

News of Friends of Grasslands

supporting native grassy ecosystems

January-February 1999



COMING EVENTS

Margaret Ning

After a busy year in 1998, we have commenced putting together our 1999 program. Apart from the February and March activities and the St Mark's Open Day, the program is tentative at this time. We welcome your ideas.

Saturday 6 February, 8.30 to 11.30am
Adventures Around Queanbeyan FOG and the Queanbeyan Landcare Group (a FOG member) will link up for this activity. Hopefully we will be joined by the Monaro Conservation Society and NSW National Parks and Wildlife Service. Each group will give a short presentation on its activities: Queanbeyan Landcare will talk about its work and experiences; Monaro Conservation Society about the use of grassland plants in horticulture; NSW NPWS will provide a background to the reserve; and FOG will discuss grassland conservation. We plan to visit one or two nearby sites (time permitting). Meet at the end of Furlong Road (next to Queanbeyan Race Course) at 8.30am.

Monday 8 February, 7.30pm
Hughes Community Centre This activity is organised by the ACT Wildlife and Botanical Artists Group but it will be FOG's night to give a presentation. Geoff Robertson will give a talk on conserving grasslands through art, and David Eddy (one of the four authors of *Grassland Flora*, to be released soon) will show his excellent slides on grasslands and plants. If you have not seen David's slides of wonderful grassland wildflowers, you won't want to miss this. FOG members are welcome. Cost \$2. Tea and coffee provided.

Sat 20 February, 4pm - Annual General Meeting Those of you who attended our last AGM (at Dierk and Rosemary von Behrens') will recall that it was a fun event. We kept formal proceedings to one hour even after some lively discussion. Michael Bedingfield brought along some of his drawings and plants and Leon also brought some plants. This was followed by a delightful supper where we circulated

and exchanged ideas which acted as a seedbed for the successful 1998 program. So this year we will go down the same track. We will keep the formal meeting to one hour. This will include reports, election of office holders, a motion to make a minor modification to the constitution (see page 3), and a discussion of the 1998 program (see page 4). We plan to have further displays - photos of our activities, the FOG posters, and anything you care to bring along to show other members what you are doing. Again it will be held at the von Behrens' and supper will be supplied by the committee. Please arrive before 4pm for a 4pm start. The address is 121 Springvale Drive, Weetangera.

Sat 8 March, 2pm - Yarrawlumla Shire Council Greenway Network Geoff Butler will show us around some interesting crown road reserves which have been put aside for conservation purposes, as well as

Important notes on COMING EVENTS:

- Please put firm dates in your calendar.
- For outdoor activities, don't forget your hat, sunblock and drinking water.
- For insurance purposes, sign in/out at activities.
- For any information about activities (including times and venues), please contact Margaret Ning on 6241 4065 (home) or 6252 7374 (work).
- Program suggestions, also contact Margaret.

some recreational use.

April - Weed killing at Bredbo

April - Workshop on Grassland Conservation/Regeneration in Canberra This will look at ACT grassland conservation strategy and the role of landcare and parkcare groups.

June - Slide afternoon

August - Workshop: Can good pasture management increase production and bring back native grasslands? This workshop will look at the work being done on minimum pasture coverage and its implications for increased production and conservation.

24 October - St Mark's Grassland Open Day For developments at St Mark's, see Nigel Hall's article on page 7.

October Halloween Cemeteries Tour

November - Common grasses identification workshop

December Southern Tablelands Grassland Hotspots Weekend

February 2000 - Y2K Bug Identification in the Southern Tablelands

Changes to newsletter

We have outgrown our old format and still we cannot publish all we receive. We are also looking for a new title - contact a committee member with a suggestion.

RENEW MEMBERSHIP

Geoff Robertson

You will find a membership renewal form enclosed. **Before you read any further, please fill it out and send it in.**

Membership is \$20 (individual or family); \$5 for students, unemployed, and pensioners; and \$50 for corporations and organisations.

Membership gives you our newsletter six times a year and you are entitled to attend our functions mostly for free. Corporate members may opt to receive two newsletters.

We have attempted to keep fees low so as to promote a greater understanding of native grasslands through our newsletter and activities. However, we do not cover costs and our bank account is not healthy - so any extra donations are gratefully received. Unfortunately we do not have tax deductible status.

You might also promote Friends of Grasslands to your friends or even give membership as a (late) Christmas or birthday gift.

1998 has been an excellent year for FOG and it will be hard to do better in 1999. However we have many good program ideas and some interesting projects in mind.

Now make yourself a tea or coffee, put your feet up and enjoy the newsletter.

GRASSLANDS IN SPRING

A phenomenal spring

October, November and early December were active FOG months. As promised, the grasslands were at their best in spring - what a phenomenal spring. The good rainfalls in late winter throughout the Southern Tablelands and the Monaro resulted in extraordinary flowering. Who knows when we will see its like again?

Cemeteries at Halloween

The eleven persons who went on the Halloween Northern Cemeteries Tour (Saturday 31 October) were astonished at the plenteous range of flowers. There were masses of colours and shapes at each of the sites visited. In particular, Binda and Bigga cemeteries were the most spectacular. Not only had the rains encouraged great numbers of plants to grow and flower, but plants which were much less common, were also there. Superlatives were on everyone's tongue.

Car pooling and travelling in convoy through a very pleasant part of the State was also rather fun. We are indebted to Rainer Rehwinkel for guiding us to and through these special places. There will be an article on this trip in the next newsletter.

The general feeling is that such a trip ought to be made each year (although, not necessarily to the same sites) and we ought to encourage greater attendance and involvement by local landcare groups in the vicinity.

Saving threatened species

Saturday 7 November a small contingent went to Jim Ryan's property south of Bredbo to do some spot spraying of African Lovegrass (*Eragrostis curvula*). This was FOG's third occasion there - similar activities have taken place in 1996 and 1997 and Jim (a FOG member) is confident that such assistance is winning against this Monaro menace. This grassland is important because (as mentioned in the previous newsletter) it is a good example of a short open-structured grassland on shallow soil in one of the driest parts of the Monaro. It retains diverse grasses and forbs, including a population of two threatened species, Creeping Hop Bush (*Dodonaea procumbens*) and Mauve Burr-daisy (*Calotis glandulosa*). Those in the weeding party took some time off to explore the grassland - the Mauve Burr-daisy was in its glory.

Conder grassy woodland

There was a very good turnout at Conder grassy woodland on Tuesday 10 November. Michael Bedingfield did a lot of organising to make this activity a great success and to publicise the need to secure the conservation status of this area which is threatened by urban and road development (see Michael's article on opposite page).

