



News of Friends of Grasslands

Supporting native grassy ecosystems

November-December 2004

Program

SAT 30 OCT (9am to 3pm) Field day visiting Bungendore hotspots and becoming a FOG buddy. Meet at Bungendore Park, Gibraltar St. Full details last issue.

SAT 13 NOV FOG's Tenth Birthday. Grassland walk followed by dinner in Gib Street Café Bungendore. We shall meet and park at Bungendore Park (off Gibraltar St) at 3:30pm before going to the Turallo Grassland Reserve for a short walk and reminiscing. Then at 6:15pm we will adjourn to the café, 2/15 Gibraltar Street, Bungendore. To show our appreciation the two course dinner will only cost you \$10 after FOG's subsidy, but you need to bring your own liquid refreshment. We have the café to ourselves and there will be a special but short slide show celebrating our ten years. As a lucky door prize, Michael Bedingfield is generously donating one of his drawings, and to add to this pot, there will be two FOG T-shirts for lucky winners. Inquiries Sandy (details back page), bookings and money (\$10) should be sent to FOG, PO Box 44, Majors Creek NSW 2622.

SAT 4 DEC (9:30 TO 3:30PM) FOG's working bee at Old Cooma Common Grassland Reserve. We shall be doing some follow-up herbiciding of woody and other weeds, and enjoying the ambience and special plants. Contact Margaret for further details. If you haven't seen FOG's grassland reserve this is an ideal time to see it.

SAT-SUN 29-30 JAN Sub-alpine grassland. Currently planning to visit Long Plain and camp at Blue Holes camping ground on Friday and Saturday nights, but people may turn up on either Saturday or Sunday morning. We will visit sub-alpine frost hollows and limestone grassy ecosystem sites. More details next issue. Inquiries Roger, details back page.

SAT 26 FEB 4PM FOG's AGM, Mugga Mugga. Short but enjoyable AGM followed by a traditional free barbeque. This is an important annual event for FOG to discuss its broad directions, elect a new committee, and to relax and enjoy the comfortable environs of Mugga. So please put this in your diary now.

And also...

SUN 14 NOV Grassland walk at Mugga. The Mugga Mugga Historic Cottage and Environment Education Centre, Narrabundah Land, Symonston, will hold its open day, and FOG will conduct a grassland tour at 2pm. The tour of the historic cottage is also highly recommended. Mugga inquiries number is 6239 5607, FOG's is 6241 4065.

THURS 18 NOV LUNCHTIME Southern Tablelands Ecosystem Park (STEP) AGM A news item on STEP and details of its AGM are included on page 4. A STEP membership form is also included in this newsletter. Note: FOG members can become STEP members for just \$10.

Membership renewal

A membership renewal form is enclosed. Yes, it is time to get out the cheque-book and renew your membership for 2005. Please do this promptly as it will save 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. More on page 4.



In this issue

- Tribute to Ros Dixon
- News roundup
- Cumberland Plain woodland
- MacPhersons' Plain area revisited
- Draft ACT grassland strategy
- Tarengo leek orchid, an endangered species

A Tribute to Ros Dixon

Rosemary von Behrens

On 8 September Ros Dixon, an active member of FOG and many other groups, died. At her funeral on 14 September, attended by well in excess of 200 people, there were many tributes. The following tribute, titled a celebration of the life of Rosalind Mary Dixon [nee Stafford], was made by Rosemary von Behrens who agreed that FOG could publish it. We shall all greatly miss Ros and our special condolences go to Garth Dixon and Ros' and Garth's families.

It is a great honour to have been asked to speak about the Ros Stafford that I, and most others present here today, have known and admired for many years.

I first became aware of Ros and her husband Garth when Dierk and I rejoined the Field Naturalist Association of Canberra after a gap of many years. Field Nats has two Rosemarys, the other is Rosemary Blemings. Rosemary was also asked to speak today, however, she is currently on an environmental tour of Kangaroo Island and took her leave of Ros while she was still alive. I acknowledge Rosemary's tribute to Ros and I have incorporated her beautiful prose into this celebration of Ros's life. You will recognise the differences in styles I'm sure.

Ros was a botanist with a wide knowledge of plants and ecology. She once re-created a rainforest at her home. Her botanical training, her delight in natural history, "may have led her to observe and research individual species but never in isolation. The whole picture of habitat, relationships, interdependencies wrapped the plants and animals she came to know so well in a cloak of understanding; the appreciation of biodiversity. The treasured arboreta at Warriwillah reflect her scientific mind and sheer determination. May their survival become a beacon for the future."

"Ros's learning never ceased. Surveys, observations, photographs, herbarium specimens formed a detailed collection of data on Warriwillah's flora and fauna that reflected her passion for timeless places rescued from others' concepts of land ownership." Ros was a custodian of the land, a responsibility she took seriously. "She discovered koalas on Black Ridge. She assisted in the study of platypus, fish and other riverine creatures. Rare plants were fenced off. Fire regeneration patterns were noted."

Warriwillah is a spectacular property owned by Garth and Ros at Michelago on the junction of Michelago Creek and the

Cover page photos. Donkey-ear orchid (*Diuris semilunulata*) taken on FOG visit to Sarah and Adrian Fether's property, and pink lady's finger orchid (*Caladenia carneae*) taken this spring.

tor. All properties have Voluntary Conservation Agreements with the NSW Department of the Environment on them. Ros and Garth have spent many hours, even days, sharing the magic of this land "with members of the Field Naturalists, the Australian Native Plants Society and Friends of Grasslands." Ros was so involved and keen on several occasions to show us more than we expected that the degree of difficulty was evidenced by the number of muddy feet and dirty bottoms as we clamoured over the uneven terrain along the Murrumbidgee. Some of us took short cuts, but I wouldn't have missed it for quids. We were all in sorrow when Warriwillah was hit by the fires of 2003.

Ros was a founding member of the ACT Association for Environmental Education. She was a stalwart of conservation causes around Canberra for many years. She and Garth were long time Councillors representing the Goulburn Field Naturalists on the Conservation Council of the SE Region and Canberra. They supported Friends of Grasslands and turned up for many of FOG's activities, workshops and on-ground work. The same applied to the Field Naturalists and the Australian Native Plants Society.

Ros was a beautiful, quiet, unassuming person but this belied her committed activism. She firmly believed that things can only change by political action. She wrote letters, rang and lobbied politicians, bureaucrats and other decision makers causing change to happen.

She was responsible for important alterations to the recent NSW Land Tax bill, even after she learnt of her illness. She was at all times supported by Garth and it is difficult to separate

the two as they did most things together. Ros was a passionate advocate for the environment. She opposed the logging of native forests for cheap woodchips and firewood and would go out of her way to research a case with relevant authorities such as National Parks and Wildlife personnel.

She was horrified when the law was circumnavigated, for example, when a land-owner had been given permission to sell for firewood the trees that, according to legislation, were meant for personal use only.

Ros protested against injustice; the treatment of refugees in detention Centres; against the war in Iraq, indeed their dog Mitcha was paraded during an anti-war rally wearing a sandwich board. Mitcha, unknowingly, declared that he would like to bite a certain politician. This had him featured in several newspapers. Ros spent days lobbying against the Australia United States Free Trade Agreement – unfortunately, to no avail, as we now know.

