The Austral Bugle

Newsletter of the Southern Tablelands Grassy Ecosystems Conservation Management Network, in association with the Grassy Box Woodlands Conservation Management Network

Volume 1 / Issue 1 ISSN 1446-8581 Winter 2002

Our heritage - grasslands and grassy woodlands

Extraordinarily diverse and colourful grasslands and grassy woodlands once covered extensive tracts of the NSW Southern Tablelands. At a first glance, a native grassland seems to lack interest - your initial impressions are of a carpet of drab-coloured grasses. Closer inspection reveals many smaller broad-leafed and grass-like plants (forbs) growing between the grass tussocks. In near-pristine grasslands, such as those found on some country roadsides, village cemeteries or travelling stock reserves, the forbs can yield one of the most rewardingly colourful sights during Spring and early Summer. It is then that these wildflowers - daisies, peas, orchids, lilies and others - show themselves in their phenomenal variety. Each site is seemingly different from the next.

Botanists working in our region have identified some 600 species of plants growing in grasslands and grassy woodlands (known collectively as "grassy ecosystems"). There are also many fauna species living in these vegetation communities - many are confined to grassy ecosystems, some are unique to the Southern Tablelands, and several species are threatened with extinction.

A grassy woodland is essentially a grassland with a scattering of trees, most often Yellow Box, Blakely's Red Gum, Candlebark or Snow Gum. Shrubs are not a prominent feature in grasslands and grassy woodlands. Grassy ecosystems have seriously declined since European-settlement. This is because they occupy parts of the landscape that were favoured for the development of cities, towns, roads and railways. More recently, agricultural technologies have also seriously impacted upon grasslands. Some of these vegetation communities are now listed as Endangered, under Commonwealth, NSW and ACT legislation.

Grassy ecosystems are an important, if poorly recognised, part of our natural heritage. They have an important role in sustainable agriculture. We owe it to our descendants to conserve as many remnants of these uniquely Australian ecosystems as we can. A Conservation Management Network has an important role to ensure the future of these communities.

What is a conservation management network?

A Conservation Management Network (CMN) is a network of remnants of native vegetation, their owners or managers, and other interested individuals. CMNs usually focus on a single ecological community (e.g. grassy ecosystems), because the management needs of each community are usually relatively uniform. An important purpose of CMNs is to assist in the management of remnants.

A CMN is managed by a coordinator who can help you, the land holder or manager, learn about the fauna and flora in your remnant. The coordinator can help you

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Conservation Management Networks (continued)

work out the best way to manage your remnant, according to your goal. Your goal may include both conservation and production. The CMN coordinator also promotes communication between members of the CMN through a newsletter, assists with protection measures and sourcing of funds, and maintains a database of the CMN's sites. The remnants of a CMN are not controlled or purchased by a centralised agency. Rather, you, as an existing owner or manager are encouraged to join the CMN. You'll continue to manage your remnants, either as you have been previously, or with an increasing focus on conservation.

By joining a CMN, you may make a commitment to manage your remnant at least partly towards conservation goals. Entering into one of the various available conservation agreements is an important part of this. In making such a commitment, your significant individual contribution will add to others in the CMN, all accumulating to the conservation of the ecological community as a whole.

Why do we need a CMN? Managing remnants is a sometimes difficult and often thankless task - though extremely important in our agricultural landscapes where native vegetation is most at risk.

Several particular problems face you as a manager of native remnants. One problem is to find the information you need to help make decisions. Would a change to grazing patterns enhance or degrade the remnant? Should you try burning as a management tool? What species are present, and which are the most important? Are there any local sources of seed for restoration works? By joining a CMN, you, as an owner of a remnant, can draw on the experience of others, thereby gaining access to expert knowledge that may otherwise not have filtered through to you.

A second problem is to find the resources that you need to put better management practices into effect. You may require funding and help with writing applications. You may need some voluntary help to remove woody weeds. Remnants in the CMN will have a higher profile than those managed in isolation, the better to attract funds and other resources.

Grassland Earless Dragon

Managing remnants in isolation may be difficult. You don't know whether your efforts are worthwhile. Are others doing similar work? How does your site compare with others? By joining a CMN, you will have the satisfaction of knowing that any contribution, big or small, contributes to the greater picture of conserving an ecological community and a landscape. In a CMN, your efforts are formally recognised.

Finally, you may sometimes wonder whether your efforts will be wasted, say if you should sell your property. Will the next owner then undo all of your good work? By entering a formal management agreement, you can be ensured that your vision for the remnant continues.

From the point of view of scientists and people working in government and non-government agencies, especially those dealing with endangered ecological communities, a CMN allows us all to understand how well we are all doing in terms of conserving these communities.

The CMN model has been widely acclaimed and endorsed as an effective tool for the conservation of bushland remnants.

(adapted from article in WOODLAND WANDERINGS Vol.1 No.1)

Two new Conservation Management Networks

The Federal Government's NHT has recently approved funding for the Southern Tablelands Grassy Ecosystem Conservation Management Network to be coordinated by the NSW National Parks and Wildlife Service office at Queanbeyan. At the same time, the NSW Government's *Environmental Trust* has approved funding for the Monaro Grasslands CMN to be established in that region. It is proposed to hold a joint launch of these CMNs in the coming months.

The two CMNs will work in close cooperation, both with each other and with the Grassy Box Woodland CMN. The Southern Tablelands CMN will focus on the management of grassland and grassy woodland remnants throughout the Southern Tablelands. This region stretches between Yass, Boorowa, Crookwell and Goulburn in the north to the upper Shoalhaven River catchment, and the Monaro in the south – encompassing plains and rolling hills rimmed by higher forested mountains. The Monaro Grasslands CMN will have its focus on the three shires of the Monaro (Cooma-Monaro, Snowy River and Bombala).

The new CMNs will not be mutually exclusive, each providing separate functions within the larger CMN model. It is expected that the coordinators will each support and complement the other in their particular fields of expertise. Like a Russian Doll, three CMNs will nest one within the other. The Monaro CMN will be included within the Southern Tablelands CMN, which in turn will sit under the already established Grassy Box Woodland CMN. At the same time, each CMN will maintain a high degree of autonomy.

The coordinator of the Southern Tablelands Grassy Ecosystem CMN has established links with both the coordinator of the Grassy Box Woodland CMN and the proposed Monaro Grasslands CMN. Additionally, preliminary discussions have been held on a long-term plan to include grassy remnants in the ACT in the Southern Tablelands CMN.

(with acknowledgments to David Eddy, WWF)

How do I become involved?

Private land holders and public land managers can be involved in the Southern Tablelands Grassy Ecosystem CMN at various levels. You may chose to simply subscribe to The AUSTRAL BUGLE, making no further commitments. You could arrange a site visit, registering your remnant at the "Entry Level", thereby gaining the benefit of expert advice and a survey. For those ready for a greater commitment, the CMN coordinator can arrange negotiations for some form of management agreement, and assistance with funding applications. If you would like to register a site or want more information about the Southern Tablelands Grassy Ecosystems CMN, please write to the address in the *Making Contact* box on the back page.

If you are on the Monaro and would like to be involved with the Monaro Grasslands CMN, please phone David Eddy on 62574010, or email on deddy@ozemail.com.au.

If you are on the slopes and would like to be involved with the Grassy Box Woodlands CMN, please phone Lorraine Oliver on 02 6298 9709, or email on lorraine.oliver@npws.nsw.gov.au

Community Care for Crepuscular Critters - the Bur

Sue Rose *Project Manager* **and David Costello** *West Hume Landcare Coordinator*

What a wonderful surprise it was to re-discover the occurrence of squirrel gliders (*Petaurus norfolcensis*) on farms in our landcare area during the mid 1990's! These cute nocturnal critters are regarded as vulnerable in NSW. Their discovery was even more surprising given they were found in the heart of the wheat/sheep belt of the South West Slopes of NSW, at Burrumbuttock (35km NW of Albury). This district suffers from the classic problems of the South West Slopes Bioregion ie. overclearing, continuing decline of retained habitats, isolation, and swamping of relict flora and fauna populations by weeds and feral animals. Less than five percent of native woodland vegetation remains in our area, most of which is concentrated along narrow roadside reserves.

