News of Friends of Grasslands

Supporting native grassy ecosystems

September-October 2008

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Program - key events

SUN 14 SEPT 9.00am-3pm FOG workshop and field day **Geology and Vegetation of the Monaro** with Dennis Dyer. No charge. See page 2 for details.

SAT 18 OCT (10am-4pm) **FOG visit to Major's Creek & Braidwood** See news item on page 2.

And more ...

FRI 12 SEPT (10.30am to 3pm) FOG Conservation and Cultivation Group - A workshop with Ingrid Adler: **Propagation by division, seeds and cuttings**, at Ingrid's home, 21 Khull Crescent, Kambah. Please register with Ingrid (phone 6231 4919). Participants should bring: lunch, gloves, secateurs, some small pots, and a styrofoam box.

SAT 20 SEPT & 11 OCT (9-noon) **FOG Hall Working bee at Cemetery** See page 2 for details.

WED-THURS 15-16 OCT **FOG visit to Wellington (NSW)** 15 Oct - **Plant identification at Wellington Common** FOG will visit this Aboriginal Community (host Rose Chown) to help with plant identification. 16 Oct - FOG members will participate in a **Workshop on ground storey-restoration** (on essentially exotic pasture) on a Wellington Working Farms property managed by UNSW, FATE Program. For more information, contact Margaret (02 6241 4065/margaret.ning@fog.org.au).

THURS 23 OCT (9.30-3.30) **FOG Monitoring at Scottsdale** with Peter Saunders. FOG is organising its second monitoring at Scottsdale. Please contact Sarah (02 6251 2228/sarah.hnatiuk@fog.org.au) if you wish to participate and/or arrange any car pooling.

And also ...

SUN 19 OCT (2pm) **Walk in Dunlop grassland** - organised by Saint Barnabas, Charnwood. Isobel Crawford (FOG) will provide information on Canberra grasslands and plant identification, while an ACT Indigenous ranger, Euroka Gilbert will provide an Indigenous cultural perspective. Meet at corner of Shakespeare Crescent and Binns Street.

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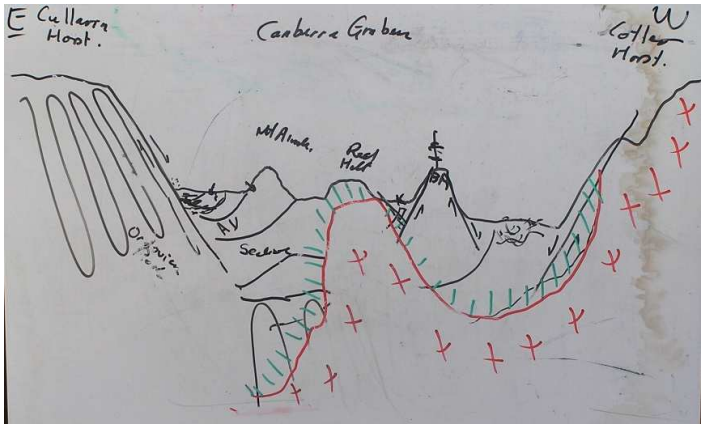

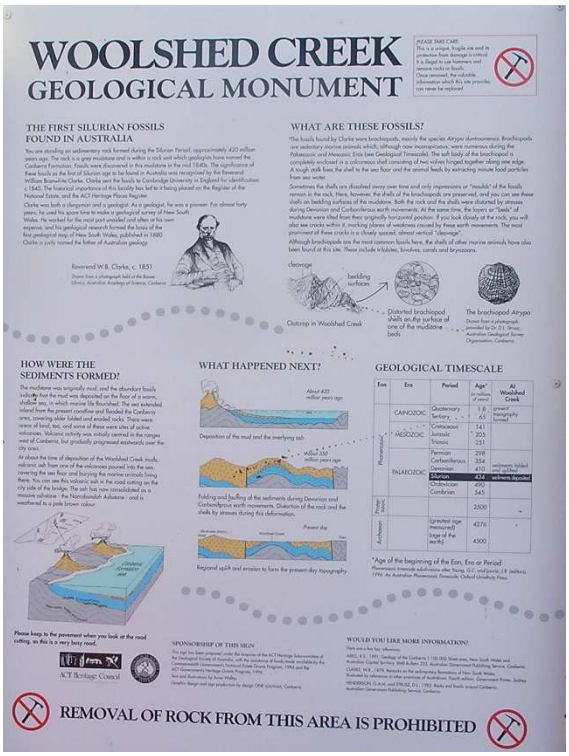

Images from *Geology of ACT field trip*. Above - summary of Canberra geology, middle - sign at Woolshed Creek site, and bottom - trilobite fossil. Story, page 8

News Roundup

FOG trip on Monaro geology

SUN 14 SEPT Dennis Dyer will be leading our *Geology and Vegetation of the Monaro* workshop/ field trip. Dennis is a geologist, well acquainted with the Monaro, and will take us to a number of sites around Cooma. His recent talk and walk on Canberra geology (see page 8) was fantastic, so this should be a fascinating day. We shall start at 9.00am at *Quartz Hill* (Bob and June Wilkinson's property), about 18k south of Cooma.

The program for the day will include a presentation on the geology of the Monaro followed by free morning tea and a visit to granite and sedimentary sites on the property. Then we shall be visiting several sites around Cooma, including a subduction zone, a syenite (intrusive rock), and basalt terraces. At each site we shall relate geology and soils to vegetation structure and show the dominant plants. We shall stop for people to purchase lunch in Cooma.

For more information/or register contact Tony Lawson on 6161 9430 or tony.lawson@fog.org.au.

FOG visit to Major's Creek & Braidwood *Margaret Ning*

SAT 18 OCT Join us for a visit to Major's Creek Cemetery for some orchid spotting and in the afternoon we can take in a wonderful grassland TSR which is nearby on the Braidwood/Cooma Road.

