

# Wildlife and Native Plants Study Group Newsletter



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**AUTUMN EDITION 2002 No.37**  
WELCOME again to new and renewed members to another edition of WILDLIFE & NATIVE PLANTS.

My apologies also for the delay in sending out the Christmas/Summer edition of the newsletter. Unfortunately ill health took its toll once again, with another spell in hospital, but I'm on the mend now. So a bumper read is planned in this mailout with both Summer and Autumn 2002 editions coming together.

The end of 2001 and the start of 2002 has been long and stressful for many families, but our hearts go out to those who have battled valiantly through tragedy, devastation and loss, and to those who have been touched in anyway with the fires in NSW. The fires have meant great change to the Australian flora and fauna scene and to the thinking of many.

To use Eleanor Hannah's words (APS NSW):  
*'Being a society interested in Australian plants, the fires also mean great change, in some cases destruction, in others renewal. For many it will be an opportunity to redo a garden, one that has come without choice or chance to save or collect material, though also without the weeds.'*

To also quote Jeff Reid (APS SA) on 2001:  
*'It has been a violent year. For many the horror that was graphically displayed in our newspapers and on our TV screens will be impossible to forget. Our hearts go out to anybody affected by these terrible events. And here in Australia, with the massive bush fires just experienced in New South Wales, one wonders at the reasoning (if that is the right word) of the people who cause such mass destruction. Not only are people affected for the rest of their lives, but the damage to native flora and fauna is immense, with some never to return.'*

To further compound the situation in NSW the area has again been hit by floods and violent storms. One wonders just how much else can happen in NSW .... Let's hope that our Society

members can maintain and strengthen their interest in our native flora and fauna despite such tragic losses. We may never be able to make things the way they once were, but we have to try!

*'We can no longer be complacent when our natural environment is destroyed, damaged, eroded or polluted.'* From *COTA News*, June 1999

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- Comment: Who is the real 'nature' by Carol Booth courtesy *WildlifeAustralia* - Summer 2001
- Bracken Fern by Anna Watson
- Bracken - a much maligned but most useful fern by Stephen Platt, *Land for Wildlife News* Vol 2. No.1
- Plant Breeder's Rights by Nik Hulse and Linda Gowing, courtesy *APS SA Region*.
- Threatened Species from *Life Lines* Vol.7, No.3 Spring 2001
- Major Revamp of Tasmanian Threatened Species Schedules by Peter McGlone, *Tasmanian TSN*, courtesy *Life Lines* Vol.7, No.3, Spring 2001
- NSW Threatened Species Conservation Act 1995 update of changes - review by Eleanor Hannah courtesy APS NSW, *Native Plants*, July 2001.
- Our environment - a Bird's eye view
- Incubation - by Leaves and Sand (The malleefowl)

### WELCOME

To the following new/renewed members welcome : Gwen Kelly (Vic), Kris. Schaffer (Tas), Blue Mountains SGAP (NSW), ANPS Canberra Region (ACT), Phil & Anna Watson (Tas.), Aub Podlich (Qld), and Margaret Moir (WA). A steady stream of enquiries has also been received via email and the internet.

## ASGAP CONFERENCE

The ASGAP Conference was held in Canberra during late September, 2001. At the Study Group Leaders meeting on the Saturday prior to the Conference a number of issues were raised and discussed, including the current subscription rates for Study Groups. It would seem that our rate of \$5 p.a. is at the lower end of the scale for subscription rates, and that in the near future we may need to address this matter. However, for the current period it will remain as is.

Another issue raised was 'membership criteria' with membership of a Study Group only for those who are members of ASGAP societies. In line with my other South Australian colleague, Colin Jennings from the Eremophila Study Group, a decision to have a new category was made. This category will be known as 'subscribers', for those who wish to subscribe to the Newsletter and keep in touch but who are not involved currently with ASGAP societies. Such persons have contributed or been involved with the Study Group for a number of years, and have made a very valued contribution in the past, but for one reason or another, have decided not to continue their membership with an ASGAP Society. Unfortunately under the terms of the Society it will mean that such category of persons will not be covered by ASGAP for insurance and the like.

*'Protecting our natural environment still remains one of our most urgent tasks if we are to maintain a healthy, sustainable and enjoyable world for current and future generations.'*

### Items from the ASGAP Conference

- The motion submitted by the SA Region: *That the Bylaws of the Association be amended by adding to Bylaw 1(1)f "A leader for each Study Group be appointed at each Biennial Conference"*, was defeated. However, the matter has been passed to the Working Party for urgent consideration.
- The position of ASGAP Webmaster has now been officially recognised as an ASGAP appointment. Our webmaster is Brian Walters.
- The issue of auditing the funds of Study Groups was raised, as all Study Group assets belong to ASGAP. The issue relates to Study Group funds, and the ASGAP financial audit under the terms of the Incorporations Act, and this matter has also been referred to the Working Group.

Opinion is being canvassed on whether there should be an audit of Study Group funds, and what amount constitutes a small account balance for smaller groups.

- The ASGAP Working Party is a subcommittee (established at the Brisbane Conference in 1999) and is made up of one delegate from each member Society. Currently it is chaired by former ASGAP President Lorna Murray from QLD.
- As at November 2001 there were 29 ASGAP Study Groups reflecting the diverse plant interests of members.

### Conference Papers

One of the guest speakers at the conference was Nik Hulse who spoke on Plant Breeders' Rights. A precis of PBR is provided in this newsletter.

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### DID YOU KNOW?

If you do your grocery shopping in a Coles Supermarket, you may have noticed a new range of "gourmet" bush foods. Not only does this make bush food ingredients more accessible to the general public, but each sale also results in funds (25c per item from Coles and 12c per item from Robins Australian Foods) being contributed to an Indigenous Food Fund. Moneys raised are disbursed to support Aboriginal owned or run projects and enterprises. (From *Gumnuts* 41, December 2001 and the *APS SA Journal* Vol.17.No.1.Feb.2002)

### ROGER ELLIOT at Newcastle APS meeting

An email from Glen Yakimoff from Newcastle APS informs members that Roger Elliot will be talking on attracting wildlife to the garden to their group on the 5<sup>th</sup> June. If you are nearby and interested in attending please contact Glen by email (glenyakimoff@bigpond.com), phone (02 4956 7890) or check out the Newcastle APS website

[http://www.users.bigpond.com/glenyakimoff/aps\\_newcastle.html](http://www.users.bigpond.com/glenyakimoff/aps_newcastle.html)

### OTHER NEWS

Andrew Silcocks from Birds Australia has informed me that the Bird atlasing project has been so successful that despite its contract expiring in March 2002 with Environment Australia, they will attempt to seek additional funding. Andrew says "We are getting some wonderful data from the project which, among other things, we are using to assess the changes in bird populations across bioregions. By keeping the project rolling we will be able to investigate long term species changes."