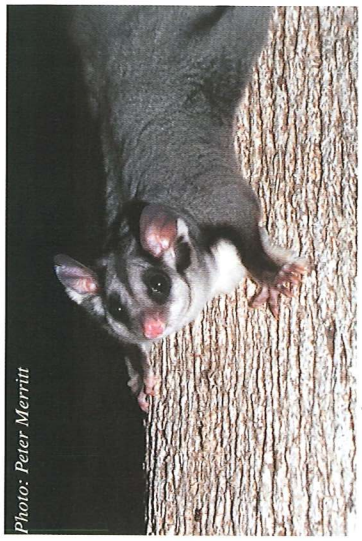


Photo: Peter Merritt

Figure 1 – One of the local animals from the Burrumbuttock squirrel glider colony. This particular animal is also the face for the month of 'October' in the Hume Shire Council community calendar.

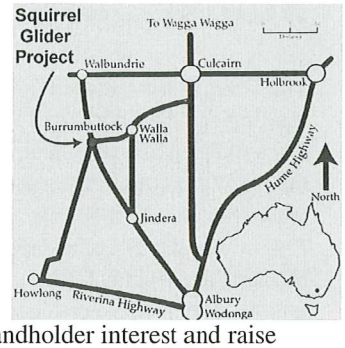
The re-discovery of squirrel gliders became known in 1995 when an injured squirrel glider was discovered by a local landholder on their property '*Thurso*', 5km south of Burrumbuttock. The young glider was cared for by a WIRES volunteer until its re-release at '*Thurso*' in 1996. This glider is still regularly observed where it was released, along with up to seven other gliders that now reside in nearby hollows.

Photo: Owen Dunlop

Figure 2 – To celebrate the re-discovery of squirrel gliders, this mural was painted by a number of Burrumbuttock Public School students during their art classes.

Following regular sightings of gliders at '*Thurso*', interest in the local glider population escalated. Charles Sturt University researchers revealed the occurrence of additional gliders in woodland remnants surrounding the Burrumbuttock township.

In 2000 the West Hume Landcare Group applied for (and secured) an $11,000 grant through the '*WWF Threatened Species Network*' to protect and enhance woodland remnants and connect isolated fragments that supported glider populations. Consequently the 'Burrumbuttock Squirrel Glider Project' was born, using the squirrel glider as an iconic species to capture landholder interest and raise awareness of woodland dependent animals.



The Landcare Group's application was based on research that suggested glider populations may be constrained by the loss of wattle understorey (the sap of some wattles providing an alternative food source to eucalypt nectar and insects) and a reduction in old trees with hollows. Dr Barry Traill informed us that gliders could survive quite well in narrow corridors of vegetation, unlike other native mammals such as Brush Tailed Phascogales. With these issues in mind, our project sought to fence several white box woodland remnants and enhance them with understorey species (namely the three suspected sap providing wattle species - *Acacia dealbata A. implexa* & *A. pycnantha*), as well as other local understorey plants such as Sweet Bursaria (*Bursaria spinosa*) and Drooping She Oak (*Allocasuarina verticillata*).

The project was very much collaborative and involved landholders, townsfolk, Hume Shire Council, the Rural Lands Protection Board, Charles Sturt University and most importantly the Burrumbuttock Public School. The school has participated in landcare activities since 1990 and students/teachers were quick to become involved in the glider project. Students collected Golden Wattle (*A. pycnantha*) seed from roadsides and would queue up during recess to take turns cleaning the seed with the landcare group's sieves! The students then used a shadehouse donated by North Albury Rotary Club to grow 1200 understorey plants.

Figure 3 – Burrumbuttock Public School students busy planting understorey plants as part of the Squirrel Glider project. The students were involved in all aspects of the project including seed collection, propagation and planting. They are supervised here by a member of the Burrumbuttock Green Corps.

Photo: Owen Dunlop

Over 15 properties and several landholders erected 4.5km of fencing and enclosed more than 20ha of white box woodland in a bid to provide a continuous

'rumbuttock Squirrel Glider project

network of woodland corridors within a four-kilometre radius of Burrumbuttock. Both hand planting (5000 plants) and direct seeding (6km of seeding lines) were undertaken on private property, roadsides and a travelling stock reserve.

The Landcare Group was fortunate enough to secure a Green Corps team to assist with the implementation of the project. This supervised team of 10 young adults provided us with 14 weeks of on-ground work. During this time they assisted landholders with planting, fencing, woody weed control and the construction of 50 nestboxes. The nestboxes were constructed of hardwood (to reduce parrot damage), cost $14 each in materials, and were built according to Victorian Gould League specifications. The boxes were erected in areas where hollow-bearing trees were limited (eg. in areas of eucalypt regeneration) and/or where landholders were interested in monitoring. Early indications are that introduced bees readily occupy boxes!

Figure 4 – Burrumbuttock Public School students monitoring one of the nestboxes erected as part of theproject.

An integral part of the project also involved a degree of scientific study, under the guidance of Charles Sturt University and two private wildlife consultants. This scientific study is currently being undertaken for an eight-week period (until the end of March 2002) and involves the trapping of a number of squirrel gliders and fitting of radio-transmitting collars. It is hoped the results will provide further supporting information about the animal's home range and habitat requirements.

To ensure continued community support and increase the wider community's awareness, some of the project funds were devoted to the production of 'Significant Squirrel Glider Habitat' roadside signs. These signs (currently in production) picture a squirrel glider and will be used to educate passing motorists of the importance of the roadside corridor to the squirrel glider colony.

Cats (and foxes to a lesser degree) are the major predators of gliders and this was a vital aspect when a town was located in the middle of a squirrel glider conservation project. To address the cat issue, a 'responsible cat ownership' line is pursued at Burrumbuttock with the aim of increasing awareness of the damage cats do and how to keep domestic cats 'responsibly'. Foxes are also in the spotlight with 2002 heralding the arrival of a regionally coordinated fox eradication program, being implemented by the Rural Lands Protection Board in conjunction with a number of landcare groups and landholders throughout the region.

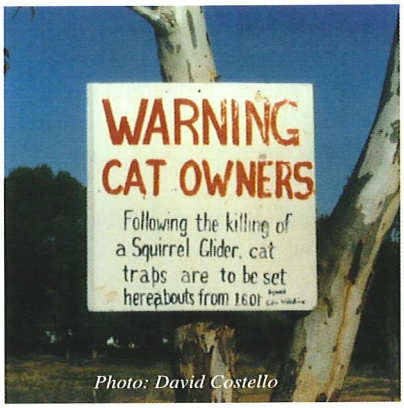


Photo: David Costello

Figure 5 – One local resident took immediate action following the death of a 'beloved' squirrel glider to a cat. This sign was erected and traps were set!

A five-minute video (aptly named '*Gliding to a better future*') encapsulating the project and showing unique footage of local squirrel gliders was recently produced. This was made possible after the North Albury Rotary Club generously donated a further $800 to the project (after initially donating a shadehouse to the school to assist with propagation). Our Threatened Species Network funding enabled several copies of the video to be made, which have since been distributed widely and proved very popular. The video visually illustrates how schools can be involved and take direct action in local environmental issues.