Plant ID at O'Connor Ridge

About twenty persons attended the plant identification day (14 Nov) at O'Connor Ridge, including members of the O'Connor Landcare group, FOG members, other landcare members and some members of the public who came as a result of press advertising. We broke up into small parties and, assisted by *Our Patch* and some FOG ID sheets, got on with identifying a variety of grasses and forbs and discussing how the site might be managed. One active conservationist said that she hadn't had the opportunity to identify plants and enjoy a fun activity for a long time. Thanks go to our two experts, Isobel Crawford and David Eddy, for their leadership and contribution on the day.

Belconnen Naval Station

An even bigger group turned up the following day when FOG members were joined by members of the Society for Growing Australian Plants (SGAP) and the Field Naturalists for a visit to the naval station. The naval station is off-limits except by special arrangement, but our hosts were very generous with their time and enthusiastically showed the grassland to the assembled throng.

The grassland is somewhat patchy but most of the better remnants are open-structured grasslands on somewhat poorer soils. It was hoped to see the Golden Sun Moth (*Synemon plana*), but it did not oblige. It was an excellent day weather-wise. There was a wide range of flowers out and much interest in identifying the plants and discussing their distinguishing features. Some of the group were also fascinated by the various pieces of communication equipment and the overall nature of the communication structure.

The highlight for many was seeing the extensive area of Bladderwort (*Utricularia dichotoma*). This insect-eating plant with its deep purple flower always makes a spectacular show when it grows en masse in damp areas. Those familiar with it will know that it is particular about conditions,

and so mass showings like we saw are not everyday events.

Thanks to Michael Parker, Sarah Sharp and David Eddy for making this a most successful and enjoyable event. Some eager Moth seekers made arrangements with Michael to revisit the site in December and this time the (male) Moth showed up.

Gungahlin Grassland Open Day

The FOG Committee wants to place on record its thanks to ACT Parks and Conservation (Canberra North District) for organising the Gungahlin Grassland Open Day on Sunday 22 November. Special thanks go to Odile Arman and Nicky Webb for their huge efforts, and also to Colleen Lines (a FOG member) and Geoff Robertson for their efforts. The open day was well advertised and supported by many government, conservation and community groups. SGAP and FOG were co-sponsors and FOG very much appreciated the opportunity to participate.

For those who attended there was a lot to see and do. The five large tents, the fire engine and the various plant stalls made a wonderful silhouette at the top of the hill overlooking part of the reserve. The Gungahlin Town Centre made an interesting backdrop. Many conservation groups had displays focusing on grasslands and containing much good material. It was also an opportunity to see *Delma impar*, the Striped Legless Lizard which saved this grassland. The Reptile Centre also sent some wonderful live specimens and Alan Scrymgeour was a big hit as he wandered around bedecked with the Centre's large python.

Minister Brendan Smyth opened the day and spent some time discussing grassland issues with FOG members. Representative Simon Corbell (a FOG member) also took the opportunity to catch up on issues.

FOG's display included some examples of native grass plants borrowed from the ANGB and Michael Bedingfield brought along a selection of his drawings. FOG led a number of guided walks. These were enjoyed by all of those who attended. An article on the reserve appeared in the November newsletter.

Southern Cemeteries Tour

There was a good turnout for our Southern Cemeteries Tour held on the weekend of 5 and 6 December. There will be an article on this activity in the next issue (see photo on page 5).

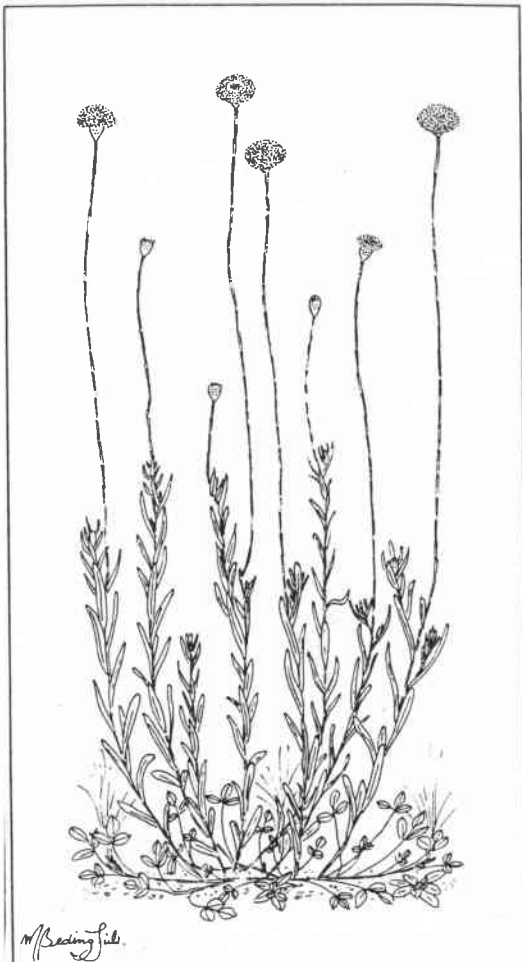
CONDER WANDER

Michael Bedingfield

A successful activity was held at a site in Conder in the late afternoon of Tuesday 10 November. There were about twenty people present, including ten FOG members, the rest being local residents and assorted children.

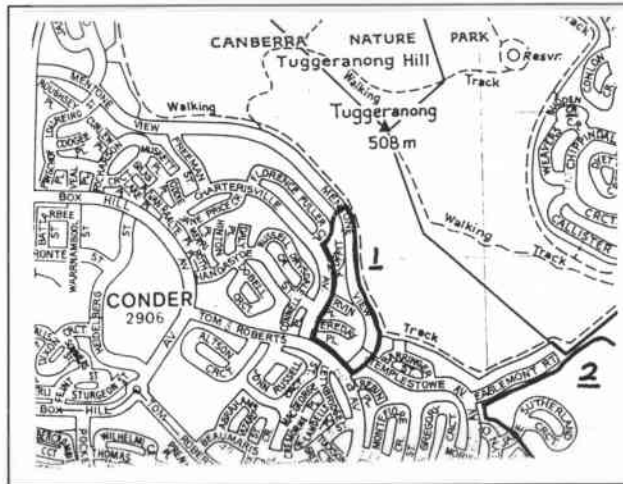
FOG members were impressed by the quality and diversity of the flora on the site, which is more abundant than usual this year because of the good Spring rains. They were also able to share some of their knowledge with the other eager participants who found it thoroughly interesting and were delighted to learn more about the natural treasure in their neighbourhood. Some of these were from the Conder Community Landcare Group and FOG was able to create a link with them over a shared interest.

On the day the most abundant forbs on display were *Leptorhynchus squamatus* (Hairy Buttons) and *Chrysocephalum apiculatum* (Common Everlasting Daisy).



