular species occur in late spring, but do not last long and are seldom seen (I suspect that the somewhat-fleshy bracts are eaten by animals, as the flower-heads have been known to disappear overnight!). *D. bipinnatifida* is widespread, from Eneabba to Perup and Boyup Brook and around Dunsborough in various forest or heathland habitats.

*D. nobilis* subsp. *fragrans*, almost totally confined to the aforementioned farm at Badgingarra, has a delightful perfume and is an excellent cut flower. On the other hand, *D. epimicta* (its name means 'on the nose') which occurs only in a reserve in the Kulin area, has a thoroughly obnoxious, foul smell which attracts blowflies as pollinators.

My interest in this genus began when I decided to grow some dryandras for my mother, then



*Dryandra nivea* (M.P.)

residing in NSW, to use in dried-flower arrangements. They are very suitable for this purpose and several species are being grown commercially for the cut flower market. More could be tried, especially some of those with attractive foliage. The most commonly grown, and one of the hardiest and fastest growing is *D. formosa* with its glowing golden flowers with coppery buds. *D. stuposa*, from the Narrogin region, has similar flowers on tall, bushy shrubs with blue-grey leaves. Though its flowering time is in summer, odd flowers may be found all year round. Another popular vase flower is the urchin dryandra, *D. praemorsa* var. *splendens* of which the pink-flowered forms are most sought after. It grows in the Darling Range usually associated with granite rocks, and the pink-flowering plants occur randomly with normal yellow ones. *D. quadrifolia*, from the Ravensthorpe area and

Fitzgerald River National Park, also shares this characteristic. Both of these species have prickly oak-shaped leaves.

Most dryandras are easily grown from seed. Success has been achieved with cuttings from newly-sprouting underground-branched species such as the couch honeypot, *D. lindleyana*.

It is gratifying to know that our floral heritage is being appreciated and protected by the reserving of bushland remnants on farms as well as in reserves and National Parks.

Margaret Pieroni is a member of the Botanical Artists' Group and an expert on the genera *Dryandra* and *Verticordia*.



### Did you Know ...

The genus *Dryandra* is named after Jonas Dryander (1748-1818), who was the first librarian and one of the original fellows of the Linnean Society. He was also the curator of Sir Joseph Bank's collections, and as such was much concerned with Australian plants, of which he described many.

(Ref: Sharr, F.A. (1978) *Western Australian Plant Names and Their Meanings*. Uni of W.A. Press.

## FAUNA

**G**RANITE outcrops are very valuable areas to wildlife, both plants and animals. One animal I am presently studying that uses granite outcrops is the yellow admiral butterfly, *Vanessa itea* (also known as the 'Australian admiral'). This highly mobile insect travels widely through the countryside, but may visit granite outcrops for two reasons.

If a granite hill is the highest point in the district, admirals will use it as a meeting-place. Males fly to the tops of these hills in the late afternoon (after 3 pm in late winter, but not until about 5 pm in late spring). There they set up territories, by settling in favoured spots and darting out to investigate any object that flies past. At the same time of day virgin females ascend these hills to select a mate.

The other thing that may attract admirals to granite outcrops is a plant that sometimes grows at these sites: native pellitory (*Parietaria debilis*). This soft, delicate annual, up to 40 cm tall, is the only known native plant in southwestern Australia on which the admiral's larvae feed. Female admirals therefore visit this plant to lay their eggs.

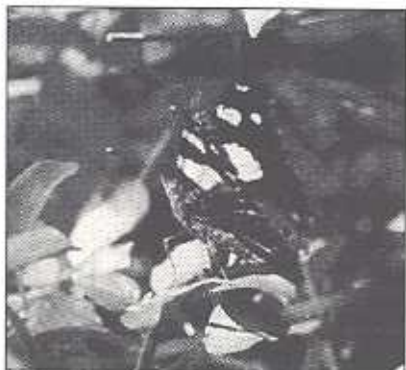
Native pellitory occurs widely in southern Australia, but only where conditions suit it, particularly on the coast or in association with granite. Native pellitory may therefore occur, or have occurred, on your local granite outcrop. It might not still be there if the vegetation is weedy and disturbed as, like many native annuals, native pellitory is readily displaced by weeds. In weed-infested bushlands on Perth's coastal plain it has largely disappeared, however native pellitory still thrives in some spots where kangaroos are present; perhaps as a result of kangaroos grazing on the exotic grasses that compete with it so strongly. The same may be true of granite rocks where there may be more chance of finding pellitory if kangaroos are present.

### THE USE OF GRANITE OUTCROPS BY THE YELLOW ADMIRAL

by Robert Powell



*Yellow admiral (life size).*



*Yellow admiral laying an egg on native pellitory.*

You may wonder how the yellow admiral is faring, given that the plant on which it breeds is now very scattered and declining. Surprisingly, it continues to do well. The admiral is one of the most mobile of butterflies, and is able to travel long distances to find places where it can breed. Moreover, it is able to breed also on an introduced relative of native pellitory that some people have on their farms: stinging-nettle (*Urtica urens*).