It is also worth mentioning some of the other spin-offs that resulted from the project:

1. Squirrel gliders have made it to the world-wide-web, following the development of a website by Burrumbuttock Public School who received $1,500 via the Eco Schools Grants program. The school is developing an interactive website covering local environmental issues using the squirrel glider as a 'flagship species'.

2. Several landholders have observed that where gliders occur the wattles are in much better health and do not develop the amount of insect galls on them that decimate isolated wattles elsewhere.

3. The Burrumbuttock township is home to the Wirraminna Environmental Education Centre, a 4ha area of once degraded land that has been transformed into a series of wetlands, and bush landscaped areas. This has provided an ideal venue to highlight the loss of woodlands and use the glider to illustrate some of the impacts. Three taxidermied squirrel glider specimens have been prepared and are used to give visitors a 'hands on' familiarity.

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The last bastions in agricultural landscapes

Philip Gibbons, Woodland Ecology Unit, NPWS & Miles Boak, Southern Directorate, NPWS

What would the landscape in your area look like without the numerous isolated and small patches of trees that occur scattered throughout paddocks? These trees will be progressively lost over the ensuing decades. Why does this matter?

When settlers began clearing the wheat-sheep belt of NSW, they recognised the value of retaining scattered trees across the landscape, probably as shade and shelter for stock. These isolated and small patches of trees – or paddock trees – are now a prominent feature of agricultural landscapes throughout the wheat-sheep belt. But they are gradually disappearing, at a rate of 0.54% to 2.5% per annum, which means they will be lost in 40-185 years.

The loss of paddock trees is due to four main reasons.

First, eucalypts have a maximum life-span of around 400-500 years, so trees retained at the time of European settlement will slowly senesce, regardless of what we do to protect them.

Second, paddock trees can be subject to high rates of mortality due to factors such as elevated nutrients in their foliage from fertilizer and stock camping at their base. These nutrients make the leaves attractive to insects. Salinity can also cause mortality among paddock trees.

Third, paddock trees constitute a large proportion of all native vegetation that is cleared.

Finally, eucalypts do not typically regenerate in grazed and cultivated paddocks. This is either because seedlings are browsed (by stock, rabbits and invertebrates) or the seedlings cannot compete with pasture plants.

If we were to lose paddock trees from the landscape, what impacts will this have?

For those vegetation communities that typically grow in productive parts of the landscape, such as White Box, Yellow Box or Blakely's Red Gum, around **half** of what is remaining occurs in patches of trees less than one hectare (Figure 1).

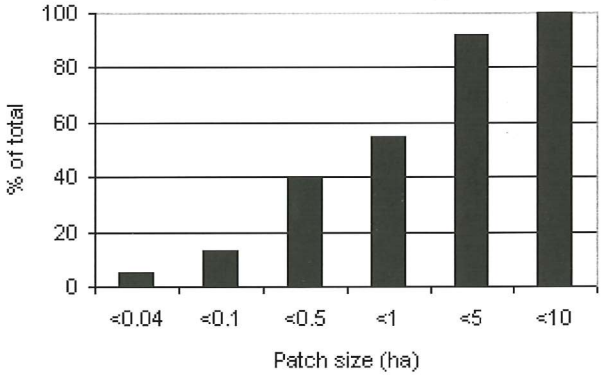


Figure 1. The cumulative per cent of woodland dominated by White Box and Red Stringybark in different-sized patches in a 30,000ha sample of the South West Slopes near Holbrook. Over half of the remaining vegetation of this community is in patches less than one hectare.

Given these communities often occupy less than 10% of their original area in the landscape, further losses due to the factors outlined above will undermine conservation efforts to improve this percentage.

One study suggested that an isolated tree prevents recharge over an area that is 3.7 times its canopy cover. Thus, large trees at a density of 2.5 per ha could theoretically provide complete recharge protection. This has yet to be verified, but is an appealing statistic.

Paddock trees are important for many species of fauna. These include threatened species such as the Superb Parrot, Swift Parrot and a number of bat species.
The fauna for which paddock trees provide habitat help control insect populations. One insect-eating bat can consume up to 600 small flying insects in an hour.

The shelter provided by paddock trees from extremes of cold and heat can improve live-weight gains, wool and milk yields in stock.

Finally, the deep roots of paddock trees can help recycle nutrients leached beyond the pasture root zone. These

trees also help maintain soil pH and improve soil friability.

As paddock trees provide a number of important environmental services, how can we protect them?

Protecting paddock trees requires a two-pronged strategy aimed at: (1) reducing the rate of mortality; and (2) encouraging recruitment.

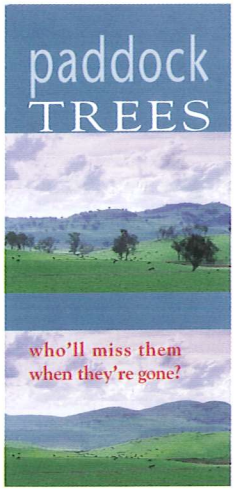
Mortality among paddock trees can be reduced by not clearing them, taking care with herbicide drift and limiting fertilizer use in their vicinity. Prolonged camping by stock around the base of paddock trees should be discouraged.

Recruitment is a difficult issue. Paddock trees can be temporarily fenced beyond their crown to encourage natural regeneration. Some farmers have achieved natural regeneration by lowering or temporarily removing stocking from a paddock. This does not require additional fencing.

However, the exact conditions required to reliably achieve natural regeneration in this way are poorly understood.

We do know that eucalypt seed does not persist in the soil, so there must be a seed source in the canopy of adjacent trees. Eucalypts also require some bare soil on which to establish. This can be provided by scarifying the site.

Some farmers have created the right conditions for regeneration by grazing a paddock fairly heavily to expose some soil and then lowering, or removing, stock and other browsers. The difficulty is that this must coincide with adequate seedfall and rainfall for regeneration to occur.



Intense competition from pasture plants will inhibit germination and survival of eucalypt seedlings, especially in the early stages. This is probably why it is generally easier to achieve regeneration of paddock trees in unimproved pasture.

Finding the optimum conditions for achieving regeneration among paddock trees by manipulating stock movements – and the costs of this to the producer – are issues that we intend to pursue in the future.

If we could get a new crop of paddock trees across large parts of the wheat-sheep belt at little, or no cost, to the producer then the benefits for sustainable agriculture could be huge.

Phil is interested to hear from anyone who has achieved eucalypt regeneration in grazed paddocks for his future work.

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Photo: Peter Merritt

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In conclusion, the project has achieved an enormous amount for the modest amount of money invested. More importantly it has dramatically increased the level of community awareness and managed to harness the support and enthusiasm of a large number of people from all walks of life. Although our project was based around Burrumbuttock, reports have since arrived of gliders occurring at the nearby townships of Brocklesby and Walla. A long time Burrumbuttock resident recently observed sugar gliders in his well treed backyard and recollects a cat once brought a feathertail glider to his backdoor (over 20 years ago). The hunt is now on to find feathertail gliders at Burrumbuttock!

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GreenCorps: www.greencorps.org.au
Gould League: www.gould.edu.au

Native Vegetation Profiles - useful tools to aid successful restoration and revegetation

Gill Earl, *Murrayana Botanical Services, Albury, NSW*

Vegetation profiles provide a simplified impression of landforms and the associated vegetation commonly found in each. They are useful tools to help with recognition of boundaries between landforms, for monitoring progress in restoration projects and for guiding species selection in revegetation projects.

Vegetation profiles – what do they represent?

Vegetation profiles aim to convey an impression, not a precise description. They display a visual impression of the native vegetation across a range of landforms. In landscapes that have been dramatically altered, e.g. cleared for agriculture or recently burnt, the profile drawings and species lists may be quite different to what is in the real landscape. This is because vegetation profiles convey an impression of intact or restored vegetation, thus providing an idealised image of how the landscape might look if, for example, revegetation was undertaken, or if grazing was managed to allow the recovery of plants. The species listed usually represent only a fraction of the plants that could occur there, but these are likely to be important species, important to the overall vegetation structure and ecosystem function. They provide a valuable selection list for revegetation projects, or an indication of how well a restoration program is going.