Ros enjoyed a deep sense of wonder, awe, curiosity and admiration for all life forms – from the tiniest moss to the mightiest whale. She would capture alive and remove outside spi-



Photos by Rosemary von Behrens. Next page, Ros, second from left, amongst familiar faces.

ders found indoors. She would carefully avoid stepping on native plants.

At the same time, however, she had a clear idea about the place of feral animals and exotic weeds. "At her hands thousands of invasive weeds have been deftly removed with the twist of a sizeable screwdriver. The tenacity of such plants gave her cause for admiration as well as extreme frustration. The ineptness of our management of imported species in Australian habitats caused anguish that was partly assuaged by submissions to authorities urging action. She, indomitably, also responded by redoubling her efforts to control invasive species on Warriwillah and Black Ridge."

Which weeds to remove was often a moot point. When she attacked thistles

Garth would say, "Don't worry about those Ros, they're not so important." She would continue to take out the thistles. On this point I agreed with Ros, but when it came to the pretty little exotic eyebright from Europe I agreed with Garth. Neither of these species, however, belonged in Ros's patches of paradise. In this respect she was a purist.

The destruction of struggling native vegetation and recent plantings "by the voracious grazing of a neighbour's goats" disturbed Garth and Ros, but Ros quietly, recently said "they're lovely animals." People so often mismanage their

animals and fail to understand their stock and their land." She would have agreed with Garth who replied when I commented on the blossoming tree outside their kitchen window, "There were many more blossoms, but the parrots picked them, and they looked so pretty while they were doing it."

Ros cared for her friends and family. Even in the short time left to her, she was still trying to link people who needed ongoing care, in Australia and abroad. She has arranged that her

support of two Romanian children via World Vision will continue. She has given generously to a dozen or more charities. Her accountant once told her "No-one gives as much as you do." Bush Heritage

was dear to her heart. Ros was also generous with her time and hospitality, frequently hosting overnight friends and relatives at Ainslie and Warriwillah. She loved and was in turn loved by Garth's family. She was a loyal and loving partner and best friend for Garth.

I'd like to finish with a sentence from Rosemary Blemings: "May we, each in our own way, dedicate our love of the land and our efforts to study, restore and maintain it, to Ros and the shining examples she's given."



News Roundup

FOG-STEP workshop

Grasscover

28 AUGUST Twenty eight people attended the FOG-STEP workshop titled, *leaf, feather, fur and scale: exploring the relationships between Southern Tablelands ecosystems and their bird, mammal, and reptile inhabitants*.

Geoff Robertson gave the first session providing a comprehensive set of images of the goannas, dragons, geckos, legless lizards, skinks, elapids, blind snakes, and pythons found in the region. The presentation had initially been put together in late 2003 with the help of members of ACT Herpetological Association (ACTHA) as part of its annual display at the Australian National Botanic Gardens. It has since been revised.

The aim of the presentation is to increase understanding and enthusiasm for the marvellous reptiles of the region.

Jenny Bounds summarised what was happening with birds in the region with particular emphasis on several selected declining woodland birds. Jenny's presentation provided very good images as well as some very precise statistics greatly increasing participants' understanding of the plight of woodland birds. Her talk also underscored the importance of what well-focussed community groups such as the Canberra Ornithologists Group (COG) can achieve.

Geoff gave a second presentation, daisies of the Southern Tablelands. He stated that there were about 160 indigenous and eighty introduced species.

Daisies include ray-floret daisies (eg brachycome, burr daisy), everlasting, fireweed, dandelion, thistle, cudweed, and a variety of others. He showed how various flower patterns reappear amongst the daisy family, and he gave some very useful tips on how the amateur can tell various species apart. The aim of this presentation was to provide a comprehensive list and set of images of the region's daisies.

Rainer Rehwinkel spoke about the ecosystems of the Southern Tablelands largely focusing on the large volume of work that has been done in recent years to classify and map the vegetation communities of south east NSW.

The last presentation examined mammals in the region, particularly those

that are less known. Andrew Claridge, the presenter, had organised an excellent set of images. Unfortunately, illness prevented his attendance and Rainer stepped in to explain Andrew's slides.

After a wonderful lunch, there was an open forum, led by Helen Sims, on how community groups might progress the use of the presentations. Several very constructive suggestions were made. Jenny outlined the importance of informative brochures, referring to material that COG had put together on birds aimed at the schools, teachers, community groups, and tourists. Such material can be included in kits or placed on websites, she said.

Education kits aimed at providing resources to teachers were also favoured. These could be linked to science curricula which could be enriched by a greater focus on local species and vegetation. Providing panels of experts and volunteers would be a desirable backup. Sponsored competitions, such as the Science Fair, were seen as another possible focus.

Field days were also mentioned, and participants were reminded of the FOG field buddy day planned for Bungendore on 30 October.

Linking conservation to work protocols, eg assisting to provide input into lawn mowing or vegetation clearing protocols may provide better protection of native vegetation.

Targeting landcare and community groups, or the broader community through the media, with rich information, were seen as other areas which could provide a useful focus.

Plant ID at Sutton

9 OCTOBER a handful of FOG members visited Sarah and Adrian Fether's patch in Sutton. The aim was to identify the plants on their 25 acre property on the ACT-NSW (Molongu-Yass Catchment) border. Their property also borders the Majura Field Firing Range, and a quick look over the fence revealed stunning woodland-forest communities.

Sarah and Adrian want to keep their property for conservation and encourage their neighbours to do likewise. They wish to learn about what they have and how best to manage it.

Two broad vegetation communities intermingle on their property, stringybark manifeira forest, and yellow box Blakeley's red gum grassy woodland. There are some patches of shrub, but mostly the understorey is grass and herbs. There are also several areas of secondary grassland.

Time for Membership renewal: FOG needs your support

In this year we have:

- Continued with a quality newsletter,
- Conducted the leaf, fur, feather and scale workshop,
- Continued support for establishment of the Southern tablelands Ecosystems Park,
- Visited Tasmanian grasslands,
- Had a widely supported field program,
- Lobbied for grassy ecosystems,
- 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.

Plus we will be celebrating FOG's tenth birthday on 13 November.

So please send in your completed membership renewal form.

If you joined (not renewed) since 1 July your membership is up to date, i.e., paid until end of 2005.

Once the serious business of plant ID started, the number of plants on the list quickly accumulated, although there was the usual stop to debate some IDs, and to allow everyone to observe the more unusual plants. By afternoon's end the plant list was a long one with a fair smattering of lilies and orchids, always a delight. We also observed a healthy cryptogam cover.

As for management, FOG's advice was to allow natural regeneration to take its course (no need for planting), with the added assistance of strategic placement of some fallen timber to slow down runoff and allow more bare areas to revegetate.

FOG members were rewarded by a great afternoon and a very pleasant afternoon tea. Thanks Adrian and Sarah.

Hughes Primary School

Active FOG member, primary school teacher and librarian, Margaret Strong is receiving much support from her school, Hughes Primary, in her work on teaching the value of yellow box red gum grassy woodlands. Walk into the

library, and one readily sees material on grassy ecosystems including many posters and laminated kangaroo, spear and wallaby grasses.

Next year, Hughes Primary will host the Science Fair. Margaret wants to ensure that grassy ecosystems are one focus and that Hughes Primary students are participants.