Leptorhynchus squamatus
Hairy Buttons

Michael BEDINGFIELD, 1997



The vast numbers of *Bulbine bulbosa* (Bulbine Lily) and *Stackhousia monogyna* (Candles) which a few weeks earlier had dominated the landscape were now past their time of glory. There were many others of course and some new discoveries. They were added to the species list which now has about 100 entries.

The site we visited (site 1 on the map) has been classified as a Yellow Box/Red Gum Grassy Woodland (an endangered ecological community) in the Environment ACT Draft Action Plan 10, and is described therein as being of "high conservation value". There is also another site nearby (site 2 on the map) which is described as being of "very high conservation value".

My opinion (as a non-botanist) is that site 1 is at least as good as site 2 because the native understorey seems to be more plentiful and varied. However, in the Draft Action Plan there was no recommendation to change the current status of the land from being urban, and it is zoned for future development.

I hope for a positive outcome as the Canberra community responds to the various action plans.

AGM - 20 FEBRUARY

from the Committee

FOG became incorporated in the ACT under the Associations Incorporation Act 1991 on 20 March 1998. Our official name is Friends of Grasslands Inc (Incorporated), our reference number is A3057,

and our public officer is Art Langston. We must hold an AGM, elect a committee and present audited accounts. These matters should be reported to the ACT Registrar-General's Office shortly thereafter. Subsequent changes to the committee, if any, must also be advised. There are fees associated with each of these submissions and penalties for late submission.

FOG's statement of objectives and rules were agreed to at the last AGM. The rules follow the model rules published by the Registrar-General, with a few exceptions. The Committee would like to change the rules concerning officer holders; this change would actually move closer to the model rules.

Currently, the committee consists of seven office holders (President, vice President, Secretary, Treasurer, Newsletter editor, Membership secretary and Activities co-ordinator) and three ordinary committee members.

The committee considers that the positions of newsletter editor, membership secretary and activities coordinator should be abolished and the committee structure changed to include four office holders and eight ordinary committee members. The committee could then appoint members to do tasks that FOG requires.

Its reasons are: defining each of these positions as officer holders creates certain inflexibilities and may not always be the best way to organise them; there are a number of other functions (eg publicity) which also need recognition; the committee is appointing more and more persons to do things and represent it (both committee and non-committee persons) and we need to give such persons greater recognition.

Notice of Motion for AGM

The committee proposes to change rules in Part III, sub-Part 12 (1) to allow for eight ordinary committee members, 12(2) to delete reference to (e) newsletter editor, (f) membership secretary, and (g) activities coordinator; and in sub-Part 13(7) to replace with the words "a person is not eligible to hold simultaneously more than one committee position".

FOG PROGRAM IN 1998

Reflections from the Committee

Apart from the activities listed for February and March, the program for 1999 (see page 1) is a skeletal program not yet set in concrete. We plan to discuss it at the AGM so come and give us your ideas.

FOG's niche

It may be useful to reflect a little on last year's program to determine what worked and what didn't. In our program we attempted to fill a niche and not do what other groups do. Many Canberra groups, the Ornithologists, SGAP and Field Naturalists have highly successful meetings, usually presenting wonderful talks and slides. We have therefore stayed away from that format with the exception of our successful slide afternoon in August.

Visits to grassland sites

FOG visited many grassland sites in 1998, especially in spring. The purpose was to allow members to appreciate why grassland conservation is important. Sites visited were diverse in geography, structure, plant communities, etc. Activities in Canberra and nearby were usually well attended. Those further afield were less well attended but good educational and thrilling experiences. As the word gets around, cemetery tours (or something similar) should attract greater numbers in future.

Workshops

Our big workshop in May was an outstanding success with over 120 people attending. This workshop raised public awareness of FOG and its values, and through active promotion, reached many people who did not attend. It also taught some important lessons, especially the different values of grassland stakeholders and the need to understand and respect different values if we are to pursue successful conservation outcomes.

We also held two small workshops to improve our approach to hands-on tasks. One focused on developing hands-on skills of members and the other on documenting a grassland site. As a result, we are feeling somewhat more confident in visiting sites, running guided tours, identifying plants, suggesting conservation measures, documenting sites, etc.

In 1999 we may have two workshops, though not on the scale of the May 1998 workshop. These should reach out to pastoralists and landcare groups and provide valuable education for members.

Working with landcare

Many of our members are active members of landcare and parkcare groups in and around Canberra. Our visit to a number of landcare sites early in the year was successful as was our November activity with the O'Connor Ridge Parkcare Group. We in FOG got to see some good and varied examples of conservation and regeneration practices. Landcare members are always keen to learn and improve on what they are doing. This will remain an important focus of FOG's activities.

Establishing landcare groups

Encouraging and establishing landcare groups is also important and it is now good to see the St Mark's Grassland Group emerging. Unlike many other groups it commences with a particularly high value grassland area. The group is already planning a grassland open day in October 1999 (see article on page 7).

FOG has applied to the Threatened Species Network Community Grants Program, in partnership with a number of Community and Local and State Government organisations, for funding assistance to establish conservation reserves at two important grassland sites at Cooma and Adaminaby. The objective is to foster long-term management of these sites by local communities and agencies.

Helping property owners/stakeholders

Many property owners, and others with a stake in a particular site, are also keen conservationists and welcome visits which give them a greater appreciation of what plants are present, their importance, management issues, and maybe even some practical weeding assistance.

FOG supported sites

We hope to develop FOG-supported sites. These would be special sites which are good remnant grasslands or where grassland regeneration is a theme. We plan to help set goals for the site, visit/work on the site, possibly develop plant lists, and maybe offer other practical assistance.

Practical skills

Building up practical skills of members through courses and practical experience is important. Our focus has been on plant identification, weeding, and management/regeneration. The newsletter is an important vehicle for spreading knowledge and information. We have encouraged and supported useful courses.

On field trips we encourage members to look up references and take notes; the plethora of newly released field guides has added to our resources. Weeding days help focus on the importance of land management in quality grasslands. We encourage members to grow grassland plants in their gardens to increase their familiarity.

In 1999 we hope to run some courses to compliment all these endeavours.

Lobbying - needs to be more proactive

Lobbying has continued to be important. During the year we have put in a number of submissions which we have mentioned in our newsletter. Our lobbying effort has tended to be re-active (to requests for submissions) rather than pro-active.

Publicity - need better plan

Publicising grasslands and FOG has also been a somewhat hit and miss affair. We put in a big effort for the May workshop and received good, press, radio and TV coverage. We had a FOG stall at the World Environment Day, the Gungahlin Grassland Open Day, the Kuma Nature Reserve Opening and elsewhere on the Monaro. Our efforts have exploited opportunities delivered to us, rather than following a more coherent and coordinated plan.