## The Burrow of a Rare Australian Rodent

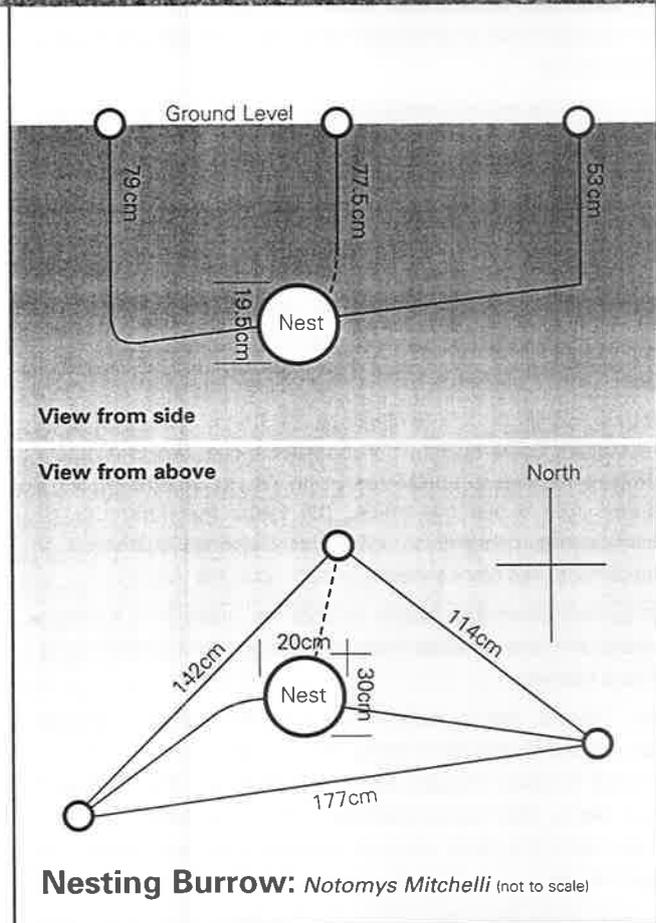
by Hans Beste

**MITCHELL'S HOPPING MOUSE** is considered a rare animal in its range, which previously used to take in parts of south-western New South Wales, north-western Victoria and the adjacent areas of South Australia. However, the animal is rarely reported these days and at some stage was thought to be extinct. A few records in the last few years from isolated areas, mainly in Victoria, have however strengthened the belief that the animal may still survive in greater numbers than could at first be hoped for.

Nevertheless, the species is still in possible danger of extinction and especially so as more of its habitat is cleared. The mallee areas, where it is found have experienced particularly good seasons in the last few years and this has probably contributed to a build up of numbers of the species to the degree where a few animals are sighted by naturalists. But it is also known that a couple of dry years may well reduce a species to the level where a subsequent comeback is unlikely.

Reports from a farmer in the Rainbow district in Victoria in September 1969 that he had found two freshly killed animals in a rabbit trap, prompted the writer and C. Crouch, a fellow naturalist of Nhill, to visit the area and look for possible burrows.

Three burrows were located during the next two days and one which was excavated, contained five animals, four adult males and one juvenile mate. The burrow, which had three 'popholes' (one no longer connected to the nesting chamber), was in sandy mallee country in an area known as the Big Desert. The predominant vegetation is no higher than ten feet and desert banksia, tea tree, and yellow mallee predominate. Measurements of the burrows were taken as digging progressed and the dimensions were as given in the accompanying drawing. The nest chamber, which was, rather large, was lined with coarse brown bark matting. The species of tree from which this came could not be identified, but the individual strips were long and less than one eighth inch in width. No sand was thrown up near the entrance holes or within a radius of more than ten feet of the burrow. This is in direct contrast to another species of rodent, the mouse, which is also found in the area and heaps up sizable amounts of yellow sand around its burrows, a sure 'give away' to its presence in an area. ■



### Key Words:

<b>Mitchell's Hopping-mouse</b>	<i>Notomys mitchelli</i>
<b>Desert Banksia</b>	<i>Banksia ornata</i>
<b>Tea tree</b>	<i>Leptospermum laevigatum</i>
<b>Yellow Mallee</b>	<i>Eucalyptus incrassata</i>
<b>Grey Mouse</b>	<i>Pseudomys albocinereus</i>

*Editor's note: In Victoria today, the Mitchell's Hopping-mouse is considered 'low risk — near threatened'.*

# Who is the real 'nature'

*Mother Nature has been violated.*

*The violence was shocking. Nature doesn't care — there was no mercy out there.*

*Assembled by nature and honed by evolution, the convoluted 3-lb organ positioned between our ears represents a triumph of bioengineering.*

*Modern Americans see nature as well under control and react with indignation when it is unchained.*

*Mankind is a monstrous curse laid upon nature.*

*extract from Time Magazine*

**IMAGINE AN EXTRATERRESTRIAL** learner of English who has not yet learnt the word 'nature' trying to work out its meaning from such sentences. What is this 'nature': a violated mother, a violent and merciless force, an assembler of brains, a chained wild beast, a cursed victim?

It won't help the extraterrestrial much to consult a dictionary. To really understand 'nature' she needs study western culture and the history of ideas which have impregnated 'nature' with this array of meanings.