We plan to meet at the cemetery at 10am and visit the TSR after lunch. Bring your own lunch or purchase it before the cemetery at the wonderful Braidwood Bakery.

You are welcome to camp over at Sandra's on the Friday night. For more information and to register, contact Sandra: 02 4846 1096 or sandra.hand@fog.com.au.

FOG working bees at Hall
Andy Russell

SAT 20 SEPT & 11 OCT FOG will be holding its third and fourth working bees at Hall Cemetery, 9am to noon, Wallaroo Road about 200m from the Barton Highway. We will be removing regenerating eucalyptus, which are threatening orchids, in the grassland areas and woody weeds (cutting and daubing) in the woodland paddocks. Please bring gloves and tools. If possible, morning tea will be provided. For more information please contact Janet (see Activities back page).

FOG slide afternoon

SAT 26 JULY At FOG slide afternoon FOG members were treated to three excellent presentations on what FOG members have been doing.

Don Fletcher provided a most fascinating account of the latest science on kangaroos, dingoes and their impacts on native temperate grasslands.

Joe McAuliffe outlined the work the Australian National Botanic Gardens has been doing in identifying plants in each alpine vegetation type, and collecting seeds and plant material as a safeguard against climate change.

Leon and Kay Pietsch related their wonderful experiences in their month as volunteer caretakers looking after the only population of northern hairy nosed wombats.

We plan more comprehensive accounts of Don's and Joe's presentations in future editions of the newsletter. FOG is currently organising a visit to Joe's alpine sites in January. An article by Kay and Leon on wombat watching appeared in the Jan-Feb edition of the newsletter.

Newsletter available electronically

You can receive the newsletter in colour, electronically, instead of in hard copy. To arrange, contact Margaret, details back page.

Golden Sun Moth – Help us

FOG will know in early September whether or not we have received funding for our Golden Sun Moth project – see page 3 of last newsletter for more information. If we are successful, we will need a lot of help to find and organise 500 hours of volunteer time. It you can help in any way, please contact us on info@fog.org.au.

FOG Advocacy Group

Tony Lawson

One of FOG's most important functions is advocacy in support of grassy ecosystems. We are always on the lookout for more help with this function. There are three important tasks, namely identifying issues of possible concern to FOG, within FOG's geographic sphere of interest, drafting FOG's views on these issues, and publicising those views - at hearings, or with the media. If you would like to help with any of this important work, please contact Geoff Robertson (02 6241 4065) or email advocacy@fog.org.au .

FOG @ Con. Council Dinner

See enclosed brochure and join the FOG table to support the Con. Council. Contact Geoff, details back page, to arrange.

Enclosed brochure Box gum stewardship

FOG members in the Murrumbidgee and Lachlan River catchments with patches of box gum grassy woodland (yellow box, white box and Blakely's red gum) can now apply for stewardship payments for up to 15 years to manage their woodland. Stewardship payments can cover all labour and capital costs involved and any losses from current production on your box gum grassy woodland site. Patches need to be at least 5 hectares in size. Details are explained in the enclosed brochure. Contact 1800 239 453 (free call) for further details. (Note woodlands in the ACT are not eligible).

Aboriginal showcase day

16 JULY Murrumbidgee CMA held its *showcasing Aboriginal cultural values on private land* day at *Garuwanga* near Nimmitabel, Margaret Ning's and Geoff Robertson's property (see photo). Talks and guided walks were held around the themes of connecting local landholders and Aboriginal people, mutual learning/exploring of traditional knowledge, and practical ways to protect and manage biodiversity and cultural values. Speakers include Rod Mason, Geoffrey Simpson, Rainer Rehwinkel, Margaret and Geoff.

Victoria fails grasslands

31 MAY 2008 The Victorian Government is failing to reverse the destruction of one of Australia's most endangered ecosystems, a Department of Sustainability and Environment (DSE) report has revealed**.** The report shows that despite government policy to reverse the loss of native vegetation across Victoria, more than three football fields of endangered grasslands are being lost each day. Eight of the 26 mammals that depend on those grasslands have become extinct from the Plain, including the eastern quoll, rufous bettong and eastern hare-wallaby.

Associate Professor Ian Lunt (grassland expert) says Australia can't afford this. Less than five percent of Victoria's original grasslands remains and only a small fraction is high quality. This rate of loss is totally unacceptable for any ecosystem. Victoria lost at least 40,000 hectares of native vegetation between 1994 and 2004, including some 32,000 hectares of grasslands. DSE's *Native Vegetation Net Gain Accounting – First Approximation Report* reveals that native vegetation on private land is suffering "chronic and long-acting degradation problems", and we will see more species vanish if no action is taken.

The Victoria Naturally Alliance, a coalition of leading environment groups including the Victorian National Parks Association, Australian Conservation Foundation and Environment Victoria, has called on the State Government to fulfil its policy objective of reversing the long-term decline in the extent and quality of native vegetation. The alliance is calling on the State Government to boost resources for protecting and restoring grasslands on both private and public land through a range of measures. The government also needs to buy up high-quality native grasslands and give them strong protection - less than 5,000 hectares of this dwindling ecosystem is protected on public land in Victoria. For further comment, contact Victoria Naturally Alliance project leader Carrie Deutsch on 0438 003 037, Ian Lunt on (02) 6051 9624/ ilunt@csu.edu.au, or Sarah Bekessy on 0425 828 471.

Wiradjuri plant use
Geoff Robertson

I have been most privileged of late to spend time with a number of our Indigenous brothers and sisters, especially Rod Mason, who has been sharing various elements of *Ngarigo* culture. I am becoming aware that there is now a view among Indigenous Australians that it is now time for them to start to share their understanding of nature with us. We can also expect to see new literature on this subject which will help this process. The sharing of traditional aboriginal knowledge can provide a totally new perspective for understanding biodiversity.