She has enlisted FOG's support and on 19 October, Geoff Robertson showed the FOG grassy ecosystems slides to sixty student and eight teachers. Geoff was amazed at the reception – he has shown these slides on a number of occasions, but never to school students and never to such an enthusiastic audience. Students and teachers were very interested in the different types of grasslands and woodlands and the many different coloured and shaped flowers.

After the school session, eight teachers joined Geoff in a walk through the Hughes yellow box red gum woodland where there was much to observe. Bulbines lilies and many other flowers were present, but most exciting was seeing large numbers of flowering short-flowered mat-rush (*Lomandra bracteata*).

STEP finding its feet

The Southern Tablelands Ecosystems Park (STEP) describes itself as a future regional botanic garden, education and ecosystem recovery centre for the Southern Tablelands. Its genesis took place in two separate initiatives. In 2002, the Australian Native Plants Society decided to examine the possibility of establishing a regional botanic garden with a particular emphasis on linking the plants, especially groundstorey plants, to Southern Tablelands ecosystems. In the same year FOG lobbied for more strategic planning for nature conservation. By the end of 2002, STEP had emerged.

STEP's evolution has been reported in the FOG newsletter: *Vision for Canberra* (November-December 2002), *Successful workshop* and *A bid for a feasibility study* (January-February 2003), *Exciting late news* (March-April 2003), *STEPing up* (May-June 2003), *STEP launch* (July-August 2003), *STEP news* (January-February 2004). STEP has also produced two newsletters (De-

cember 2002 and 2003) and held several events.

On 1 October STEP announced that it had started discussions with Birrigai School to establish a demonstration garden to illustrate the STEP concept and provide the experience to develop a more complete garden. There was also mention of several education initiatives. A workshop on 10 October explored this development in more depth and mention was made of a number of other projects that might synergise with the demonstration garden.

STEP will hold its AGM at lunchtime (12:30 to 1:30pm) on 18 November, at the Administration Building, Australian National Botanic garden. FOG members are welcome to attend. For those interested in becoming STEP members, a membership form is included in this newsletter. Inquiries contact Cathy, details back page.

Landcare awards finalists

1 SEPTEMBER FOG was amongst the landcare finalists in the Bushcare Nature Conservation Awards and gave a presentation, covering some of FOG's philosophy and achievements, to the other finalists in that category. The half day was enjoyable and interesting and provided many insights into landcare and some very interesting bushcare projects in particular. The winner in the bushcare category was the Saltshaker Boorowa Regional Catchment Committee. Other finalists with close links to FOG were Rosemary Bleming (individual category), and Cooleman Ridge, Mount Taylor, and Farrer Ridge Parkcare Groups (landcare community award category).

Spring flowering in Canberra Benj Whitworth

20 OCTOBER At York Park grassland at the moment there are lots of goodenias, bulbine lilies, and some blue bells.

At St Marks the bulbine lilies, cryptandra and yam daisies are almost finished. The billy buttons are just over their prime and the scaly buttons are starting to flower. There are lots of creamy candles. Button wrinklewort has almost died off to ground level but is now growing vigorously although most are only 10cm tall.

At Mulligans Flat in wetter areas there

ones further down, and perhaps they need to be spread.

Mount Taylor

20 OCTOBER Anne I'ons reported that the flowers on Mount Taylor are just magnificent, having come out in the last week. However, she also reported that the verbascum needs a hit. Last heard, she was organizing impromptu tours for those wishing to see the flowers.

Gungahlin Drive Extension victim Jean Geue

Thanks to those who responded to my e-mail message of 23 September staying "It doesn't look as if endangered natural grassland No. 22A, Caswell Drive roadside has been protected at all. The ribbons around it were blown all over the place soon after they were erected. The workers didn't follow up with orange netting as they did for Pryor's Snow Gums."

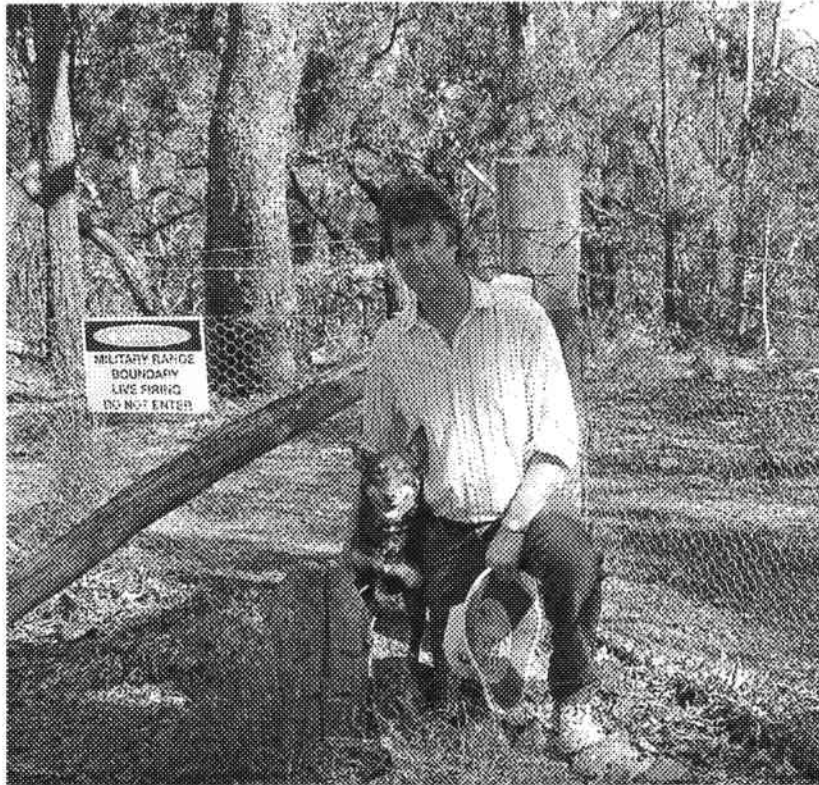
Paul Norburn (GDE site supervisor) and I visited the site on 28 September and it is

clear that the road will cut right through No. 22A. There was no protection area and there are power poles and fibre optic cables in the way.

I had had been told that it would be saved. We pondered over the maps and aerial photos at Conservation Council briefings and various public information sessions. I could see it was vulnerable.

Site 22A was identified as an endangered ecological community under ACT's Action Plan 1. It is 1.4ha and located on the road verge at the corner of Caswell Drive and William Hovell Drive. This grassland is wet themeda rated 3 out of 5 in botanical significance and has uncommon or declining species.

22A is one of three endangered natural temperate grassland remnants in the Glenloch Interchange area in Action Plan 1. No. 22B Caswell Drive paddock (5.4ha) is wet themeda grassland, rated 4 and now within Canberra Nature Park (Aranda Snow Gums reserve). No. 23 Glenloch Interchange (1.5ha) is dry



Adrian Fether behind ACT/NSW border marker with Majura Field Firing Range in background.

are billy buttons starting to come through and are scattered across the broad and heavily grazed grasslands, and early nancy are to be found mainly on the slopes. Towards the big dam, there is a fantastic amount of the thorny looking threatened species, they are going very well most being at least 40cm tall because I assume kangaroos don't like them. There are also patches of flowering egg and bacon peas.

At Coppin's Crossing there is nothing, as the grazing is leaving little ground cover and is causing erosion.

