



News of Friends of Grasslands

Supporting native grassy ecosystems

July - August 2009

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Program

General note on FOG activities

For any activity you should register with the contact who can assist with directions and possibly car pooling. By registering you assist FOG to organise any catering and provide you with other information you may need.

SAT 25 JULY 1.30 to 4.15pm. What FOG members have been doing. This year at our winter slide afternoon, we have three fascinating talks (see page 2 item *three at slide afternoon* for details). Location is Mugga Mugga, Education Centre, Narrabundah Lane, just opposite the Therapeutic Goods Administration Centre. Afternoon tea provided. To let us know you are coming, please contact Tony Lawson on 6161 9430 or activities@fog.org.au.

THURS 6 AUG 12.30 to 1.30pm, talk on Daisies of the Southern Tablelands by Geoff Robertson. This is part of the Australian National Botanic Gardens' lunchtime talks series which is held every Thursday in the Theatre.

SAT 8 AUG 1.30 to 3.30pm, FOG visit to ANBG nursery. For description of this event see page 2. Unlike other FOG events you do not need to register for this one. Enquiries: Heather Sweet (ANBG) 6242 4675 or heather.sweet@environment.gov.au.

WED 12 AUG 1.30 to 4.40pm FOG workshop on grassland advocacy issues at the Conservation Council meeting room. For more details see item on advocacy workshop on page 2. To register, contact: Tony Lawson 6161 9430 or tony.lawson@fog.org.au.

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Photos by Margaret Ning: FOG-Fenner volunteers enjoying a well-earned lunch break (top), and a happy Jamie Pittock inspects dispatched weeds (middle), and some of the 30m³ of weeds removed from Stirling Ridge (bottom). See article page 3.

Upcoming FOG events

Three at slide afternoon

At FOG's winter slide afternoon (25 July, see program on cover page), there will be three talks.

Greg Baines' topic is the *Recovery of our natural temperate grasslands*. From 2005-08 Greg was the project officer for the Natural Temperate Grasslands (NTG) of the Southern Tablelands and ACT recovery team. He drove a highly successful project which mapped NTG in the region, arranged extensive surveys of previously unidentified grassland remnants and organised conservation management over a number of high quality sites. In doing so, the NTG recovery team broke much new ground, and provided many new insights into the protection, understanding and management of NTG. Greg will describe the project.

From 2004 to 2007 the Grassy Box Woodland Conservation Management Network and the Department of Environment & Climate Change NSW carried out a project, titled *Biodiversity Conservation in the Sheep-Wheat Belt of NSW Project*. Andrew Zelnik will talk mainly about a significant part of the project that involved conducting biodiversity surveys on private and public lands in the western slopes and western parts of the tablelands principally targeting remnants of the box-gum woodlands endangered ecological community and associated threatened fauna and plant species. A number of FOG members' properties were included in the project. Andrew will describe how sites were obtained and surveyed, and some of the overall survey results, findings and outcomes which included a greatly expanded knowledge of box-gum woodland sites in NSW.

Rainer Rehwinkel, well known grassland ecologist, will talk on his recent travels in Borneo. The title of his talk will be *Borneo – from the ground layer upwards*.

FOG visit to ANBG nursery

This event (Sat 8 August) is the third part of the trilogy on the Australian National Botanic Gardens' (ANBG) alpine project. Those involved in either part one or two will be aware of Joe McAuliffe's presentation on the project at our FOG slide afternoon on 26 July 2008 (see Sept-Oct 2008 Newsletter, page 2) and the FOG ANBG alpine weekend on 2-4 January (see March-April 2009 Newsletter, pages 1 and 8) led by Joe, Greg Flowers and Heather Sweet.

In this event, the team will show how they are storing and growing plant material so as to learn about the ecology of plants in alpine communities and how we might use this knowledge to help the plants adapt to climate change. They will also tell us what they are doing about a couple of other plants of interest to FOG, namely Ginninderra peppercress and *Zieria obcordata*.

We will meet at the end of the end of Frith Road outside the ANBG gate. After the visit, we will adjourn to Hudson's Cafe. For enquiries, see program page 1.