'Nature' is probably the most complex word in the English language. Its history is a history of much of human thought. One of the reasons for its complexity is its accretion of a vast range of different, often conflicting, meanings. Here, let me briefly introduce you to some of the manifold personas of 'nature'.<sup>1</sup>

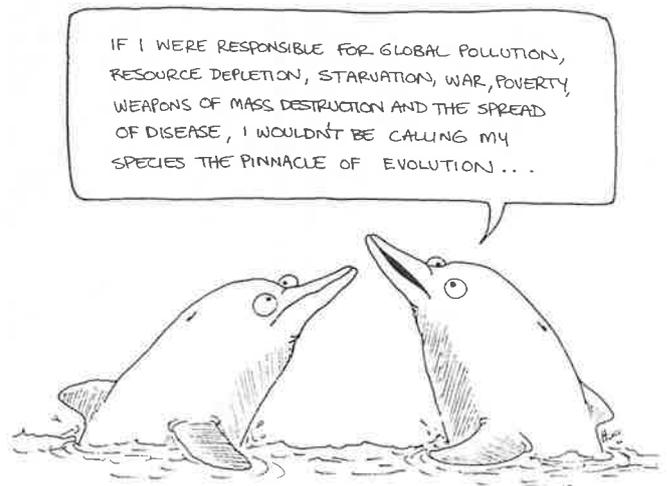
'Nature' was invented by pre-Socratic Greek philosophers, more than 2500 years ago. In impounding the multitude of forces and phenomena of the world under a single name, they committed a truly audacious act. Conceiving 'nature' as a singular entity allowed for its personification, its abstraction from an all-encompassing category to much less, and its placement in relationships with other entities.

Nature was personified initially as goddess, sometimes literally a goddess and other times an amorphous, all-powerful, creative force, a divine Mother.

Then, 'Nature' had to make way for belief in another singular, abstracted and personified being: the monotheistic God. Thus, in medieval European thought, God was primary and Nature became God's deputy. She had her particular place in the grand scheme of things, below the moon, and was required to perform certain vice-regent duties.

Because of the often destructive, manifestation of nature's power, God's deputy was often recast as an absolute monarch, who capriciously exercised power over human lives. Depending on whether times were good or difficult, 'nature' oscillated between this capricious and merciless monarch and the goddess or mother who sustained and nurtured.

From the 17th to 19th centuries, the increasing scientific focus on discovering natural laws and parallel political changes underlay the recasting of nature as a constitutional monarch or constitutional lawyer. Nature was seen not as spirit, but as machine, and not so much an inherent and shaping force as an accumulation of cases, which could be investigated to discover new laws.



The emphasis on discoverable laws led to a common identification of Nature with Reason. This provided the basis for a transformation in thought, which contrasted the state of society with the primeval state of nature. Two movements arose out of the dispute about whether the pre-social state of nature was one of original sin or of original innocence: enlightenment and romanticism, respectively.<sup>2</sup>

From the late 18th century, the ideas of evolution radically reshaped conceptions of nature. Nature became the selective breeder and Nature's laws became laws of survival and extinction. But, Darwin's theory of evolution was warped to portray nature as cruel and savage, making of life a perpetual struggle. The survival of the fittest was selectively interpreted as the survival of the strongest or the most ruthless. Such conceptions of nature were used to justify a range of social and political transformations, such as the rise of the market as the natural regulator.

The effects of massive interference in nature have resulted in further conceptions of nature. Where once the mark of a civilisation was its ability to escape nature's power, there is increasingly the sense that humankind has almost mastered nature. Nature is the tamed beast. And so thorough has this 'taming' been, that we fear that nature has been devastated and its survival is threatened. Nature has now become the victim.

From goddess to victim, all these personas of nature live on in our language, shaping the way we see and treat nature. — **Carol Booth**

**Dr Carol Booth** works in policy development and project administration for Queensland environment groups.

1. *The following derives largely from Williams, R. 1976, Keywords: A vocabulary of culture and society, London: Fontana Press; and Lewis, C.S. 1967, The Discarded Image: An introduction to Medieval and Renaissance Literature, Cambridge: Cambridge University Press.*

2. *Thomas Hobbes described the pre-social state of nature as 'solitary, poor, nasty, brutish and short', while John Locke described it as a state of 'peace, goodwill, mutual assistance and good will'.*

# Vol. 2, No. 1 Bracken - a much maligned but most useful fern.

There has been so much negative publicity concerning bracken *Pteridium esculentum* that some of its qualities, particularly as wildlife habitat, have escaped notice. This article attempts to look at the positive aspects of bracken - a plant that will have drawn many a frustrated sigh from landholders who are wearied by the battle to control it on their land. But this was not always so. Bracken has enjoyed considerable status in the past. The contrast in views is well expressed in this quote (about English bracken) by Celia Fiennes from 1695,

*"In Kank wood ...is also many great quantys offerne, which tho' it overuns their ground and spoiles the grass where its much, yet the usefulness of it renders it necessary to be preserv'd".*

### A highly successful plant

Bracken is a highly competitive and adaptable native fern with a widespread distribution in Victoria south of the 500mm isohyet (approx. line between Wodonga and Stawell, and north Edenhope). Bracken species occur throughout the world. Its competitive advantage is in part assisted by allelopathic chemicals produced from dead standing fronds. Bracken is a relatively efficient user of water (it reduces soil moisture values) and can be prolific in well-drained light-textured soils. It is highly resistant to diseases, such as fungal attack. Physical attributes, such as heavily lignified tissues, as well as chemical defences are probably involved.

### Uses

Bracken has been used as food, in glass manufacture, for soap and bleaching, as fuel, thatching (it was reported to last about 20-30 years), bedding (for livestock and humans), compost, fertilizer and in medicine (Rymer, 1976). In Japan, bracken fronds, often served with soy sauce, are used as an appetizer in bars. Over 300 000kg of young fronds are imported from Siberia for consumption in Tokyo alone (Rymer, 1976, refer health risks). Other uses have included protecting plants from frost, as packaging for fruit, for dyeing wool yellow, to repel midges and kill aphids on roses.