At Shepherds Lookout there are bluebells, odd patches of bulbine lilies, and *Hibbertia riparia* (the hairy one) and a strange small headed yellow flowering daisy that I don't recognise. St John's wort near the car park have the chrysomelid beetles on them, but not the

themed a grassland, rated 3 and in much the same location as the Aboriginal sites.

These two sites appear to have been given some protection, but will be strongly affected by fragmentation, changes to drainage patterns and further exposure to weeds, rubbish, excessive mowing and planting of so called 'sterile' exotic grasses.

Another thing that disturbs me is that the maps from Action Plan 1 had not made their way through to the engineering drawings. Paul Norburn didn't know about endangered grassland No. 22A and it didn't show in other maps and drawings provided by Roads ACT.

Environment ACT's Action Plans have been developed with a considerable contribution from community groups and are subordinate legislation under the Nature Conservation Act. It's unfortunate that they do not lead to action.

ANN Get-together in 2006 *Rosemary Blemings*

FOG has agreed to support Field Naturalists Association Canberra (FNAC) by advertising the 2006 event, encouraging FOG members to share homes with ANN members, and possibly arranging to visit some sites around Canberra. For more details contact me – details back page.

ANN is the Australian Naturalists Network. Its purpose is to assist naturalists across Australia to meet and visit one another in their home areas.

The fourth edition of the ANN Register has recently been mailed to member groups. Marion and John Simmons of Launceston have compiled this register from information received from naturalists' organisations throughout Australia.

In 2000 Alice Springs hosted the inaugural ANN get-together. Launceston followed with 2002's gathering and this year's is being held in Perth in September-October.

The South East Australian Naturalists Association (formerly the Victorian Field Naturalists Clubs Association) offered to host the 2006 get-together during the alpine spring.

Participants will be coached from Melbourne airport, where necessary, and taken to Feathertop Chalet in Harrietteville on 16 January. On 26 January the group will move on to Jindabyne's Sport

and Recreation Centre. The return to Melbourne is scheduled for 2 February.

When the original concept was mooted it was suggested that FNAC members (Canberra) might like to continue the hosting role by inviting ANN members to share Canberra and the ACT after the official get-together ends.

If you want to participate in the Harrietteville and Jindabyne Get together, the cost is about \$1550 based on 2004 prices and covers coach transport, all meals, accommodation, park entry, insurance & incidental items. For more information contact me.

Even if exploring the High Country with field naturalists from everywhere else is not feasible for you at that time perhaps you will be able to help this wonderful concept by sharing our beautiful area with any who wish to have a longer nature-adventure.

Stipa Fourth Native Grasses Conference *Grasslands for production and conservation: both sides of the fence* 11-13 October 2005 Burra SA

The sub themes are: where we have come from, where we are now, healthy landscapes - healthy profits, healthy landscapes - healthy biodiversity, establishment of healthy grasses, and healthy systems - a burning issue.

Inquiries: Sue Rahilly, suerahilly@bigpond.com.

ACT election *Grasscover*

CONGRATULATIONS to all candidates in the 16 October ACT election which resulted for the first time in one party winning a majority of the seats. The quality of candidates and debate were of a high standard.

The Conservation Council is also to be congratulated for its successful election campaign. At the campaign's beginning, the major parties and many other candidates were reluctant to mention conservation in their literature, except negatively. The Council set out to turn this around and through lobbying of candidates, attendance at public meetings, organisation of the highly successful *Conservation over Cocktails* evening, media releases, and letter boxing, turned this around.

By campaign's end the major parties and many minor parties were actively vying for the conservation vote, coming

up with comprehensive and more environmentally-friendly policies. The Conservation Council's score card made an informative evaluation of these policies, although it also reminded voters to remember recent decisions by both major parties which had poor conservation outcomes.

Three former assembly members who have done much for biodiversity will not be returning. FOG thanks Roslyn Dundas (Democrat), Kerrie Tucker (Green) and Bill Wood (ALP) for their efforts.

Guide to Australian grasshoppers

In our last issue we published Kim Pullen's review of *A Guide to Australian Grasshoppers*. Kim has since found where to obtain copies of the book. See: <http://www.agric.nsw.gov.au/Hort/ascu/myrmecia/reports.htm#NewPubs>

ARC Linkage Project Grant

While much has been achieved in the recovery of grassy woodlands, especially their identification and protection, the management of such areas remains problematic as we have little more than anecdotal evidence to go by. Less is known about recovering such areas.

Grassy woodlands also provide habitat for many rare and threatened plants and animals. While decline in some species has been arrested, through actions taken to date, other species reliant on grassy ecosystem habitat are still seriously declining.

This state-of-affairs points to the need for immediate and well-funded research into appropriate ways to manage and recovery our grassy ecosystems. While the need is immediate, it is recognised that research of this nature is long-term.

In its last budget, the ACT Government allocated \$500,000 for post-graduate research and has since flagged a potential partnership with the Centre for Resource and Environmental Studies (CRES), ANU. The ACT Government wishes to use these funds to leverage further research.

FOG members, through the Conservation Council, have held discussions with CRES and believe that its research proposal provides an exciting framework to advance our understanding of the intricacies of grassy woodland communities and their management to ensure their long term viability and to recover many

species dependent on them. There is also the potential for FOG members to be involved in and learn from their participation. Lessons learnt will have widespread applicability. FOG has therefore supported CRES' proposal to gain funding to support the project.

Job advertisement

The Conservation Council, the peak non-government environment body for the ACT, which campaigns on water, climate change, transport, biodiversity conservation, planning, air pollution and waste, is seeking an enthusiastic person to implement a range of policy and campaign tasks.

Salary from \$40,055 neg depending on experience. For more information see website at www.ecoaction.net.au/ccserac or call Trish Harrup 02 6247 7808.

Cumberland Plain Woodland

Geoff Robertson

FRIDAY 17 September, a small contingent of FOG members visited remnants of two endangered grassy woodland ecological communities, *Cumberland Plain woodland* and *shale sandstone transition forest*. Our host for the day was Marina Peterson, Regional Environment Officer, Department of Defence. We visited Holsworthy Training Area in the morning and then went on to Orchard Hills near Penrith. We had planned to visit the Cumberland Plain Seeds, Castlereagh, owned by Tim Berryman who is trialling different methods of grass seed collection and production for use in restoration work around Sydney. Unfortunately a bad dose of flu put a stop to that.

As scheduled each of us arrived at the Holsworthy Training Area just before 10am and we were duly identified and signed in. Then within this secured site we first visited a Cumberland woodland remnant. As Marina explained, the remnant is situated on the northern and lowest altitude end of the Woronora Plateau. Several eucalyptus species were present, but the most prevalent was the narrow-leafed ironbark (*Eucalyptus crebra*). The understorey was dominated by ei-



Photos: Marina Peterson, Cindy Royston and Warren Saunders examine a narrow-leaf ironbark. Page 8. - a white caladenia. Page 9 Warren standing in the dried out wetland. The base of the sedge above Warren's knee shows the normal water level.

ther patches of kangaroo grass (*Themeda australis*) or the shrub, sweet bursaria (*Bursaria spinosa*).

Marina said that it seems fire determines the understorey, kangaroo grass was the result of burning and sweet bursaria of not burning. The last fire had occurred in December 2002, and according to Marina the area had not regenerated well due to the subsequent drought.

