

# News of Friends of Grasslands

Supporting native grassy ecosystems

November-December 2002



## Program

**9-10 November - Jackie Miles' inland coastal sites** - Jackie's program will start at a leisurely pace in the Bemboka-Candelo area on the Saturday, and we'll stay at a Burrigata B&B on the Saturday night. On Sunday morning we shall drive down the coast to Eden, heading inland to cemeteries at Towamba, Rocky Hall and Wyndham, and leave the valley via Cathcart & Bombala. Each day will stand on its own, and accommodation at Geoff's and Margaret's at Nimmitabel on the Friday night is available. On Saturday night, the B&B will be \$20 per person and that's with linen provided, etc. They also have camping sites for \$10 per night. It's a great location and we shall do a little spotlighting with great expectations! To book call Susan or Margaret, contact details on back page.

**Sunday 24 November - Tinderries walk.** Meet at Service Station on Highway at Michelago at 9am. We will visit a grassland on the way and then those alluring mountains east of Michelago. Bring your own lunch. This is a somewhat demanding walk, quite steep and scrubby on occasion.

**Saturday 7 December - Smokers Flat in Namadgi NP, 10:00am to 12:30pm.** Join us to see lots of unique sub-alpine grass and wildflower species. Meet at corner of Corin Road and Smokers Fire Trail at 10am. If you get to Corin Forest Recreation Area you have gone one kilometre too far.

## Membership Renewal

Yes, it is time to get out the chequebook and renew your membership for 2003. Please do this promptly as it will save Kim and Margaret chasing you up. We have kept fees to their current low levels: \$20 for individuals and families, \$50 for corporate members and \$5 concession for those on social security benefits. Donations are welcome as the budget is tight. If you have any doubts about rejoining, remember we need your support.

In this year we have:

- Continued with a quality newsletter,
- Had a widely supported field program, particularly reaching out into new areas,
- Presented several workshops,
- Been involved with many official agencies providing advice on and lobbying for grassy ecosystems - this has been very demanding particularly in (but not confined to) the ACT given the initial ACT Government decision on East O'Malley and the plethora of consultations undertaken by the ACT Government,
- Networked with many people with shared visions and objectives,
- Continued to visit members' properties or sites in which they are involved,
- Assisted with field surveys, and
- Enhanced members' hands-on experience.

An important initiative has been making the case for a more strategic approach to conservation planning and in particular encouraging government to establish the infrastructure to make grassy ecosystems restoration a reality. In addition we have been supporting the Australian Native Plant Society to establish a regional botanic garden and centre with a focus on the plants of the Southern Tablelands.



Two orchids, a Double-tail (top), *Diuris punctata*, and a Greenhood, found during FOG's Western Slope's trip in October.



## News Roundup

### Grassy ecosystem update

Warmed by the cosy fire at Mugga Mugga, there was a good turn out for the Grassy Ecosystem Update on 18 August. Rainer Rehwinkel spoke first on the *Planning Framework for Natural Ecosystems of the Southern Tablelands and ACT*. This project grew out of the need to map the ecological resources of the ACT and surrounding areas so that appropriate conservation management measures could be put in place, while permitting, at the same time, the realisation of the region's economic potential. The project has provided a series of maps showing the key ecological habitat types or ecological communities in the region, the location of threatened species and ecological communities, and key sites. It is hoped that these maps will provide a conservation strategy for the protection of the region's ecological resources for use as a planning tool by government agencies, catchment authorities and the community. The *Planning Framework* is due for release in late October or early November 2002.

Sarah Sharp spoke on the *Management Kit for Grassy Ecosystems: a guide to developing conservation management plans*, authored by her and Josh Dorrough, Rainer Rehwinkel and David Eddy. The *Kit* is expected to be completed by late 2002. It will show how to assess a site and prepare a conservation management plan, allowing for plan reviews to allow for changing circumstances and changes to management if certain practices are found to be inappropriate. She provided a handout showing various extracts from the *Kit* to illustrate

First intrigued, then smiling during Sarah Sharp's presentation at the FOG Update at Mugga Mugga 18 August 2002.

how it might be used in practice.

The third topic was the implications of the NSW listing of *White Box-Yellow Box Blakely's Red Gum Woodland*, more simply referred to as the Box Woodlands. Rainer summed up the area of Box Woodlands in

#### In this issue

- Grassy ecosystems CMNs
- A rocky refuge in an old paddock
- Water Couch - productive quality grass for acid sulphate soil remediation
- Tasmania: land, water and wool
- Austral Adder's Tongue

NSW, and summarised some of the key considerations and implications for conservation planning now that the listing was official. He provided two very useful handouts on the Box Woodland Community: a fact sheet and identification guidelines.

There were numbers of comments and questions, illustrating the importance of these issues for amateur grassland enthusiasts. In thanking the speakers, Geoff Robertson stated that each of the three issues were of extreme importance. He mentioned that Alan Ford and he had been involved in some workshops on the *Framework* and considered that the *Framework* had informed FOG's overall conservation strategy. The draft *Kit* had greatly stimulated FOG's thinking on approaches to conservation management and in offering informal advice on managing remnants, while the listing of the Box community consolidated and enhanced its involvement in the region.

### Eurobodalla NP - the coastal fringe Alan Ford

On a sunny weekend of 21-22 September FOG went to the coastal fringe (or what is left of it) around Moruya and points south to view the vegetation and examine the

landscape. Against a back-drop of stunning scenery (when the houses were out of sight) we found a variety of habitats from grass-based, Banksia dominated, Acacia dominated through to eucalypt forest.

It was a very impressive practical lesson in the problems confronting management of these remnants. How to maintain the diversity of plant life and prevent one species taking over an area of coastal hinterland is going to be a challenge. (The amount of effort put into controlling Bitou Bush is one issue - and the results could be seen. However, that is an exotic weed.) What has to be recognised is that in places a Banksia species is invading some grassy areas (which may themselves be secondary grasslands) and will take them over unless the succession cycle is modified. The fundamental issue here is that the headland is a remnant and unless the cycle is modified we will lose everything. There is not much left to lose.