Newsletter

The newsletter plays an integral part in FOG activities. Originally we planned a bi-monthly newsletter of eight pages, but this and the previous edition have been twelve pages! Even then, much good material, photos, etc. have been left out. Response from members has been very positive however.

Organisation

The committee works well and many non-committee members chip in. There will be vacancies on the committee at the AGM. Please discuss with a committee member.

NATIVE GRASS SEED GERMINATION

Iain Dawson and Susan Walker
(Australian National Botanic Gardens)

This is an interim report on the progress of a project funded by the Natural Heritage Trust and ACTEW Corporation under the auspices of the ACT Government. Revegetation with native grasses is often difficult. A common problem is that whilst the seed may be healthy and potentially germinable it is difficult to get it all to germinate rapidly and at the same time. This is the concept of 'synchronicity', which is the major theme of the project. There are two facets to synchronicity which reflect different time scales. Firstly it is necessary to get the seed in a particular batch to ripen at the same time after harvesting. Secondly, it is desirable that germination is compressed into as short a time as possible to maximise the opportunity to utilise available soil water and to reduce predation and competition. The objectives are:

- faster germination of seed
- more synchronous germination of seed
- increasing the amount of germinable seed (less wastage)
- developing better strategies for seedling establishment

Unlike grain crops and exotic lawn grasses which have been selected for synchronous ripening and germination it is

not desirable to use this method to produce seed for revegetation with native grasses because of the need to preserve diversity in the gene pool. This study therefore examines alternative methods to facilitate revegetation with native grasses. The focus is on practical and cost effective methods applicable to the upper Murrumbidgee catchment area using seed of local grasses.

The main conclusions and recommendations so far are:

General

- most species can be stored at room temperature, but ripening of the seed in some instances requires several months before germination rates will be satisfactory (in practical terms this means that seed collected in summer should be used in the following spring)
- for some species it may be necessary to store some seed at lower temperatures to insure against poor seasons for seed production (the lower temperature will slow seed ripening)
- some species germinate faster, and sometimes there is a higher percentage germination also, if the seed coat is removed
- the technology necessary to remove seed coats needs further investigation
- smoke treatment is generally not necessary, though it may be useful to break dormancy in fresh seed of some species.
- analysis of actual seed content of

"seed" suggests that some reports of low germination rates for native grasses may be due to gross overestimation of the amount of germinable seed sown

- for most species sowing rates will probably need to be increased compared to past practice to compensate for deficiencies in seed quality and quantity

Seed Testing

- predictable germination rates will only be possible if seed of known provenance is used, or germination tests are done for each seed batch
- for in vitro testing the use of Previcur or Foli-R-Fos fungicide is recommended
- if fungal growth is considered to be a problem in field establishment of seeds then Thiram powder may be a suitable seed dressing
- the use of towelling rather than filter paper is more labour efficient for in vitro testing
- incubation should generally be at room temperature
- seed set can be seen in most species by soaking in water followed by microscope examination

Austrodanthonia caespitosa (Wallaby Grass, White Top)

- germination rates of 100% have been achieved in 4 days
- for planting within 12 months store the seed at room temperature
- for later planting store the seed at

Southern Cemeteries Tour

As usual we are too short of space to show you many photos but we couldn't resist this from our SCT - Round Plain church surrounded by *Podolepis jaceoides*.

The tour was held on the first weekend in December and, thanks to David Eddy, we saw some of the Monaro's best grasslands. We will include an article in the next newsletter.



cooler temperatures to slow ripening

- if these storage conditions are not met % germination will still be satisfactory, but establishment will be slower
- remove the seed coat prior to germination to accelerate establishment
- mechanical methods to remove seed coat need to be investigated
- the use of smoke on fresh seed will accelerate and increase germination rates
- smoke is not necessary with older seed

***Austrostipa scabra* (Spear Grass)**

- germination rates of nearly 90% have been achieved in 5 days
- store at room temperature and plant within a year (ie assuming harvest in mid-summer plant in the following spring)
- sow intact seed
- use smoke to accelerate germination with fresh seed
- smoke is not necessary with older seed

***Bothriochloa macra* (Red Grass, Redleg Grass)**

- 100% germination can be achieved in 3 days
- store at room temperature
- a useful species to establish groundcover quickly but it does not appear to compete well in the longer term and mixed sowings with other species may be appropriate
- removal of the seed coat will increase the speed of establishment
- smoke is not needed

***Ehrharta stipoides* (Microlaena, Weeping Rice Grass)**

- 100% germination can be achieved in 4 days
- store at room temperature
- use this species for rapid ground-cover
- surplus seed can be kept for use in the following year
- remove the seed coat for rapid germination
- smoke is not needed

***Joycea pallida* (Chionochloa, Redanther Wallaby Grass)**

- 90% germination can be achieved in 5 days
- store at room temperature

- fresh seed can be used for rapid ground cover
- preferably use within a year of harvesting
- remove the seed coat for rapid germination
- use smoke with fresh or young seed
- smoke is not needed with older seed

***Poa labillardieri* (Tussock Grass)**

- 100% germination can be achieved in 5 days
- smoke is not needed with older seed (not tested with fresh seed)

***Themeda triandra* (Kangaroo Grass)**

- 65+% germination can be achieved in 5 days, but usually it is much lower
- provenance is an important factor in germination
- although storage at room temperature gave the best results further research is needed before specific recommendations can be made
- scarification should be investigated
- smoke is not needed
- kerosene is not recommended to reduce predation as it caused a reduction in germination.

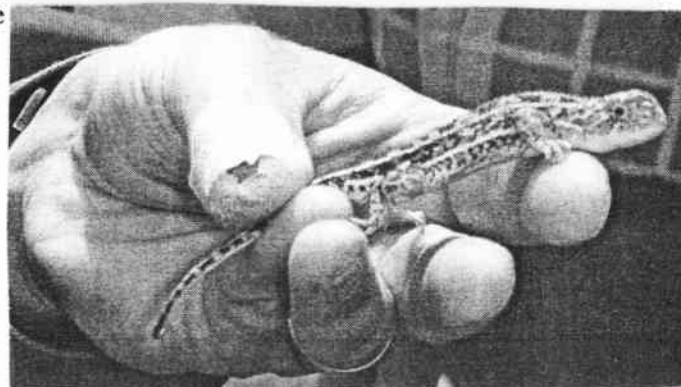
The laboratory tests are now being followed by field trials at Gungahlin and Mount Painter.