In this context, a delightful, informative and well designed book, *Wiradjuri plant use*, published by the Murrumbidgee CMA, has come my way and I highly recommend it. It contains information on a variety of individual plants classified as trees, tree parasites, shrubs, bushes, vines, grasses, forbs, and wetland plants, and provides information for each on their use as tools/implements, medicine, food, shelter, fire, water, fish poison, dye/paint, and spiritual/ ceremony. For one grass, native millet, it states that its scientific name, *Panicum decompositum* and its Wiradjuri name *(gulaa)* and says that it grows after good summer rains and can produce large amounts of seed, which when harvested and ground into flour, are used to make bread which is cooked on coals of open fire or on hot rocks. Another familiar plant is silver wattle *(gilgandul)* and the description goes into some detail of its uses, which includes resins for water proofing and gluing (e.g. the heads of stone axes to wooden handles) and, when mixed with ash, for application to wounds and sores. The wood is widely used by women to make digging sticks which are used for many reasons, while the seeds are ground to make flour for bread.

I am learning that a book such as this, should be seen as an aid to, but not a substitute for, learning. If I might make an analogy, it is one thing to see a record of a language, but to truly understand it you need to hear it spoken, understand the concepts used in the language, and learn how to converse in it with native speakers.

The book can be ordered from: Geoffrey Simpson, Catchment Officer, Aboriginal Communities geoffrey.simpson@cma.nsw.gov.au or (02) 6932 3247.

Provenance in perspective
Janet Russell

30 MAY Speakers at the Greening Australia (GA) *Provenance in Perspective Forum* were field scientist Melinda Pickup, GA, researcher Linda Broadhurst, CSIRO, Sarah Sharp, ACT Parks, Conservation and Lands, and Bindi Vanzella, GA.

Melinda presented the findings of her recently completed PhD at the ANU on the effect on small populations of the button wrinklewort (*Rutidosis leptorhynchoides)* using non-local (foreign) seed for the purposes of genetic rescue. She illustrated that populations which have a shared gene pool may not be that close, depending on the distance that the pollinators travel. Melinda found there was no evidence of local adaptation, and that the introduction of genetic material from a foreign source did not lead to the dilution of adaptive traits of the plants. She believes that these findings would generally be applicable to other species.

Linda talked about the research she had done on remnant vegetation in agricultural landscapes, focussing on the implications for seed collection. She found, for different types of remnants (linear, patches, isolated stands, or revegetation sites), that the proportions of male to female seeds varied. This variation of the proportion of male to female seeds was found between trees and/or different parts of the canopy of the same tree. This illustrates the need to ensure that seed samples are taken from all around the canopy, and it places a limit on how much seed can be removed from any tree or site for collection.

Sarah Sharp advised that the *Nature Conservation Act* is being reviewed and interim arrangements have been proposed to assist applicants who wish to apply for a seed collection permit. The interim arrangements will preclude needing to name specific projects for which the seed is required. I am sure this will be welcomed by those with an interest in this area.

Bindi Vanzella outlined the challenges in developing seed production areas (SPA) and said that to date much of the expertise has been developed by on-the-job experience. She then showed us the SPA which has been in place at the Lions Youth Haven for ten years.

This brief outline does not do justice to the quality of the presentations. The research presentations were a challenge to keep up with but I found the afternoon extremely stimulating and interesting.

Stipa
Native Grasses Association Inc

Sixth Conference: Regenerative Grassland Management for Profitable, Ecological and Social Gains

Town Hall Horsham,
Victoria, 9-11 November.
Early registration closes 9 October.

Contact Sally.brown@uq.net.au,

ACT Environment Report

7 AUG The ACT State of the Environment Report 2007/08 was released by the Office of the Commissioner for Sustainability and the Environment in the ACT Legislative Assembly and is available on www.envcomm.act.gov.au. A more full report will appear in the next issue.

Weeds and their possible nemesis…. *Cathy Robertson*

As you do, I was driving along one morning in the Canberra winter sunshine, when I turned on my car radio to ABC Country Radio. I immediately connected to the first minutes of an interview with Paul Martin about the world's first weed management market.

His glib phrasing grated on my pre conceived set of nicely arranged beliefs that have put the weeds problem beyond the reach of any solution. I thought 'a bloody economist!' He wants to sound as if he has found a way to turn weeds into gold. 'Stupid bastard!'

The strange thing was, I didn't turn him off. I kept listening and I am glad I did. I went home and looked up the ABC Radio website and read the whole interview online. Then I looked for Paul Martin's research online and found the 16th Australian Weeds Conference website. Paul Martin was the key note speaker at the Conference and presented a paper that would help land owners to see the cost of invasive weeds as part of the value of their properties and encourage them to find the most effective and efficient way to minimise the negative economic impact of weeds on the rural property market.

Paul Martin is a public policy advocate who develops proposals for regulatory frameworks for sustainability issues including soils and environmental jurisprudence. He is the Director of the Australian Centre for Agricultural Law at the University of New England and co-leader of the CRC Irrigation Futures research program. His proposal seems a good start for putting the responsibility for managing the removal of invasive weeds into a regulatory framework that will be cost effective and ensure that the spread of invasive weeds is understood as a high risk factor, responsible for driving down the value of rural land and impacting negatively on rural land sales. I encourage you to take a look at his idea to include a mandatory weed report as the responsibility of the seller of rural property sales. The report would include the cost and relevant impact on soil productivity of a particular weed infestation.

The link to the article is at: http://www.abc.net.au/rural/nsw/content/2006/s2251604.htm and the link to the conference programme and the full text of the speech is at: http://www.16awc.com.au/ - and go to Conference Program and key note speakers.

Visit to Michalego

2 AUGUST
A small group visited a property near Michalego (see photo), the home of FOG members' Kim Foster and Tony Leng. The property is a mix of largely native pasture and remnant yellow box red gum woodland. We had a delightful morning identifying plants.

Late news on Molongo

19 AUGUST The ACT Standing Committee on Planning and Environment recommended that central Molongo, earmarked for 7,000 houses, should never be developed and should be removed altogether from future development plans. This is very welcome news.