The Saturday began at Toragy Point, near Moruya South Head. I appear to have recorded 16 native species, an underestimate, if ever there was one. A *Scaevola* in flower was a definite highlight, to say nothing of the *Casuarinas* looking quite out of place so near the sea.

From there around the corner to North Congo, around 40 species in a coastal scrub community that included a wet area. Strange plants like the Bleeding Heart tree, an epiphytic orchid halfway up a tree and a *Parsonsia*. Most of us learn that swimming in the sea has its perils but the coast is a strange place botanically to one from the inland.

South to Meringo, the habitats are getting confusing but the Banksia and the casuarina looked similar and the Acacia was boring, if not positively dangerous - flanked by around 20 other native species.



Sunday morning to a site known as South Congo - a eucalypt woodland with a stringybark foundation. The pace was hotting up - 20 metres in 20 minutes, such was the diversity - around 30 native species. Another corner, another headland, Bingie Point; a real lesson in sitting down at one spot and listing. Tiny plants with long names, a *Hydrocotyle* and *Plantago* among them marking out the parameters of diversity of the flora at these spots.

We ended at Jemison's Point, adjacent to Potato Point. This is a very large area of grassland but it began to rain. Next time. Our thanks to Rainer Rehwinkel for an outstanding weekend.

### Western Expedition

#### *Aristida*

The 10-14 October FOG Western Expedition opened with an introductory talk by Kevin Thiele to the Gundagai Bushcare Group on Grassy Whitebox woodlands. It was a fascinating talk on the nature of the beast and his and Suzanne Prober's latest research, which is to examine the role of nitrogen in relation to the competition between weeds and native flora and methods to shift the balance towards natives. One amazing way is to use sugar to change the carbon/nitrogen balance, soaking up the nitrogen and allowing the natives a better run.

On Friday, we started at Pevensey Travelling Stock Reserve (TSR) north of Cootamundra, a Yellow Box/Grey Box/White Box remnant with over 40 native species, including a raft of Burr daisies (*Calotis* spp.), and continued on to a roadside site north of Grogan. This had a spectacular flowering of Copperwire daisies (*Podolepis* sp.) and was well worth the long drive.

On Saturday we met Kevin Thiele at Monteaegle Cemetery, a stunning White Box/Yellow Box grassy woodland north of Young. The cemetery has a voluntary conservation agreement and a management plan. It is a centrepiece for the Conservation Management Network that Kevin and Suzanne Prober have been developing on the Western Slopes of NSW. Kevin Thiele showed us his area of 20 plots, some burnt, some mowed and spoke about the results to date. He also pointed out the *Poa* under the

drip line of the Yellow Box and the weed ring that tends to form under certain conditions. From there we went to *Showground* TSR outside Young to examine another experiment in weed ecology.

To the Yellow Box remnant at Wallendbeen Cemetery, with its Kangaroo Grass and Billy Buttons (*Craspedia* sp.). In fact the cemetery was notable for the latter. But then again, a number of these places had the Yam Daisy (*Microseris* sp.), a plant that you have to really search for these days.



Those beautiful coastal grasslands seen on the FOG September trip. Below, looking upward, looking downward and looking about. Photos by Alan Ford.



We ended that day in Stockinbingal Cemetery, which is lucky to have a very enthusiastic school headmaster involved in its management. It was notable for the school project that had placed student artwork, based on the local flora, on exhibition in local libraries and other public places and for a little *Eremophila* that occupied our time. As occurs sometimes, it had two species of *Dianella* in the cemetery.

Sunday began with Rainer Rehwinkel leading us to a remnant woodland near Tarcutta Cemetery. It was notable for the shrubby understorey, people bending down

to smell the Chocolate lily (*Dichopogon strictus*). From there far to the south (on the highway) lies the weedy entrance to Kyeamba TSR. When you drive in a little way you begin to realise that this is a very important little White Box/Yellow Box gem. The native species list is huge and that is without considering the nests of Diamond Firetails. We then drove back to Tarcutta to visit another important site, Mates Gully TSR. This is important for the Ironbark (*Eucalyptus sideroxylon*) element of the flora. Again, a large native plant list - clearly, a very significant place.

On Monday, we were the guests of Mason Crane and the Gundagai Bushcare Group, beginning with the White Box remnant in South Gundagai Cemetery. The Bushcare Group has adopted this as one of its main sites and the list of species in such a small area is really quite impressive. The second site that the group has concentrated on is Mt Parnassus, which towers over Gundagai. This site was notable for the Senecio and the amount of Native Flax (*Linum marginale*). This was followed by Muttama Cemetery, a Yellow Box woodland with many weeds but also a surprising number of natives scattered through it. Another little area awaiting restoration, and it would be possible judging by the number of natives present in the ground layer. The day ended with a visit to a site on a hillside at Coolac, a Drooping She Oak (*Allocasuarina verticillata*)/Red Gum (*Eucalyptus* sp.) community with a small Sandalwood and Wedding Bush element due to the serpentine soil.

Twenty-nine people participated in all including a few preteens. Thanks to Kevin Thiele, Rainer Rehwinkel,

Mason Crane and Margaret and Geoff.

### Monaro grassland project finish

On 30 September the Monaro Grassland Advisory Committee (MGAC), in which FOG is an active participant, celebrated the Monaro Native Grassland Project's completion and achievements, and awarded certificates to a number of landowner participants who had signed voluntary conservation agreements with WWF. John King, NSW Farmer's Association acted as MC. Gary Nairn, Federal MP for Eden-Monaro, Robert Purves, President WWF Australia, two landowners, Ross Sherlock and Narelle

Radford, and Project Officer, David Eddy, spoke about the achievements and their participation in it.