The Royal Botanic Gardens is advising Defence in the remediation of areas that have been impacted, to increase the inherent quality and extent of this ecological unit. The remnant was flat and showed signs of previous military activity such as old trenches. Now major military equipment

is no longer allowed at the site, although lighter activity such as a recent camp by 3,000 school cadets can occur. In earlier times areas of Holsworthy, associated with the German internment camp. Even earlier, the area may have been used for market gardens, and I pondered whether my great grand parents, part of the first wave of Italian and French immigrants to NSW in the early 1880s, were market gardeners on this very spot.

We saw many different species of grasses (kangaroo, weeping or microleana, windmill, spear, wire), chocolate lilies, numerous peas (numerous egg and bacon species, kennedia, harden-

bergia, and glycine), small epacrids, and a white caladenia. The shrubs included *Leptospermum laterale* and *Acacia decurrens*.

The most obvious evidence of the quality of the site was the lack of weeds and the softness of the soils which seemed springy underfoot despite the area being very dry when we visited it.

The site has been listed as a heritage site and meets five criteria for listing: natural, indigenous, European, viticulture history, and an Internment camp.

The next site at Holsworthy was a visit to a wetland, but on the way, we piled out of our vehicle to examine a particular pretty spot with many colors of the spring flowering.

The wetland, dominated by the large shrub/small tree *Melaleuca decora*, was completely dried out, but the various water levels could readily be seen. Marina pointed out that the rare mistletoe, *Amyema gaudichaudii*, was to be found on the melaleuca, but we failed to see any examples on the post fire regrowth. An interesting piece of information about the wetland is that it was formed by the disruption to drainage caused by the building of the East Hills railway line extension. Towards the edge of the wetland we saw a population of an unusual grass-tree *Xanthorrhoea macronema*.

Orchard Hills

We next traveled from Liverpool to near Windsor to visit Orchard Hills, another military site, and again were signed in. We then collected a set of keys and went to our first site where, not far from a large dam, we had lunch. Marina described this as shale plain woodland (core Cumberland plain woodland) within South Creek Catchment. This did not have the variety of species, but nevertheless was a pleasant mix of (secondary) grassland, and woodland, with some areas dominated by sweet bursaria. Apart from the dam, which itself was the home of various water birds, the remaining water ways seemed to be natural ephemeral water bodies. Some spots were somewhat weedy and one large area had a salt scald. We saw several plants of *Themeda avenacea* – a two meter form of kangaroo grass.

The second site at Orchard Hills was an example of shale/sandstone transition forest, and included, along drainage lines, Sydney coastal riverflat forest species. We made several stops at this site and saw some lovely old thin-leaved stringybark (*Eucalyptus eugenioides*) whose bark and texture reminded us of elephants, and broad-leaved apple (*Angophora subvelutina*), as well as many other grasses and herbs. Outside the woodland were extensive areas of secondary native pastures dominated by kangaroo grass. We also stopped for a while to observe a tawny frogmouth do battle with white-winged choughs who wanted to see it off the premises.

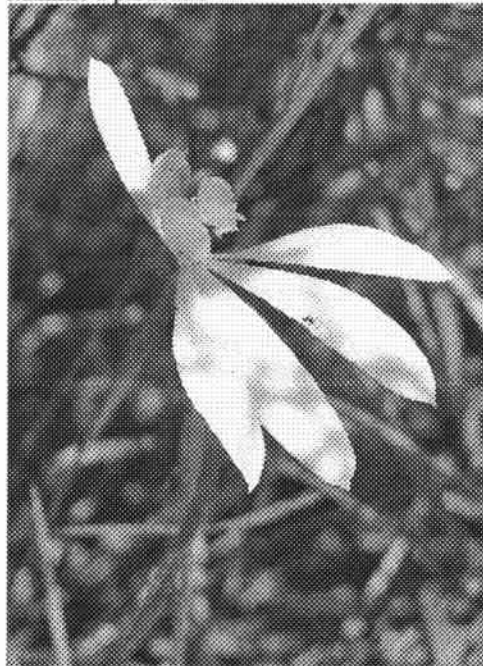
Cumberland Plain woodland

Scientists generally recognize that the 'Cumberland Plain woodlands' represent those distinct groupings of woodlands dominated by trees of *Eucalyptus moluccana*, (grey box), *E. tereticornis* (forest red gum) and in some areas *E. crebra* (narrow-leaved ironbark). It is listed as endangered under the NSW *Endangered Species Protection Act 1992*, and was the first ecological unit listed under the EP(IP) legislation and now the EPBC Act.

The plant community that occurs on soils is derived from shale on the Cumberland Plain. It was once widespread in the Cumberland Plain region west of Sydney but has been re-

duced to a few fragmented stands by human use of this land for farming, industry and housing. The remaining stands of this ecological community are threatened by the spread of Sydney suburban areas.

The Cumberland Plain woodlands ecological community is characteristically of woodland structure but may include both more open and denser areas, and the canopy is dominated by one or more of the species: *E. moluccana*, *E. tereticornis*, *E. crebra*, *E. eugenioides* and *E. maculata*. The understorey is generally grassy to herbaceous with patches of shrubs, or if disturbed, contains components of the indigenous native species sufficient to re-establish the characteristic native understorey. The Cumberland Plain woodlands ecological community includes re-growth that is likely to



achieve a near natural structure or is a seral stage towards that structure.

The following assemblage of grass, forb and sub-shrub species characterizes the under storey of the Cumberland Plain woodlands ecological community: *Cheilanthes sieberi*, *Aristida ramosa*, *A. vagans*, *Arthropodium milleflorum*, *Chloris truncata*, *C. ventricosa*, *Commelina cyanea*, *Cyperus gracilis*, *Dianella revoluta*, *Dichelachne micrantha*, *Echinopogon caespitosus*, *Echinopogon ovatus*, *Entolasia marginata*, *Eragrostis leptostachya*, *Hypoxis hygrometrica*, *Lepidosperma laterale*, *Lomandra filiformis*, *L. multiflora*, *Microlaena stipoides*, *Oplismenus aemulus*, *Panicum simile*, *Themeda australis*, *Tricoryne elatior*, *Asperula conferta*, *Brunoniella australis*, *Dichondra repens*, *Glycine clandestina*, *G. tabacina*, *Goodenia hederacea*, *Hardenbergia violacea*, *Hibbertia diffusa*, *Hypericum gramineum*, *Lissanthe strigosa*, *Oxalis exilis*, *Phyllanthus filicaulis*, *Pratia purpurascens*, *Solanum pungetium*, *Vernonia cinerea* and *Wahlenbergia gracilis*. The characteristic taller shrub assemblage is: *Acacia decurrens*, *A. falcata*, *A. implexa*, *A. parramattensis*, *Bursaria spinosa*, *Daviesia ulicifolia*, *Dillwynia sieberi*, *Exocarpos cupressiformis*, *Indigofera australis*, *Melaleuca decora* and *Eremophila debilis*.

Not all species listed as characteristic of the assemblage occur in every single stand of the community. Also, the total list of plant species that occurs in the community is much larger than the characteristic assemblage, with many species occur-

ring in one or a few sites, or in very low abundance. A detailed description of the ecological community is provided in Benson D. (1992), *the natural vegetation of Penrith*. *Cunninghamia* 2(4): 541-596.

The distribution of Cumberland Plain woodlands in the County of Cumberland in 1788 was approximately 107,000 hectares. Only six per cent (6,420 hectares) of the original community remained in 1988 in the form of small fragmented stands. Although some areas occur within conservation reserves, this is in itself not sufficient to ensure the long-term survival of the community unless the factors threatening the integrity and survival of the community are ameliorated.