The committee also recommended expansion of the proposed Kama Reserve, conservation leases for management of woodlands outside the core reserve, bushfire management zones located outside the Kama Reserve, cat containment across all Molonglo suburbs, no lake (unless it receives community support), and solar block orientation be maximised for all residential development in Molonglo. All these are supported by FOG. The committee also drew attention to the plight of the pink-tail worm-lizard, and recognised the need to do more to protect this species.

FOG advocacy workshop - *continued from page 13.*

The main problem with these policy statements is that they get out of date too quickly to be useful for any length of time. As an alternative approach, the advocacy group will trial an index of past submissions (to identify relevant topics quickly) and proposed development of fact sheets containing principles and key messages instead. The fact sheets could be made available on the web and handed out at suitable venues/events.

FOG advocacy

Bernadette O'Leary

I have included summary information on recent advocacy below. Copies of submissions and related letters are made available on the FOG website at www.fog.org.au.

June

FOG provided comments on the **Gungahlin Town Centre Study** in the context of potential impacts on the adjacent Mulanggari Grassland Reserve and possibly later to the Mulligans Flat Nature Reserve. Particular issues raised in comments included: the need to mitigate against direct impacts from the construction phase, the need to consider 'links to significant landscape features', including reserves (e.g. in species selection for plantings), the need to avoid shading of adjacent native grassland, and the opportunity to raise community awareness of the grassland and grassy woodland setting to enhance the Gungahlin story and encourage conservation.

FOG provided a submission to the ACT Legislative Assembly's Standing Committee on Planning and the Environment's inquiry into *Territory Plan* Draft Variation (DV) 281 - **Molonglo and North Weston**. This followed our earlier submission to the ACT Planning and Land Authority on the DV and related Preliminary Assessment in November 2007, and the announcement of the Government's moratorium on Central Molonglo some months ago.

FOG restated its position on the proposed development (see earlier submission on website), drew the Committee's attention to the April declaration of the pink-tail worm-lizard as a vulnerable species in the ACT (significant populations have been recorded along the Molonglo corridor), and supported the Conservation Council's (CC) recommendations on the impacts of the proposed developments on endangered woodlands in their June report.

FOG stated its ongoing concerns as follows: the unsatisfactory planning and public 'consultation' process, the unacceptable potential extensive loss of remnant box gum woodland (including the failure to understand the loss), the need for offsets and to provide for their management, the placement of the proposed suburban boundaries (with suggestions, again based on the CC report), proposed monitoring and evaluation, referral under EPBC and possibility for strategic assessment, and the ongoing need for community awareness.

August

FOG commented on a **draft agreement between the Australian and ACT governments relating to environmental impact assessment**. While noting that most development referrals do not go to the EIA stage, from its experience of EPBC in recent years, FOG commented on the need for efficient assessment of impacts, participation of *environmental* planners, quality assessment (i.e. by recognised professionals), and strategic assessment, including consideration of cumulative impacts.

FOG provided further information to the ACT Commissioner for Sustainability and the Environment to assist with the ongoing **inquiry into grassland management**. FOG also provided **letters of support** for two regional organisations seeking funding under the Australian Government's *Caring for our Country* program.

Cultivation Corner

Things you find - *Janet Russell*

We recently planted plants that we bought in autumn, and in spite of the lateness of planting them, they show signs of new growth. Any other work in our garden is on hold during the winter months. I still investigate what may be happening to the grassland plants I planted,

and some of them seem to have been refreshed by the small amount of rain we have had over the last few months. Some die off during winter and this can cause problems when deciding where to put in new plants so as to avoid digging the old ones up again. Since the last rain, there is a crop of seedlings in the front garden that I think are *Xerochrysum bracteatum*. They will have to mature a little before I can be sure. They have germinated in a patch of the garden where the mulch was finer and is much more broken down. Mulch can inhibit germination of seed, particularly daisies which need to be surface sown or lightly covered.

I had been concerned that the presence of mulch may inhibit the recruiting of grasses. I went to a talk given by Native Seeds and Plants a few months ago and the speaker assured the audience that this is not the case. Most grasses need to be covered with at least 5mm soil (can be more if the soil is friable) and say 5mm of mulch. Redleg grass (*Bothriochloa macra*) is one of the few grasses that can be broadcast on clay without any covering and it will germinate readily.

We covered our garden with woodchips when we established it and most of it was quite coarse. There are advantages and disadvantages of using mulch. It certainly inhibits weed growth but may also inhibit germination of seed that you may wish to germinate. It also can form a barrier beyond which the rain does not penetrate. There is compensation, however, for having decomposing wood in the garden, as I have discovered over the last few years.

The last drop of rain we had sent me off into the garden to see what fungi may have emerged overnight. After about three years of mulching the garden, I saw our first fungi – some golden toadstools. Since then, I have found a number of different fungi in different parts of the garden and often with different forms, including a startling bright red phallic one. I found three deflated looking specimens lying on the ground last January. According to my web research, it looks like they were red stinkhorns (*Phallus rubicundus*) - see photo column one. I suspect that I needed to get out a little earlier to see them in all their glory. Flies had been attracted to them already. Last month I found a new cluster of attractive fungi (see photo above) which covered a circle of about 40 cm diameter. I have become quite attached to these unexpected crops of newcomers to the garden and so will continue to mulch. I will have to take steps to prepare bare ground in selected places to ensure the optimum conditions for some seed germination, as well as raking the mulch from time to ensure that it does not become too compacted.

Tour with a local hero - *Grasscover*

21 JUNE Fifteen people attended FOG's winter tour event which was a visit to the Blue Devil Grassland (BDG) in west Belconnen. FOG, in its early days, had often visited this grassland - one of my earliest FOG memories is a trip to this site. The June trip had been organised by FOG with the Ginninderra Catchment Group.