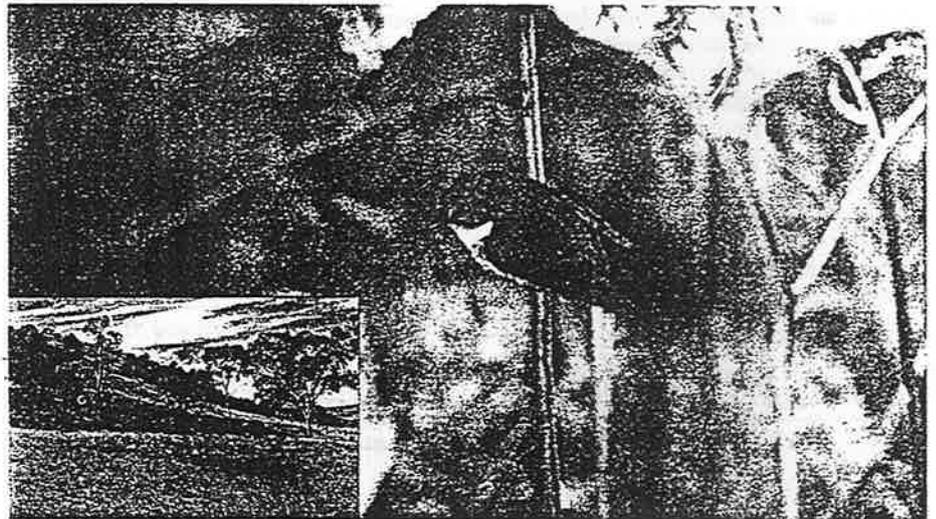
In 1776, rents on Argyllshire land purchased by Sir Archibald Campbell were partly paid in kind by "sixteen cart loads of pulled fern". The ancient privilege of 'Fern bounds' governed the areas and dates on which bracken could be harvested. In some cases the allotments were carefully set out and practices, set down as rules, were designed to encourage bracken. Potash, an alkaline substance used in glass manufacture, was obtained from lixiviating

the ashes of terrestrial vegetables, and evaporating the solution in large iron pans or pots - whence the name (Rymer, 1976). Bracken was used for potash production. The use of bracken as a fuel for brickmaking may go back at least as far as the Black Death (1348AD) at which time no buyers could be found for the fern and the brickmaking industry came to a halt. Lastly, bracken has a place in superstition. In 1636, the Earl of Pembroke wrote on behalf of the king to the Sheriff of Stafford asking him to suspend the burning of bracken, which was believed to 'bring down rain' so that the king could enjoy pleasant weather whilst passing through the district.

tions has been suggested and can confer significant benefits by increasing young lamb survival. Reduced erosion as a result of breaking rainfall impact may be another.

### Wildlife values

Bracken is an important structural component in many forest and woodland ecosystems in Victoria providing cover and foraging opportunities to animals that inhabit near-ground vegetation. These include birds, such as Eastern Yellow Robin, Eastern Whipbird, Superb Lyrebird, Brown Thornbill, Golden Whistler, White-browed Scrubwren, White's Thrush and Chestnut-rumped Hylacola. Small mammals prob-



(Bottom left) Bracken has been retained in habitat areas on this Land for Wildlife property near Euroa as wildlife habitat. Photo: S. Platt. Eastern Yellow Robins search for food amongst bracken near ground level. Photo: Peter Menkhorst.

### Koorie use

Victorian aborigines used bracken as a source of food, particularly when alternatives were scarce. The underground creeping rhizomes were either roasted and chewed or roasted and pounded (to extract the starchy meal inside) to produce a flour which was eaten with water as a dough or made into 'bracken cakes' (see Veitch in Thompson & Smith, 1989). Bracken has been described as a staple food of Tasmanian aborigines and New Zealand Maoris but on the mainland was a fallback in tough times. Bracken rhizomes "contain more protein per unit weight than carrots and pumpkin, and more carbohydrate, kilocalories and fat than potato, carrots, pumpkin and spinach" (Veitch in Thompson & Smith, 1989, note health risk). Young bracken stems were rubbed on insect bites for medicinal purposes (Gott, 1993).

### Agricultural values

There are few references to benefits that might be offered by bracken but shelter for livestock during adverse weather condi-

ably also benefit by the cover provided by bracken.

The rate of litter decomposition of bracken is very slow and so bracken fronds contribute to a structural layer at ground level, and slow nutrient release, which will provide habitat and food for small organisms and these in turn for larger organisms (e.g. bandicoots).

Bracken has a remarkable post-fire response. The established underground rhizomes and root system survive fire as do dormant frond buds. Following adequate rain, rapid post-fire regrowth occurs, ahead of potential competitors. The fast emergence and expansion of fronds allows bracken to quickly shade its potential competitors and, combined with the allelopathic effects of chemicals leached from its fronds, allows it to dominate the understorey after fire. Bracken thrives in the increased light intensity and will decrease in density as the forest canopy redevelops and creates shade.

*continued on page 9*

continued from page 5

For the animals that have survived the fire, and those that recolonise, bracken is likely to play an important role in escaping predation.

*An account of the real and alleged offences committed by Pteridium.*

- \* Competition with pasture for light, moisture and nutrients.
- \* harbour for vermin
- \* a fire risk as it is a light and quick-burning fuel

*Health risks*

\* Most of the evidence relates to the northern hemisphere species *P. aquilinum*. Poisoning has been reported for sheep, goats and horses. Cattle are most likely to be affected, sheep occasionally. Thiamine deficiency (horses and pigs), haemorrhaging, blindness, urinary problems including cancer have been associated with prolonged exposure. The carcinogen in bracken occurs in milk when cows feed in bracken-infested pastures and may occur in meat but Smith (1989 in Thompson & Smith) suggests that the dilution between plant and animal must be considerable. There is variation between areas. Rock fern *Cheilanthes seiberi* also has high concentrations of the bracken cancer-causing chemical. The cancer-causing chemical can be destroyed by cooking and wood ash (Gott 1993).

*Management and control*

Bracken can be eliminated by ploughing, domesticated pigs can eradicate it on soils

of light texture and it can be weakened by repeated cutting or burning. Under natural conditions, bracken is prolific after fire but decreases in density as the canopy creates shade. Chemicals developed in recent times offer considerable scope for control of bracken. They include asulam, glyphosate and metasulphuron methyl (BRUSH OFF™)\* which is used with a surfactant. Biological control trials are being conducted overseas.