Key elements of vegetation profiles

The vegetation profiles usually have a series of headings along the left margin, together with three columns of information to the right, each corresponding to a landform with its associated species list. Each heading refers to a discrete element of the vegetation profile.

Landform – this heading will tell you which part of the landscape the profile refers to – is it a ridge top, a creekline, a level plain, etc.

Vegetation community – this heading usually follows nomenclature in use for vegetation types, e.g. Grassy White Box Woodland, Riverine Forest, Bladder Saltbush Chenopod Shrubland. It tells something about the structure and dominant species of the vegetation type.

Geology & Soils – provides information about the parent rock and/or soils associated with the vegetation, alluvial - heavy clays; volcanic - granitic sands. This information is not always presented under a separate heading, and may sometimes appear under a **Notes** heading.

Description – a brief, description of the vegetation expanding on the **Vegetation community** information. This heading is sometimes absent with the information incorporated elsewhere or under a **Notes** heading.

Location example – lists places within reasonable distance, where examples of relatively intact vegetation can be seen, either in nature reserves, along roadsides, travelling stock reserves, cemeteries or other remnants.

Species lists – these are usually divided into smaller categories e.g trees, shrubs, small shrubs, groundcovers. They provide a short list of indigenous species representative of the vegetation community. They are ideal for revegetation projects, and can also provide good indicators of vegetation recovery.

The illustration – represents key species for landforms that are typically juxtaposed in the study area.

Matching the right profile to your part of the landscape

Locating yourself

- Identify the location of your property on a map.
- Observe your property
- Are there any remaining native plants there still? Look for trees, shrubs and native groundcovers that may give some clues about the former character of the vegetation. Make a note of these species or seek assistance if you are unfamiliar with them yourself.
- Walk around the property and make a note about the landforms present – are there any creeklines, valleys, rocky ridges. Your property will probably include more than one landform, and similarly more than one vegetation type. Draw a map of your property breaking it up into the different landform types.
- Note how steep the property is.
- What type of geology is the property on – alluvial, sedimentary, volcanic, metamorphic. Make a note of any exposed rocky sites.
- Describe the soils – are they clays, sandy loams, shallow and stony. Make a note of their colour.
- Note the dominant aspect.

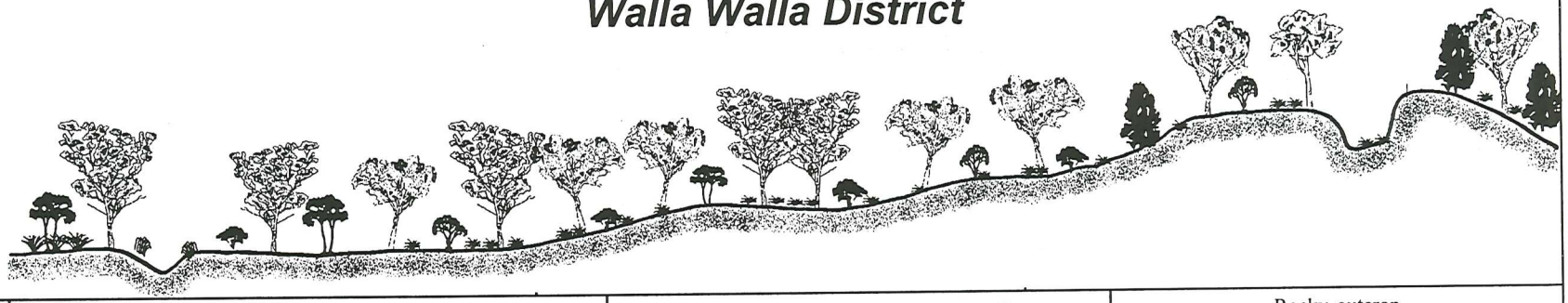
Choosing the most suitable vegetation profiles for your property

- If there is a revegetation guide for your area, identify which sub-region or catchment your property is in, and refer to the profiles for that sub-region or catchment.
- Compare the **Landform** descriptions on the profiles find the ones that match your observations.
- Look at the **Geology & Soils** descriptions to see if they also resemble your observations.
- Look at the plant species listed – are any of the remnant species on your property there?
- Search through all the relevant profiles until you find one or more that resemble your observations.
- Visit a **Location Example** to see an intact example, and compare it with your property.
- Does this resemble your property?

If it does, then spend some time walking around it, take photos, and imagine how your property could look. Note whether the trees are widely spaced in a woodland structure, or closer together in a forest. Notice how abundant shrubs and groundcovers are. If you are planning a revegetation project estimate the ratio of trees : shrubs : groundcovers, as this will help you with the ordering of seedlings.

If this site does not appear to match well with your property, then try working through the profiles again choosing another. You may even find it useful to look at profiles from neighbouring areas. Remember that vegetation profiles are highly simplified, stylised representations of the vegetation.