(Note: "Germination" in this context means that the radicle (the primary root) had emerged from the seed. "Seed" is used in the broad sense meaning the dispersal unit which falls from the plant. The "seed" is actually a caryopsis which is comprised of a fruit with a pericarp fused with the testa. "Intact" seed means dispersal units cleaned of extraneous material collected as a by-product of the harvesting methods, and usually includes the awns (if present) and the seed coat. "Bare seed" refers to the caryopsis only.)

Kuma Nature Reserve

Opening - 27 Nov

Several FOG members attended the opening of the reserve for *Delma impar* and *Tympanocryptis*, near Cooma. This little fellow was trapped as part of an on-going survey.



ACTION PLANS FOR ENDANGERED AND VULNERABLE SPECIES

by Naarilla Hirsch

FOG was recently asked to comment on several new draft action plans:

10 Yellow Box/Red Gum Grassy Woodland - an endangered ecological community

15 Hooded Robin (*Melanodryas cucullata*) - a vulnerable species

16 Swift Parrot (*Lathamus discolor*) - a vulnerable species

17 Superb Parrot (*Polytelis swainsonii*) - a vulnerable species

18 Brown Treecreeper (*Climacteris picumnus*) - a vulnerable species

19 Painted Honeyeater (*Grantiella picta*) - a vulnerable species

20 Regent Honeyeater (*Xanthomyza phrygia*) - an endangered species

(Action plans 11 to 14 concern fish and crayfish species.)

In responding to these action plans, FOG concentrated on number 10, concerning Yellow Box/Red Gum grassy woodland. We had some concern that the language in the action plan tries to provide a compromise between the interests of conservation stakeholders, and non-conservation stakeholders, with use of terms such as "where feasible" and "it may be possible".

Our response indicated that the action plan should hold conservation of the community paramount, in line with the stated objectives for these action plans. Another concern is with the use of Property Management Agreements (PMAs) to achieve off-reserve conservation outcomes, particularly for high quality sites. Difficulties with PMAs include their availability for consideration only at the time of renewal or transfer of a lease, and the large number likely to come up for re-

newal and needing renegotiation in the next few months.

Several areas were identified as not being planned for inclusion in the ACT reserve system but we believe should be, including sites adjoining Mulligan's Flat, in O'Malley, in Conder (which FOG visited recently) and in Calwell. Another concern with the action plan is the fact of consideration of buffer zones around protected areas, particularly high quality woodland sites located adjacent to planned urban developments. There is also little consideration given to preserving the ecotone between Yellow Box/Red Gum grassy woodland and adjacent native grasslands.

ST MARK'S GRASSLAND MANAGEMENT GROUP

Nigel Hall

(Management Group Chair, 6247 3493)

In the early planning of Canberra, an area on the edge of the Parliamentary Triangle in Barton was allocated to the Anglican Church as a cathedral site. No cathedral was ever built, and as a result a significant area of natural grassland has survived in almost the centre of Canberra.

The site comprises about four hectares of native grassland of very high conservation value. The grassland is dominated by Kangaroo Grass (*Themeda triandra*) and contains a high diversity of native plant species, several of which are regarded as uncommon, including five orchids and a number of lilies. There is also a small population (about 130 plants) of the Button Wrinklewort (*Rutidosia leptorhynchoides*) on the site.

St Mark's National Theological Centre was established by the Anglican Church on one corner of the site in 1956. The St Mark's Council oversees the implementation of all actions that occur on the site. This includes the conservation of the native grassland. The Council has now established the St Mark's Grassland Management Group to oversee the implementation of a management plan drawn up by Environment ACT.

The Management Group has members drawn from St Mark's National Theological Centre, Friends of Grasslands, Environment ACT, and the Tent of Meeting Group. Geoff Robertson, David Eddy and

Leon Horsnell represent FOG on the Management Group.

The Management Group hopes to form a 'Friends of the St Mark's Native Grassland' group to facilitate the involvement of the St Mark's community and other interested people. Activities that the group might undertake include the development and maintenance of a grassland garden, weed control, planting activities, assistance with monitoring and providing education guides. An Open Day for the site is planned for October 1999. Anyone interested in becoming a Friend of St Mark's Grassland should talk to Geoff Robertson.

CONSERVATION FIRST FOR CANBERRA NATURE PARK

Jean Geue

I was introduced to the concept of a conflict hot spot at the May 1998 FOG workshop and thought 'snap! that's what Aranda Bushland is'.

One of the speakers had used one transparency to plot areas highly valued by Bega foresters and another transparency to plot those highly valued by conservationists. Put the transparencies together - lo and behold the conflict was based on a surprisingly small area.

Canberra Nature Park

Canberra's bushland has rich flora and birdlife within easy access of city and suburbs - our heritage from the early garden city planners who kept the hills free of buildings and created green corridors between and within suburbs.

The bushlands integral to Canberra's Bush Capital ambience are gazetted as 'nature reserves' under the Land (Planning and Environment) Act and together are known as Canberra Nature Park.

Management of this park has been under discussion since 1988 - a summary of community responses was published in 1990; a 170 page Draft Management Plan issued for comment in September 1996; the Final Draft went to the ACT Legislative Assembly in December 1997; a public hearing was held on 3 July 1998 and the Standing Committee on Urban Services tabled their 45 page report on 22 Septem-

ber 1998. The next step is a response by the government.

The Conflict

Conflict centers on recommended horse trails criss-crossing Aranda Bushland, the Pinnacle and Mount Painter. The trails were added by the Conservator of Flora and Fauna in the last few weeks before submitting the Final Report. There is also conflict about mountain bikes on unformed walking tracks and horses wandering outside the Bicentennial Trails on Cooleman Ridge and the Pinnacle.

The Land (Planning and Environment) Act sets management objectives for 'nature reserves' and gives priority to 'conservation of the natural environment' over 'recreation, education and research' (Section 195 (4 & 5) and Schedule 1). Under the Nature Conservation Act, horse riding is prohibited in 'nature reserves' without the consent of the Conservator.

As there is considerable evidence that horses damage natural areas, introducing them to nature reserves appears in conflict with the Land Act and the precautionary principle. The Management Report, which will become part of the legislative framework, does not quote the relevant parts of the Act and thus encourages unconscious watering down of the conservation ethos.

Canberra is well served with horse trails and there is sufficient space in adjoining areas for pleasant treed horse trails with views. Inappropriate multi-use jeopardises safety, and places community groups in conflict.

Certainly, initial damage by horses is not apparent to those with little expertise in native vegetation. Horses spread weeds through their droppings and on their coats. Their weight and hooves disturb soils, erode tracks and open the land to weeds. There is no guarantee horses and riders will keep to allocated trails. Damage escalates once weeds take hold and may not be noticed until it has gone beyond the stage where it can be easily reversible.

Parkcare volunteers

Volunteer parkcare groups are working enthusiastically throughout Canberra to conserve and rehabilitate our natural resources.