Biobanking (NSW)

Landowners in NSW who are interested in protecting and conserving biodiversity values on their land may establish a biobank site and generate biodiversity credits. These can be generated by landowners who commit to enhance and protect biodiversity values on their land through a biobanking agreement. Credits may be sold to generate funds for the management of the site. The 'list of wanted credits' allows prospective buyers of biodiversity credits to inform current and future credit holders of the credits that they require. For more information check out: <http://www.environment.nsw.gov.au/biobanking/participants.htm>

FOG advocacy workshop

Following the recent release of the report on the ACT Lowland Native Grasslands Investigation and the Draft ACT Kangaroo Management Plan and the impending release of a discussion paper on the Nature Conservation Act, the FOG Advocacy Group plans to hold a workshop on 12 August (for details on time and venue see program page 1) to discuss how it might address four broad issues in its future advocacy work.

First, the workshop will examine threats to individual ACT grassland sites. This would be based on developing an inventory of grassland sites. Second, in relation to the proposed Nature Conservation Act, the workshop will address how we might progress our understanding, in a practical way, of the concepts of 'offsets' and 'connectivity'. The third issue addressed will be how we might progress our understanding of the management and restoration of grassland sites and the management of threat mitigation

Finally, we will examine advocacy issues arising from our on-ground conservation work at the Yarramundi Reach (grassland) and Stirling Ridge (grassy woodland) sites around Lake Burley Griffin.

PLEASE READ

Is this you?

On 3 June someone made an electronic subscription and donation to FOG, but we didn't receive a renewal form so we don't know who you are. If you think it could be you, please contact Margaret Ning or Sandra Hand (details back page).

Newsletter available electronically

You can receive the newsletter electronically. The electronic version is in colour. To arrange, contact Margaret, details back page.

News Roundup

Hall Cemetery working bee

Andy Russell

18 APRIL A small group of five (for four of the five see photo) attended this working bee to continue the work of controlling briar rose and hawthorn in the woodland surrounding the cemetery and grubbing out eucalypt lignotubers in the cemetery area. Some of us initially worked on the woodland area between the cemetery and Wallaroo Road cutting and daubing small plants of hawthorn and briar. This area had been covered on previous occasions when all the large plants were killed, however small plants may have been missed in the past or may since have germinated. We checked the area where the St Francis Xavier students were involved with the cutting and daubing of briar and there was not a single piece of regrowth. On the north-west side of the woodland there are a number of larger hawthorn which the cemetery organisation has been asked to remove as these are beyond our capability to handle. Thank you to all who attended.

30m³ of weeds removed

For photos of the working bee, see cover page.

2 MAY On a stunning autumn day on 21 FOG and ANU Fenner School volunteers met near the Canberra Yacht Club to begin the long process of weeding Stirling Park's grassy box woodlands in Yarralumla. Supported by the National Capital Authority, the working bee dispatched around 30 m³ of weeds from around two populations of the endangered button wrinklewort and along Haines Creek.

Adam Muyt led a team that undertook fine scale weeding of an important habitat patch on Attunga Point that dispatched most of the visible invaders. Along Haines Creek, Margaret Ning oversaw



work to eliminate broom regrowth (following inadequate previous 'control' work), outlying patches of blue periwinkle, blackberry, and a mass of woody weeds. On the adjacent hillside others successfully returned thickets dominated by Cootamundra wattle, cotoneaster and other woody weeds to its natural woodland structure. Sarah Sharp undertook the establishment of monitoring points to measure the impact of our work.

The scale of the weed infestations in Stirling Park is daunting, but we are hopeful that the National Capital Authority's renewed commitment to undertaking key conservation activities in coming years, and to implement a draft management plan prepared by Sarah Sharp, will make a critical difference. The FOG-Fenner group's work showed that volunteers can make a great difference in restoring critical patches of habitat.

Further events are now scheduled for later in 2009. Working bees are planned for 19 September (Yarramundi Reach) and 17 October (Stirling Ridge) and a public walk to introduce the woodlands is planned for 21 November. For more information, contact Jamie Pittock - 0407 265 131.

West Macgregor, ACT

Rosemary Blemings

14 MAY This morning I strolled along the Bicentenary horse-trail as far west as the original infrastructure fence corner. At the corner there was a flock of ten diamond firetails and several flame robins. There was a cold north west wind (the car temperature read 11 degrees) and little sunshine.

Another wedge of 'cliff' had fallen onto the creek edge where the fairy martins' were area recently. A white faced heron was present as were one little pied cormorant, a solitary sacred ibis, red-rumped parrots, a flock of yellow-rumped thornbills.