If you want to see admirals, hilltops are the best places to look, but make sure you pick the highest hill, and visit it during the late afternoon of a sunny day between autumn and spring. Go right to the

top, and look out for dark, fast-flying butterflies of medium size. When one lands and spreads its wings you will note its distinctive colour-pattern: the pale yellow, oval-shaped patches on the forewings, black round the wing borders and reddish brown towards the body. Several other species of butterfly, various dragonflies and other insects also congregate on hilltops, so these places are of interest for seeing other insects too.

If you wish to check whether native pellitory occurs on your outcrop, contact *Land for Wildlife* by phoning (08) 9334 0427, and ask for a description and botanical drawings of the plant. Look for the plant between July and November, in moist spots at the base of granite boulders, or on scree slopes, often in partly shaded places.

I would be very interested to know whether native pellitory still survives on granite outcrops on farms, so if you find native pellitory and are happy to pass on this information, please phone me on (08) 9334 0430, or write to: Robert Powell, C/CALM Planning and Visitor Services Branch, Locked Bag 104, Bentley Delivery Centre 6983. If you are willing for seed to be collected from your plants, it may be possible to create a seed-bank for use by others who would like to re-establish this easily propagated plant on their granite outcrops.

Penny Hussey's excellent booklet *How to Manage Your Granite Outcrops* emphasizes the value of these areas to wildlife, both plants and animals. In a later edition of this newsletter there will be a more general article about the different species of butterfly you may see on your property, and what plants you might protect or grow to encourage them.

*Robert Powell is a naturalist and member of the Western Australian Insect Study Society.*

*He can be contacted by phone on (08) 9334 0430.*

# FLORA

## IT'S BLOOMING FLOWERS

by Mike O'Donoghue and Liesl Rohl

THE season has changed and the cool rainy days of winter make way for spring. The warmer weather and longer periods of sunlight stimulate the flowering mechanisms of many of the State's most beautiful and unique wildflowers. Local, interstate and overseas visitors make their annual pilgrimages to their favourite wildflower "hotspots" to marvel at the annual wildflower display.

Licensed wildflower pickers also take advantage of the blooming event and harvest a wide range of wildflowers during the peak flowering season. Many of the State's much sought after wildflowers are exported fresh or dried to overseas destinations such as Japan, Europe and America. Others, including the sweet smelling brown boronia, several species of kangaroo paws and the ever-popular Geraldton wax are sold on the domestic market.

From relatively small beginnings, the Western Australian cut wildflower and seed industry has blossomed into a multi-million dollar export industry. Data from the Australian Bureau of Statistics indicate a total annual export of native cut flowers in excess of \$15 million. In Western Australia over 240 species of protected flora are harvested for their cut stems, and in addition more than 600 species of seed are collected.

The Department of Conservation and Land Management (CALM) is responsible for the conservation and management of protected flora throughout Western Australia, and for the administration of the Wildlife Conservation Act. In addition, the export of protected flora species overseas is controlled by Environment Australia in accordance with an approved Western Australian flora management program.



*Verticordia grandis*

CALM's management of the wildflower picking industry is principally designed to ensure that commercially exploited species are harvested sustainably, both for the species themselves and for the ecosystem in which they occur.

Quotas and various other management restrictions are placed on some of the more heavily exploited flora species, for example *Boronia megastigma*, to control harvest levels, thereby ensuring sustainability.

Individual pickers taking flora for commercial purposes from Crown land, or those selling flora taken from private property, are required to hold an appropriate commercial flora licence issued by CALM. Nearly 600 Commercial Purposes Licences were issued last year, to take material from Crown land, with just over 500 Commercial Producers Licences issued to cover private land operations. The number of licences issued varies from year to year. The number of Crown land licences has remained fairly constant (578 licences were issued in 1991), while private land licences continue to increase (284 licences issued in 1991).

Some of the most commonly targeted species for cut flowers on Crown land are listed in the table below.

Species	Common names	Location
<i>Agonis juniperina</i>	coarse ti-tree	Busselton to Denmark
<i>Agonis parvloeps</i>	fine ti-tree	Busselton to Denmark
<i>Banksia hookeriana</i>	Hooker's banksia	Eneabba
<i>Banksia prionotes</i>	acorn banksia, orange banksia	Dongara to Gingin
<i>Persoonia longifolia</i>	cherry bush	Bunbury to Manjimup to Denmark
<i>Podocarpus drouynianus</i>	emu bush	Bunbury to Manjimup to Denmark
<i>Stirlingia latifolia</i>	blueboy	Dongara to Denmark
<i>Verticordia nitens</i>	yellow morrison	Wanneroo to Gullderton

## FLORA

continued from page 4

Species most commonly cultivated on private land (at various locations) for cut-flower production include:

<i>Anigozanthos manglesii</i>	red and green kangaroo paw
<i>Anigozanthos pulcherrimus</i>	yellow kangaroo paw
<i>Anigozanthos rufus</i>	red kangaroo paw
<i>Banksia baxteri</i>	Baxter's banksia, bird's nest banksia
<i>Banksia coccinea</i>	scarlet banksia, waratah banksia, Albany banksia
<i>Banksia hookeriana</i>	Hooker's banksia
<i>Banksia prionotes</i>	acorn banksia, orange banksia
<i>Chamelauclium uncinatum</i>	Geraldton wax

Licences to take material from more specialised products may also be issued. For example, whole *Xanthorrhoea* (now called balgas) may be taken from development areas, in accordance with a CALM-approved salvage operation. Banksia cones are taken from the forest floor and turned by skilled craftsman into an amazing array of different artifacts and trinkets. Mallee stems are taken from the eastern Goldfields for didgeridoo manufacture and the flowering stems of the balgas can be processed into sturdy walkingsticks. Blossom is "combed" from the sweet-smelling brown boronia plants, *Boronia megastigma*, and distilled to produce oil which is used by the food additive industry. Special endorsements are required to harvest these products.

The overseas wildflower market tends to favour products sourced from cultivated plants on private land as these plants are subjected to more intensive management regimes. Such management results in an improvement in the length and quality of the harvested stems. Disease and insect problems can also be controlled to further improve the quality of the picked product.

Consistency of supply is also a very important component of the export market. This can be more easily achieved from plants produced on private land, but may be less reliable from native flora on

Crown land. There is no doubt that the long-term future of the wildflower industry depends largely upon the development of cultivated plants on private property, and this is reflected in increased private property production. Agriculture WA plays an important role in the floricultural industry on private land. They provide technical advice on the cultivation of wildflowers, and provide valuable support and advice to individual growers in respect to the developments of new products.

Management of flower and seed production from natural vegetation on private property is also increasing as landowners become more aware of alternative values found in their bushland. Such management is intended to ensure sustainability in the harvest so that the natural vegetation, and hence the flora resource, is preserved. This is an encouraging trend with the need to conserve vegetation in rural areas for soil, water and nature conservation.

Springtime is a great time to view our magnificent wildflowers. Take some time this season to enjoy and appreciate one aspect of the State's wonderful natural heritage.

*Mike O'Donoghue is an Administrative Officer in Wildlife Branch. Liesl Rohl is Flora Industry Botanist. Both can be contacted at CALM on (08) 9334 0455.*

## Dowerin

### Field Days

1998



At this year's Dowerin Field Days *Land for Wildlife* combined with CALM Wheatbelt Region, CALM Threatened Species and Communities Unit, Murdoch University, Environmental Weeds Action Network, Greening WA and the Roadside Conservation Committee to provide a very informative and eye catching display. A central display depicted a large granite outcrop complete with a sheoak thicket and attendant fauna, even the plaintive call of the bush stone-curlew. Each of the representative organisations also provided displays giving specific information about the services they offered. Comments by visitors were most complimentary and with such a diverse panel of 'experts' on hand even the most curly questions were answered. Junior *Land for Wildlifers* were catered for too (see photo).

# FAUNA

## BUSH STONE-CURLEW

by Brett Beecham

**M**OST landholders can recall hearing bush stone-curlews calling at night, an eerie and distinct wailing and whistling "weer-loo". Today they are rarely heard, and people are asking why have the curlews gone, and how can we bring them back.

### Description

Apart from the very distinct call heard at night, often before rain or during the breeding season, the bush stone-curlew is elusive. It is a medium sized bird weighing up to 800 g, standing 50 - 60 cm high, with large yellow eyes and a broad white eyebrow. During the day birds shelter amongst fallen timber, rocks or dense undergrowth, where their mottled grey and brown plumage provide superb camouflage. At night they forage in woodlands, pastures and wetlands for insects, but will eat a wide range of seeds, small fruit, spiders, centipedes, frogs and reptiles.

### Habitat

They generally inhabit open forests and woodlands, with a low grassy or herbaceous understorey and few shrubs. This open habitat allows birds to spot potential predators from a distance. At the hint of any disturbance they lie still, adopting a flattened posture on the ground to avoid discovery. If this is unsuccessful, they will run for a few metres and then freeze in a horizontal or upright position. The bush stone-curlew's camouflage and postures are designed to blend it in with any nearby fallen timber. Finally, if deception fails, the bird will fly off a short distance.

### Behaviour

The seasonal movements of the bush stone-curlew create the impression that it is a nomadic species. However bush stone-curlews are sedentary, and form bonded pairs that occupy a permanent home range of several hundred hectares.

They may live for 20 - 30 years. During autumn and winter pairs and young often gather into loose clans and roam a larger local area of up to 100 square kilometres. Within this area they will roost in several different areas, but shift their feeding areas daily.