Under the project, public and private land managers have made a commitment to improve the conservation management of at least 2,600ha of grasslands on travelling stock reserves, rural cemeteries and council reserves, and private land. Two new public grassland reserves have been created in the region at Cooma and joint management agreements are being prepared for more than twenty public grassland reserves on the Monaro. As part of the project David co-authored *Grassland Flora* and authored *Managing Native Grasslands: a guide to management for conservation, production and landscape protection*. Workshops and tours have been organised for local schools, land managers and members of the public. One way and another the project has resulted in a large amount of conservation funding finding its way to the Monaro. Probably the least tangible but most important has been the radically changed perception of Monaro Grasslands.

MGAC will continue to function as the project transforms itself into the Monaro Grassland Conservation Management Network which will be launched before year's end.

#### Nomination of eleven birds

Canberra Ornithologists Group (COG) are finalising submissions to nominate eleven birds as threatened under ACT legislation. These submissions are based on evidence collected by COG over many years. For example, three birds once regarded as common have declined by over fifty per cent over the last two decades according to COG surveys. These are the Flame Robin, Scarlet Robin and Diamond Firetail. Eight other birds, according to COG have also declined from 30 to 50 per cent. These include the Red-capped Robin, Jacky Winter, Crested Shrike-tit, Dusky Woodswallow, Varied Sitella, Southern Whiteface, White-winged Triller and White-fronted Chat. If nominations are accepted, these would join six other bird species listed as threatened in the ACT: Hooded Robin, Swift Parrot, Suburb Parrot, Brown Treecreeper, and Regent Honey Eater. Most of these birds are heavily reliant on grassy ecosystems for habitat.

Jenny Bounds, former COG President, in an article in the latest *Ecoview*, outlined the extinction process and the underlying threats, especially loss of habitat through clearing such as the proposed developments at East O'Malley. Since 1966, COG

has been systematically monitoring grassy woodland sites in the ACT. COG now has more than 100 sites in the region which are regularly monitored.

#### FOG submissions

There has been a plethora of requests for submissions and follow-up from earlier submissions. Apart from the submissions described below, FOG sent a letter of support to Queanbeyan Landcare to support its attempts to conserve Gale Precinct and made a submission to Environment ACT on Management Issues for ACT's Rural Riparian Zone. Copies of FOG submissions are available from the Secretary.

#### Community Forum on Action Plan 10

On 22 August FOG made a presentation to the Community Forum on the Review of Action Plan 10 and associated species organised by Environment ACT, and tabled a paper. There were a number of well-researched and thought-provoking contributions and FOG congratulates Environment ACT for organising the forum and the approach outlined in its presentations.

In its paper, FOG outlined its support of the approach being taken for the review of the ACT Action Plans on threatened communities and species, although it mentioned that there would always be some difference of view on how much was put/not put into conservation. It outlined what it saw were the strengths and weaknesses of the current Action Plan 10 and noted that many of its criticisms are already being addressed in the review.

It outlined what it would like to see come out of the review, namely:

1. Government commitment to retain all high and very high quality areas,
2. A broader definition of Yellow Box Red Gum Woodland,
3. Comprehensive maps and ground truthing (ie allowing the opportunities for maps to be checked against the situation on the ground),
4. An information update on species at various sites,
5. Integration of grassland, wetlands and woodland conservation,
6. More transparent information on different land tenures,
7. Proper community involvement,
8. A recovery strategy, along the lines advocated in its vision for Canberra,
9. Regular briefings on strategies, information and action plan updates during the process of the review, and
10. Allowing the process sufficient time.

#### ACT DV 200 - Residential landuse policies

In its submission FOG supported the Government developing a more strategic approach to spatial and social planning and economic management, and the themes running through DV 200 concerning proposals directed at sustainability, reducing run-off and downstream ecological effects on native fauna and flora, encouraging greater use of public transport, etc. However, it stated that many Government documents, including DV 200, are somewhat light-on when it comes to describing how such outcomes may be achieved in practice. The submission outlined various suggestions about how lands should be managed under a better framework based on better conservation management protocols and vegetation guidelines.

#### Kenmore/Progress Street Woodland

Following a request for a submission, FOG wrote to the NSW Department of Land and Water Conservation concerning the Draft Crown Land Assessment of the Kenmore/Progress Street Woodland, an area on the northern fringe of Goulburn. FOG supported the assessment, although it made some suggestions for improving possible conservation outcomes.

#### Vision for Canberra

Since the last newsletter, Geoff Robertson and Alan Ford met with ACT Planning Minister Simon Corbell (5 September) and ACT Environment Minister Bill Wood (11 September) to discuss FOG's vision of *Strategic Planning for Canberra*. As mentioned in the previous newsletter, the statement was published in the July-August 2002 Newsletter and subsequently sent to all Members of the Legislative Assembly. Reports on follow-up action in July and August were reported last time. Simon Corbell was receptive and said he would convey his broad support to Bill Wood. Discussion also covered a project in which Geoff has been involved as Conservation Officer for the Australian Native Plant Society, that is the establishment of a regional botanic garden, education and research centre, focusing on the ecosystems of the Southern Tablelands and their restoration. Bill Wood was also receptive and asked David Shorthouse to work with FOG and ANPS to prepare submissions that the ACT Government could consider - Bill suggested that any project should have a regional focus. As a first step it has been decided to hold a workshop of stakeholders to discuss a number of initiatives related to grassy ecosystems. The workshop is



planned for late November. A copy of the vision statement was also submitted as FOG's contribution to the ACT Sustainability discussion.

#### *Your Canberra your future*

A number of FOG members have participated in recent Government consultations on *Your Canberra your Future*. These have been wide-ranging consultations which have received much attention. Simon Corbell has flagged the possibility that the supply of Canberra land may shortly dry up if larger areas of Canberra are kept for conservation. In fact he mentioned that instead of Canberra having a twenty-five year supply of land, the ACT may run out in five years.

#### *Grassland National Recovery Plan*

Environment ACT has now completed the *National Recovery Plan for Natural Temperate Grassland of the Southern Tableland (NSW and ACT): an endangered ecological community*. In previous newsletters we have mentioned FOG's input into the drafting of this document as a member of the Natural Temperate Grassland Recovery Team. FOG has a copy of this document remains a draft until accepted by the Scientific Committee. We understand that Environment Australia will release the *Recovery Plan* for comment in the near future.