So, why all this information about a plant that is common and not directly related to the survival of a threatened species? Even common native plants can have their own intrinsic values if viewed in the right context. Bracken is not all bad nor all good. If it naturally occurs in areas managed as wildlife habitat on a property then it will add value to that area for wildlife and encourage a range of animals that may not otherwise be present if the only other habitat is cleared pasture. Stephen Platt

*References:*

- Gott, B. (1993) Use of Victorian Plants by Koories in Foreman, D.B. & Walsh, N.G. Flora of Victoria. Royal Botanic Gardens, Melbourne.
- Thomson, J.A. and Smith, R.T. (ed) (1989) Bracken biology and management. The Australian Institute of Agricultural Science.
- Perring, F.H. and Gardiner, B.G. (ed.) (1976) Biology of bracken. Botanical Journal of the Linnean Society, Vol. 73, Nos 1,2 & 3. Academic Press.
- Rymer, L. (1976) The history and ethnobotany of bracken in Perring and Gardiner.
- \* Refer to label information to check usage and health and safety.

## POSSUM DETERRENT

You may have experienced problems with Common Brushtail Possums eating your favourite plants. Various recipes for controlling this behaviour have been proposed. The following one is suggested by Marilyn Wood.

"Boil up 2 litres of water. Add 4 heaped tablespoons of Lapsang Souchong Tea. Allow to cool. Strain off the leaves and pour into a plastic spray bottle. Liberally spray the effected plant or vine. Reapply at least every 2 weeks and always after rain. Make a fresh brew every time." "The possums appear to hate its creosote smell."

Stephen Platt

Source: 'A Growing Concern' Spring 1996. Candlebark Community Newsletter.



Noisy Miner. Photo: Peter Menkhorst

## Stone Walls - habitat as well as historical values

Stony rises and other stony areas are diminishing habitats due to the practise of cleaning paddocks for grazing and cropping and then either selling the rocks to landscapers, piling them or creating stone walls or dykes.

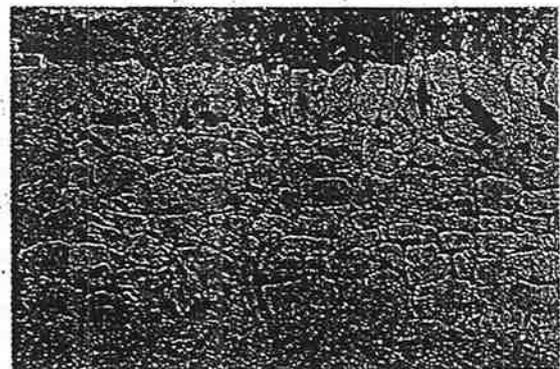
However, the old stone walls found in many parts of our country have now become valuable habitat. The south face may have a large variety of mosses, liverworts, fungi, ferns and herbs growing in shady, cool protected areas. This itself can provide resources for wildlife such as insects, dunnarts and frogs. The northern

side can provide valuable basking sites for wildlife such as lizards. Birds such as Grey Shrike-Thrushes and pardalotes can use the walls as nesting sites and bats can use them as roosting sites.

As well as having historical values, stone walls have huge conservation values and can last for many centuries, surviving flood and fire. Consider including the maintenance and protection of stone walls in your conservation plans.

Felicity Nicholls

A stone wall in good condition showing the many cracks and crannies used by fauna. Photo: NRE



## **Bracken Fern – It is not so bad after all!** *By Anna Watson*

Bracken Fern (*Pteridium esculentum*) is a hardy native fern, consisting of a tough stem, green fronds and fleshy underground stems or rhizomes. Besides Australia, it is found on a number of continents including Europe and America.

As the plant grows, a succession of young, succulent crosiers (fiddle hooks) uncurl slowly from the rhizomes, to form the mature fronds.

Large expanses of these green fronds can commonly be seen in degraded heathy woodlands and forests thriving in poor sandy soils. These sites have often been subjected to a frequent firing or clearing activities in response to “improving” the land for farming. In moist forests they often appear after a large tree has fallen, allowing the light to penetrate sufficiently to stimulate a rapid flush of bracken ferns.

In these situations, bracken fern assumes the role of a pioneer plant, protecting and binding the exposed soil with their rhizome roots, just like a scab acts to protect grazed skin. However, in lower light environments, such as when the forest canopy closes over the bracken gradually dies out as its role is no longer required.

### **Aboriginal Uses**

The foraging **Australian Aboriginal** women sort out the taller and more succulent bracken ferns, which were generally located in the moister wet sclerophyll forests. The moisture allows the growth of a thick, starchy rhizome.

These rhizomes were treated as a staple food, but required substantial preparation before eating. Their preparation for eating involved washing, beating into a paste, moulding into cakes and finally roasting in hot ashes. During times of

limited food alternatives, such as when seafood was scarce, these roots became the main food for short periods.

Another important usage were there medicinal properties. The juice from the young fronds was used to stop itch and sting of ticks and other insects. It was broken and the juice rubbed on, after the tick was removed.

The **American Indians** consumed the fiddle hooks for removing intestinal worms and crushed them to relieve the pain from burns and scalds.

### **Gardening Uses**

Large amounts of shredded bracken ferns collected in late spring and mixed with manures, are a valuable addition to the **compost**. They provide an excellent organic source of **potash**, which has been concentrated from the sandy, potash deficient soils in which they normally grow. Ferns collected later in the growing season are lower in potash and much slower to decompose into humus. When shredded they are useful for **poultry deep litter** prior to going into the compost. A great supply of **mulch** can be obtained from piles of slashed bracken fern, that has been compacted and allowed to partially breakdown over a six month period.

The tough stems of older ferns make ideal throw away, **pea supports**. The whole fern provide an ideal **shade umbrella** over tender seedlings (cauliflowers, broccoli, cabbage, lettuces and silver beet etc) planted out during the hot sunny days of summer.

To control bracken infestations repeated removal of the young fronds will gradually weaken the plants by deleting the food stored in their rhizomes. Spreading concentrated poultry manure will soon cause the decline of a patch of bracken fern. Once the ferns has stopped growing use the ground to grow a healthy crop of organic potatoes.