### Breeding

Bush stone-curlews breed during spring and summer, although this varies with location and season. At the start of the breeding season, pairs re-establish their breeding territories of about 10 - 20 ha and vigorously defend them. Un-mated and non-breeding birds will gather into smaller flocks in neutral territory. Breeding pairs will generally lay 2 eggs directly on the ground in a simple scrape or clearing. This "nest" is often at the edge of woodland patches with good visibility at ground level. The same nesting area may be used for many

years. The eggs have a pale base and a darker mottle, the colours closely matching the local habitat. They hatch after about 30 days, and the chicks take a further 50 days to fully mature. Young birds may have difficulties in establishing new territories when all the available habitat is occupied.

### Distribution

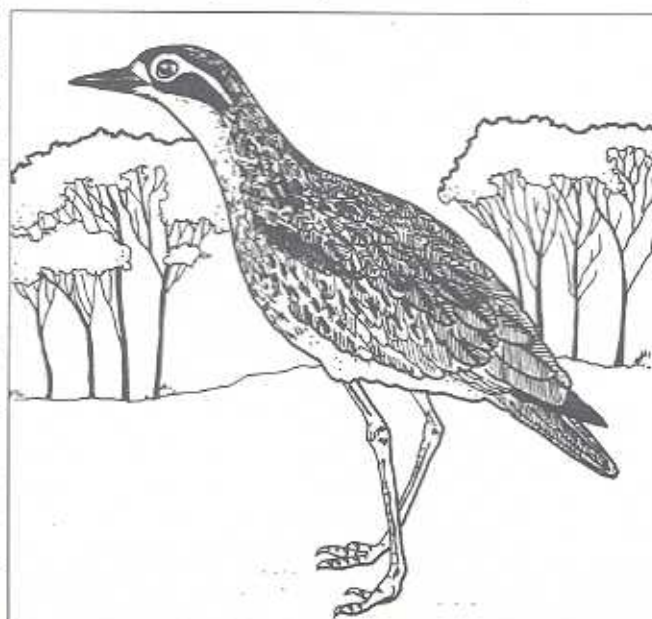
The bush stone-curlew is found in all Australian states and territories except Tasmania. Outside Western Australia, it occurs across northern, eastern and south-eastern Australia. It is absent from the southern inland and Nullarbor region.

Within Western Australia, the bush stone-curlew is a relatively common resident of the north and north west pastoral country (Kimberley, Pilbara and Gascoyne). It is absent from the south-east of the state and the arid interior. It was once abundant throughout the south west, but numbers have declined substantially in the agricultural zone since the late 1930s. It is believed to be extinct north-east of Brookton, has not been seen in the Stirling Ranges since the 1950s, and is extremely uncommon around Wongan Hills and the Northam district. It is now considered an uncommon resident of wheatbelt woodlands.

### Decline

Studies suggest that clearing of woodland habitat was the major cause of the bush stone-curlew's decline in south-eastern Australia. In the Western Australian wheatbelt the bush stone-curlew was common in the earlier phases of development, and was considered to have been favoured by clearing.

However from the 1930s they became increasingly rare. The decline increased substantially during the 1950s, coinciding with the crash in rabbit numbers due to myxomatosis. Fox predation of native species,



continued from page 6

including the bush stone-curlew, may have increased as rabbit numbers dropped. Whilst there have been few studies, it is likely that numbers of bush stone-curlew continue to decline in the south-west of Western Australia.

### Conservation Status

The bush stone-curlew is listed as secure at the national level. It is relatively common across the sub-tropical and tropical north, but has declined dramatically across the wheat-sheep belts of south-eastern and south-western Australia during the last 100 years. It is considered threatened in New South Wales, Victoria and South Australia.

### Threats

Studies around Australia indicate that many threatened birds have similar ecological characteristics, including living in woodland habitats, weighing more than 500 g, feeding on terrestrial invertebrates and nesting on the ground. The bush stone-curlew shares many of these characteristics, as do other wheatbelt birds such as the malleefowl, bustard, plovers and button-quails.

#### Predation

Because the bush stone-curlew is a ground-nesting and feeding bird it is particularly vulnerable to predation by foxes and possibly cats. Their reliance on camouflage and "freezing" to avoid detection also increases their risk of predation by foxes, which rely more on smell to find prey. The rate of predation on adult birds is unknown, but eggs and young birds are at greater risk. There are many stories of bush stone-curlew successfully breeding, but their eggs and chicks disappearing each year. In Victoria, nesting success and survival of young is much higher at sites with predator-proof fencing.

#### Habitat Degradation

Whilst habitat loss through clearing has slowed in many areas, the continued degradation of the remaining vegetation poses a significant threat to the bush stone-

curlew. Degradation of remnant vegetation occurs through increasing salinity, weed invasion, stock grazing, firewood collecting or "tidying up". This affects the birds by either removing their cover, or by increasing the height and density of the understorey and reducing visibility.