Friends of Aranda Bushland first heard about the proposed introduction of horses in December 1997, just about the time we launched Our Patch - our field guide to the plants of Aranda Bushland. This was the culmination of a five year photography project supported by a series of landcare grants. In addition, after eight years of parkcare weeding, Aranda Bushland was over 95% free of weeds.

We plunged into an Administrative Appeals Tribunal case - a four day hearing in February with a stay-of-action decision, then presented our case to the Standing Committee of the Legislative Assembly.

As well as sharing the rich flora with Black Mountain Reserve, Aranda Bushland has the same steep slopes and fragile soils. Apparently the land was cleared by early settlers but was not useful, and regenerated naturally more than ninety years ago - well before today's major weed species reached Canberra. Botanists believe that few species have been lost. Conservation groups agree that horses should continue to be excluded.

Both the Pinnacle and Mount Painter were probably grassy woodlands cleared by early settlers and found suitable for grazing. The fault line down Bindubi Street divides the Black Mountain/Aranda Bushland soils from the more fertile Mount Painter volcanics.

Landcare/parkcare work in the Pinnacle dates from 1983 and has involved large working parties - one with over 100 cars parked along Springvale Drive. The Bicentennial Horse Trail was initially fenced from the main reserve, but in the last couple of years horses have had 'permissive access' and new weeds are taking hold along the trails.

Friends of Mount Painter dates from 1989, and has undertaken massive clearing of thistles and other rehabilitation work. The distinctive hill was gazetted as a nature reserve in 1996.

The Committee's Recommendations

The report of the Standing Committee (Harold Hird, Simon Corbell and Dave Rugendyke) was unanimous and takes a very positive stance in putting conservation first. It recommends that horses are not to be permitted in Aranda Bushland or on the Pinnacle except for the National Bicentennial Horse Trail and an 'all stakeholders' discussion on Mount Painter routes.

It discusses planning safe and attractive horse trails outside the reserves and widening road easements to facilitate safe movement of horses and bike riders.

The report also recommended 'that the position of Conservator of Flora and Fauna be separated from that of the executive director of Environment ACT and it be made perfectly plain that the duty of the Conservator is to protect and conserve the natural environment'. Other recommendations include increased resources, signage, garden-city values, an off-reserve site for competition mountain bikes and independent three-yearly environmental audits. Copies of the report are available from Rod Power, Secretary of the Committee on 6205-0435.

The government is under no obligation to implement any of these recommendations, and it is under intense pressure from horse riders to soften and overturn them.

The report stated that - 'no incontrovertible scientific evidence was presented to the Committee about the effect of horses on Canberra Nature Park in the areas where they are presently allowed'. It recommended seeking expert advice.

What next?

The saga continues and continues to need your support. The ball is currently in Minister Brendan Smyth's court and will then go to the Legislative Assembly.

For more information contact Jean Geue who is also the Convenor, Friends of Aranda Bushland (phone 6251-1601, or email jean.geue@alianet.alia.org.au)

SNOWY INQUIRY - AVOIDING THE INEVITABLE!

Michael Hissink

This article is reproduced from November 1998 Sustainable Times, monthly newsletter of the Canberra & South East Region Environment Centre

The Final Report of the NSW/Victorian Snowy Water Inquiry has recommended against restoring a minimal 28 percent environmental flow for the Snowy River, opting instead for an unacceptable 15 percent flow rate. This recommendation flies in the face of at least three reports by scientific experts, including the Inquiry's own Scientific Reference Panel (SRP), and a statement by world environmental science expert Professor David Bellamy,

recently in Australia, that nothing less than 28 - 30 per cent can establish environmental flows.

The SRP report indicates that the Composite Option (Composite Option D - 15%) recommended by Inquiry Commissioner, Robert Webster, will not shift sediment and restore pools in the section of the river between Buchan River and the Sea. On the other hand, the Inquiry's own Draft Option 6 (30%) and Option 7 (40%), developed as a result of community submissions and the public hearing process, would meet environmental flow requirements, but these have not been supported in the Final Report recommendations.

Once again it is political expediency and voodoo economics driving this Snowy Water Inquiry, under the guise of restoring environmental flows to rivers affected by the ill-conceived Hydro Scheme.

Of course the Snowy Mountains Scheme was an amazing engineering feat, but the fact remains that drying up rivers on the eastern side of the Great Divide and diverting this water to irrigation projects on the western side has created serious environmental problems that will cost the Australian community far more than the spurious benefits of the Scheme.

These problems include salinisation of vast areas of the Murray Murrumbidgee Irrigation Area (MMIA), and the degradation of eight rivers in the Snowy Mountains.

Provision of Snowy water to the west has encouraged significant expansion of the farming potential in the MMIA resulting in an industry which produces \$422 million irrigated products from the Murrumbidgee Valley, and \$1120 million from the Murray Valley (1995/96). It is therefore easy to understand the concerns of Irrigators who have now become dependent on Snowy water. The question remains, how sustainable is the MMIA while-ever it is based on an artificial water supply?

Of greater concern is the tremendous waste of water through leaks, river bed soakage and evaporation. Up to 3000GL (1 gegalitre equals 1000 million litres) or 35 per cent of Snowy Scheme water is lost before the water even reaches the farm gate. This is three times the Snowy River contribution of 1040GL.

If the irrigation delivery infrastructure for the MMIA were improved, together with more efficient irrigation methods, the

saving of the current 3000GL/y loss would be more than enough to give water back to the Snowy.

The Snowy Hydro Scheme is also concerned that any significant water allocated to restore environmental flows to the Snowy would make electricity generation non-viable. However, the Hydro Commission need only sacrifice 11 per cent of generating capacity. It appears that costs to hydro electricity generation provided to the Inquiry in support of the proposed corporatisation of the Snowy Hydro Scheme may have been overestimated and that insufficient information has been presented to allow proper assessment of the estimated costs.

Environmental flows to Snowy Mountains rivers is possible and economically viable provided greater efficiencies are implemented. Some MMIA irrigators are already doing this. It is now up to the State and Federal Governments to take the environmental issues seriously.

BACK FROM EXTINCTION

This article was sent to FOG by Vicki-Jo Russell of the Threatened Species Network, which is a community-based

program of World Wide Fund for Nature and Endangered Species Program of Biodiversity Group, Environment Australia, with support from State conservation organisations.

National Threatened Species Day is celebrated on 7 September each year and marks the day the last known Tasmanian Tiger died. The day is used to highlight the plight of Australia's threatened species.

In South Australia, the fourth annual National Threatened Species Day in 1998 focused on the Pygmy Bluetongue Lizard, one of Australia's most endangered reptiles.