General Native Vegetation Profile:
Walla Walla District



LANDFORM	Flats and low country		Rising country & gently undulating hills		Rocky outcrop	
VEGETATION TYPE	Box woodland - Yellow Box & Grey Box. Blakely's Red Gum woodland.		White Box woodland		Dwyer's Red Gum woodland with Currawang & Long-leaf Box; Red Stringybark dry forest.	
GEOLOGY & SOILS	Riverine deposits of clay, silt, sand & gravel. Alluvial loams & grey & brown clays.		Mainly residual & colluvial deposits from underlying granite. Red and yellow earths.		Residual and colluvial deposits from underlying granite. Sandy granite soils.	
LOCATION EXAMPLE	Creekline country: Billabong; Petries; Back & Middle.		Rising country SE of Walla Walla		Stringybark Hill (NW of Gerogery)	
TREES > 8 m	*Acacia dealbata* *Allocasuarina luehmannii* *Eucalyptus albens* *E. blakelyi* + *E. bridgesiana* + *E. camaldulensis* *E. melliodora* *E. microcarpa* **+ creeklines**	Silver Wattle Bulloak White Box Blakely's Red Gum Apple Box River Red Gum Yellow Box Grey Box	*Acacia dealbata* *A. implexa* *Acacia penninervis* *Brachychiton populneus* *Callitris glaucophylla* *Eucalyptus albens* *E. blakelyi* *E. dwyeri* *E. melliodora* *E. microcarpa* *E. polyanthemos* *Hakea tephrosperma* *Pittosporum angustifolium*	Silver Wattle Hickory Wattle/Lightwood Hickory Wattle Kurrajong White Cypress Pine White Box Blakely's Red Gum Dwyer's Red Gum Yellow Box Grey Box Red Box Hooked Needlewood Butterbush	*Acacia doratoxylon* *A. implexa* *Allocasuarina verticillata* *Brachychiton populneus* *Callitris endlicheri* *C. glaucophylla* * *Eucalyptus albens* * *E. blakelyi* *E. dwyeri* *E. goniocalyx* \# *E. macrorhyncha* *E. nortonii* * *E. polyanthemos* *Exocarpos cupressiformis* *** Mainly slopes of rocky outcrop** **\# Mainly SE aspect**	Currawang Hickory Wattle Drooping Sheoak Kurrajong Black Cypress Pine White Cypress Pine White Box Blakely's Red Gum Dwyer's Red Gum Long-leaf Box Red Stringybark Silver Bundy Red Box Native Cherry
SHRUBS 1.5 - 8 m	*Acacia acinacea* *A. montana* *A. paradoxa* *A. pycnantha* *Bursaria spinosa* + *Callistemon sieberi* *Eutaxia microphylla* **+ Billabong Creek**	Gold-dust Wattle Mallee Wattle Kangaroo Thorn Golden Wattle Sweet Bursaria River Bottlebrush Mallee Bush Pea	*Acacia acinacea* *A. montana* *A. pycnantha* *A. rubida* *Bursaria spinosa* *Eutaxia microphylla* *Indigofera adesmiifolia*	Gold-dust Wattle Mallee Wattle Golden Wattle Red-stemmed Wattle Sweet Bursaria Mallee Bush Pea Tick Indigo	*Acacia rubida* *A. verniciflua* *Correa glabra* *C. reflexa* subsp. *reflexa* *Dillwynia* spp. *Dodonaea viscosa* subsp. *angustissima* *Indigofera australis* *Pultenaea cunninghamii*	Red-stemmed Wattle Varnish Wattle Rock Correa Common Correa Parrot-pea Narrow-leaf Hop-bush Austral Indigo Grey Bush-pea
GROUND COVERS	*Austrostipa* spp. - Spear Grass *Bothriochloa macra* - Red-leg Grass *Calotis cuneifolia* - Purple Burr-daisy *Carex* spp. - Sedge *Danthonia* spp. - Wallaby Grass *Dianella revoluta* - Spreading Flax-lily *Geranium* spp. - Cranesbill *Lomandra filiformis* - Wattle Mat-rush *Microlaena stipoides* - Weeping Grass	+ *Phragmites australis* - Common Reed *Poa* spp. - Tussock Grass *Sclerolaena muricata* var. *semiglabra* - Black Roly Poly *Themeda triandra* - Kangaroo Grass +*Typha* spp. - Cumbungi **+ creeklines/soaks/poorly drained sites**	*Arthropodium* spp. *Austrostipa* spp. *Bothriochloa macra* *Bulbine bulbosa* *Burchardia umbellata* *Chloris truncata* *Danthonia* spp. *Dianella revoluta* *Elymus scaber*	Lily Spear Grass Red-leg Grass Bulbine Lily Milkmaids Windmill Grass Wallaby Grass Spreading Flax-lily Common Wheatgrass	*Glycine clandestina* *Hardenbergia violacea* *Hibbertia obtusifolia* *Isotoma axillaris* *Lomandra filiformis* *Pelargonium australe* *Pimelea curviflora* *Stypandra glauca* *Themeda triandra*	Twining Glycine Purple Coral Pea Grey Guinea-flower Rock Isotome Wattle Mat-rush Native Storksbill Curved Rice-flower Nodding Blue-lily Kangaroo Grass

Source: Fleur Stelling (Ed) (1998) *From little things big things grow.... South West Slopes Revegetation Guide.* Murray Catchment and Department of Land and Water Conservation.

Austral Trefoil – *Lotus australis*

Suzanne Prober & Kevin Thiele *Grassy Box Woodlands CMN*

The common name Lotus conjures images of chanting Indian mystics and fat buddha-figures. The Lotus in question is a tropical water lily *Nelumbo nucifera*. But by a taxonomic accident, the true *Lotus* is an unrelated genus of legumes, one species of which, the Austral Trefoil (*Lotus australis*), is an uncommon inhabitant of grassy box woodlands.

The Austral Trefoil is a perennial herbaceous legume with a growth habit quite similar to cultivated lucerne. In fact in some parts of New South Wales it's called Barwon Lucerne. Like lucerne, a woody crown helps it survive harsh periods of drought or winter cold when the above-ground parts die back. Its leaves are soft and lucerne-like also, with three elongate leaflets on a short stalk. It can be easily distinguished from lucerne by its leaves having two other leaflets at the base of the leaf-stalk, quite different from the small, transparent stipules at the base of a lucerne leaf. And unlike the small, purple flowers of lucerne, Austral Trefoil flowers are large and usually white to shell-pink (see picture).

Like many other grassy woodland plants, Austral Trefoil was once common and is still widespread. It ranges almost throughout Australia except the desert inland, but is mostly found in temperate and subtropical areas. In the region of the grassy woodlands, it's now somewhat more frequent on the Northern Tablelands and Slopes of New South Wales than it is further south. But nowhere is it common. It's sensitive to set-stocked grazing, and in many areas only persists in country cemeteries, roadsides, rail lines and Travelling Stock Reserves, or in parts of paddocks where grazing is light.

Being a legume, Austral Trefoil fixes nitrogen from the air. Along with other native legumes such as the psoraleas (*Cullen* species), it has promise as a component of native perennial pastures. There are reports of stock poisoning caused by high levels of cyanide compounds at times, but this trait is variable in wild plants and could probably be bred out (many pasture species also produce cyanide). Similarly, wild plants differ in their vigour and competitiveness. Very little work has been done to assess the potential of native legumes in sustainable grazing systems, but this is a growing field with much potential.

Lotus australis, Monteagle Cemetery Spring

For these reasons, retaining many different natural populations of Austral Trefoil is important – one of them may hold a key to agricultural sustainability. That's another reason why saving Grassy Box Woodland remnants, with their precious cargo of native plants and animals, is so important.

References:
Clarke PJ, Davison EA, Fulloon L (2000) Germination and dormancy of grassy woodland and forest species: effects of smoke, heat, darkness and cold. *Australian Journal of Botany* **48**, 687-700.

Growing Lotus australis

Austral Trefoil should be easy to grow, and perhaps to reintroduce into Grassy Box Woodland remnants. Collect seeds in mid to late summer as the pods begin to split. Timing of seed collection may be difficult, as the pods will split explosively on a hot day as soon as the seeds are ripe – if you know where there is a patch, keep checking frequently as the seed pods harden. The seeds have hard coats like wattles and other legumes, so don't germinate readily. About 20% germination can be achieved by moistening seeds and leaving them in the dark. Better results will be achieved from hot-water treatment – put some seeds in a jar and cover with just-boiling water. Leave to cool, then examine the seeds – some will have swelled to double their size, others will be unchanged. Sow the swollen ones in ordinary potting mix. Germination will be rapid.

Re-introducing Austral Trefoil into your remnant

The simplest way to reintroduce Austral Trefoil to a remnant is to collect seed from the closest wild population, then scatter the seed in a small area and watch to see what happens. This is fairly hit-and-miss though - the seeds may be eaten by seed predators such as insects or pigeons, or the young seedlings may die from damping off or competition with weeds or other native plants. A more reliable method would be to grow plants in pots then plant out when well-grown. There is no published information on how successfully Austral Trefoil can be transplanted, but it should be fairly tough if conditions are suitable. If you intend to reintroduce Austral Trefoil, remember the following points:

- You need to apply for a licence under the *Threatened Species Conservation Act* is you are collecting from a remnant of White Box Yellow Box Blakely's Red Gum as it which is an Endangered Ecological Community.
- Reintroduction onto a remnant on public land may only proceed with permission – consult NPWS for advice.
- Always collect seed from the closest population, and never collect more than 10% of the seed from any population. Again, always seek permission from the owner.
- Keep records, of the location of the original seed, and the success of the re-introduction attempt. This is important for two reasons – so that others can learn from your success or failure, and so that future workers will know the provenance of your plants.

Suzanne Prober and Kevin Thiele are freelance botanists. They have studied Grassy Box Woodlands for over 10 years.