## **PLANT BREEDERS RIGHTS - An Australian Native Plant Perspective**

An interesting paper was presented by Nik Hulse, Deputy Registrar of the Plant Breeders Rights Office, at the 21<sup>st</sup> ASGAP Conference in Canberra. The following article and information courtesy *APS SA Journal Vol.17 No.1 February 2002*

### **What is PBR?**

Plant Breeder's Rights is a system that provides commercial rights to the breeders of new plant varieties. These rights are effective for 20-25 years, and provides protection against unauthorised propagation, sale, import, export and stocking and may even extend to end products such as cut flowers and plant oils. PBR is a form of intellectual property, and can be applied to all plant species including fungi, algae and transgenic varieties. The scheme is overseen the Commonwealth Government.

To attain PBR is a complex process and includes breeder testing and the conduct of trials to prove distinctiveness, uniformity and stability of the variety. The average time to complete the application from start to finish is approximately 2.5 years dependent on the species.

### **PBR and Australian plants**

There have been more than 400 applications for indigenous plant varieties since 1988 involving around 80 genera. About 12% of all applications have been for indigenous plant varieties, with around one-third being varieties of *Anigozanthos*, *Brachyscome*, *Bracteantha*, *Chamelaucium* and *Grevillea*.

On the world scene, Australia has lodged applications only for the following species: *Acmena*, *Actinotus*, *Agonis*, *Allocasuarina*, *Angophora*, *Anopterus*, *Apium*, *Asplenium*, *Astrebla*, *Austromyrtus*, *Backhousia*, *Caustis*, *Ceratopetalum*, *Corymbia*, *Cyathea*, *Cynodon*, *Danthonia*, *Dodonae*, *Duranta*, *Epacris*, *Eragrostis*, *Eremocitrus*, *Glycine*, *Hymenosporum*, *Isotoma*, *Kunzea*, *Lechenaultia*, *Lomandra*, *Lophostemon*, *Melaleuca*, *Melia*, *Mentha*, *Microcitrus*, *Microlaena*, *Murraya*, *Olearia*, *Paspalum*, *Philothea*, *Pimelea*, *Pittosporum*, *Poa*, *Ptilotus*, *Regelia*, *Santalum*, *Scholtzia*, *Sporobolus*, *Stenanthemum*, *Stenocarpus*, *Themeda*, *Thryptomene*, *Verticordia*, *Wahlenbergia* and *Xanthostemon*.

### **When can I use a PBR variety?**

If you purchase a plant with a PBR label you own that plant, and while you can sell the plant at a later date, you cannot propagate and sell it without permission from the breeder.

### **PBR Costs**

To establish a PBR the costs are \$2000 plus, comprising \$300 application lodgement fee, \$1400 examination by the PBR Office, \$300 for the issuing of a certificate, plus additional costs to conduct a trial and the certification of that trial. An annual fee of \$300 applies.

### **Need More information?**

Contact the PBR website: [www.affa.gov.au/pbr](http://www.affa.gov.au/pbr) or contact the Plant Breeder's Rights Office at Agriculture, Fisheries and Forestry, Australia GPO Box 858, Canberra . ACT. 2601 Ph 02 6272 4228 Fax 02 6272 3650

### **BACK FROM EXTINCTION? Asterolasia**

**buxifolia** - From an article in the *Sydney Morning Herald* 18/12/2001 by Krystyna Pollard, and reprinted in *APS NSW Native Plants, Vol.37 No.1. January 2002*.

*Asterolasia buxifolia* has been thought to be extinct for over 160 years but was recently rediscovered in the Blue Mountains, by Sydney botanist, Bob Makinson (Co-ordinator of the Centre for Plant Conservation at Sydney's Royal Botanic Gardens). A cluster of about 50 plants was found in the Hartley area, and samples were sent for DNA analysis and confirmation.

*A.buxifolia* was originally collected by Allan Cunningham in the 1830s but then was lost completely, considered extinct. Its original location was given as Bells Line, Blue Mountains. The new plants were found in a valley several kilometres away from the current Bells Line of Road, however it is possible that the area was part of the original Bells Line.

*A.buxifolia* is a two metre high shrub with golden star like flowers. The plants were found in a well fenced almost pristine natural remnant . Another survey will be undertaken in Spring to seek out more plants, and a common name may also be given. Lithgow City Council, NPWS and the Royal Botanic Gardens in Sydney are working together to protect the species.

??? With the Bushfires has it once again become extinct  
I wonder????



# Threatened Species

**TABLE 1: Summary of Endangered, Vulnerable and Presumed Extinct Species / Populations as Listed by the NSW Scientific Committee (13/07/01) under the TSC Act.**

	ENDANGERED SPECIES	ENDANGERED POPULATION	SPECIES PRESUMED EXTINCT	VULNERABLE SPECIES
AMPHIBIANS	9	1	0	14
REPTILES	6	0	1	25
BIRDS	26	3	12	76
MAMMALS	13	7	27	41
MARINE MAMMALS	1	0	0	7
INVERTEBRATES	10	1	0	0
PLANTS	282	11	37	214
<b>TOTAL</b>	<b>347</b>	<b>23</b>	<b>77</b>	<b>377</b>

**TABLE 2: Summary of Recovery/Threat Abatement Planning in NSW (31 March 2001)**

Category	Total
Approved Recovery and Threat Abatement Plans	11
Publicly Exhibited Recovery Plans	22
Drafted Recovery Plans (Not Yet Exhibited)	19
Recovery Plans in Preparation	126
Threatened Species, Endangered Populations, Endangered Ecological Communities (EECs) and Key Threatening Processes (KTPs) Covered by Plans under Development	248
Threatened Species, Endangered Populations, EECs and KTPs Listed on the TSC Act	801
Percentage of Threatened Species, Endangered Populations, EECs and KTPs Covered by Approved State or National Plan	3.1%
Percentage of Threatened Species, Endangered Populations, EECs and KTPs for which Planning is Underway	32%

## The Truth about Bats - A New Action Plan To Boost Their Conservation

A new Action Plan that unveils the often feared, but fascinating world of bats and provides a framework for their conservation worldwide has been published by IUCN's Species Survival Commission (SSC) to coincide with "International Year of the Bat (2001)":

This Year of the Bat marks the 10th anniversary of the signing of the Agreement on the Conservation of Bats in Europe (EUROBATS). *Microchiropteran Bats: Global Status Survey and Conservation Action Plan*, compiled by the SSC Chiroptera Specialist Group, uses information gathered from about 150 bat specialists around the world. Illustrated with maps and photographs, the Plan provides the first detailed review of threats facing bats, conservation activities underway, and those needed to stop the decline in populations.