#### *Gungahlin Drive Extension*

FOG also submitted a formal statement on the Gungahlin Drive Extension following its verbal presentation to the ACT Government Consultation Process reported in the previous newsletter. Since its submission, the ACT Government mentioned that it would encroach on Black Mountain Reserve, a matter on which FOG is seeking further information.

#### *Nice photo of Sarah and David*

Canberra Times 24 August 2002 showed a nice photo of David Shorthouse, Manager of the ACT Wildlife Monitoring and Research Unit and Senior Plant Ecologist, Sarah Sharp, checking out Kangaroo Grass. Both are well known to most FOG members. The accompanying article provided

much background detail on David and the work of the Unit, part of Environment ACT, which in turn sits within the Department of ACT Urban Services.

#### *From GrassEcol Update*

Donna Smithyman (Grassy Ecosystems Network) in her September update reports that the Grassy Ecosystems Network has come to the end of its NHT funding and the future is very uncertain. However the Victorian National Parks Association, who have supported the project throughout its term, is looking at alternative funding sources to keep the project running.



Photo of some of those who received recognition at the Monaro Grassland Project Completion on 30 September. Several members of FOG were amongst those receiving awards.

Donna also reported on some interesting and varied responses that she elicited on the impacts of the drought on native grassland areas, particularly on some reserves and travelling stock reserves.

The report mentions that the Trust for Nature's 'Bush Month' in October invited anyone interested to see some of the properties that have had covenants placed on them. While the opportunity has passed, readers wanting any more details might wish to follow up the Trust - web address is [www.tfn.org.au](http://www.tfn.org.au).

In her August report, she summarised her reactions to the forum on Nature Conservation on Private Property held on 13-15 August in Adelaide; two days of presentations and workshops followed by field trips on day three. While the challenge of retaining native vegetation on private land

was laid down to us as individuals, many of the solutions may lie in changes to policy frameworks, such as tax reform. Extension people were also recognised as vital for successful projects. Face to face contact with someone familiar, and building on that relationship, can have a direct influence on more open and accepting of new ideas over time. However it is worth noting that this change in attitude does take some time to materialise making short-term contacts ineffective.

The highlight for her, she mentions, was the chance to catch up with familiar names and put faces to them. A particular treat

was to team up with the Dynamic Duo of the Mid North, Ann Prescott and Millie Nicholls, who showed the participants some important grassland sites around Burra. Places of interest included the impressive Mokota Conservation Park, where in the near future National Parks and Wildlife Ranger, Ian Falkenberg, will set up management trials to assist species diversity (and hopefully decrease weed species). They also went to the Burra Mine site, which was the recipient of a WWF Grassy Ecosystem Grant, where they were confronted by sleepy Shingleback lizards. After visiting the small but lovely Holme Hill grassland they proceeded to a site which highlighted what not to do in native grasslands - a direct seeding trial for trees! Finally the day ended at Helen and Wayne Thomas' at Manoora. They are part of the Mid North Grasslands Working Group's grazing practices trials. Accompanying them on the tour (actually providing the transport!) was Bernadette O'Leary and Marie Waschka (WWF Australia).

*Plant Protection Quarterly* (v17:3, 2002) is a special edition on exotic spear grasses, particularly on Serrated Tussock and Chilean Needle Grasses. For anyone interested in this subject, the publication contains some fourteen well-researched contributions.

While only in the Grassy Ecosystems Network position briefly, Donna certainly kept things bubbling. Thanks Donna. Her e-mail is [smithman@iprimus.com.au](mailto:smithman@iprimus.com.au).

## Grassy Ecosystems CMNs

*Grasscover reporter*

Have you seen the *Austral Bugle*? It is the Newsletter of the Southern Tablelands Grassy Ecosystem Conservation Management Network (STGE CMN). What is the STGE CMN you ask? If you went to any of the Mulwarree to Monaro workshops field program last year you would have heard Rainer Rehwinkel talk about its planning. Now it exists, with the official launch due in the near future. The Monaro Grasslands CMN is also nearing the launching pad. These organisations are modelled on the Grassy Box Woodland CMN which is now two years old.

An article in *Austral Bugle* explains the purpose of CMNs. Put simply, a CMN is a network 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 key ingredient is management by a coordinator who provides an extension service providing information about fauna, flora and management to individual members. The coordinator also encourages communications among members of the network through a regular newsletter. The coordinator can assist in helping to source funds for conservation work.

Membership of a CMN may involve a range of commitments. Membership may involve just receiving the newsletter and no further commitment. But landowners may also wish to register the property to receive expert advice and a survey. For those wanting to go further, the coordinator can arrange negotiations for some form of management agreement and assistance with funding.

The STGE CMN will cover the area between Yass, Boorowa, Crookwell and Goulburn in the north to the upper Shoalhaven River Catchment, while the Monaro CMN will cover the three shires of the Monaro (Cooma-Monaro, Snowy River and Bombala). However, membership of either the STGE or Monaro CMNs, which by the way is free, is not necessarily mutually exclusive. There is a formal understanding between the two CMNs, arranged between WWF and NPWS, to promote active cooperation and coordination.

The *Woodland Wandering*, published by the Grassy Box Woodland CMN, and the *Austral Bugle* are classy newsletters. Initial publications contain many high quality information and stories and some wonderful colour photos. For example, the *Austral Bugle* contains information about the nature and function of CMNs. It also contains major articles on the Burrumbuttock Squirrel Glider project, a scientific analysis of trees in agricultural landscapes, and a description of native vegetation profiles (a useful tool to aid restoration and revegetation), and restoring a Kangaroo Grass understorey. There are numerous other minor stories on some of our favourite plants and animals, project management and restoration and a news roundup.

The ACT Government has flagged support for the CMN concept and discussions are under way to determine how ACT grassy ecosystem managers and sites could become part of the STGE CMN.