In view of the fact that ACTPLA is seeking permission to increase the number of planned dwellings in the second stage of West Macgregor, perhaps it would be useful to gather a list of sightings for this area as it is clearly necessary to ensure there is a maximum "buffer" between development and the riverine zone. Some development concessions have been made for the golden sun moth habitat but many of the original concerns raised about the development by Ginninderra Catchment Group are not reflected in what is already being built.

A FOG query

Ed-FOG gets many queries and inquirers usually receive full responses. I would like to print these but space is limited. However, David Eddy's response on whether clustered and common everlasting daisies (Chrysocephalum semipapposum and C. apiculatum) were sensitive to grazing is a gem and should be printed.

It seems to me that both species of chrysocephalum are grazed variously by sheep, cattle, goats (and other ferals) and native macropods. Common everlasting daisy is a very common and widespread native forb, which suggests that it is reasonably tolerant of grazing. It is one of the forbs that remains even after many other species have been removed. Being a daisy it probably manages to prosper from its high seed production, wind dispersed seed and strong colonising ability. However like all plants, with enough grazing pressure it will eventually disappear from native grassland or woodland, as it is pushed toward 'native pasture'.

Clustered everlasting seems less widely distributed, though still common, appearing to grow more into lightly timbered grassland and woodlands. I've seen a number of examples of snow gum or manna gum woodland, having probably been quite modified by past grazing, being very strongly colonised by clustered everlasting within a few years of the removal of grazing. This certainly suggests that it is grazed, and that with the removal of grazing it can bounce back more quickly than many other species.

It is always difficult to make sensible generalisations about whether any species is 'sensitive' to grazing or other disturbance, as it really depends on the type of disturbance, how it is applied and how heavily. All plant species can recover from some disturbance. They vary in how they respond to what type of disturbance, with what intensity and frequency.

Tiny greenhood

Roger Farrow

Remember that tiny greenhood found by Margaret on our return along the north coastal track (Wadbilliga trip) (see photo by Margaret). Tony Wood has kindly identified it and says "I would hazard a guess and say the orchid is *Pterostylis pedoglossa* (now known as *Crangonorchis pedoglossa*), the so-called prawn greenhood. It flowers April to July and grows in heath and heathy woodland near the coast in Victoria. Most of the other greenhoods flowering at this time do not have a basal rosette on the flowering plants."

According to *Orchids of NSW & Vic* by Tony Bishop it is not common, so quite a find Margaret!



Timing of fire is everything

5 MARCH NPWS released the results of a prescribed burn near Hegarty's Bay in Ben Boyd National Park last May. NPWS states that the burn has increased the habitat and numbers of small marsupials.

NPWS ecologist, Dr Andrew Claridge, said today that the pilot research program has provided some valuable information about the relationship between fire and fauna in a coastal environment. "The population we have in Ben Boyd National Park of southern brown bandicoots, long-nosed bandicoots and long-nosed potoroos is unique. Nowhere south of Sydney do we have such a robust mix of these medium-weight

ground dwelling marsupials in the one place except maybe Nadgee Nature Reserve further south.

"There are good reasons why though – they a good distance from urban areas and the consequent threats of domestic dogs, cats and people but also a lengthy and sustained fox baiting program over 12 years has also helped significantly limit predation. However, there were changes taking place in the vegetation that was not helpful and we think this was due to the absence of fire from this area for a long time."

"Our monitoring showed that the understorey of banksias, wattles and hakeas had begun to decline. They were starting to reach the end of their cycle and so the understorey was changing to one that wasn't as advantageous or beneficial as habitat for these marsupials."

"After considering the results of our research we carried out a patchy prescribed burn last winter and the early results are promising. The post fire monitoring using infra-red remote cameras and truffle oil attractant has shown not only that bandicoots and potoroos persist but that the activity of some species is increasing," Dr Claridge said.

NPWS stated that "It is a challenge and there is still so much we need to learn in order to know when is the right time to introduce fire. We will continue to monitoring native animal populations over time to better understand the long term benefit of this approach."

Garden escapees

The recognition of garden plant escapees as an environment threat has progressed with the proposed EPBC listing of *Loss & degradation of native plant and animal habitats by invasion of escape garden plants, including cultivated pond and aquatic plants*. An excellent submission by the Conservation Council ACT Region highlighted the ACT experience with many individual weed species. While it is too long to quote here, anyone interested in weeds should check out the Cons Council website.