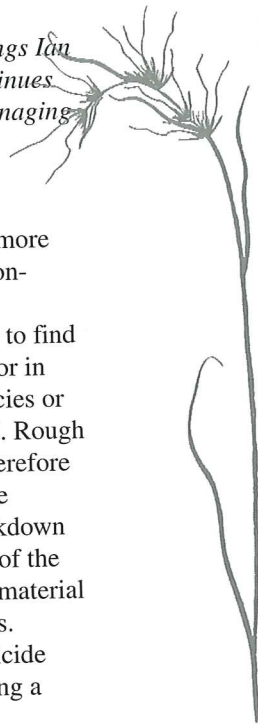
Restoring a kangaroo grass understorey

Part 2: Sowing and management

Ian Cole *Terrestrial Ecologist, CNR, DLWC, Cowra*

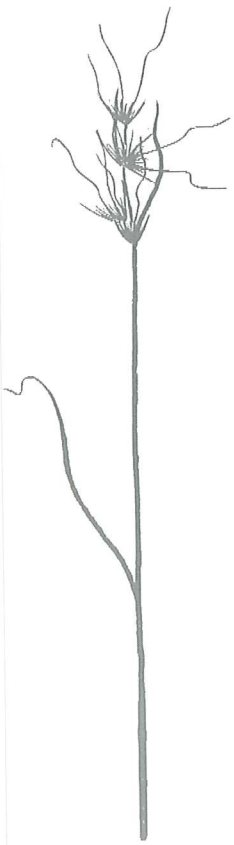
LAND & WATER CONSERVATION

In the last issue (No 2) of Woodlands Wanderings Ian discussed harvesting kangaroo grass. Ian continues the article with information on sowing and managing kangaroo grass.



Sowing kangaroo grass

Products containing awned seed are probably more suited to direct spreading on inaccessible or non-arable areas than are un-awned seed products. Although awned seed has a remarkable ability to find suitable microsites, establishment rates are poor in areas with complete groundcover of other species or where the soil surface is compacted or crusted. Rough cultivation prior to spreading seed-hay will therefore improve establishment. Management to reduce vegetative cover in spring by applying a knockdown herbicide in early spring prior to germination of the kangaroo grass followed by burning the dead material has improved establishment in some situations. Alternatively, crash grazing followed by herbicide application would have the benefit of producing a litter 'mulch' that has proved beneficial to establishment especially in dry seasons.



Pure (unawned) kangaroo seed may also be sown into a freshly worked but rough seedbed that will allow seed to fall into depressions where it will be covered by loose particles of soil and trash. On non-arable sites where this is not possible, hydroseeding or hydromulching techniques should be considered, but are probably only relevant to small scale well-funded revegetation projects. Apart from this, the better use for pure seed is on relatively flat terrain where it can be accurately sown about 1 cm deep into a relatively uniform seedbed using conventional seeding machinery.

Establishment rates using all these techniques will vary considerably depending on site conditions and season. As a guide it is reasonable to expect about 5% of spring sown viable seed to develop into established plants by the end of summer from a relatively dry season, and up to 50% in a more favourable season. Even low plant establishment should be considered successful, as kangaroo grass competes well with most species especially where site fertility is low. Even densities of 1-2 plants per square metre are capable of developing into thick stands within 3-5 years given a couple of favourable seasons. On higher fertility sites the ability of kangaroo grass to compete with other grassy perennials such as phalaris and paspalum is much reduced and they should be controlled either by herbicide or cultivation prior to sowing.

Management of kangaroo grass

Establishing kangaroo grass seems to tolerate light grazing from a number of herbivores including rabbits, deer and kangaroos although plant numbers will be reduced. Areas should however be fenced to exclude sheep and cattle in the first year. Once established, high intensity-intermittent grazing by sheep or cattle should be timed to suppress weed growth and prevent the kangaroo grass from becoming too tall and rank. Tall rank kangaroo grass stands become poorly rooted and are severely damaged by grazing.

Weed suppression can also be augmented by herbicides if this is appropriate to the site. Kangaroo grass seems to be tolerant of Simazine, Atrazine, Verdict®, Glean®, and most selective broadleaf herbicides when used at recommended rates to control specified weeds in pasture.

For further information see:
Ian Cole, Iain Dawson, Warren Mortlock, and Susan Winder. (2000), FloraBank Guideline 9: Using Native Grass Seed in Revegetation, FloraBank, Canberra.

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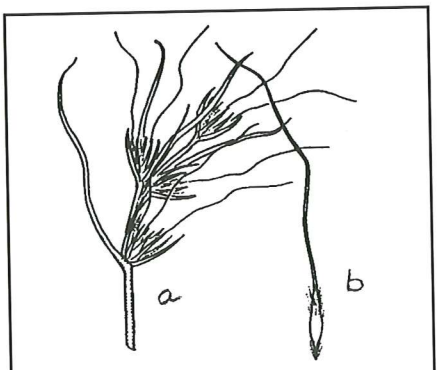
If you would like a copy of the article on harvesting kangaroo grass, contact the CMN co-ordinator (details on the back page).



a. seed head b. individual seed with awn

Squirrel Glider (*Petaurus norfolcensis*)

Dr Andrew Claridge *Senior Threatened Species Officer, Southern Directorate, NSW NPWS*

The Squirrel Glider is a medium-sized arboreal (tree-dwelling) marsupial, with a distribution ranging from northern Victoria, through the eastern half of New South Wales and Queensland, to the base of Cape York in northern Queensland. Throughout much of this range, the species is considered rare, particularly so in remnant woodland and riverine forests that are a precious yet diminishing natural feature of our inland rural landscapes.

Squirrel Gliders usually live in small family groups, comprising one adult male, one or more adult females and their associated offspring of that season. Very occasionally, one or more young males may also be associated with a group of up to ten animals, including four to five adult animals. Family groups occupy discrete territories, which range in size depending upon habitat quality.

An important component of Squirrel Glider habitat is the presence of large, old, hollow-bearing trees. Within the protection of these trees, gliders den in bowl-shaped, leaf-lined nests. Entrance diameters to hollows containing nests are typically narrow fitting, being just large enough to allow access to gliders but prevent intrusion of larger predators. Where such large trees are absent, Squirrel Gliders are also known to nest in holes in tree stumps, particularly where coppice stems afford extra shelter.

Squirrel Gliders are nocturnal, emerging from their nest shortly after dusk and not returning until later the same evening or in the early hours of the following morning. Depending on the food types they are seeking, animals emerging from their nest either move up into the canopy of trees, or glide down to smaller shrubs. Insects provide the bulk of diet throughout the year, which are gleaned either from leaves or other plant parts such as flowers, or from under bark. During key times of the year, such as winter, plant exudates such as sap, gum, honeydew and nectar, is a preferred food source.

In areas where the overstorey canopy is discontinuous, Squirrel Gliders may be forced to the ground in order to move from one patch of preferred habitat to another. This is particularly the case for offspring dispersing away from their maternal family group. In such circumstances, gliders may fall prey to introduced predators such as the Red Fox (*Vulpes vulpes*) and Feral Cat (*Felis catus*). Even if they avoid these predators, other perils may await. Barbed wire fences, in particular, are a hazardous boundary to movement, and in some landscapes gliders may perish after being caught and subsequently tangled on barbs.

A range of measures may help conserve the Squirrel Glider in woodland and riverine forest landscapes. First and foremost, protecting remaining large hollow-bearing trees, including dead ones, is vital to ensure den sites are available. In some areas where such trees are absent or few, establishing nest boxes may be a necessary alternative and may encourage gliders to move back into sites. To ensure a supply of den trees for the future, replanting schemes using local eucalypt species or allowing natural regeneration to occur may be critical. Enhancing the diversity of shrubs in the understorey may help provide alternative foraging substrates, particularly at sites where tree species diversity is low.