Before leaving the car park, Geoff Robertson brought out the FOG posters, and talked briefly about grasslands and how they fit into the natural vegetation of the region. He then introduced Robert Cruickshank, our guide for the afternoon (see photo). Robert, Geoff said, had adopted the BDG many years ago as his patch, and as Robert revealed throughout the tour he weeded this patch several times a week, occasionally assisted by others.

As the tour started from the car park about half a kilometre from the BDG, Geoff described the exotic grassland under our feet which was starting to become dominated by Chilean needle grass (CNG). He picked some grass leaves and explained how CNG could be identified when there are no telltale seeds.

Before we arrived at the underpass, Robert had the group observe the landscape, especially to look at the cold air drainage line, which would have resulted in natural grassland once dominating the area. As there were some native grasses present, the group was introduced to some, and Geoff gave an explanation of how to identify some different grasses, such as spear grass, love grass and poas by knowing their seed structure.

Eventually we arrived at the first natural grassland site, dominated by kangaroo grass, a distinctive reddish brown colour. As we saw later on the tour, many plants were a purple colour – quite distinctive. Robert proudly showed the group a chocolate lily seedling. We then moved across a disturbed site and then onto the extensive area of kangaroo grass natural temperate grassland.

Kangaroo grass is very thick on the site and has almost no grazing pressure. It showed some evidence of crowding out of other plants. Nevertheless, there was good structure in the grassland and usually sufficient inter-tussock bare ground for new plants to establish. One method of managing the herbage mass is fire, and young local residents are known to oblige by either deliberately or accidently starting fires, and this has resulted in biomass reduction. Quick response by the local fire brigade has left a mosaic of burnt and unburnt areas. Unfortunately, after the latest fire, there was a large downpour, which caused much topsoil to be removed. Patches of wetness and other factors, leads to other patchiness, and in the sea of kangaroo grass, we saw patches of tall spear grass dominated areas, and other areas where kangaroo grass does not dominate. We saw patches dominated by common everlasting daisies, a signature plant of natural temperate grasslands.

We saw many different species of forbs, but only by passing around *Grassland Flora* could we see what the plants might look like in flower. Robert showed us examples of scrambled egg, bulbine lily, tricoyne lily, various mat rush species, New Holland daisy, rock fern, a native fireweed and bear's ear.

We saw many grass species, including several less common ones such as nine awn grass, wild sorghum, barbed wire grass, slender rat's-tail grass, cotton panic grass, and brushtail spear grass.

Robert talked a lot about his weeding approach, and he showed us areas which he was not able to weed, illustrating how weeding can keep a site looking terrific, while not weeding leads not only to weed build up but untidiness.

Finding fault with Canberra *Geoff Robertson*

Those members of FOG and the Canberra Field Naturalists who joined Dennis Dyer (see photo) on either Thursday 3 July for his talk on Canberra geology or Saturday 5 July for his field trip were delighted by his simple and humorous explanation of the geology of Canberra. About forty people attended the talk and over twenty the field trip.

In the first part of his talk, Dennis, working from a great handout, gave an explanation of the geological time scale linking geological time periods and life forms together. In fact, geological periods are defined by their reference to life forms, e.g. Palaeozoic is the era of the trilobite. Terms such as Archaean, Proterozoic, Palaeozoic, Cambrian, etc. rolled off Dennis' tongue along with easy historical explanations of all these fascinating words.

In the second part of his talk, Dennis provided another handout showing a time line of the geology of Canberra, which was established in the Ordovician, Silurian and Devonian periods. During the Ordovician, the location of Canberra was at the base of an ocean where layers of sediment were gradually deposited, with most of the sediments being derived from the then east coast of Australia, located around Broken Hill. The earlier layers of Canberra rocks have been dated as around 468 million years old. In the early Silurian period, as tectonic plates shifted, the Ordovician sedimentary rocks were tightly folded and some were exposed at the surface. Largely through the Silurian, which ended about 410 million years ago, the geology was dominated by explosive volcanic activity – not a pleasant place to be, said Dennis. Sedimentary rocks were deposited during times of volcanic inactivity. The resulting landscape for much of the time was a series of volcanic ash soils. Rocks were also subjected to periods of tectonic activities that included folding.

During the Devonian period, the local geology was dominated by the intrusion of deep seated magma which solidified to provide granitic types of rock followed by uplift and erosion. Another clear image was given as Dennis illustrated the process of normal faulting, where rock splits, and either some rock falls, or nearby rock rises. Most of the Canberra area lies in a graben between two large horsts, the higher lands of the escarpment mountains, which did not drop or which rose. The series of horsts and grabens, generally oriented on a north-south axis, provides an explanation of the regional topography. Within these blocks, those rocks (such as some volcanic types) have resisted weathering and erosion to a greater extent than some sedimentary rocks such as siltstone and limestone, and consequently now express themselves as ridges or higher ground.

During the talk, Dennis circulated examples of different fossils and rocks to illustrate the points he was making. Unlike the usual audience which sits back and relaxes, many people took detailed notes.

On the Saturday trip (7 July), our first stop was at the summit of Mount Ainslie, where Dennis repeated some of the key parts of his talk about the formation of Canberra geology and topography using the landscape as his tool. The landscape, he explained, evolved around 468-408 million years ago, a period of some 60 million years. As Dennis pointed out, and as we were to see first hand, we are very fortunate in Canberra to have this geological history on our doorstep. People from elsewhere, such as the UK, would be so thrilled to have something similar. By this time, many people were using their notebooks.

The second location was situated at the foothills of Mount Ainslie, at the rear of the War Memorial, where we assembled to observe the volcanic rock. Dennis showed us that the rocks here contained both large and

small crystals, evidence of volcano formation, and shattered crystals, evidence of violent explosive eruptions. There was a discussion of the difference between volcanic rock, containing crystals of varying size forming close to the earth's surface, and granite, crystals of uniform size, forming well below the surface, and why this variation and uniformity occur in the different rock types.