Friends of Grasslands has worked actively in supporting the establishment of the STGE and Monaro CMNs which marked a new step in grassy ecosystem conservation. It has already agreed to become a member of the STGE CMN and, through its involvement in the Monaro Grasslands Advisory Committee, it will be a member of the Monaro CMN. Many individual FOG members are being approached to join these organisations.

Funding for the STGE CMN has been obtained under the Commonwealth Government's Natural Heritage Trust while the Monaro Grassland CMN is funded by the NSW Government's Environmental Trust. However, these funding arrangements are short term and there is a need to find a way to ensure longer-term funding.

*If you want to find out more about any of the CMNs, the contact for the STGE CMN is Rainer Rehwinkel (02 6298 9745, [rainer.rehwinkel@npws.nsw.gov.au](mailto:rainer.rehwinkel@npws.nsw.gov.au)); for the Monaro Grassland CMN it's David Eddy (02 6257 4010, [deddy@wwf.org.au](mailto:deddy@wwf.org.au)); or for the Grassy Box Woodland CMN it's Lorraine Oliver (02 6298 9709, [lorraine.oliver@npws.nsw.gov.au](mailto:lorraine.oliver@npws.nsw.gov.au)).*

## A Rocky Refuge in an Old Paddock

*Maggie Nightingale*



Between early February and late May 2002, I undertook a vegetation survey of part of Fisher Parkland, part of the extensive Canberra Nature Park, for external post-graduate studies in Vegetation Management with the University of New England, Armidale. The area consists mainly of former Blakely's Red Gum/Yellow Box Woodland with an understorey dominated by *Phalaris* (*Phalaris aquatica*), presumably from former pasture improvement. Stock was removed many years ago.

There are also extensive plantings of trees, which are Australian natives but mostly not species indigenous to the area. An elliptical remnant of much more diverse vegetation, about 200m by and 150m, remains on the end of a low granitic ridge extending south east from Fisher hill. Gently sloped east-, west- and south-facing aspects occur, with rock outcrops and light textured soil particularly in the west and south. The remnant consists of Broad-leaved Peppermint (*Eucalyptus dives*) woodland or former forest, with a diverse understorey, and a central area of Kangaroo Grass (*Themeda australis*) grassland. The nearest similar communities are about 2km to the southeast (Broad-leaved Peppermint) and 1km to the east (Kangaroo Grass) on the slopes of Mt Taylor, and there is a smaller grassland remnant a hundred metres or so to the north.

A small landcare or 'friends' group undertakes weeding in the area but the more intractable perennials Wild Sage (*Salvia verbenaca*) and Phalaris appear to be increasing in the remnant. The study aimed to determine species present and to provide information to help the landcare group target its weeding effort and undertake other management actions effectively.

Herbarium vouchers of all species encountered were collected and will be deposited in the Australian National Herbarium, Canberra, and the University of New England herbarium. Abundance, cover and distribution of more common species through the remnant were assessed using 25 quadrats of 4 square metres area, laid out on a grid with roughly 30m intervals. Ten quadrats were located in 'grassland' areas, defined as being more than 5 m from a tree, and 15 in 'woodland' areas.

#### Floristic composition, recruitment and distribution

The 62 indigenous (native to the area) species collected and identified included 4 trees, 4 tall shrubs, 7 small shrubs, 12 grasses, 6 other monocots, 25 dicot forbs, 2 ferns and 2 scramblers. The 27 introduced species were comprised of 2 trees, 1 shrub, 9 grasses (2 yet to be identified when they flower), and 15 dicot forbs. Fifty-four species occurred in the 25 quadrats, and the remaining 35 were mapped and/or counted.

Broad-leaved Peppermint is the most common tree, with at least 350 mature individuals plus 150 juveniles and seedlings. The other three indigenous tree species are Blakely's Red Gum (*E. blakelyi*), Apple Box (*E. bridgesiana*) and Scribbly Gum (*E. rossii*), and seedlings of all are present.

Two of the tall shrubs, Native Boxthorn (*Bursaria spinosa* ssp. *lasiophylla*) and *Indigofera australis*, are recruiting well in patches. The others (*Cassinia* spp.) may require fire for regeneration. Dense growth of *C. quinquefaria* in two southern areas of the remnant is probably associated with a fire in mid to late 1990s, which is indicated by fire scars on the trees and regrowth from eucalypt lignotubers. Clarke and Davison (2001) showed that *C. quinquefaria* has better seedling emergence from burnt compared to cleared or untreated ground.

One of the scramblers, False Sarsaparilla (*Hardenbergia violacea*), is also growing only in a small area which has been burnt in the past year or two, probably by an escaped camp fire. Three of the 4 introduced species of trees are wattles (*Acacia* spp.) that occur

naturally in the Southern Tablelands region but probably not in this area. Guinea Flower (*Hibbertia obtusifolia*) is the most common small shrub, with 70 mature individuals and 40 juveniles counted. There is little or no evidence of recruitment in the remnant for the other 6 small shrubs, and very low numbers for 5 of these.



Forbs and grasses contribute most to species richness (the number of different species). Cover of native forbs and non-grass monocots is generally low, except for Variable Plantain (*Plantago varia*), Yellow Rush Lily (*Tricoryne elatior*) and two Mat-rush (*Lomandra*) species. Native Geranium (*Geranium solanderi*) is widespread and occurred in 68 percent of quadrats. Common Everlasting (*Chrysocephalum apiculatum*) is moderately conspicuous, with 17 patches counted, the diameters varying from one to about 10 metres.

Kangaroo Grass and Poa Tussock (*Poa sieberiana*) are the most common native grass species. Kangaroo Grass is widespread throughout most of the remnant but is most abundant in the open central 'grassland' area, which is flatter and has heavier soil.

Poa Tussock is also fairly widespread and is the dominant grass in the less disturbed shaded areas in the southern part of the remnant. It is similarly associated with the Broad-leaved Peppermint community on the southern slope of Mt Taylor, and in two smaller remnants to the southwest, on the slopes of Mt Arawang and near McQuoid's Hill.