Grazing in remnants with a weedy grass understorey may benefit the bush stone-curlew by keeping the weeds low and improving visibility. However over-grazing will tend to favour the further invasion of exotic grasses, making the problem worse. Grazing in remnant vegetation also reduces the amount of litter and abundance of the ground-dwelling invertebrates that bush stone-curlews eat.

Cultivation and cropping close to roost and nest sites is also likely to be detrimental.

Changes in farm management practices appear to have a direct link to bush stone-curlew decline. The maintenance of low-intensity land use around suitable habitat seems critical to preserving bush stone-curlews in these areas.

### Management

There are many actions that can protect bush stone-curlew on your property, or encourage them to return. The most important of these are:

- controlling foxes and cats
- fence out some habitat remnants to exclude stock grazing
- reduce the level of stock grazing in other remnants
- retaining fallen timber to provide daytime shelter

Other actions that will benefit the bush stone-curlew include:

- encouraging regeneration in remnant vegetation
- revegetate areas with local species to provide new habitat areas
- control weeds, particularly exotic grasses where they are invading remnant vegetation
- reduce the use of insecticides, as these can affect the birds if they eat poisoned insects

Of course, all these actions will benefit many other species of plants and animals.

### Can You Help Us?

During the Wagin Woolorama and Dowerin Field Days this year, many people provided information about bush stone-curlews to staff at the CALM display.

There is not much information about bush stone-curlews in the south-west of Western Australia, and CALM would like to find out more. Much of the information above is based on work in Victoria.

Information about any of the topics covered in this article would be welcome. Do you have any interesting stories or management tips about the bush-stone-curlew that you can share; who knows it might get published in a future "Western Wildlife". You can contact Brett Beecham (Regional Ecologist) at CALM, PO Box 100 Narrogin, 6312; phone (08) 9881 1444, fax (08) 9881 3297 or email [brettb@calm.wa.gov.au](mailto:brettb@calm.wa.gov.au)

*Brett Beecham is Regional Ecologist at CALM in Narrogin, and can be contacted by phone on (08) 9881 1444.*

### Other Information

The Bird Observers Club of Australia has established the "Friends of the Stone-curlews", a group aimed at increasing public awareness, and providing advice and assistance to landowners. If you would like to register your interest, contact the Bird Observers Club of Australia, PO Box 185, Nunawading, Victoria, 3131, phone 1300 395 342 (cost of a local call) or fax (03) 9894 4048.

There are also a number of Victorian publications featuring information about the bush stone-curlew.

## LFW NEWS

**T**HE Swan and Canning Rivers, in the heart of our beautiful city, attract many species of birds not normally seen in such close proximity to a city centre. A notable example of this is the osprey, a pair of which had been nesting in an ancient dead tuart tree on Mount Henry peninsula which is adjacent to the school grounds of Aquinas College. Unfortunately this tree fell down 18 months ago, and since then the osprey pair had no place on the Peninsula suitable to nest.

Concerned at the loss, Mrs Jan King at Aquinas College contacted *Land for Wildlife* to see what could be done to remedy the situation. It was suggested that Western Power might be approached to come to the rescue.

During August 1998 the recovery program came to fruition

### Aquinas Takes Ospreys to New Heights



with the erection of an osprey nesting platform using an 11m recycled telegraph pole, donated and placed in position by Western Power. A one metre square nesting platform, built from steel by a past student of Aquinas College, Mr Gary Azzalini of Park Engineering, was secured to the top of the pole. A derelict osprey nest, obtained from a chimney stack demolished at Burswood by Swan Cement, was mounted on the platform in the hope of attracting the ospreys to the platform. With a bit of luck these birds may be able to nest again on this *Land for Wildlife* site on the lower Canning River.

◀ The final touch. Students look on as the osprey nest is secured to the platform by Western Power. (Photo courtesy of Aquinas College)

### Green Teams at Work in Wyening

**W**YENING MISSION in the Shire of Victoria Plains is a normally peaceful place, but was a hive of activity on June 30, when teachers, parents and students from Penrhos Primary School in South Perth visited to embark on a tree planting project. The project covered two days, and was organised by Katrina Aniere of Green Teams, an organisation which aims to give young people from the city an introduction to the bush.

John Young and Michelle Freeman registered areas on their property with *Land for Wildlife* last year. The tree planting was planned along a saline creekline to provide a corridor for wildlife movement, and in an attempt to control the spread of salt. Some 48 students, 10 parents, two teachers, and two *Land for Wildlife* officers took part in the project, which saw the planting of some 500 seedlings.



▲ Bob Huston briefs the students before the planting gets underway.

Planting in progress. Some 500 seedlings including Eucalyptus and Melaleuca species were planted over the duration of the project.