Photo: P. Menkhorst © NPWS

Status: In New South Wales the Squirrel Glider is listed as a Vulnerable species under the *Threatened Species Conservation Act 1995*. In addition, under the same legislation, an Endangered Population of Squirrel Gliders is listed for the Wagga Wagga Local Government Area. The species has also declined in distribution in Victoria and is listed as Vulnerable under the *Flora and Fauna Guarantee Act 1988*.
Description: Squirrel Gliders are small arboreal (tree-dwelling) marsupials, characterised by blue-grey to brown-grey fur above while the belly is a rich white or creamy white colour. There is a dark stripe between the eyes to the mid-back and the tail is soft and bushy. Squirrel Gliders are up to twice the size of their common relatives, Sugar Gliders, and their facial markings are typically more distinct.
Diet: Squirrel Gliders are primarily insectivorous but also eat seeds and plant exudates such as sap, gum, honeydew and nectar, as well as eucalypt pollen. The preference for inhabiting mixed-species eucalypt stands may be related to the more predictable availability of pollen and nectar at key times of the year (typically winter). In stands of simpler overstorey composition, such as River Red Gum forests, the absence of a reliable source of pollen and nectar may be compensated by the availability of gum from Acacia.
Reproduction: Breeding usually commences in late winter or early spring with young born between August and December. Average litter size is 1.5-2 young, depending on location.
Habitat: Across inland rural landscapes, Squirrel Gliders are mainly confined to dry sclerophyll woodlands and riverine forests. Eucalypt species known to provide suitable denning and foraging resources include Blakely's Red Gum, Grey Box, Red Ironbark, River Red Gum, White Box and Yellow Box. Shrub species in the genus *Acacia* also form key foraging habitat at certain times of the year.
Size: Adult Squirrel Gliders have a head and body length between 180-200 mm. Tail length varies from 220-300 mm. Body weight ranges from 190-300 gms. Adult Squirrel Gliders have a head and body length between 180-200 mm. Tail length varies from 220-300 mm. Body weight ranges from 190-300 gms.

Andrew is a Senior Threatened Species Officer in the Southern Directorate of the NSW National Parks and Wildlife Service.

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CHARLES STURT UNIVERSITY

Greening Australia

Research Update

Recruitment of woodland trees on agricultural land in the Central Tablelands

Dr Donna Windsor, *Greening Australia* and Dr David Goldney, *Charles Sturt University*

Grassy eucalypt woodlands naturally occur on the more fertile soils of the lower valley floors to lower slopes. In the Central tablelands of NSW very little, if any, natural regeneration of the dominant eucalypts occurs due to extensive modification of the environment as well as continuous livestock grazing.

Integrating nature conservation within agricultural systems has been recognised as a priority to achieving landscape sustainability. This would include a change from traditional European management practices to those that incorporate and manage native vegetation as an integral part of their agricultural enterprises. Part of this process would involve encouraging natural regeneration of extant populations through active management and implementing strategic restoration programs.

Mature Yellow Box trees currently providing important habitat but with no recruitment for the long-term

An experiment across agricultural land in the Central Tablelands aimed to identify optimum conditions required for encouraging recruitment of two woodland species, *Eucalyptus melliodora* (Yellow Box) and *Acacia dealbata* (Silver Wattle).

Livestock and rabbits were excluded before experimental treatments were applied around existing mature *E. melliodora* trees in various states of health. The experimental treatments applied were selected to be practical and cost effective and included: seed application, understorey burning, ant control, scalping (grading), scarifying, herbicide, herbicide and scarifying and scalping and scarifying.

Although rainfall was limited during the study period, better recruitment of the woodland species was obtained in exclosures where mature trees were in healthy condition and where additional seed had been applied. The combined scalping plus scarifying and herbicide plus scarifying ground treatments resulted in significantly higher recruitment outcomes than resulted from most other experimental treatments. Burning the understorey or applying an ant control treatment did not appear to influence seedling recruitment.

For more information contact:
Donna Windsor
Greening Australia, Central West Region,
30 Lynch St Cowra, 2794. Phone (02) 63 419 310
Email: dwindsor@ix.net.au

NPWS SEEKS LONG-LEGGED BIRD: Have you seen the Bush Stone-curlew?

Catherine Price, *Biodiversity Management Unit, NSW NPWS*

Have you heard the wailing 'weer-loo' call of the Bush Stone-curlew recently? Have you spotted this long-legged bird in your district? The National Parks & Wildlife Service is calling on the local community to help determine where this endangered bird is still found across NSW.

The Bush Stone-curlew (also known as the Bush Thick-knee or Bush Turkey) was once a common resident of open woodlands across NSW. With the clearing of much of its habitat for agriculture and the proliferation of foxes, it is now endangered in NSW. However, the Riverina and South-western Slopes seem to be one of the last remaining strongholds for the species.

Fortunately, by taking just a few simple steps it is not difficult to manage bushland remnants in a way that suits the Bush Stone-curlew. The main requirements include fox control (fencing or baiting), preventing stock from trampling eggs, keeping grass below about 15cm in height during the breeding season (August to February) and leaving scattered timber and sticks on the ground for camouflage. Rehabilitation of bushland remnants and the regeneration of habitat (even small areas such as around isolated paddock trees) will also make a big difference to the ongoing conservation of the species. Corridors of suitable habitat help young birds spread into formerly inhabited areas.

If you have seen the bird recently please let us know by filling in the enclosed survey form and sending it (no stamp required) to Bush Stone-curlew Survey, Reply Paid 1967, Hurstville NSW 2220.

If you would like information on the Bush Stone-curlew or its management, contact Catherine Price on (02) 9585 6602 or email: catherine.price@npws.nsw.gov.au

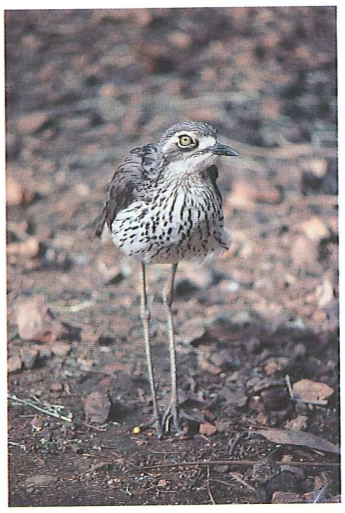


Photo: R. Bennett © NPWS

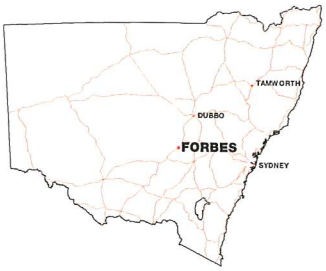
The National Parks and Wildlife Service website contains information on the Bush Stone-curlew – go to: http://www.npws.nsw.gov.au/wildlife/thr_profiles/tsproflist.htm

White Bend Remnant Vegetation Preservation Site, Forbes

Len Reade & Steve Barnard *Forbes Urban Landcare Group*

Preservation of native vegetation on this site is an initiative of the Forbes Urban Landcare Group in conjunction with Forbes Rural Lands Protection Board, Forbes Shire Council, Greening Australia and the Natural Heritage Trust.

Approximately ten hectares of remnant vegetation exists six kilometres south of Forbes on a shaly hill close to a bend in the Lachlan River known as White Bend.



The low hill contains an excellent representation of a woodland community dominated by *Eucalyptus albens* (White Box) and *E. microcarpa* (Grey Box). There is also a varied shrub layer which is dominated by *Dodonaea* sp. and *Acacia* sp. and a well represented groundcover layer. The central area of the site is very degraded owing to previous small scale quarrying operations by local residents and council. Local residents had used the quarried area as an illegal rubbish tip.

During the mid 1990's the site, which is managed by the Forbes Rural Lands Protection Board (RLPB), was the subject of a study to assess the ecological condition of many of the state's Travelling Stock Routes (TSR).

Drs Prober and Thiele with Greening Australia and members of the Forbes Urban Landcare Group

From this study the site was recognised as significant owing to the diversity of plant species but was considered too small to be worthy of fencing out from stock access.