The most common weeds during the survey period, in terms of numbers of plants, were Sheep's Sorrel (*Acetosella vulgaris*), Wild Oats (*Avena barbata*), Catsear (*Hypochaeris radicata*), Phalaris, Common Plantain (*Plantago lanceolata*) and Wild Sage. Of these, Sheep's Sorrel was most widespread, which is not surprising considering its very efficient dispersal mechanism, which anyone walking through the remnant will experience! The annual weed Wild Oats was the third most common grass overall.

Phalaris and Wild Sage, both perennials, were generally associated with low counts and cover of native species in the quadrats where they occurred. There are substantial incursions of Phalaris on the

eastern and western extremes of the area, while Wild Sage tends to occur in patches of a few metres diameter, mostly within 20m of the path. The past efforts of the landcare group are evident in the low numbers or absence of several other locally and regionally troublesome weeds, such as Patterson's Curse and St John's Wort.

'Grassland' and 'woodland' areas have almost the same percentage of indigenous plants (67 to 70 percent) but 'woodland' has 50 percent more species than 'grassland'. Five indigenous species occur only in 'grassland' areas, compared to 26 only in 'woodland' areas. There is evidence, from stumps and understorey composition, that tree cover has been greater in the past, and that weed incursion was probably facilitated by stock grazing and camping in the remnant.

### Recommendations

The competitive ability of Kangaroo Grass is being harnessed by spreading heads on areas cleared of Wild Sage, and this activity could be stepped up at certain times of the year. Kangaroo Grass would probably benefit from the associated biomass reduction as it is tall and seedy compared to other grassland areas, probably due to lack of burning and kangaroo grazing.

In part of the northern section of the remnant there is almost no native understorey or recruitment of young trees, despite a good cover of mature trees. Mounds of earth and patches of weed species not occurring elsewhere indicate that dumping has occurred here in the past. Limited low intensity burning, or mowing in early spring, could be beneficial in this area, but must be well contained since indigenous plant diversity increases abruptly moving south and some species may be fire-sensitive (Harvey, personal communication).

In contrast, the high quality south-western part of the remnant is rich in native indigenous species, with 36 found in a 0.1 hectare quadrat. Considering that the survey was undertaken in only one season, this compares quite favourably with a count of 63 for a similar area of the best remnant Grassy White Box Woodland, reported by Prober and Thiele (1993). A diverse area of 0.5 – 1 hectares, west of the main path and north of the southernmost peppermint trees, should be a priority area for maintaining free of perennial weeds, since this can be done with relatively little effort. Care should be taken to minimise disturbance to the soil during weeding.

There is evidence that the well-used central path and its users are a source of weed propagules. However, closing it would either deny suburbanites the brief experience of a more natural and diverse vegetation community, or, more likely, would cause another path to be formed that might increase the overall adverse impacts on the remnant. The survival of the whole Parkland area as open space may depend upon accessibility, multiple use and community awareness of its value.

The non-indigenous tree plantings are fairly well located to pro-

vide protection from dessication for the southern end of the remnant, and to trap run-off and decrease groundwater recharge at the higher northern end. Should these trees ever be replaced by indigenous species, the work should be progressive to ensure no diminution of the beneficial effects they provide. Seedlings of non-indigenous planted species, such as Blue Gum (*E. bicostata*), which appear in the Broad-leaved Peppermint remnant, should be removed to maintain its integrity. Suckers of non-indigenous *Acacia* species, such as Blackwood (*A. melanoxylon*) and Silver Wattle (*A. dealbata*), should be cut and the stumps treated with herbicide, to retard their spread.

### Conclusions and future work

In summary, the Broad-leaved Peppermint remnant in Fisher Parkland is heterogeneous in terms of aspect, soil and fire history, and is rich in native indigenous species. Grasses and forbs contribute most to species richness. Shaded (layered) areas are more diverse than open areas. It appears likely that tree cover was greater in the past, with an understorey dominated by Poa Tussock, which is progressively giving way to Kangaroo Grass and introduced species in more open areas. Sixty-two indigenous species were apparent in late summer and autumn of 2002, along with 27 introduced species, some of which are in need of ongoing control. The competitive ability of Kangaroo Grass could be harnessed in this respect. The past efforts of the landcare group are evident in the low numbers or absence of several regionally troublesome weeds.

I had planned to complete specimen collection in spring 2002 to produce a permanent record of the floristic composition, which may be drawn upon should this diverse and interesting area be threatened by competing land uses in the future. However, because of the drought, this process will need to be continued into future years. If funds permit, the specimens will be photographed to produce an identification guide to assist in weeding efforts. These must be ongoing to prevent degradation and loss of diversity in this highly vulnerable remnant. There appear to be few, if any, areas of equivalent size on Mt Taylor or Coolamon Ridge that have as many indigenous species. The data collected in this study also could provide a baseline for assessing future changes in the vegetation.

Comments and requests for further information may be e-mailed to [magnight@cyberone.com.au](mailto:magnight@cyberone.com.au).

Thanks to Alan Ford, Naarilla and Gerry Hirsch, Geoff Robertson, Judith and David Harvey and Dave Mallinson for assistance with this project. Specimens were collected under licence number LT2001074, and permission was obtained from Clinton Tomlinson, chief ranger at Canberra Urban Parks and Places. Common names of plants are from *Grassland Flora* by D.Eddy, D.Mallinson, R.Rehwinkel and S. Sharp (1998), and *Flora of New South Wales* edited by G. Harden (UNSW Press, Sydney, 1990-3). Other references cited are Clarke, P.J. and Davison, E.A. (2001), *Experiments on the mechanism of tree and shrub establishment in temperate grassy woodlands: seedling emergence*, *Austral Ecology*, 26: 400-412 and Prober, S.M. and Thiele, K.R. (1993), *The ecology and genetics of remnant grassy white box woodlands in relation to their conservation*, *Victorian Naturalist*, 110: 30-36.



Photos by Maggie show the mosaic of the Parkland. Second photo on previous page is her favourite Apple Box (*Eucalyptus bridgesiana*).