Stop three was at Woolshed Creek where we were able to observe sedimentary rocks of fine siltstone and sandstone, also from the Silurian period. This was the first geological site in Australia where fossils of Silurian age were identified, this being commemorated by some interesting signage. Dennis pointed out how to read the inclination of the folded bedding, and pointed out the numerous fossils of brachiopods (see photo on cover page). Also in the creek bed was finely grained rock which exhibited slaky cleavage which formed as a result of the tiny micaceous minerals aligning themselves perpendicularly to the regional pressure. Higher up the hill we could observe younger folded sedimentary ashstone rock derived from volcanic activity.

Stop four was the State Circle cutting where rocks from the early Silurian period have been exposed. The lower strata contain silts and shales some of which have experienced slump folding prior to their becoming rock. Above this layer was a regolith, a layer of old soil, more whitish in colour than the strata it separated. This layer would have been formed in a period when the land was above sea level. Above this were numerous strata of sandstone, formed below sea level.

The strata were of varying colours, reflecting the slightly different chemical compositions, and weathering over time. We then went looking for a fault which Dennis found and we could see where the strata on one side of the fault matched strata on the other side but at a somewhat lower level, and this was a normal fault which reflected the regional faulting.

Finally we went to the southern end of the Australian National University to observe an outcrop of limestone. We stood there in the almost dark as Dennis explained the origin of this limestone rock.

As Tony Lawson said in thanking Dennis, his talk on Thursday was truly excellent, showing someone who was passionate about his subject and able to explain it so easily. Surprisingly, according to Tony, the field trip exceeded the talk. Also, thank you Tony for arranging this.

Now this is the best part. If you missed Dennis, or you want to hear more, join us for our September field trip to hear about the geology and vegetation of the Monaro Region (see program on cover page for details).

A bush block at Brogo:

managing a grassy forest for conservation - *Groundcover*

Introduction

On 19 April, FOG and the Far South Coast CMN visited, among others (see previous newsletter), Bernadette O'Leary's and Richard Bomford's property at Hawks Head Road, Brogo via Bega, in south-east NSW. FOG members and the CMNers were delighted with what they saw. After the visit, Bernadette circulated some notes on the management of their property (see photo next page) among those who attended. Like so much else that Bernadette and Richard do, the notes provide an excellent summary of the issues faced in conservation management and some of the ways they are facing up to them. So with a little editing to fit the style of the newsletter the notes are represented here.

They refer to their property as 'the block', which is some 40ha. They bought the block in early 1987 and at that time it was being grazed by a small herd of beef cattle. They took out a Voluntary Conservation Agreement (VCA) for 39.4ha in early 2003. The block is on the edge of the mostly cleared Bega Valley, about 2km from the South East Forests National Park (Bemboka Section), with largely forested private land between. It consists of a series of ridges and gullies running north west, draining into Alsops Creek which drains to the Brogo River. Elevation is from around 140m-250m. Soils are mostly granite gravels.

Background

Bernadette and Richard understand that early land use consisted of grazing by dairy cattle, sheep and beef cattle, in that order - along the way rabbits have been a real problem. Big timber was also removed, at least from the ridges, including forest red gum (*Eucalyptus tereticornis*) and probably coast grey gum (*E. bosistoana*), monkey gum (*E. cypellocarpa*) and white stringybark (*E. globoidea*) for sale and farm 'development'/use.

They think that in one or more periods of low vegetation cover there was considerable soil erosion, removing top soil from ridges, filling the bottoms of natural gullies, and in a few places resulting in gullying and land slips.

The block was partly logged and cleared, probably from the mid to late 19th century, but allowed to regenerate. In the 1940s, as seen in aerial photos, it was largely grasses and wattles, with a few remnant trees. The last wildfire was in 1952.

In their early days, Bernadette and Richard planted various woody species in areas lacking them, but generally not on the 'grassland' tops. Most seedlings were bought locally and some provided by a neighbour, from various local seed sources. Some planted 'exotic' native tree species in the conservation area are dealt with in the VCA management plan and not allowed to become weedy.

Natural vegetation

There are four vegetation types. The first is grassy forest, close in species composition to Bega dry grass forest, an endangered ecological community (EEC). The second is wetter forest, with a dense groundcover of low ferns and grasses, found in gullies and along Alsops Creek. It is typical of Bega wet shrub forest, under represented on reserved public land. The third is secondary grassland created by clearing the original grassy forest e.g. Windy Hill. They point out that native grasses persist in all areas, with a good diversity of herbs in most vegetation communities present. Finally, there is dense scrub composed of shrubs such as dogwood and tree violet on some lower slopes and gullies, derived from Bega wet shrub forest, presumably after disturbance.

The block contains native plant species of regional conservation significance, some at their southern limit. The species list in the VCA management plan has been added to over the years - it is a work in progress.

Benefits of the bush block

Bernadette and Richard see many advantages in having a bush block. Many are personal but they also see much wider biodiversity and social benefits. Chief among the benefits is conserving biodiversity. While there are few threatened species (except for the EEC itself) they consider that the native vegetation and animals are worth having in the landscape - the VCA confirms that. Another benefit is that the block captures their interest as well as the interest of others. Their block provides a source of seed to recolonise the increasingly degraded (especially weedy) broader landscape, and is potentially habitat for species reintroduction (e.g. koalas). In their view it is a delight, but no picnic. However, despite efforts in recent decades, and even in a shire like Bega Valley, conservation block owners are still in the minority.

Vegetation management issues

They, like others managing land for conservation, face many management issues. Weeds top the list. These include fireweed, spear and other thistles, blackberry, tall fleabane, giant mullein, purpletop and kikuyu, which are all over the block. Smaller and local infestations include species like Yorkshire fog, Parramatta grass, paspalum, tree of heaven, sweet vernal grass and lots of others. There are more on their way (e.g. stinking Roger). All weeds need active management, some throughout the year. Post-drought regeneration of mainly woody weeds, including on previously open ridgetops, is another source of weeds. Lack of management of weeds by neighbours/across the landscape increases the problem.