Lawson grassland

30 APRIL Chief Minister Jon Stanhope has repeated again today that the ACT Government is committed to preserving the high value grasslands identified at the Belconnen Naval Transmission Station, should it come under ACT control. "Irrespective of the future ownership of the former naval base at Lawson, it is imperative that the valuable grasslands at Lawson are included in the ACT nature reserve network and protected in perpetuity," Mr Stanhope said. "However," the Chief Minister said, "I would be hopeful that these important grasslands would be transferred by the Commonwealth at nil cost for inclusion in Canberra's nature reserve system and preserved for all time."

The land was included in the Report on ACT Lowland Native Grassland Investigation undertaken by the Commissioner for Sustainability and the Environment and presented to the Government in March 2009. The report found that the site was of 'high botanical significance' and home to the Ginninderra peppercress and the golden sun moth. "This land is of significant value and contains the region's largest population of the endangered golden sun moth and the ACT Government is committed to conserving grasslands, remnants of an ecosystem that once covered about fifty percent of this region," Mr Stanhope said.

Mr Stanhope also confirmed that the Government continues to be interested in purchasing surplus Commonwealth land in the ACT. "I regularly make representations to the Federal Government and continue to communicate with the Rudd Government to determine what land is surplus to Commonwealth requirements, particularly in light of our efforts to release additional land for affordable housing.

Wasps and woodswallows

Julian Robinson

To conflate two topical Canberra issues – European wasps may be one reason why some dusky woodswallows have opted to remain in Canberra so far this winter. The photo was taken in April at Callum Brae where the numbers of both dusksies and swallows has increased to about 30 of each (from about eight each



last time I was there). It shows that at least one woodswallow was feeding on the plague of European wasps that are about at the moment. I was interested to notice that despite there also being a lesser plague of pasture day moths (also a pest apparently, but not exotic), they did not seem to be the food of choice for the birds. Many moths flew around and were ignored, while this wasp, seemingly a more difficult target to deal with, was taken. Good bird Beryl!

Kangaroo cull to resume

22 JUNE The ACT Administrative Appeals Tribunal has ruled the culling of kangaroos on Defence Department (DD) land in Canberra can resume. The ACT Government granted a licence to the DD in April to cull 7,000 kangaroos at the Majura site. Around 4,000 were killed in May before a temporary stay was granted. Animal Liberation challenged the granting of the licence, arguing there was sufficient inaccuracy in the assessment of kangaroo numbers on the land. The tribunal stated there is compelling evidence that the kangaroos have caused substantial damage to declared ecological communities and threatened species.

Progress at STEP site, Block 100

STEP reporter

SAT 16 MAY The morning was frosty and very windy, but luckily the sun came out about noon and the day became a golden autumn beauty. The Conservation Volunteers Australia bus arrived at the Southern Tablelands Ecosystems Park (STEP) site at the Canberra International Arboretum and Gardens with six volunteers and Taz at the wheel. The six volunteers were from Taiwan, Israel, Korea, Canada and Australia. They were a terrific bunch – hard working, engaging and very interested in hands on experience of local conservation. We planted 64 *Euclayptus nortonii* and about 1500 juncus and grasses, the latter along the creek lines running from east to west, highest to lowest points across the site. Lainie Shorthouse made a couple of delicious cakes for our morning tea. At lunchtime we wolfed down the gourmet sandwiches made by Charmian Lawson, and then snacked on crisp Roman Beauties and organic apples. We are now taking bookings for the next planting day in spring 2009. Email limestone@grapevine.com.au if you would like to join us.

Local seed not best for reveg

According to *Ecos* 147, Feb-Mar 2009 www.ecomagazine.com, successful revegetation of native flora lies in sourcing genetically diverse seed, not necessarily relying on seed sourced from local remnant vegetation, according to a recent study. CSIRO scientist Linda Broadhurst states 'this research shows that where vegetation loss is high and across large areas, "local" seed sources are often small and isolated and can be severely inbred resulting in poor seed crops. This can lead to germination failure and poor seedling growth.'

The research findings are reported in a paper by Linda Broadhurst and others from the ARC-NZ Research Network for Vegetation Function, which was recently published in the journal *Evolutionary Applications*.

Grasses of NSW

Wal Whalley

FOG members may have noticed that the 4th Edition of *Grasses of NSW* has now been advertised in the CSIRO Landlinks leaflet (admittedly a tiny ad, but it is there on page 8). If you want to buy a copy, that is probably the easiest way to get it. The Botany Dept (Uni of New England) is no longer allowed to retail copies so they are wholesaled to the UNE United Campus Bookshops and CSIRO Publishing as part of their 'Landlinks' programme. The contact details of the UNE Bookshop are below. It is a bit cheaper through the bookshop.