For the full story see: <http://www.iucn.org/themes/ssc/pressreleases/batplan.html>

# Major Revamp of Tasmanian Threatened Species Schedules

Peter McGlone, Tasmanian Coordinator, Threatened Species Network

On 27 June 2001 the Threatened Species Protection Order 2001 was gazetted thereby bringing about a myriad of amendments to the schedules of the Tasmanian Threatened Species Protection Act 1995 (TSPA). This order completes the Threatened Species Scientific Advisory Committee's five yearly review of the threatened species schedules that is required under Section 13(6) of the TSPA. Also incorporated into the Order are all changes made prior to the five yearly review (mainly through public nominations), a considerable number of new listings dealt with at the same time as the five yearly review and all species which remained unchanged from the original 1995 schedules.

As well as additions, deletions and changes between schedules, numerous changes have been made to correct scientific, common and family names.

**Table 1: Numbers of Flora and Fauna Species Listed on Schedules of the Tasmanian Threatened Species in 1995 and 2001**

	1995			2001		
	Flora	Fauna	Total	Flora	Fauna	Total
End.	35	19	54	94	41	135
Extinct	29	12	41	24	9	33
Vul.	59	37	96	62	30	92
Rare	342	86	428	280	94	374
<b>Total</b>	<b>465</b>	<b>154</b>	<b>619</b>	<b>460</b>	<b>174</b>	<b>634</b>

Table 1 shows that the total number of species listed on the schedules of the TSPA has increased from 619 in 1995 to 634 in July 2001. Since 1995 a total of 53 species (51 flora and 2 fauna) have been deleted and a total of 68 species added (46 flora and 22 fauna) to the schedules of the TSPA.

**Table 2: Changes Between Schedules of the Tasmanian Threatened Species Protection Act between 1995 and 2001**

1995 schedule	2001 schedule				
	End.	Ext.	Vul.	Rare	Total
End.	-	-	1	1	2
Ext.	6	-	-	1	7
Vul.	15	-	-	4	19
Rare	23	-	7	-	30
<b>Total</b>	<b>44</b>	<b>-</b>	<b>8</b>	<b>6</b>	<b>58</b>

Table 2 shows that since 1995 a total of 58 species changed schedules on the TSPA (39 flora and 19 fauna). A total of 45 species moved up in status (31 flora and 14 fauna) and 13 species moved down in status (8 flora and 5 fauna species).

A major review of the status and taxonomy of orchids in Tasmania accounts for the majority of the deletions,

additions and changes between schedules. Out of 53 species deleted 27 are orchids, out of 68 species added 33 are orchids and out of 58 changes between schedules 18 were orchids.

Since 1995 there has only been a small increase in the total number of threatened species – an increase of just 15 species. However, there has been a significant increase in the number of species listed as endangered – up from 54 to 135. This is mainly due to 25 flora species being upgraded in status (20 from rare and 5 from vulnerable) and 32 flora species being newly listed.

## Fauna - Notable changes

- 3 species have been re-discovered - the Lake Fenton Trap Door Spider, the Tunbridge Looper Moth and Skemps Snail.
- 3 species changed from rare to endangered: New Holland Mouse, Grey Goshawk, Arthurs Paragalaxias,
- 10 species changed from vulnerable to endangered - Swift Parrot, Wedge-tailed Eagle, Grey-headed Albatross, Black-browed Albatross, Light-mantled Albatross, Blue Petrel, Fairy Prion (southern sub-species), Pedra Branca Skink, Scottsdale Burrowing Crayfish, Stanley Snail.
- 22 species added including - Chappell Island Tiger Snake, Great White Shark, Spotted Handfish, 6 galaxias and paragalaxias species, Sub-antarctic Fur Seal, Southern Giant Petrel, Northern Giant Petrel, Southern Elephant Seal, Sooty Albatross, three seastar species, three snail species and two stag beetle species.
- 2 species deleted: Northeast Forest Snail and Pencil Pine Moth.

## Flora - Notable changes

- 4 species re-discovered – all have been listed as endangered.
- Out of a total of 51 species deleted since 1995:
  - 5 were found to be exotic species;
  - 25 were found to have improved in conservation status eg. through discovery of new populations;
  - 21 were subject to taxonomic changes including 5 species that were found not to exist in Tasmania.
- Out of a total of 46 species listed since 1995:
  - 33 were orchids;
  - 7 were lichens (the first lower plants listed in Tasmania);
  - 1 algae (the first marine plants listed in Tasmania);
  - 2 Euphrasias;
  - 3 others.

# NSW Threatened Species Conservation Act 1995

## Update of changes to Flora...

The following is a list of alterations to Flora in Schedules 1 & 2 of the Act from 17 June 2000 to 16 June 2001

### SCHEDULE 1

#### Part 1 Endangered species

Aponogetonaceae

*Aponogeton queenslandicus*

Brassicaceae

*Lepidium peregrinum*

Convolvulaceae

*Wilsonia rotundifolia*

Fabaceae

*Acacia chrysotricha*

*Cassia brewsteri* var. *marksiana*

*Sophora tomentosa*

Flacourtiaceae

*Xylosma terrae-reginae*

Myrtaceae

*Babingtonia prominens*

*Babingtonia silvestris*

*Baekea kandos*

*Eucalyptus magnificata*

Orchidaceae

*Chiloglottis anaticeps*

*Dendrobium melaleucaphilum*

*Diuris* sp. (Oaklands, D.L. Jones 5380)

*Diuris* sp. aff. *chrysantha* (Byron Bay)

*Sarcochilus dilatatus*

Poaceae

*Distichlis distichophylla*

Proteaceae

*Grevillea divaricata*

*Persoonia bargoensis*

*Persoonia hindii*

Rhamnaceae

\**Discaria nitida* (removed)