The Pygmy Bluetongue Lizard (*Tiliqua adelaidensis*) was once found around Adelaide and the Northern Mount Lofty Ranges but was until recently feared extinct having not been recorded for over 30 years. It was rediscovered in 1992 when the body of a Pygmy Bluetongue was found inside a Brown Snake which had been killed on a road near Burra. The surrounding area was thoroughly searched and over the next three years 10 small populations of the lizard were discovered in the region. Their numbers are now

estimated at 5,500.

One of the truly amazing features of the Pygmy Bluetongue Lizard is that it lives down the hole of a Trapdoor or Wolf Spider (perhaps after eating the spider?). They are active by day, spending much of their time basking by their holes ready to ambush passing insects. They rapidly retreat into the holes at the slightest sign of danger. Less than 20cm in length the Pygmy Bluetongue is considerably smaller than its well known relative, the Eastern Bluetongue.

The nationally endangered Pygmy Bluetongue Lizard is only found in the temperate native grasslands of South Australia's mid-north. Grasslands are Australia's 'sweeping plains'. They are naturally occurring areas covered with few or no trees. The Pygmy Bluetongue Lizard, as well as many threatened plants and a diversity of other wildlife species, depend entirely on this unique vegetation type for survival.

Instead of Banksias, Grevilleas, heaths and other shrubs common in other South Australian vegetation associations, grasses, lilies, native peas and daisies are the dominant features of temperate

Drawings of
Sundews
(*Drosera
peltata*) by
Ann Smith.
Readers will
recall an article
on Ann Smith
in our Sept-
ember issue.



'Sundew' *Drosera peltata*
Wombin September 1998

Flowering in October 1998

grasslands. In South Australia numerous species confined to grasslands are threatened including *Psoralea parva*, *Eryngium rostratum* and *Agrostis limitanea*.

Native grasslands were formerly widespread across South Australia, but today only 2% remain after many of them were replaced by cereal crops and introduced grasses that were planted as pasture. The small pockets of native grassland which remain are largely on private property and landholders have already shown valuable support for the recovery of the Pygmy Bluetongue Lizard and its grassland habitat in the mid-north region.

The Pygmy Bluetongue Recovery Team aims to halt the decline and increase the probability of long-term survival for the Pygmy Bluetongue Lizard. This innovative program is undertaking research into the species and its habitat, including plans for expanding populations by providing artificial holes for lizards to take refuge in.

NATIVE GRASSLANDS IN CANADA

Geoff Robertson

A few of us had the privilege, at short notice, to hear a talk from Dr S. Ray Smith (University of Manitoba, Canada). His theme was native grasslands and grasses in Canada.

He gave a potted but excellent history of the US-Canadian grasslands. Imagine the continent of North America. Moving from the eastern coast, you will encounter eastern mountains/highlands which are largely forested. Beyond them are the grasslands which stretch from southern Canada to northern Mexico.

There are two main areas of grasslands, each running in a north-south direction; the most eastern are the tall wet grasslands where the grass is very tall and soils very rich. The native grasslands are now one per cent of this area (familiar story).

Further west where it is drier and higher, the grasses are shorter; here 30 per cent have remnant vegetation. Again, this is familiar.

The droughts in the 1930s in the US, turned many areas into a dust bowl. It became apparent that there needed to be

suitable grasses to withstand the more extreme conditions. Any grass would do, provided it had the right properties. Slowly they realised that native grasses tended to be better suited.

Ray pointed out that seed cost for native grasses, however, remains extremely high. He talked largely about the work being undertaken to resolve this issue. He also spoke about some of the areas in which native grass revegetation had taken hold.

There is a lot of interest in native grasses for pasture. Native grasses are also required in national parks. If a road is put through a national park, the roadsides are required to be vegetated with local grasses (from within 10 miles).

Ladybird Johnson (former President Johnson's wife) took an active interest in revegetation of roadside verges. Now many areas, especially in Texas, have road verges with many native plants, including wildflowers. Native grass lawns have now become trendy (around Texas), because of their low water requirements.

Ray described a project he has been involved in with Ducks Unlimited Canada. Ducks Unlimited's objective was to provide a better environment for ducks (so that there would be more to shoot at). It was found that the only suitable grasses were native varieties which had the properties of keeping their structure under the snow and therefore in spring provided suitable structure for the ducks to breed in, safe from predators.

Ray explained a number of experiments to develop native grass for this project. The objective was to keep the diversity within the species. Grass plants were collected from a number of sites. He showed where the sites were located in southern Canada - some were cemeteries.

The plants were grown in a grid pattern so that the site from which they came was known. Essentially there were nine rows of plants from each site, but the rows were scattered to randomise the experiment. The plant from each row with the highest seed production was chosen to form an "ecovar".

It was found that high seed production is correlated with other characteristics such as vegetative mass.

Biodiversity within the species was the key. The plants selected were not the best seed producers overall. Plants from more southerly sites grow taller and produce more seed and so if that characteristic was selected for, plants from many areas would be ignored. Work was being undertaken to determine if this selection method did or did not eliminate some of the genetic diversity using DNA finger printing.

Taking plants seems to work better than taking seeds because the results are more reliable.

Ray is in Australia for a year working at the Uni of New England (Armidale).

DANTHONIA MAGAZINE

FOG has received the September 1998 issue of Danthonia, the newsletter of the Australian Network for Plant Conservation (ANPC). If anyone would like to look at it, contact one of the committee members. This issue includes articles about indigenous remnants at the Royal Botanic Gardens in Melbourne, a gene bank workshop at the 5th International Botanic Gardens Congress, the Tasmanian Understorey Network, the Sullivans Creek Catchment Group, and the 4th ANPC national conference (to be held November 1999 and to include several conservation themes). An article on the Land and Water Resources Research and Development Corporation (LWRRDC) describes its three priority research areas as productive and sustainable land use systems, sustainable management of rivers and water resources, and sustaining vegetation in the landscape. LWRRDC has recently published *Diversity and sustainability in grassy eucalypt ecosystems* (occasional paper no. 1/98, available from the Department of Primary Industries).

BOOK REVIEWS

Wildflowers of the Snow Country: A Field Guide to the Australian Alps.

Ian Fraser & Margaret McJannett, illustrated by Helen Fitzgerald. Vertigo Press, Canberra, 1998. xv + 170pp.

Kim Pullen

Well known Canberra nature writers Ian Fraser and Margaret McJannett have

again teamed up with painter Helen Fitzgerald to produce a high country companion to *Wildflowers of the Bush Capital*, their 1993 guide to the flowers of Canberra Nature Park. *Wildflowers of the Snow Country* is a geographically more ambitious undertaking, covering that part of south-eastern Australia that gets regular winter snow, from the Brindabella Range on the ACT's western boundary, through Kosciuszko National Park and Victoria's Alpine National Park to Mount Buffalo.