Threats to the community include clearing for agriculture, grazing, hobby and poultry farming, housing and other developments, invasion by exotic plants and increased nutrient loads due to fertiliser run-off from gardens or farmland, dumped refuse or sewer discharge.

Shale/sandstone transition forest

Shale/sandstone transition forest (SSTF) in the Sydney Basin bioregion is listed as endangered ecological community under the NSW *Endangered Species Protection Act 1992*. It occurs on areas transitional between the clay soils derived from Wianamatta Shale and the sandy soils derived from Hawkesbury Sandstone on the margins of the Cumberland Plain. All sites are within the Sydney Basin bioregion, and occurs or has occurred in Bankstown, Baulkham Hills, Blue Mountains, Campbelltown, Hawkesbury, Liverpool, Parramatta, Penrith, and Wollondilly local government areas.

The floristic composition of the community includes species otherwise characteristic of, or occurring in, either sandstone or shale habitats. The structure of the community is forest or woodland. Characteristic tree species are: *Eucalyptus punctata*, *E. resinifera*, and one of the stringybarks (*E. globoidea*, *E. eugenioides*, *E. sparsifolia*, *E. agglomerata*). One or more ironbarks (*E. fibrosa*, *E. crebra*, *E. paniculata*, and *E. beyeriana*) may be locally important. SSTF has an understorey which may be either grassy and herbaceous or of a shrubby nature. In areas that have not been burnt for an extended period of time the understorey may be dense. Species composition varies between sites depending on geographical location and local conditions (e.g. topography, relative influence of sandstone or shale).

Other characteristic species are: *Acacia brownii*, *A. decurrens*, *A. falcata*, *A. implexa*, *A. parramattensis*, *A. parvipin-*

nula, *Allocasuarina littoralis*, *A. torulosa*, *Angophora bakeri*, *A. costata*, *A. floribunda*, *Aristida vagans*, *Arthropodium milleflorum*, *Astrotricha latifolia*, *Banksia spinulosa*, *Bossiaea obcordata*, *B. prostrata*, *Breynia oblongifolia*, *Bursaria spinosa*, *Calotis cuneifolia*, *Cheilanthes sieberi*, *Chenopodium carinatum*, *Corymbia eximia*, *C. gummifera*, *C. maculata*, *Cryptandra amara*, *Cymbopogon refractus*, *Danthonia tenuior*, *Daviesia ulicifolia*, *Dianella prunina*, *Dodonaea triquetra*, *Einadia hastata*, *Entolasia stricta*, *Eragrostis brownii*, *Eremophila debilis*, *Eucalyptus haemastoma*, *E. moluccana*, *E. notabilis*, *E. oblonga*, *E. pilularis*, *E. sclerophylla*, *E. siderophloia*, *E. squamosa*, *E. tereticornis*, *Exocarpos cupressiformis*, *E. strictus*, *Glycine clandestina*, *Gompholobium grandiflorum*, *Goodenia hederacea*, *Grevil-*

lea mucronulata, *Hakea dactyloides*, *H. sericea*, *Hardenbergia violacea*, *Hibbertia aspera*, *H. diffusa*, *Hypericum gramineum*, *Indigofera australis*, *Kunzea ambigua*, *Lasiopetalum parviflorum*, *Lepidosperma laterale*, *L. trinervium*, *Leucopogon juniperinus*, *L. lanceolatus*, *L. microphyllus*, *L. muticus*, *Lomandra filiformis*, *L. longifolia*, *Lomatia silaifolia*, *Melaleuca thymifolia*, *Microlaena stipoides*, *Olearia microphylla*, *Ozothamnus diosmifolius*, *Persoonia linearis*, *Phyllanthus gastroemii*, *P. hirtellus*, *Pimelea linifolia*, *Platylobium formosum*, *Poa labillardieri*, *P. sieberi*, *Pomax umbellata*, *Pratia purpurascens*, *Pultenaea flexilis*, *P. villosa*, *Siegesbeckia orientalis*, *Solanum prinophyllum*, *Sporobolus creber*, *Stackhousia muricata*, *Stellaria flaccida*, *Styphelia laeta*, *Syncarpia glom-*

ulifera, *Themeda australis*, *Vernonia cinerea*, *Wahlenbergia gracilis* and *Xerochrysum bracteantha*.

A large proportion of the area where SSTF occurred in the past has been cleared for agriculture and urban development. Remnants are small and scattered. Identified threats include: clearing, physical damage from recreational activities, rubbish dumping, grazing, mowing and weed invasion.

A big thanks to our host Marina.

Reference: NSW Department of Environment and Conservation website.



MacPhersons' Plain Area Revisited

Margaret Ning

Tumbarumba may only be 100kms away as the crow flies, but in reality it was nearly a four hour drive to where I was going one Saturday morning in August. I was on my way to re-visit Jim Kelton's patch, 45kms to the east of Tumba, which FOG had visited in December 2003 to see his spectacular sub-alpine grassland plain at its most beautiful.

Jim's patch, known as Brandy Marys, is two Forests New South Wales (FNSW) leases that total 2500 acres, of which 1600 are of interest for commercial logging. Part of the leases is a huge open swampy plain known as McPhersons Plain (which is what we visited in December last year) but the vast majority is grassy woodland/forest (see Geoff Robertson's write-up in FOG newsletter March-April 2004, page 3). A 12 month moratorium on logging on the leases has recently expired so Jim is worried that logging may resume soon.

Also visiting on the same day as me were some Greens members who intended to assess the situation to see if there was anything they could do to help. Jim has been visiting the area since 1978, and was able to give a well constructed presentation to the Greens group which summarised FNSW's activities in the area. Jim believes that neither natural nor Aboriginal heritage issues are taken seriously by FNSW as threatened orchid habitat has been destroyed and damage has been done to Aboriginal sites on the leases. Jim is an archaeologist by profession and spoke of evidence of campsites, bora, scar trees, grinding grooves, etc on the leases.

We set out to see Jim's old growth alpine ash area which is of particular concern. A brief stop included a neighbour's Sphagnum bog which had been trashed by invading cattle - that was a truly depressing sight. Another brief stop was at Jim's brumby traps which he uses to reduce the brumby population and earn some income by selling them. Jim suggested that the brumbies cause less destruction than the cattle as their tracks show they go straight in and out for the water, while cattle trample and graze the sensitive area. Jim said a corroboree frog was sighted in the area 15 years ago.

Jim filled us in on the dismal tale of "forest ecosystem type #87" an alpine ash/mountain gum (*Eucalyptus delegatensis/dalrympleana*) association which the Department of Conservation describes as "subalpine escarpment moist shrub/herb grass forests". Jim says that FNSW documentation shows there are only 669ha of that forest type left in the Southern Regional Forest Agreement (RFA) region of 4.5m hectares in 2001. Fifty eight per cent of the 669ha area is regarded as 'old growth', i.e. it has never been logged, and prior to the January 2003 bushfires, 99 percent of forest type 87's 669ha was in Kosciuszko National Park. Some NPWS people believe that up to 60 percent of that was burnt in the 2003 fires and has not yet regenerated through epicormic growth. There is some hope of seedling regeneration but none has occurred yet as the seasons since the fires have been unsuitable. Jim estimates that less than 190ha is remaining of forest type 87 and apparently FNSW still wants to log the little that is left on his leases, which he estimates at around 20ha.