## IN BRIEF

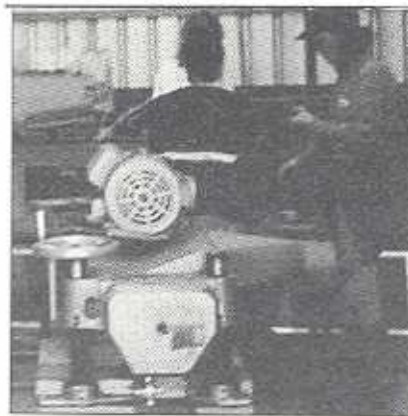
### Green Corps – The Hills Forest Fauna Enhancement Project

THE following is an extract from the Green Corps brochure, published by Australian Trust for Conservation Volunteers.

"Green Corps is an environment initiative of the Commonwealth Government. The program is managed by the Australian Trust for Conservation Volunteers (ATCV) on behalf of the Department of Employment, Education, Training and Youth Affairs and Environment Australia.

The program will undertake priority environmental and heritage conservation projects developed in conjunction with non-government conservation organisations, community groups, Local, State and Territory governments across Australia. Each project will involve teams of 10 Green Corps Trainees and will be of 6 months duration.

To join Green Corps you must be aged between 17 and 20, have a commitment to preserving the Australian environment and be willing to commit 6 months of your



*The Green Corp team at work.*

time to the program. For an application form or details of upcoming projects, phone FREECALL 1800 633 844 and they will be posted to you."

Recently completed, The Hills Forest Green Corp Project was based at CALM Mundaring, and had the aim of encouraging native fauna to The Hills Forest Activity Centre so people can interact with the fauna in their natural habitat.

During the construction of Mundaring Weir earlier this century,

timber was removed from the area, resulting in a marked lack of dens and trees with hollows suitable for native fauna species. It is aimed for this project to artificially recreate these hollows and dens.

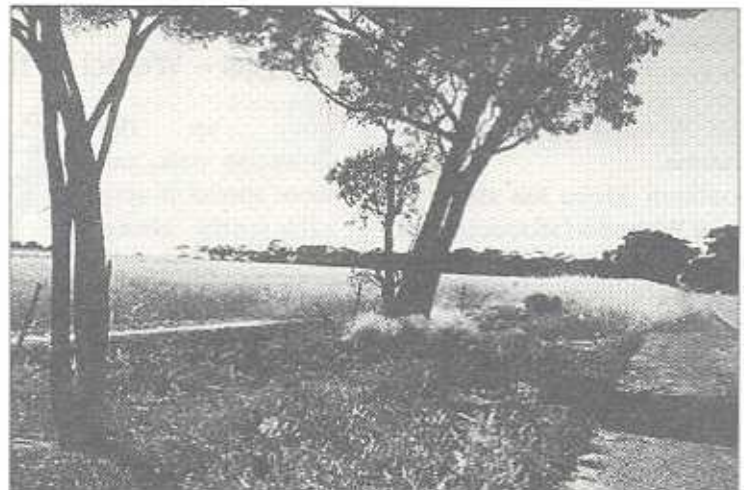
The project involved the construction of a number of nest boxes and rock dens for fauna, as well as a fauna trapping program to be undertaken with CALM staff as part of the Western Shield monitoring program. Walk trails and rehabilitation of areas showing signs of degradation were also on the program.

Most of the materials used in the project are the result of donations of timber and other materials from Timber Traders Cockburn, Colli & Sons, Hamilton Sawmills, Stephanelli Sawmillers, and CALM. Enquires about this project can be directed to either John Carter of CALM Mundaring, phone (08) 9295 1955, or Stev Slavin of The Hills Forest, phone (08) 9295 3149.

### Natural Weed Suppression

PEOPLE often express concern about the fire threat posed by masses of grass weeds on roadsides and in disturbed bushland. Yet undisturbed bushland is remarkably resistant to weeds. This photo illustrates the point very clearly. It was taken about 17km along the Merredin to Narrembeen Road.

In the foreground of the photograph adjacent is a small stand of boree, *Melaleuca pauperiflora*, and gimlet, *Eucalyptus salubris*. Underneath are some of the plants one would expect to find as an understorey to this woodland, including feather speargrass, *Stipa elegantissima*, wallaby grass, *Danthonia* sp, bindii, *Sclerolaena* sp, and the prostrate wattle *Acacia erinaceae*. A few wild oats can be seen closest to the road.



Further down the road, away from the tree crowns, a dense stand of wild oats can be seen (note that the crop, allowing for a boundary firebreak, is also outside the crown area, so shows no sign of depression). Since there are no trees left here, it is possible that the ground was

disturbed while the trees were being ripped out, which would also have encouraged weed growth.