To purchase *Grasses of NSW*, 4th ed contact.

United Campus Bookshops
Madgwick Building
University of New England
ARMIDALE NSW 2351
www.ucb.net.au
Ph 02 6773 2289, 02 6772 3486 Fa
02 6772 3469

FOG website

The FOG website (www.fog.org.au) is now well established and attracting over 2,000 visits per month. If there is anything you'd like to contribute to the site, let us know: webmanager@fog.org.au.

LATE NEWS

FOG has a new secretary, Al Gabb, a recently joined FOG member. Al replaces Bernadette.

Bernadette O'Leary joined the committee in 2006 and officially took over as secretary in February 2007 at the AGM. She set new standards for FOG in many areas, especially in advocacy. She remains on the committee.

Welcome Al and a big thanks Bernadette.

FOG advocacy Apr '09

Naarilla Hirsch

FOG made a submission on the EPBC referred **Development of a new electricity substation and access road at Williamsdale**. Three sites were included in the preliminary flora and fauna assessment, with two (including the developer's preferred site) being high quality remnants of yellow box/Blakely's red gum lowland woodland, and the other more highly modified native pasture. On environmental grounds, FOG argued that the site selected for the new substation should be the latter, more highly modified site, rather than the developer's preferred site, particularly as the reasons for preferring this site were not clear. FOG supported the mitigation measures in the proposal, but also made a number of other suggestions, including spelling out in contracts the proposed mitigation and techniques to be used, and the use of a significant financial disincentive should agreed mitigation measures in the contracts be breached. FOG also expressed concern about the use of offsets when there are alternative sites for the proposed development. While offsets, if effective, may be necessary in situations where there is no alternative, it should be recognised that "reinstating" vegetation cannot replace the complexity of the ecosystem that is lost. If biodiversity conservation legislation to protect threatened species/ecological communities is to be effective, some areas must be "no go".

FOG made a submission on the EPBC referred **Proposal for site servicing and land release for Bonner stage 4, Gungahlin**. The development proposal will result in the loss of an area of white box - yellow box - Blakely's red gum woodland with secondary grassland containing a critically endangered species, the golden sun moth (GSM) (*Synemon plana*) and other uncommon and vulnerable species. FOG considered three of the four proposed options to be unacceptable because of the large

area (65-70 percent) of box-gum woodland that would be lost. The fourth option was more acceptable as only 32 percent of box-gum woodland would be lost. However, FOG's view was that the best approach at this stage is to follow the suggestion at the conclusion of the GSM report attached to the proposal, i.e., to review the urban boundary and the subdivision layout to determine whether an alternative design for this part of Bonner could be achieved which provided more effective conservation of the GSM while still providing an acceptable development solution. Ongoing management of the grassland areas is an issue, particularly as GSM habitat needs to be maintained, rather than allowing eucalypt regeneration to exclude the GSM over time. Other management issues include anticipated future human impacts such as foot traffic and dumping, and siting of bushfire and other management tracks and structures. FOG's view is that discussion of long term management of this area should be considered at this stage rather than being left to be picked up in the future.

In April there was a request for comments on the **nomination for listing the ecological community, inland grey box woodland as a threatened ecological community** under the EPBC Act 1999. The inland grey box woodland exists in similar areas to other woodland communities with different box species dominant, and often adjoins to or intergrades with the EPBC listed white box-yellow box-Blakely's red gum grassy woodland and derived native grassland. Vulnerable and endangered species such as the regent honeyeater, hooded robin, brown treecreeper and superb parrot may be found in the community. Its conservation status is poor because it occurs on productive soils. While FOG is not particularly familiar with this type of woodland community, it did respond in support of the nomination.

Cultivation Corner:

Forbs that grow in my lawn Rosemary Blemings

Janet is travelling in the great Australian outback checking out our grassy ecosystems there.

It's amazing what 9ml of rain can do. In a yard where grassy open space teaches grandchildren what a rural oval might be like, Austral bears-ear, (*Cymbonotus lawsonianus*), dies down to 'nothing' once summer's heat is established. Less than a week after rain, green growth from buds amongst the 'dead' rosette is visible. Attractive, yellow daisy-like flowers will follow in 3-4 weeks when soil moisture combines with soil warmth.