Rabbits also present a problem. These are relatively unmanaged as yet, because of the topography and soil type, and time. Goats were also a problem for a while. Drought exposed weed-seed-carrying soil, as vegetation competition was lost from the ground layer to tree-top level.

The clearing of land for the house site, shed and electricity line and building the road and dams result in unnatural disturbance. These areas need to be maintained as cleared land. In the absence of natural fire, and altered natural grazing regime, they need to maintain reduced biomass and create 'natural' disturbance. Fencing of the home paddock creates a difficult to manage mostly grassy area, which is becoming rank and weedy. Boundary fencing is minimal which allows the occasional incursion of straying cattle. Time to do what has to be done is scarce.

Management techniques used

Bernadette and Richard do lots of hand weeding and seed removal, and some targeted spraying/painting with herbicide. Their approach varies depending on weeds/ location. In winter 2007, they burnt the secondary grassland, and plan to do more. They encourage recruitment of selected seedlings, by protecting them from grazing (in small cages), in selected areas, e.g. kurrajong and *Persoonia linearis*. They have also created small exclosures (around 5x5m) to see what happens when grazing by rabbits, kangaroos and wombats is excluded.

They are becoming increasingly informed and network with competent land managers, e.g. through the CMN and FOG. They observe, experiment and follow up. One small, intensive slashing/chipping/spraying/ burning trial involved at least six priority weed species. According to Richard ‘hand weeding gets you out there to keep an eye on things'. Now using a digital camera and GPS to keep better records, they have photopoints and photos of interesting things.

Rare native grasslands protected by K2C project

Nicky Bruce, Nature Conservation Trust of NSW, Regional Manager Southern NSW

Grassland discovery

Thanks to the Kosciuszko to Coast (K2C) program, the future looks bright for two local grassland properties.

Greg Baines (then Department of Environment and Climate Change) was surveying native grasslands across

the Southern Tablelands when he stumbled across a hidden treasure – two 40 hectare paddocks for sale in the Jerrabatgulla Valley, south of Braidwood. "The survey results for the two properties were off the charts," said Greg.

He alerted K2C partner the Nature Conservation Trust (NCT) of NSW; a nonprofit organization that buys, protects and sells high conservation value properties. Friends of Grasslands, also a K2C partner, confirmed the property's unique value last spring when it identified 160 native plant species including the threatened mauve burr daisy (*Calotis glandulosa*). The NCT moved quickly to buy the properties with funding from the state and Australian governments. The next step is to find buyers to purchase the conservation properties and ensure that the grasslands remain protected in perpetuity.

Natural values

Both properties contain a mosaic of the endangered natural temperate grassland (NTG) of the Southern Tablelands (NSW and ACT) community (*Threatened Species Conservation Act* 1995) and patches of snow gum woodland.

Within the NTG community the dominant grasses include kangaroo grass (*Themeda australis*), purple wire grass (*Aristida ramosa*), wallaby grasses (*Austrodanthonia* spp.), weeping grass (*Microlaena stipoides*), spear grasses (*Austrostipa* spp.), red anther wallaby grass and tussock grasses (*Poa* spp.).

A rich diversity of forb species is found scattered between the grass tussocks, such as billy buttons (*Craspedia variabilis*), clustered everlasting (*Chrysocephalum semipapposum*), common fringe lily (*Thysanotus tuberosus*), dwarf wedge pea (*Gompholobium minus*), sickle greenhood orchid (*Pterostylis falcata*), austral ladies tresses (*Spiranthes sinensis*) and the mauve burr daisy.

With so very few high conservation value NTG communities remaining in the region, the two properties may provide vital habitat for grassland specific species such as the threatened striped legless lizard (*Delma impar*) and southern bell frog (*Litoria reniformis*) and important foraging habitat for the threatened eastern bentwing bat (*Miniopterus schreibersii oceanenis*).

The snow gum woodland is dominated by snow gum (*Eucalyptus pauciflora*) with some candlebark (*E. rubida*), ribbon gum (*E. viminalis*) and black gum (*E. aggregata*) as sub-dominants. The shrub layer consists of wattle species (*Acacia* spp.), grey guinea flower (*Hibbertia obtusifolia*), tea-tree species (*Leptospermum* spp.) and rice-flower species (*Pimelea* spp.). The understorey is dominated by the native grass and forb species normally found in the NTG community.

The snow gum woodland areas on the properties, whilst small, provide a very important link between the lower slopes of the Jerrabatgulla Valley, the NTG community and the forested slopes of Bunhybee Hill which borders the grasslands to the north-east. Woodland specific

Left: FOG member Geoff Robertson surveying the grasslands. Photo by Rainer Rehwinkel

Above: the threatened mauve burr daisy (*Calotis glandulosa*). Photo by Roger Farrow

species such as the threatened diamond firetail finch (*Stagonopleura guttata*) may use these areas for nesting and roosting while accessing food resources in the grassy understorey and neighbouring grassland community.

Conservation management

According to local farmers in the Jerrabatgulla Valley, the two grassland properties have had a long history of light grazing by domestic stock, predominantly sheep. This light grazing history has resulted in the retention of many grazing-sensitive flora species such as lilies, daisies and orchids that have been lost from much of the surrounding landscape due to higher stocking densities and pasture improvement activities. This historic conservative grazing regime may be partly a consequence of the original property, the *Parlor Paddock*, being managed as two large paddocks with limited water sources for domestic stock.

Looking north across the grasslands towards Bunhybee Hill. Photo by Nicky Bruce

The two unique grassland properties will be protected in perpetuity through the NCT's trust agreement. The agreements don't follow the 'lock it up and leave it' approach, but aim to be practical and adaptive and to acknowledge on-going land management issues such as grazing, weed and pest control.