The book begins with a 15-page introductory section. Under the heading About the Snow Country, the authors define their study area and describe the environment in terms of climate, habitats and conservation status. The origin of the snow country flora is briefly discussed and "other relevant books" are mentioned. Following is a part headed About the Book, which sets out the authors' aims, defines genus and species, discusses that bane of students of both flora and fauna, name changes, and explains how to use the book.

The body of *Wildflowers of the Snow Country* consists of individual species dossiers, usually one to a page. Ms Fitzgerald's eye-catching watercolours dominate each page, with the text for each species arranged around the painting under the headings Pronunciation and Meaning, both referring to the botanical name; Family; Key Characters; Similar Snow Country Species, which are listed and distinguished; Habitat and Distribution (within the snow country); and Comments. The last includes information on wider distribution, recent name changes, current taxonomic problems, and uses, such as in Aboriginal cuisine or in cultivation. A single index of botanical and common plant names concludes the guide.

Wildflowers of the Snow Country attempts to cover "all the common and obvious native shrubs, climbers and herbs" likely to be encountered in the snow country and enable them to be identified by "anyone without botanical knowledge". Not included are exotic species (although these are mentioned where they may be confused with native species), trees, grasses and sedges ("too specialised and complicated for a publication such as this") and, logically, non-flowering plants such as

ferns. The identification method used, identical to that in *Wildflowers of the Bush Capital*, is a three-step multiple-choice method starting with flower colour. Having placed your flower by "predominant colour" into one of five groups, move down through a table of flower descriptions to stop at the first one matching yours, then go to the page indicated. You will have anything from one to about ten choices — simply match your flower with an illustration and supporting text. Where a species' variable flower colour transcends the initial groups, cross-referencing in each table of flower descriptions assures that all options are covered.

I haven't had the chance to use this book in the field yet — waiting for the snow to melt! — but I see no reason why it shouldn't be an excellent field guide. At 15x21cm and 350g in weight, it is small enough to be carried up the side of Mount Feathertop or across the Snowy Mountains, it has a built-in ruler (inside the back cover) to measure your leaf or flower, and there are labelled diagrams of the basic flower types in place of a glossary, which is not missed. Why not get a copy and take it to the mountains with you this summer?

PLAINS WANDERING: Exploring the Grassy Plains of South-Eastern Australia

Ian Lunt, Tim Barlow and James Ross,
Published by Victorian National Parks
Association and Trust for Nature (Vic).

Naarilla Hirsch

This book was written to foster awareness of native plants and animals of the grassy plains of south-eastern Australia. It starts with sections on the ecology of lowland plains, information about landform and climate, major vegetation types and the wildlife of the plains. The historical background includes a best guess reconstruction of what the plains were like before European settlement, and a discussion of the Aborigines' relationship with the land and the impact of European land use on the vegetation and fauna.

The eight regions covered by the book are from the south east of South Australia through Victoria to southern New South Wales, and Tasmania. The types of grasslands and grassy woodlands occur-

ring in each area are described. About one quarter of the plants in these regions are included, with a balance between common and unusual species. In general species were included if they occurred in two or more regions, were regionally characteristic, or were a threatened species restricted to one region.

The species illustrated in the book are grouped by family, and are listed alphabetically by scientific name within family. As well as an illustration (generally a photo) of the plant, for each species there is a brief description, the region it is found in, and an indication of habitat. Some of the grasses are illustrated by line drawings rather than photos. At the end there is a small section of the more common weeds. The index contains both common and scientific names, and is easy to use. A glossary of terms used and a list of other references have also been included.

The photos illustrating the species are excellent. They clearly show characteristics of the species that assist in identification, for example by including leaves as well as flowers. The line drawings of grasses are clearer, and key characteristics are easier to see, than in photos. Some drawings of seed heads have also been included.

For the novice trying to identify a plant about which he/she has no idea about the species or family, it is necessary to flip through the whole book to find the general area the plant might be in. However, once you do this, it is easy to find a particular species as related species are grouped together and several plants are illustrated on any two pages. The book is light so it is easy to carry in the field.

In terms of species covered, there is some overlap with the Marriott's *Grassland plants of South-Eastern Australia*. The two books both include very common species, but otherwise often contain different species within the one genus. Consequently, using both books together greatly increases the chance of accurately identifying a particular plant. The approach of the two books is somewhat different, with the Marriott's book providing more detail on individual species and *Plains Wandering* providing more information about the ecology and types of lowland plains. The two books complement each other.

Plains Wandering - definitely recommended

FRIENDS OF GRASSLANDS INC*Supporting native grassy ecosystems***Address: PO Box 987, Civic Square ACT 2608****Web address:** <http://www.geocities.com/Rainforest/Vines/7769/index.html>**Your committee:**

Geoff Robertson	President	6244 5616 (w) 6241 4065 (h & fax)	geoff.robertson@dss.gov.au
Naarilla Hirsch	Vice President	6289 8499 (w)	
Paul Hodgkinson	Secretary	6259 3869 (w & h)	phodgkin@aucom.com.au
Art Langston	Treasurer	6258 1032	art.langston@dwe.csiro.au
Margaret Ning	Activities	6252 7374 (w)	margaret.ning@abs.gov.au
	Membership	6241 4065 (h & fax)	
Dierk von Behrens	Newsletter	6254 1763 (h)	vbehrens@actonline.com.au
Kim Pullen	Committee	6246 4263 (w)	kimp@ento.csiro.au
David Eddy	Committee	6242 8484 (w) 6242 0639 (fax)	deddy@ozemail.com.au
Linda Hodgkinson	Committee	6278 3231 (h)	u983405@student.canberra.edu.au

FRIENDS OF GRASSLANDS NEWSLETTER

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 receive 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 a property, are a member of a landcare group, or actively interested in grassland 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, 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, you might encourage friends to join, or even make a gift of membership to someone else. We will also send one complimentary newsletter to anyone who wants to know more about us.

HOW TO JOIN FRIENDS OF GRASSLANDS

Send us details of your name, address, telephone, fax and email, etc. You might also indicate your interests in grassland issues. Please make cheques payable to Friends of Grasslands. The costs are \$20 for an ordinary member or family; \$5 for students, unemployed or pensioners; and \$50 for corporations or organisations - the latter can request two newsletters be sent.

If you would like further information about membership please contact Margaret Ning, or if you would like to talk over FOG issues contact Geoff Robertson. Contact details are in the box above.

We look forward to hearing from you.

Friends of Grasslands Inc
PO Box 987
Civic Square
ACT 2608