Two members of the Forbes Urban Landcare Group (FULG) have used the area as a study site for tertiary studies in the environmental field. Both could see the value of the site and have pressured the RLPB and Forbes Shire Council, with limited success, to remove rubbish and take steps to preserve the remaining vegetation.

During 1999 FULG was successful in gaining funding under the Lachlan Remnant Vegetation Management Incentives Project to fence the site. Funding for this project was provided from the Natural Heritage Trust.

Along with fencing, the Landcare group, in conjunction with Forbes Shire Council, has removed huge amounts of rubbish and started to control weeds on the site. St Johns Wort and Horehound are the main problem weeds at present.

The vehicle tracks present on the site have started to revegetate since the fencing and the Landcare group has started to list the plants and bird life present on or using the site.

The site has potential for use as a seed source for further revegetation projects and as an educational resource for local schools and interest groups.

For more information contact:
Steve Barnard
President, FULG
PO Box 823
Forbes NSW 2871
Phone 02 6852 2507 (AH)
Email: barnard@westserv.net.au

This site is part of the Grassy Box Woodlands CMN.

Biodiversity Management Network for the Victorian Riverina Plains.

The northern Victorian plains has been greatly modified over the last 200 years. Of the rich patchwork of grassy box and red gum woodlands, grasslands and wetlands only a few threads remain.

The Trust for Nature (Victoria) is establishing the Boosey and Broken Plains Biodiversity Network focussed on the Katamatite area (north of Shepparton) and the Lower Acova Biodiversity Management Network on the area around Quambatook.

The work is being funded by the Natural Heritage Trust's Grassy Ecosystems Community Grants Program (administered by the WWF) and is supported by the Goulburn Broken Catchment Management Autority.

For more information contact:

Helen Ryan, Boosey & Broken Plains BMN

Rob Orr, Lower Avoca BMN

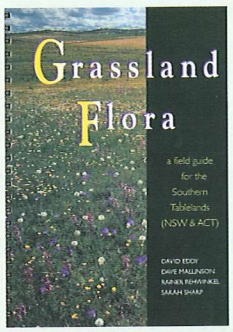
Phone: 03 5761 1558 www.tfn.org.au

Progress in grassy ecosystem conservation in the Southern Tablelands

Much has been achieved towards more effective conservation of grassy ecosystems, including the following:

- Many landholders throughout the region have put a lot of effort into sustainably managing grasslands. Some sites of remarkable diversity have been retained on private land holdings. Case studies of these will be presented in future editions of *The Austral Bugle.*

- A survey by CSIRO entomologist Dr Geoff Clarke has uncovered the endangered Golden Sun Moth at various new locations, including Gundaroo Common.



- *Grassland Flora - a field guide for the Southern Tablelands (NSW & ACT)* is now in its third print run. If you would like at find out how to obtain a copy, please contact Rainer Rehwinkel on (02 62989745 or email: rainer.rehwinkel@npws.nsw.gov.au

- The establishment of the Old Cooma Common Grassland Reserve. This project was funded by the NHT-WWF Grassy Ecosystem Devolved Grant and undertaken by Friends of Grasslands. The reserve protects a large population of the Monaro Golden Daisy.

- Work is proceeding on the establishment of two new nature reserves to protect grasslands. One is to be known as Kuma Nature Reserve. This reserve, near Cooma, NSW, will protect a grassland with populations of three threatened reptile species (Grassland Earless Dragon, Striped Legless Lizard and Little Whip Snake). The other proposed reserve is south of Bungendore, NSW, and will protect a very diverse grassland site - an area rich with wildflowers, including large populations of regionally declining orchids, lilies and daisies.

- Work is proceeding on the negotiation of a number of Joint Management Agreements for travelling stock reserves and council lands. This project is supported by funding from the NHT-WWF Grassy Ecosystem Devolved Grant.

- The National Recovery Team for the *Natural Temperate Grasslands of the Southern Tablelands of NSW and ACT* is finalising the preparation of Draft National Recovery Plan for this Commonwealth listed endangered ecological community.


Photo: K. Thiele

- Work is nearing completion on the *Grassy Ecosystem Management Kit: a guide to developing conservation management plans.* This kit will assist land managers with grasslands or grassy woodlands to undertake a conservation assessment of their sites and, after identifying issues and goals, then to develop a management plan. A set of monitoring guidelines is also included.

The kit is being produced by Sarah Sharp of Environment ACT, Josh Dorrough, formerly of the Australian National University, and now at the Arthur Rylah Institute, Victoria and Rainer Rehwinkel of NSW NPWS. This project was funded by the NHT-WWF Grassy Ecosystem Devolved Grant The kit will contain a new set of management guidelines, developed by David Eddy of WWF. If you would like to be placed on a register to receive this kit, please contact Rainer Rehwinkel on (02 62989745 or email: rainer.rehwinkel@npws.nsw.gov.au.

- Work is nearing completion on a major project entitled *Planning framework for natural ecosystems – NSW Southern Tablelands and ACT*. This project is a collaboration between various government and non-government agencies and follows extensive survey and mapping work within the Southern Tablelands. There has been a major focus on grassy ecosystems in this project. The main outcomes of the project will be a reference document that will give guidelines for ensuring that development and management impacts on natural ecosystems are integrated within existing land use planning and management processes. The report will include comprehensive maps and other scientific information on the natural ecosystems of the region. This project was supported by the NHT.

Snippets

Friends of Grasslands

With some 150 members, Friends of Grasslands (FOG) is a community group that promotes the conservation of grassy ecosystems. FOG has a major educational focus, and conducts regular field trips, seminars and slide presentations. We will endeavour to include a summary of events that FOG proposes, in future editions of The AUSTRAL BUGLE. To find out about FOG's currently planned events, please write to:

Friends of Grasslands
PO Box 987, Civic Square ACT 2608

Scientific committee listing

The NSW Scientific Committee has listed White Box Yellow Box Blakely's Red Gum Woodland as an endangered ecological community under Schedule 1 of the NSW Threatened Species Conservation Act, 1995.

Copies of the final determination are available on the NSW National Parks and Wildlife Service Web page on: www.npws.nsw.gov.au.Ts150302.pdf

Stop Press

A Conservation Management Web Page is now up and running. See it at: www.conservation-management-networks.net

Have your say

A representative committee is proposed to be established to assist us to plan future directions of the Southern Tablelands Grassy Ecosystem CMN. We will most likely meet quarterly in various locations throughout the Tablelands. If you are interested in participating in this committee, either as an individual, or as a representative of a group, please lodge your nomination by writing to the address in the Making Contact box, at right.

The Austral Bugle

This beautiful plant, known scientifically as *Ajuga australis*, is found in two distinct local forms - a taller plant in grassy woodlands and a low rosette in natural grasslands. We have adopted this plant as the name for this newsletter. It's very appropriate - the Austral Bugle is a great standard bearer for the vast array of other grassy ecosystem species of the Southern Tablelands.

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MAKING CONTACT

Expressions of interest are invited from all persons or groups wishing to be involved by writing to

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The AUSTRAL BUGLE (Southern Tablelands Grassy Ecosystems CMN newsletter supplement to the Grassy Box Woodlands CMN newsletter WOODLAND WANDERINGS) was written and edited by Rainer Rehwinkel. All photographs by Rainer Rehwinkel, unless indicated. WOODLAND WANDERINGS edited by Erica Higginson, Suzanne Prober & Kevin Thiele.

The AUSTRAL BUGLE was produced with funding from the Federal Governments's NHT Endangered Species Program.

Printed by New Era Graphics. WOODLAND WANDERINGS and the AUSTRAL BUGLE are published twice yearly for the CMNs.

The CMN project is part of NSW NPWS Conservation Partners Program.