The message is clear. **To reduce a perceived fire threat posed by weedy roadsides, revegetate with local native species and keep disturbance to a minimum.**

## WEED ALERT

### Bridal Creeper - Everybody's problem

by Avril Baxter

ONE year after *Land for Wildlife* members Jodie and Leanne White fenced off their creekline they noticed a large bridal creeper infestation. The bridal creeper had probably been there all along, but was grazed by sheep. In this instance fencing off the bush was not enough, a major weed control program was needed.

And it wasn't just on the White's property. Bridal creeper was firmly established in the creekline on the adjoining disused railway reserve and an undeveloped townsite. The problem seemed too big for the landowners to tackle. That's where the local community and Green Corps came to the rescue in a week long spraying program.

Roundup Biactive® was donated by Westrail, money for safety equipment from the Shire of Williams, backpack spray units from CALM and the Shire of West Arthur, the Williams Land Conservation



Julia Nottin from Green Corps (left) and Martin Clarke from CALM test the weight of a backpack full of water.

District applied for extra funding through the Gordon Reid Foundation and Green Corps supplied the labour.

This massive effort resulted in a first pass at weed control. The Green Corps team will be back again next year with a follow up spray, leaving the landowners in the third and following years to tackle any outbreaks - a manageable target.

Bridal creeper is not considered an agricultural weed as it is grazed

by sheep, however it is able to invade undisturbed vegetation and smother understorey plants. It is present on many of our roadsides and is readily spread by birds who feed on the bright red berries in spring time. As stock becomes excluded from creeklines, bridal creeper infestations could spread. It is imperative that the whole community gets behind bridal creeper eradication now, before the problem gets too big to handle.

### Watsonia – Weed of the Year

1998 'Weed of the Year' in WA is Watsonia.

"Southern Africa has about 70 species of Watsonia (all species pest plants), and so far six, all garden escapes, have been recorded as naturalised in Western Australia. All arise from corms, and form clumps of stiff, sword-shaped upright leaves. Most spread by seeds and corms. Since they are of garden origin, it is often difficult to place them into exact species. *W. bulbilifera* (bulbil watsonia) has dull orange flowers in late spring. It is considered by some authors to be merely a horticultural form of *W. meriana*, but it is easily distinguished when in fruit, as it forms many small corms at each

node up the flowering stalk, and these spread it very efficiently along rivers, wetlands and roadside table drains. It is a very serious weed in the wetter south-west and south coast. *W. marginata* has open, pale lilac flowers. It occurs around old settlements from the Darling Range near Perth to Albany. *W. meriana* typically has



dull orange flowers, but it may also be white, pink, or cerise. It is very similar to bulbil watsonia, but apart from not producing bulbils, it also tends to grow in sites where the soil dries out in summer, for example, around granite rocks, and in wandoo woodlands. A serious environmental weed, it is found between Perth and Albany. *W. versfeldii* is a tall, showy plant, with white, pink, cerise or red flowers. It is a serious weed of roadsides and granite rocks between Perth and Albany. Hybrids of *W. borbonica* can be found around Perth. They have open flowers in a variety of pinks and white."

Ref: "Western Weeds" (Hussey et al, 1997).

# NEW BOOKS



## WEED NAVIGATOR: RESOURCE GUIDE

by Kate Blood, Ursula Taylor and Toni Nugent  
Cooperative Research Centre for Weed Management Systems, Adelaide

Landcare, bushcare, rivercare, coastcare — all have a major problem with the identification, control and management of weeds. Weeds cost agriculture in excess of \$3 billion annually, while their cost to the natural environment is incalculable, though likely in the long run to be higher. When tackling a weed problem, often people don't know where to start. These two volumes are designed to help.

The first one is a list of contacts, covering individuals and organisations involved in, or who have an interest in, environmental and agricultural weed issues in Australia and New Zealand. It has information on the group, plus the address, phone, fax, email and often the name of the person to call. *Land for Wildlife* is listed! The second volume is a directory of resources with a huge listing of books, posters, policies, websites, CD roms, even display material. You can look up information about a specific species, where to find the latest information on herbicides, or join an email discussion group. People working professionally with weeds will be able to reach their desired information quickly, and so save a lot of time.

Although the price is on the high side, this kit will be useful for Landcare Coordinators and groups such as LCDs. It would be a valuable asset in every Shire library, where it could be accessed by all interested persons from the local area.

Cost: \$30.00. To order, phone (08) 8303 6590 or email [crcweeds@waite.adelaide.edu.au](mailto:crcweeds@waite.adelaide.edu.au)



## EDIBLE WATTLE SEEDS OF SOUTHERN AUSTRALIA

by B.R. Maslin, L.A.J. Thomson, M.W. McDonald & S. Hamilton-Brown

CSIRO Australia, 1998

This book identifies 47 wattle species which have potential for cultivation in southern semi-arid region of Australia as a source of seed for human consumption. 18 species are regarded as having the greatest potential. Botanical profiles are provided for these species, together with information on the natural distribution, ecology, phenology, growth characteristics and seed attributes.

Cost: \$39.95. Available from CSIRO Publishing and CALM Como.