*Pomaderris adnata*

Rutaceae

*Boronia boliviensis*

Sapindaceae

*Dodonaea stenozyga*

#### Part 2 Endangered populations

Fabaceae

*Glycine clandestina* (broad leaf form) in the Nambucca Local Government Area

*Lespedeza juncea* subsp. *sericea* in the Wollongong Local Government Area

Sterculiaceae

*Karadrenia corrolata* var. *denticulata* in the Hawkesbury Local Government Area

#### Part 3 Endangered ecological communities

Northern Tablelands and Nandewar Bioregions

Howell Shrublands

McKies Stringybark/Blackbutt Open Forest

South East Corner Bioregion

Bega Dry Grass Forest

Brogo Wet Vine Forest

Candelo Dry Grass Forest

Dry Rainforest of the South East Forests

Sydney Basin Bioregion

Agnus Banks Woodland

Blue Mountains Shale Cap Forest

Kurri Sand Swamp Woodland

Mount Gibraltar Forest

Robertson Basalt Tall Open-Forest

Robertson Rainforest

Southern Highlands Shale Woodlands

Sydney Coastal Estuary

Swamp Forest

Sydney Freshwater Wetlands

*Acacia loderi* Shrublands

Artesian Springs Ecological Community

### SCHEDULE 2 Vulnerable species

Brassicaceae

\**Lepidium peregrinum* (removed)

Convolvulaceae

*Wilsonia backhousei*

Fabaceae

*Acacia bakeri*

*Archidendron hendersonii*

Juncaginaceae

*Maundia triglochoides*

Myrtaceae

*Eucalyptus dissita*

Orchidaceae

*Chiloglottis platyptera*

Proteaceae

\**Persoonia bargoensis* (removed)

Rhamnaceae

*Discaria nitida*

Sapindaceae

*Lepiderama pulchella*

Scrophulaceae

*Derwentia blakelyi*

### SCHEDULE 3

#### Key threatening processes

Key threatening processes are those which adversely affect two or more threatened species and could cause species that are not threatened to become threatened. Other factors such as life cycle disruption (eg prevention of breeding or seeding) and loss of vegetation structure are also considered.

Anthropogenic Climate Change

Compiled from the Parliamentary Counsel's Office web site ([www.pco.nsw.gov.au](http://www.pco.nsw.gov.au)) by Eleanor Hannah ❖

### Incubation – by Leaves and Sand

Perhaps the Murray's most distinctive bird is the lowan, or mallee-fowl (*Leipoa ocellata*), whose only habitat is mallee scrubland. Because of its dependence on an incubation method that makes use of rotting vegetation compounded with sand, the lowan has become scarcer since the clearing of scrubland for farming.

The incubation mound, usually eight metres or more in diameter, is constructed by the male. A hole is first scratched in the sandy soil about 30 cm. deep; after it is filled with leaves, further leaves and twigs and sand are added. In the first year the mound is usually about three metres across; it is built up in each successive year and may grow over the years to be over four metres across and nearly two metres high. Sometimes two or three hens will lay in the same mound.

The birds must judge how much vegetation to add in order that the combined heat of decomposition and sun will incubate the eggs deep within the mound.

When all is in readiness the birds scoop out the centre of the nest and make a niche on one side. When the first thin-shelled egg is laid the birds gently move it into an upright position (smaller end downward) by pressing mound material around it with bill or feet. The mound is immediately closed again.

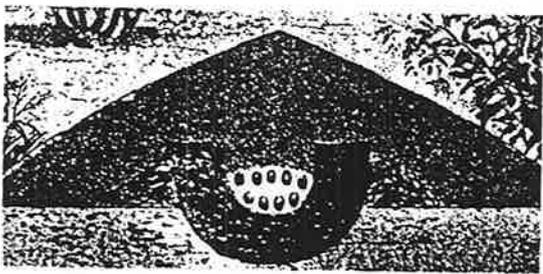
An additional egg is added every three days until the clutch of about a dozen is laid. Seven or eight eggs are set in a ring or irregular circle; when the first ring is complete another is begun above it but the birds take care not to place any egg directly above one in the lower level.

Naturalist Albert Le Souef, describing the egg mound and the egg-laying in an article in the 1880s, noted that both birds assisted in opening out and filling in the nest. "Generally," he wrote, "they use their wings to heap the loose sand up."

The birds stay close to the mound throughout the three-month incubation process, scratching it open to admit sunshine or moisture and adding more cover during unfavorable weather, so that the temperature is maintained at just below blood-heat.

"When the young is ready to hatch," Le Souef wrote, "the parent birds scrape the sand away to allow the young bird to escape out of the egg, filling it in immediately afterwards. This is always done very early in the morning, until all young are hatched."

Most observers say that the chick can make its own way to the surface, and frequently does so. By the time it emerges, the young bird has its main wing feathers, and very soon it is able to fly.



### Our environment - a bird's eye view

While most Australians are concerned about the environment, in 1999 only 9 per cent of adult Australians ranked environmental problems as their most important social issue.

This is one of the many findings on Australia's environment, assembled in the first edition of a new Australian Bureau of Statistics publication, *Australia's Environment: Issues and Trends* released recently.

#### On the positive side:

- A range of legislative mechanisms are in place to help Australia manage its environment. Government and business are spending millions of dollars to protect and manage the environment - for example, Natural Heritage Trust funding will amount to around \$1.5 billion between 1996-97 and 2001-02;
- Plantations are providing more timber than native forests;
- More than 22 per cent of tall eucalypt, mangrove and rainforests are in conservation reserves and some 774,000 hectares of land are protected by agreements between landowners and government;
- A total of 851 wetlands were recognised as nationally important in latest edition of the Directory of Important Wetlands (Environment Australia 2001);
- In 1998-99, local government in Australia spent \$2.8 billion on environment related activities
- There has been a cap on diversions in the Murray-Darling Basin, and fish restocking;

But Australians consume more energy, products and services per person than ever before, with our rate of consumption rising.

Australia is also facing serious land degradation issues, such as weed invasion and dry land salinity, while the construction of large dams, introduction of exotic species, such as carp, land clearing, and extraction of water, have left many of our inland rivers in poor condition. In addition, at least 250 known species have been introduced into Australia's marine environment.

This report is available from the Australian Bureau of Statistics (ABS Cat. No. 4613.0) for \$38.00 Tel: 1300 135 070