## Tasmania: Land, Water and Wool

Louise Gilfedder (DPIWE)

Land and Water Australia (LAWA) and Australian Wool Innovations (AWI) have given the Department of Primary Industry, Water and Environment (DPIWE) and the University of Tasmania a grant to investigate the management of native vegetation in regions used for growing wool. This project will run for five years with the aim of determining the best management practices for land management, wool production/quality and conservation.

The project has two main components. The first is integrating biodiversity conservation into sustainable grazing systems. Native grasslands and grassy woodlands contain a rich and diverse number of plant species, including rare and or threatened species. The existence of some of these plants is dependent upon the presence of grazers such as sheep. Many land managers have maintained high levels of biodiversity and therefore conservation values of sheep runs through traditional management practices. New and innovative methods of grazing (such as cell grazing, rotational grazing) are being adopted by wool-growers. The project seeks help and insights from land managers in the Tasmanian Midlands region to assist in researching changes in grazing methods on native pastures and the resultant changes in wool production and the quality (conservation value and primary productivity) of the native pastures and bush runs.

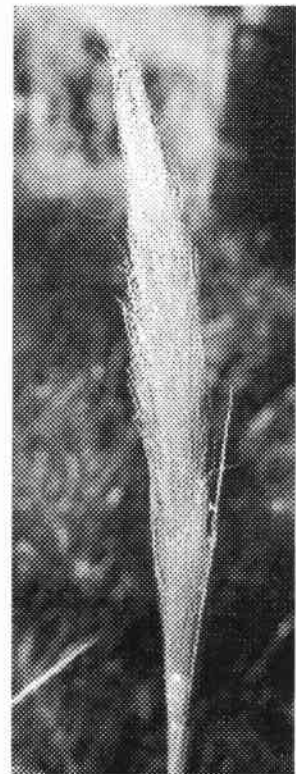
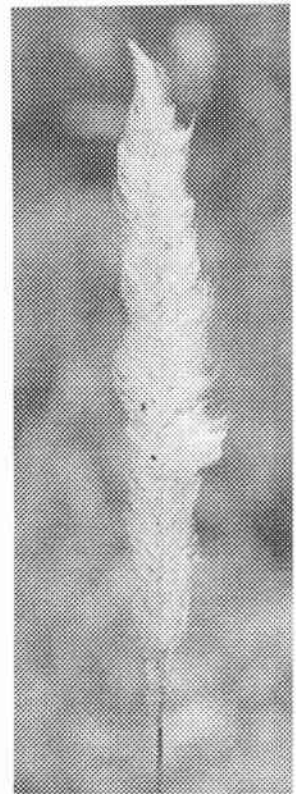
The second is valuing riparian (stream bank) vegetation as a part of sustainable grazing systems. Management and rehabilitation of rivers in wool producing areas will increase the conservation value of the landscape (and long-term viability) and may have a positive effect on wool production. Fencing, revegetation, and weed management will be used to restore riparian habitats along the Macquarie River and its tributaries.

The two components have a number of common goals, including:

- The whole project presents a new approach for biodiversity research in the Midlands region in that we propose to investigate the impacts of grazing at a landscape scale looking at variability in grazing runs (ridges, slopes, gullies, flats and rivers) which mirrors more closely the land-managers planning of grazing runs. These ecologically different environments will be studied as a whole unit, and their responses to changes in grazing systems will be monitored. This will provide land-managers with information on how to integrate the conservation of native pastures and bush-run country into their existing property management plans.
- The costs and benefits of changing management practices will be determined. An important question to be answered is '*Is the change (in grazing management) worth it?*' This question needs to be answered from an economic, social and ecological viewpoint.
- The project aims to develop a vision for the future for the region. A group of land-managers in the fine wool growing areas along with Biz Nicolson (Bushweb Project Co-ordinator) will drive the development of the vision for the future of the industry. The outcomes of the project will be tied into broader visions that might include increased wool quality, development of niche wool markets and industry accreditation.

*What is the role of the land-manager in this project?* The native pastures and bush run country of the Macquarie River catchment have high natural values have successfully co-existed with the wool-growing industry. While, traditionally this has been a wool-growing region, land-managers are increasingly diversifying their enterprises (sheep, cropping, forestry). Therefore the management of each property is based on different priorities and objectives. It is important that these diverse interests are considered when making decisions throughout the lifetime of the project. The long-term future of these natural values is dependent on the viability of the wool/sheep industry, and its ability to capitalise on these natural values. Input from land-managers is critical to the success of the project as the outcomes of the project must reflect the management of wool-growing properties.

*Reprinted from Grassecol Update. Please contact Louise Gilfedder, Michael Askey-Doran (DPIWE) 62 338011 or Jamie Kirkpatrick (UTAS) Ph 62 262463 for more details on the project.*



*Photos: two attractive grasses seen on the recent FOG Coast trip. Top - Blady Grass (Imperata cylindrica) and bottom - Plumegrass (Diche-lachne sp.). Another photo of Blady Grass appears on page 11.*

## Water Couch – Productive Quality Grass for Acid Sulphate Soil Remediation

Carol Rose, Russell Yerbury and Scott Henderson

Readers may recall a news item, A grass specialist called Rose in our July-August 2002 Newsletter, where we introduced Carol and Russell. Carol is with NSW Agriculture, Kempsey (North Coast NSW) and Russell and Scott are nearby farmers from Clybucca.

Water ponding and Water Couch (*Paspalum distichum*) have been used by landholder Russell Yerbury to reclaim 125ha (300ac) of acid sulphate scalded farmland to become a productive area again.

Acid sulphate soils are a problem in coastal areas when low lying land is drained, water tables fall and acid sulphate layers are exposed to the air. The air reacts with the layer producing sulphuric acid and leaches iron, aluminium and other metals from the soil. This has the dual affect of acidifying the soil and polluting waterways. This water, at a pH of 3 can lead to fish kills in coastal rivers. While exposed to the air acid will continue to be produced.