The plain was very different looking on that August day - the bleak monotony of winter was evident. However, suffice to say that I saw forest areas with a wonderful grassy understorey, which was the greenest native vegetation I had seen for many months as that area is one of the few in NSW that is not drought declared. Once again, Jim's enthusiasm, passion and depth of knowledge was a pleasure to be part of, but only time will tell what will happen on his property. Hopefully the future of old growth forests will not go off the boil now that the Federal election has passed, and some momentous decisions will finally be made.

Postscript. Since my August visit to Tumbarumba I have read an article in FNSW's spring issue of *Bush Telegraph* in which they discuss their collection of seed from alpine ash in Bago State Forest (adjacent to Jim's leases), which will be used in regenerating Victorian forests devastated by the 2002-03 summer bush fires. Those ash were then to be harvested, further reducing seed sources for the future however.

Draft ACT Grassland Strategy

Geoff Robertson

The full title of this document released a few days before the ACT election is *Action Plan No. 28, A Vision Splendid of Grassy Plains Extended, Draft ACT Lowland Native Grassland Conservation Strategy*¹. It is the second part of the trilogy of ACT reviews, the first is the *ACT Woodland Strategy* (see FOG newsletter, July-August 2004), and the third due next year will be a review of aquatic species and the riparian zone. Readers may recall Alan Ford's report on a workshop on the grassland review in the May-June 2004 FOG newsletter.

Anyone may comment on the draft grassland strategy; the closing date for submissions is 21 December. However, whether you intend to make a submission or not, the docu-

ment is a must read for anyone interested in grassland conservation. The 136 page document plus maps provides a thorough framework for an analysis of grassland issues. The separately available summary is a very succinct and useful document. The draft document covers natural temperate grasslands (endangered ecological community), native grass pastures, secondary grasslands (native grasslands resulting from tree clearing), and a suite of threatened (endangered or vulnerable) plants and animals: the grassland earless dragon, striped legless lizard, golden sun moth, perunga grasshopper, button wrinklewort, and Ginninderra peppergrass.

Like the woodland strategy, the grassland strategy is very much based upon a vegetative analysis. Here resource constraints have prevented analysis of other equally important issues such as fauna, soil, cryptogam, etc. analysis.

¹ Copies are available from the Environment ACT Information Centre, MacArthur House, 12 Wattle Street, Lyneham ACT, or on line from www.environment.act.gov.au or www.consultation.act.gov.au.

The draft strategy is based upon the strategy developed in Action Plan 1 (natural temperate grassland) and Action Plans associated with grassland threatened species, modified on the basis of knowledge and experience gained since. It also follows much innovative thinking in the woodland strategy. FOG has contributed to grassy ecosystem conservation over the years through its workshops and public education campaigns, canvassing of diverse views and release of information through its newsletter, lobbying efforts and discussion with scientists and grassy ecosystem managers, numerous visits to sites and surveys, and its contribution to the restoration debate. Therefore much of the strategy conforms to our own thinking. FOG's own thinking has evolved as a consensus of its members.

There has always been a tension within grassy ecosystem conservation practitioners as to what is thinkable and what is achievable. In the ACT, and in other jurisdictions, we have the sad situation that we see remnant vegetation, and grassy ecosystems in particular, destroyed in the name of development and that horrid word, 'balance'. FOG members would like to see a halt to the clearing of native vegetation. The methodology in the document allows

for the categorising and prioritising (for conservation) of better quality grasslands remnants, which we support. On the other hand we realise the results of the methods will be used for justifying the clearing of lesser quality areas, even though such areas may provide important habitat, buffers, and corridors.

The parlous state of our grasslands

Natural grasslands are one of the major vegetation formations in Australia, including arid tussock (eg Mitchell grass), arid hummock (Spinifex); coastal, and subhumid grasslands. The latter consists of tropical, temperate and subalpine grasslands (page 11). The draft strategy is concerned with temperate grassland of the ACT in the broader context of natural temperate grasslands of the Southern Tablelands of NSW and the ACT.

The draft document reaffirms the shocking figure that only half a percent of natural temperate grasslands remains in south-east Australia (page i). This figure is closer to three percent for grasslands of the Southern Tablelands of NSW and the ACT (page 1), and five per cent for the ACT (page 48). A further five per cent may be added in the Southern Tablelands if one adds back native pasture (native grasslands without a healthy forb component) (page 18). Five floristic grassland associations are listed for the ACT, eight exist in the broader region. The five can be broadly classified as wet and dry, the former includes wet themeda and river tussock grasslands while the latter includes dry themeda, austrodanthonia, and stipa grasslands (page 16).

Similar to the woodland strategy, grasslands are categorised by their vegetation quality: partially, moderately, highly, substantially and severely modified, and destroyed. Partially, moderately and substantially modified areas are regarded as natural temperate grassland while the last two categories are regarded as native pasture or degraded pasture respectively. Obviously the latter will receive no protection unless they are habitat for threatened species.

While the draft strategy states that native pasture "may provide important habitat for threatened animal species and with appropriate management may have some capacity for ecological restoration, particularly as habitat for threatened species tolerant of such modification" this understates the case

for their retention, and the retention of degraded areas and even areas of exotic pasture. The concern here is that such areas probably provide valuable habitat for many fauna species, especially reptiles, about which we know very little, and which do not appear on threatened species lists, even though they may be undergoing rapid decline.

Indigenous people and grasslands

Ngunnawal, Monaro, Walgalu etc. people, are mentioned by name and indigenous people's impact receives little attention (page 11). More is becoming known of the historic use of plants by local indigenous people.² It seems to me that unless we strive to have a more complete understanding of the relationship of indigenous people and country we will fail to gain a true insight into grassy ecosystem ecology. A future action that should be included in the final report is research to understand indigenous people-country relationship.



Some favourite grassland plants. Above early nancy (*Wurmbea dioica*), and below rock lily (*Bulbine glauca*).

Grassland plants

In ACT lowland grassland 50 grasses, 200 native forb and 150 introduced species have been identified (page 25). Up to 53 grassland plants are regarded as uncommon, or declining (page 33). Three grassland plants are listed as threatened in the ACT, and a further four, listed in the NSW or under Commonwealth legislation, also occur in ACT grasslands (page 25ff). It is pleasing to read these survey results and observe the increase in knowledge between this and the original grassland action plan (No 1). It would be useful in the final report if all grassland plant species (including exotics) were listed, and some information given about the status of each.

² Geoff Robertson *The first Monaro people*, FOG newsletter Sept-Oct 2002, *The Aboriginal People of the Monaro: a documentary history compiled by Michael Young with Ellen and Debbie Murphy*, NSW Parks and Wildlife Service, 2000. *Kosciuszko Today* Summer 2001/2, NPWS Parks and Wildlife Service.

As natural temperate native grassland plants have been declining, obviously identifying and protecting habitat and, in some instances, excluding grazing are obvious first steps to ensure their survival. But is that enough? Too often, action plans ('recovery plans' is the term used elsewhere and maybe a more useful concept) are holding operations with little emphasis on reversing species decline. In the case of some species, eg button wrinklewort, habitat protection and excluding grazing may be sufficient to ensure recovery. In some cases costly scientific research may be necessary to make a breakthrough. But other actions such as working with local horticulturalists or groups such as FOG, STEP and ANPS to promote the growing of many of these plants in gardens or for use in revegetation/restoration work may offer insights leading to their recovery on a large scale basis.