As the grasslands have had a history of grazing by domestic stock, the new owners will be encouraged to use strategic stock grazing. This is to ensure that the native grass species don't choke out the inter-tussock diversity of daisies, lilies and orchids. They will have the support of local experts and the NCT in balancing stock grazing with the conservation needs of the grassland communities.

Camperdown Cemetery grassland *Anumitra Chand*

Marrickville Council in Sydney has formed a partnership with the Marrickville Heritage Society, Camperdown Cemetery Trust and Greening Australia for the conservation of the remnant kangaroo grassland (*Themeda australis*) in the Camperdown Cemetery, which hosts one of the last remaining remnants of the turpentine ironbark forest that once dominated the inner west. Remnants now exist in patches in the Cooks River Valley with only two sites in the Marrickville area, one in Camperdown Cemetery and another on the edge of the railway cutting at the city end of the Dulwich Hill Railway Station. The turpentine ironbark forest has been listed as an endangered ecological community under the NSW Threatened Species Conservation Act 1995.

The restoration of the native grassland project in Camperdown Cemetery was initiated with the creation of the interest support group, Friends of Camperdown Cemetery (FoCC). The group undertakes regeneration and maintenance of the grasslands on a regular basis throughout the year. The Camperdown Cemetery Kangaroo Grassland Restoration Project is funded by a grant from the Australian Government Envirofund. The *Camperdown Cemetery Restoration Strategy 2007-2011* was produced and launched on 4 May 2008. This project aimed to protect significant remnant vegetation and assist council in meeting biodiversity conservation strategies. The recent launch of the restoration strategy provided FoCC with an opportunity to celebrate the six year anniversary of the project and promote it

For more information (e.g. working bee schedule), visit Marrickville Council website www.marrickville.nsw.gov.au, or call me on 02 9335 2222.

FOG advocacy workshop - *Naarilla Hirsch*

The last newsletter contained a brief overview of the FOG advocacy workshop held in May. This article focuses on some of the key points coming out of that workshop, including the FOG advocacy group's recent discussion of these.

In her presentation, Trish Harrup (former director, Conservation Council (CC)) talked about identifying who you can influence and who can, by their influence, make the changes you want. Once you've identified who you want to influence, you need to ask what can motivate them to change and what you actually want them to do.

Another part of Trish's message was about lobbying politicians. Common mistakes community groups make in lobbying politicians include ambit claims, not appreciating their time constraints, lack of local electoral focus and misstating the facts. Important considerations when meeting with politicians include being clear on objectives and outcomes, preparing a briefing document, maintaining a united front, having a clear action to be taken, and sending a follow-up letter about the discussion and any agreed actions.

David Shorthouse's (Limestone Plains Group) talk noted the need to discover and cultivate contacts, particularly the 'desk staff' dealing with the issue, since this is generally the person with the highest level of technical knowledge on the issue. David also suggested that considering 'what ifs' is important during an advocacy process, and that groups should continue to offer their input and expertise, even after the issue has reached a conclusion or if the advocacy action has failed.

After talking about FOG's approach to advocacy, Bernadette O'Leary (FOG advocacy group coordinator) identified both the strengths and weaknesses to its approach. Particular weaknesses that need to be addressed include lack of time to respond to issues, workload and capacity problems, following through on specific issues, advocacy-focused media actions, being reactive rather than proactive, and choosing the opportunities that really matter.

The two case studies discussed by workshop participants were very different and threw up some useful insights. For the proposed Molonglo development, a range of different advocacy actions already undertaken by FOG and its members (including with the CC) were identified. As this development will continue to be of concern for FOG, there is a number of future issues to be addressed, such as developing a long range plan for FOG's involvement, ensuring ecological monitoring happens and its results are accepted by government, interactions with the media and how they should be pursued, accidental damage to reserves by adjoining development, and the allocation of buffer areas to reserves.

The discussion of the *Nature Conservation Act 1980* review raised a number of specific matters that FOG should pursue, including adequate resourcing of the Act's provisions, requiring the Conservator to report on implementation of the action plans for endangered/ vulnerable species/ecosystems, the inclusion of the principle of *no net loss* of native vegetation, and building connectivity of nature reserves across the landscape. Actions FOG could take include developing a campaign strategy for this issue, writing a position statement on the review, and briefing politicians from all parties on the issues as FOG sees them.

The workshop made some general suggestions for the advocacy group (and the FOG committee) to consider. One was that FOG's message should be about conservation of grassy ecosystems, and that FOG should increase awareness of the importance of grassy ecosystems, which includes grasslands. There was a suggestion that FOG should prepare an educational presentation that could be used with different groups or the general public. Themes of this presentation would include 'this is a grassland' and 'grasslands are characteristic of Canberra', as a way of enhancing the profile of grasslands and grassy woodlands locally. Another idea was to arrange for an opportunity for the general public to visit the Lawson grassland.

Workshop participants suggested that FOG should contact the Natural Temperate Grassland Recovery Team with proposals for a meeting agenda. A specific item for this agenda is to ask the team to support and promote development of a grassland leaflet for educational purposes. FOG should also approach the CC for support, for example in reviewing media releases and obtaining copies of media and campaign training course notes.

To assist in responding to issues in a short timeframe, the advocacy group could consider the usefulness of the draft policy statements already developed, and also expand its personal contacts in relevant government areas. The policy statements were suggested at FOG's AGM in February. They were to be a few agreed-on, significant points on FOG's view about topics of major concern to FOG, and were to be used for quick short responses or as the framework for fuller responses when needed.

The advocacy group recently held a meeting to consider the workshop outcomes and a strategy for future work. At the meeting the group decided to set up a proforma to be used to consider each issue it deals with, and to include many of the ideas that arose during the workshop. This proforma will be trialed over the next few months. At the meeting the advocacy group also discussed the three draft policy statements.

Continued on page 5.

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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 Janet Russell or Geoff Robertson. Contact details are given in the boxes above. For newsletter and e-bulletin matters contact Geoff Robertson or Tony Lawson, respectively. We look forward to hearing from you.

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