When Russell came to the property at Clybucca, near Kempsey, on the mid North Coast, NSW, around 125ha was affected by acid sulfate scald. This looked very much like a salt scald, with no vegetation or organic matter, wind erosion, and white crystals on the surface, though in this case it was sulphidic salts. The scald had been caused by over drainage, acidification and fire removing the peat layers over the soil. By strategic ponding of fresh water Russell created the environment where Water Couch recolonised the shallowest (10-15cm) area. This occurred rapidly presumably from resilient seed stock. Spike Rush (*Eleocharis* sp.) colonised the deeper areas (15-50cm).

While many southern farmers consider Water Couch a weed it is in fact an excellent fodder with feed test results showing high quality (see table). Water Couch is a native summer growing grass that grows in areas with periodic waterlogging and is found in the flood plain of the Macleay River. In this environment there is a distinct demarkation between the lower wetter areas with Water Couch and the slightly higher areas dominated by Couch (*Cynodon dactylon*) and the non-waterlogged areas where Kikuyu (*Pennisetum clandestinum*) or Carpet Grass (*Axonopus* sp.) grows. Water Couch can be grazed in the ponded and dry pond state. With dry conditions in the Macleay, this year, Russell has been able to make silage from dry Water Couch areas where equipment could get into the paddocks.

Creating the environment where Water Couch can flourish has enabled an unproductive and environmentally damaging area to become both better for the environment and a productive beef property.

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Forage quality of Water Couch, Spike Rush and other pasture plants.

	Digestibility % of DM	Crude Protein % of DM	Metabolisable Energy MJ/kg DM	Source
Water Couch (December)	70.5	19.6	10.6	R. Yerbury, 11/12/1995
Water Couch (April)	57.7	14.9	8.2	R. Yerbury, Prograze, 21/04/02
Water Couch	61.1	15.9	—	R. Henderson, Kooragang City Farm
Spike Rush (Autumn)	66.5	21.4	9.6	R. Yerbury, Prograze, 21/04/02
Couch	49.5	12.9	—	R. Henderson, Kooragang City Farm
Kikuyu (leaf) (March)	69.0	16.1	10.1	J. Betts, Prograze, Grafton
Kikuyu (leaf, stem) (Feb)	57.0	17.6	8.1	J. Betts, Prograze, Grafton

## Austral Adder's Tongue

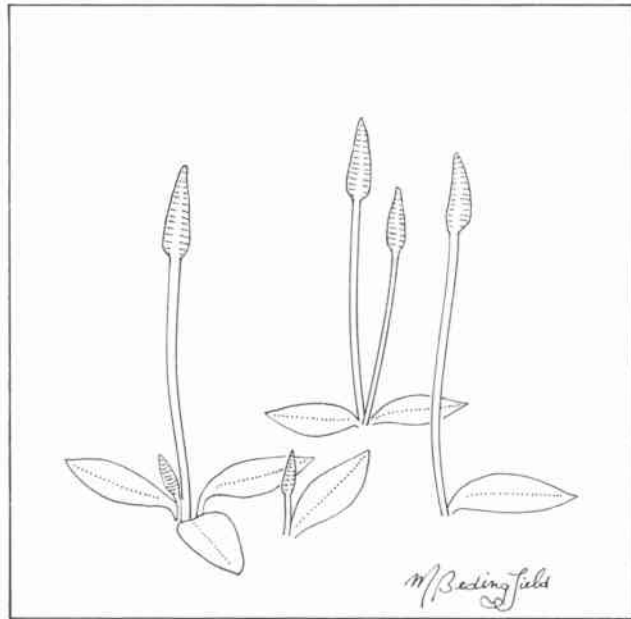
Michael Bedingfield

The drawing of the Austral Adder's Tongue is at a fairly typical size for this tiny plant, so you can be forgiven if you have never seen one. Another reason why you may not have seen one is that they are only moderately common and tend to disappear under normal grazing conditions. While quite widespread in south-eastern Australia they are sparsely distributed.

The Adder's Tongue is a primitive fern, producing one to three leaves, which grow to 2-3 cm long and are actually sterile fronds. The erect tongue-like shape is a fertile frond, which grows to 7 cm tall and contains the spore producing structures at the top. The plants are perennial and prefer a wet site. Growth occurs in late winter or early spring and arises from an underground rhizome. Adequate rain is required for their growth, however, and the ferns soon wither as the hot weather of summer approaches.

The scientific name is *Ophioglossum lusitanicum*. The genus name reflects the meaning of the common name and derives from the Greek "ophio", meaning "a snake", and "glossa", which means "a tongue".

*Ophioglossum lusitanicum* is a significant species, being regarded by some experts as 'Uncommon or Declining' in the ACT (see FOG newsletter of Jan-Feb 2001). So if you have found some on your favourite patch, then it makes it that much more valuable.



*Ophioglossum lusitanicum*  
Austral Adder's Tongue  
Michael Bedingfield  
2002

Photo of Blady Grass taken on the recent FOG Coastal trip. Also see photo on page 9.



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*Supporting native grassy ecosystems*

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You have read this far, so we must have kept your interest. If you are not a member of Friends of Grasslands why not subscribe to the newsletter? It comes out six times a year and contains a lot of information on native grassland issues.

You can get the newsletter by joining Friends of Grasslands. You do not need to be an active member - some who join often have many commitments and only wish to receive the newsletter.

However, if you own or lease a property, are a member of a land-care or parkcare group, or actively interested in grassland and woodland conservation or revegetation, we hope we have something to offer you. We may assist by visiting sites and identifying native species and harmful weeds. We can suggest conservation and revegetation goals as well as management options, help document the site, and sometimes support applications for assistance, etc.

Of course you may wish to increase your own understanding of grasslands and woodlands, plant identification, etc. and so take a more active interest in our activities. Most activities are free and we also try to arrange transport (or car pool) to activities.

If you are already a member, why not encourage friends to join, or make a gift of membership to someone else? We will also send a complimentary newsletter to anyone who wants to know more about us.

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If you would like any further information about membership please contact Kim Pullen or Margaret Ning, or if you would like to discuss FOG issues contact Geoff Robertson. Contact details are given in the box above. We look forward to hearing from you.

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