Curiosity encouraged 'cultivation' of this common grassland plant which thrives in bare patches of soil. We'd obviously walked the seeds in and I decided to leave them. The first generation of plants left clusters of seedlings which I transplanted into edge areas of the vegetable garden. Most survived this treatment and were later transplanted a second time into bare areas amongst the grass. I made a rough hole just large enough for each cymbonotus' roots, tank-watered the plants in and loosely mulched them with dried lawn mowings. Most survived in full sun, flowering in a cryptic way, and then continued their life cycle from lushness to desiccation, leaf-loss, apparent-death and then resurrection. Two plants in the lee of small rocks have remained more lush throughout this two-year experiment. Like vittadinia, cym-

bonotus seem to thrive in harsh, open situations. Since they remain low-growing they are easily mown-over without ill-effect.

Creeping knotweed, *Persicaria prostrata*, has grown in a partly shaded area of our backyard grass for decades. It could be tolerated, if not cul-



Bear's ears. Southern Tablelands' challenge to the African violet.

tivated, as a greening-effect for neglected 'lawns' but I doubt it would withstand the trampling of regular soccer sessions. Given that the species is widespread on the long-neglected Traeger Oval in Flynn it probably has an extremely successful system for harvesting raindrops or finding hidden underground water sources. This native knotweed is one of many *Polygonaceae* characterised by small knotty-clusters of flowers and seeds. The oval is a prime feeding area for galahs and crested pigeons which feed on the tiny seeds of persicaria and other members of its cosmopolitan genus.

There's something appealing about the cudweed-form, but this is probably a sign that I have become more interested in texture and rustic colours as I've aged! The euchiton species are natives - *Euchiton collinus* was previously named *E. gymno-*

cephalus. The stems have cottony hairs contrasting with the shiny green, lanceolate leaves and the clustered beige-brown inflorescences at the tops of the stems. Many *gnaphalium* species have similarities, though few are native. The cudweeds usually grow tall enough to feel the mower's blades and would be allowed to remain only as an eccentricity or because they, like *Senecio quadridentatus* in the wild, are useful, questionably-attractive, native colonisers.

Undisputedly attractive and inspiring are the spreading clusters of *wahlenbergia* that have been walked into the yard as minute black seeds. The few millilitres of rain also stimulated the almost-vanished bluebells' growth of new

leaves. At home they also seem to thrive in areas of bare soil and they are tenacious on median and nature strips in spite of the authorities' mowing regimes.

I should do more research to see what important ecosystem-function some of these more unobtrusive plants perform. Which species pollinate them? What physiological advantages do they have to allow them to thrive in such harsh locations? Or do some of them produce inhibitors which keep the soil around them bare and inhospitable to reduce competition?

Woods' Flowers index

FOG has a copy of the **combined** plant index of the fabulous Betty and Don Wood books, *Flowers of the South Coast and Ranges of NSW (three volumes)* and *Flowers of the ACT and Region*. If you would like an electronic copy (Excel spread sheet), please contact Margaret.ning@fog.org.au.

Wadbilliga camping weekend – a.k.a. Grasslands galore!

Margaret Ning

I have to admit that I was a little disappointed when the dust finally settled and the date for the Wadbilliga weekend was 21-23 March. From memory, and consultation, I knew that the Gentian Grassland in Wadbilliga National Park (WNP) had been photographed in all its splendour towards the end of April in previous years. Nevertheless, I knew it would still be a wonderful weekend, with around a dozen FOG and ANPS members, led by Roger Farrow.

Our camping site was on Tuross Waters, now owned by FOG members Michael and Karen Connaughton. ANPS members had visited the property many years earlier when it was owned by Clarry and Frances Smith, FOG members at the time. We arrived Friday evening with ample time to pitch our tents in daylight, with a choice of open grassy areas or more shady spots. Tents pitched, it was time to gather for evening drinks and nibbles.

Our weekend schedule was leisurely as we didn't have far to go each day. On the Saturday morning we wandered slowly across to the adjacent property of Karleila also owned by FOG members, Adam Muyt and Kate Godman. Karleila contains the stunning Triggerplant Grassland that FOG has been visiting for many years. At this time of the year, there wasn't much flowering but with two banksia species (*B. marginata* and *B. canei*) for Phil to help us to distinguish between, a goodly collection of pea family shrubs and a never-ending variety of forbs and grasses, some more familiar than others. Unfortunately we had barely crossed the road that divides the grassland from the forest, before we had to return to camp for a quick lunch prior to the afternoon drive to the Wadbilliga Trig. We had added a few species to Adam and Kate's list and saw the grassland in beautiful condition, with solid groundcover continuing to prevent any unwanted intrusions.