What did you do for Weedbuster Week?



Well, plan for next year!

## COMING EVENTS

### ▶ APACE AID INC.

APACE are running a number of courses for people interested in bush regeneration and seed collection. All courses will be held at APACE in North Fremantle, and a deposit of \$30.00 is needed to confirm your booking.

December 1st, 2nd & 8th or 15th, 16th & 22nd  
Seed Collection of WA Native Plants

Cost of course \$150.00.

Please phone the office during business hours on (08) 9336 1262 for further details or bookings for either course.

### ▶ BUSH REGENERATION FORUM

November 11th

On the theme of "Mulch or Fuel Load", the forum is to be hosted by the Australian Association of Bush Regenerators and held at 10 Broome St (off Douglas Ave), South Perth, starting at 7.30pm.

Phone Janice on (08) 9384 9634 for further information.

### ▶ FARM TOURS

The Land Management Society are organising two Farm Tours in Bridgetown.

November 9th and December 11th, both about Agroforestry and Farm Forestry.

The Land Management Society are contactable by phone on (08) 9450 6862 for more information and bookings.

### ▶ FESTIVAL OF THE OCEAN

December (date to be advised).

A festival to be held in Fremantle, celebrating the International Year of the Ocean. Phone Edwina on (08) 9220 0662 for details. Also on the topic of Year of the Ocean is Ocean Care Day, on December 6th.

## FUNDING

### NATURAL HERITAGE TRUST FUNDING FOR 1999/2000

Guidelines and application forms for the 1999/2000 NHT funding round are expected to be available from late October 1998. Groups thinking of applying are encouraged to start formulating new projects for the next funding round now, which will have a closing date in late February 1999. Applicants should aim to integrate their projects with other local, catchment and regional activities - particularly where regional strategies and catchment plans exist - and consist of a range of activities.

**BUSHCARE; National Vegetation Initiative** is one of the key programs under the NHT. The program aims to support projects that protect, manage and restore bushland, mainly outside the reserve system. The principal objectives are to conserve biological diversity and restore the productive capacity of degraded land and water.

*"...start formulating new projects for the next funding round now"*

Bushcare encourages activities that will:

- protect and manage native vegetation, (particularly threatened ecological communities, habitat for rare and threatened species (i.e. endangered or vulnerable) and other areas of high nature conservation value);
- rehabilitation of degraded native vegetation;

- strategically revegetate degraded land to restore productivity; and
- enhance the knowledge and skills of land managers to better manage native bushland.

*"...conserve biological diversity and restore the productive capacity of degraded land and water".*

#### ELIGIBILITY

Applicants must be an incorporated community group, or equivalent legal status, local government authorities, non-government organisations, State agency or an education institute.

#### FUNDING

To be considered for funding under Bushcare, applicants should submit a generic Natural Heritage Trust application. Projects can be approved for up to 36 months, although funding is provided for one financial year at a time. Projects longer than one financial year will be subject to an annual review.

*"Applicants should aim to integrate their projects with other local, catchment and regional activities..."*

#### FURTHER INFORMATION AND ADVICE

Contact your local Bushcare Officers

#### Regional Bushcare facilitators

Sue Kelly (commencing Dec 98)  
Ph: (08) 9842 4500 (Albany)  
Gary McMahon  
Ph: (08) 9725 4300 (Bunbury)  
Ann-Maree O'Callaghan  
Ph: (08) 9921 5955 (Geraldton)

#### Bushcare Support Officers

Wendy Bradshaw  
Ph: (08) 9825 3032 (Tambellup)  
Melissa Hudson  
Ph: (08) 99541001 (Three Springs)  
Matthew Inman  
Ph: (08) 9835 1127 (Jerramungup)  
Volker Mischker  
Ph: (08) 9071 3733 (Esperance)  
Mark Oothman  
Ph: (08) 9622 7600 (Northam)  
Nell Pemberton-Ovens  
Ph: (08) 9765 1453 (Boyup Brook)  
Anna-Marie Penna  
Ph: (08) 9221 3840 (Perth)  
Clinton Rakich  
Ph: (08) 9049 1001 (Southern Cross)  
Anne Smith  
Ph: (08) 9651 1424 (Moora)  
David Stapleton  
Ph: (08) 9823 1661 (Wagin)  
Website address: [www.nht.gov.au](http://www.nht.gov.au)

### Bushcare

For information relating to the National Landcare Program and the National Rivercare Initiative contact:

NLP - Natalie Moore  
Ph (08) 9368 3960  
NRI - Luke Pen  
Ph (08) 9278 0374

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 Conservation and Land Management.

Published by the Department of Conservation and Land Management, Perth. All correspondence should be addressed to: The Editor 'Western Wildlife', CALM Wildlife Branch, Locked Bag 104, Bentley Delivery Centre, WA 6983.

Design and Desktop publishing by Louise C. Burch Graphic Designer.