Grassland fauna

There is a good discussion of grassland fauna in the draft document. However, there is obviously an absence of hard science on population numbers and distribution, and how fauna participate in grassland function, as distinct from merely using grasslands as habitat. For the most part indigenous animals have declined (many have become extinct at least locally), although some may have adapted to changed habitat and increased in number.

Much more needs to be known about the basics of each species and their ecological function. Little is known about relatively common species such as the eastern grey kangaroo and wombats and even basic answers to questions such as whether their numbers have increased or not, and the precise nature of their ecological function. For a raft of other animals that have seriously declined or become extinct, we need to know what their ecological function is/was, and if that ecological function has become extinct what can be done to replace it.

There is a lot of anecdotal evidence that animal extinction has led to loss of soil biota and function? Can we recover these animals and /or function? It would be useful to recognise in the final document the need for research in these issues. While such research is conceivable for vertebrate species, it will take many years to examine invertebrate species.

Again, given the lack of public attention to these issues, the role of community groups becomes important. Groups such as FOG have held a number of workshops into grassland fauna and encouraged members to become more aware of animals that are present. The ACT Herpetological Association (ACTHA) holds an annual display to increase an awareness of herpetological species. ACTHA and STEP have produced a presentation on reptiles of the Southern Tablelands to increase the awareness of what reptiles are present so that data on local reptiles may increase. Some FOG members are putting together data on grasshoppers in the local region. Frogwatch is another valuable program.

Soils and cryptogams

While mentioned at various times in the report, little is known about soil development, fungi and their ecology in grasslands and likewise the role and development of cryptogam cover. These are important areas of knowledge to be developed. Therefore the final report should recognise the importance of research in these fields.

Community participation in conservation

While noting the importance of a "significant improvement in knowledge of ... native grasslands in the last 15 years" (page 20), the document understates the importance of community involvement in grassland conservation.

A disappointing aspect of the strategy is that it fails to recognise the importance of community groups such as the Conservation Council, FOG and a plethora of others in the conservation of natural temperate grasslands. In fact without the lobbying and public education that has gone on over the years, the current document would never have been written.

Going, going, gone

Appendix 2 provides some useful information on the demise and reclassification of grassland since Action Plan 1. In summary, there has been a reduction in area of 142ha of natural temperate grassland, due to development and misclassification (67ha has been destroyed through development or degradation), a further 111ha has been reclassified as secondary grasslands, and new grassland of 86ha has been identified. These figures do not include the recent destruction of a large part of the Kaleen Grassland due to the Gungahlin Drive Extension, nor the imminent destruction of (secondary) grasslands in Forde and Bonner. Nor does Appendix 2 address the areas of habitat for threatened species that have or may have been eliminated.

In each area of the ACT, areas of natural temperate grassland, native pasture and habitat for threatened and uncommon species is under threat from development. In the Majura Valley future airport development, the selling off of Commonwealth-owned land, and further development are pose threats to vegetation and fauna values. In the Jerrabomberra Valley, industrial and urban development threaten grassland and species. In Gungahlin, striped legless lizard habitat is being removed by the development of Harrison, and large areas of secondary grassland will be removed by Forde and Bonner and other suburbs. In Lawson golden sun moth habitat and extensive native pasture will disappear.

Concluding remarks

The draft document continues the high scientific methodology that we have seen in earlier action plans, including the woodland strategy. Certainly FOG would support the thrust of the document, but the strategy itself it will not stop the demise of our remnant grassland vegetation and species habitat, even for listed species.

In the final document I would like to see a number of issues addressed in some more detail, even if there is only a simple recognition that more research is necessary. These issues include indigenous people-country relationship; the importance of lesser quality vegetation as habitat for many vertebrate and invertebrate species likely to be seriously declining; the role of soils, fungi, cryptogamic cover, etc. in grassland ecology; and restoring ecological function. Lists of grassland plants and information about their status should be included. More complete information on past and future community involvement should also be included.

Tarengo Leek Orchid: An Endangered Species

Michael Bedingfield

The Tarengo leek orchid is named after the NSW travelling stock reserve where the main population occurs. Here there is a healthy population, producing about 100,000 flowering plants in a good year, all within a five hectare plot. Outside this small area there are very few plants, and it is only known to exist at two other small sites. One is near Hall in the ACT, the other near Captains Flat, each with small populations recording fewer than 100 flowering plants in a given year. If some disaster happened to the Tarengo site the species would almost disappear. Careful protection is required because leek orchids, like other orchids, are quite sensitive to grazing and other habitat disturbance. The plant has been declared endangered in ACT and NSW, and Environment ACT has a management plan in place for its preservation. This has been incorporated into the recently finalised "ACT Lowland Woodland Conservation Strategy".

The orchid sprouts from a tuber in late autumn or winter, and flowers in October or November. As with many orchid species, the plants do not flower each year, and there is a fluctuation in the numbers that flower. Tuber dormancy of up to three years has been observed with Tarengo leek orchids. In a flowering year, a single onion-like leaf about 25 cm tall is produced from the tuber, though there are occasionally two. The tubular leaf acts as a sheath for the emerging flower spike, and as it grows, a pore along the leaf opens, creating a split down the side. The flower stem grows up to 30 cm producing about 20 small flowers in an erect raceme, each only 5 to 7 mm across. They are worth examining with a hand lens for their unique mystery. The flowers vary in colour and include shades of cream, pink-mauve, fawn or greenish. Being so small and not brightly coloured, the plants can be inconspicuous among the native grasses even when flowering. They like to grow with kangaroo grass and they prefer a grassland or woodland habitat, especially in seasonally moist depressions or swamps and with comparatively fertile soil.

The scientific name for the Tarengo leek orchid is *Prasophyllum petilum*. There are a number of other local leek orchid species, and they all look rather similar, differing mainly in flower parts.

Prasophyllum is a genus of orchids that is not well known. They occur mostly in Australia, where there are 58 species. Most species are rare and have a restricted distribution. The flowers are fragrant, generally sweet, and nectar producing. Thus they attract bees, wasps and other insects for pollination. Germination of seed occurs only when there is certain fungi present in the soil, but the fungi required for *P. petilum* has yet to be identified. Reproduction also occasionally happens via the creation of an extra tuber next to the parent plant. The intermittent dormancy in flowering creates difficulty in monitoring any population and it is unclear what factors cause the plants to be dormant or in flower in any year. Investigation is also required to understand what is required for creating healthy seed. There is a monitoring program at the Hall site,



mapping individual plants, and researchers aim to increase our understanding of the life history and ecology of the species.

In the accompanying drawings I have shown the full plant, a flower-head and a slightly enlarged single flower. In time we hope to properly understand the rare and quietly attractive Tarengo leek orchid.

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Supporting native grassy ecosystems

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Friends of Grasslands Newsletter

Do you want to subscribe to the newsletter? It comes out six times a year, and you can obtain it by joining FOG. 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 landcare 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 skills, 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.

How to join Friends of Grasslands

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

If you would like any further information about membership please contact Margaret Ning, or if you would like to discuss FOG issues contact Di Chambers and Roger Farrow. Contact details are given in the box above. We look forward to hearing from you.

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