Adam joined us after lunch, and we drove the short distance to WNP, and turned east onto the Razorback Fire Trail for the ascent to the trig. When we weren't passing grassy swamps, we were driving in wet sclerophyll forest on the coast side of the escarpment. At one stage we travelled up a saddle that was the watershed between the Brogo and Wadbilliga Rivers. We had afternoon tea at the trig, and then most of the party walked the relatively brief path, a kilometre or so, to the actual trig where there was an endemic eucalyptus nearby. That was the end of the first full day so we made our way back to our camp.

Sunday morning saw us heading for the national park again, but this time we turned on to the Kydra Fire Trail and headed south, travelling along the electrified dog fence for a few kilometres until we reached a hang-

ing bog familiar to many of us from an earlier trip. Containing *Gleichenia* sp., flowering *Geranium neglectum*, a leptospermum, sedges and rushes, and a small range of forbs associated with sphagnum bogs, the bog was in good condition, though very dry, as it was well fenced off from adjoining privately grazed paddocks. After a brief look, we were back into the cars and onward to the Gentian Grassland (GG).

We arrived, and the "I told you so's" began! A profusion of white flowers welcomed us, and I was very happy to be wrong with my fears that the gentians would not yet be flowering. The GG is a very open drainage line, approximately 50m by 150m. It was essentially at peak flowering, but it was also obvious from the many gentian buds we could see that there would be gentians flowering there for nearly another month. We also caught *Xerochrysum palustre* flowering (listed as nationally threatened, but not in NSW), which would not have been the case at the end of April. It was very pleasing to see minimal pig damage, and no moo poo like on the last visit. The only disturbance was a very large wombat hole dug at one of the lowest points.

Back to the vehicles, and lyrebirds and swamp wallabies scampered out of our way as we drove further along the dog fence. Our lunch site was at Mowitts Swamp, another of the open grassy areas we saw that day.

Lunch over, we drove north back along the fire trail for an assault on Mt Kydra, 1237m above sea level. It was to be almost a one kilometre walk from the fire trail to the peak of the mountain, initially through extensive *Casuarina nana* and finally up huge boulders. However, within 300 metres of the summit, after serious *Casuarina nana* bush-bashing in declining light, being lashed by sleet, and with lightning flashing uncomfortably close to us, the decision was made to retreat back to the cars, and ultimately to our camp. Unfortunately we arrived back at the camp too late to prevent rain drenching one of the tents which didn't have its fly on it. And then it was time for the comfortable evening routine!

On Monday morning the remaining small group took a leisurely walk along the nearby Tuross River which is currently a succession of drying ponds, leaving water milfoil and water ribbons more and more exposed. Back to camp, with our tents finally dry, we completed our packing up and moved off, stopping for a coffee in Cooma, before completing the trip home. Personally I had found it very relaxing to camp in such a secure environment. Thanks Michael and Karen for opening your property to us.

The weekend's 'lucky escape' prize goes to Mike, who, when sheltering in the *Casuarina nana* from the sleet

Continued on page 12.

Visit to Bunhybee Linda Spinaze and Roger Clarke

SAT 9 MAY A perfect warm, still, autumn day, found a group of 17 FOG members and friends heading towards Braidwood, and thence southwards to Jerrabatgulla Creek and our newly purchased property, Bunhybee Grasslands.

We bought Bunhybee last December from Nature Conservation Trust (NCT), which is a non-government organisation that buys properties of high conservation values and on-sells them to private buyers, with a covenant inscribed on the deed which binds future owners to a stewardship role.

After morning tea we set off in two groups, and within an hour, we had covered at least 100 metres of ground!! Some of the group had found the duels in obscure Latin to be a bit tedious, and had taken themselves up to the tree-line to investigate the eucalypts.

As we circled around the property, up the chain-of-ponds and along the ridges we, or at least Margaret, Geoff and Mary, identified many species, including wild sorghum, swamp wallaby grass, grass cushion (*Isoetopsis graminifolia* -see last FOG newsletter), solonogynes, hemarthria,

juncus, carex, plume grass, sporobolus, leucopogons, and leptospermums, as well as the various poas, stipas, wallaby grasses, and huge swathes of kangaroo grass.

Margaret pointed out rosettes of greenhood orchids and parson's band orchids, which are hard for the average person to identify as they do not have visible leaves when they are in flower.



Lunch in the Bunhybee grassland

Since our decision to buy Bunhybee in June 2008, we have been on a steep learning curve identifying native and non-native species, particularly grasses. Neither of us have a farm or botanical background, although Linda is a keen gardener and alpine walker. Starting from such a low base does have its advantages in that everything you learn is of value!

So we were particularly looking forward to FOG's visit and their assistance in identifying many of our species, and their advice in how best to encourage biodiversity on our property. We were not disappointed!

We started by enjoying morning tea just inside the gate, overlooking the grassy landscape, with only the occasional snow gums to break the view. While we slurped and munched we were entertained by talks by Geoff, Mary Appleby (local CMN person) and Brian Binning (Board Member of NCT). Mary's comment sticks in my mind. She said that she was in the process of assessing other properties for conservation purposes, and some of these had as few as ten native species on them. Bunhybee with its 160 (now 195) species and still counting, is a rare and valuable example of biodiversity.

After a picnic lunch by the gate, we walked past the dam and up to the furthest corner of the property which abuts onto the forest. This gave us a chance to identify some of the eucalypts, surrounded by a beautiful lawn of microlaena mown by the kangaroos, and to enjoy the sweeping views of Jerrabatgulla Valley to the south. Over the fence we did spy a grevillea, a persoonia and a couple of leucopogons which were hard to identify. Mary said that we should ask the experts, but given who was there on that day, I wasn't too sure where she would find a higher authority!

The sun was low in the sky as we walked back to the cars (parked outside the gate to avoid bringing in weeds), giving us the beautiful warm glow of the late afternoon light burnishing the heads of the themeda-covered paddocks, and as we drove off the romantic picture was complete with a rising full moon to the east!

A fascinating day for us all, and we are very grateful to FOG and Mary for organising the day and giving so generously of their time and knowledge. We found at least 14 more native species to add to the list given to us by NCT. More information can be accessed on our website: <http://rogerclarke.com.au/Bunhybee>. We hope to have another open day in spring sometime to allow people to enjoy a more floriferous landscape!

Deferred grazing - a tool for sustainable management of steep hills

By Dr. Zhongnan Nie and Reto Zollinger,
Department of Primary Industries, Hamilton, Victoria

In recent years, the concept of 'deferred grazing' has been actively discussed and used to manage marginal land classes such as steep hill country by the farming communities in southern Australia. Deferred grazing involves no defoliation of pastures in a paddock for a period of a few weeks to a few months depending what is to be achieved. It is often implemented in spring or summer-autumn. During deferred grazing, a large quantity of seed is produced, which contributes significantly to the recruitment of new pasture plants. In addition, increases in reproductive tiller population with deferred grazing can result in more buds and/or higher level of carbohydrates at the plant base and roots which promote tillering and tiller survival in the following season.

The improvement in pasture density will not only improve pasture production, but also pasture persistence and ground cover. This is of particular importance in the management of marginal lands, where low ground cover and soil erosion caused by overgrazing present major production as well as environment concerns. A project, 'sustainable farming systems for steep hills' conducted by Department of Primary Industries (DPI) researchers in western Victoria from 2002-07, has developed a series of deferred grazing strategies to manage steep hill country in a sustainable and profitable manner.

The 'steep hills' project

The 'sustainable farming systems for steep hills' project, funded by DPI and Glenelg-Hopkins Catchment Management Authority, was one of the first projects in Australia to develop grazing management strategies to increase native grass population and groundcover for steep hill country. The overall aim of the project was to increase groundcover, reduce recharge and runoff and improve the seasonal growth pattern and persistence of perennial grass (predominantly perennial native grass) pastures for the marginal environments, steep hills, in central Victoria. A major component of the project was a grazing management experiment established near Ararat between 2002 and 2007. Four grazing management regimes were used in the experiment: 1) short-term deferred grazing (SD) in which pastures were not defoliated between October and January; 2) long-term deferred grazing (LD) from October to autumn break; 3) late-start deferred grazing (LSD) which started when most annual grasses had stem elongation with heavy grazing from early - mid spring; and 4) set-stocking (SS). Key results from the project are summarised below.

Impact of deferred grazing on ground cover

Ground cover remains at >70% up to mid January regardless of the ways how pasture is grazed (Figure 1). However, when a large amount of dead annual grass under set stocking is removed by grazing animals from January to March, a period of feed shortage, ground cover declines dramatically, and then increases when the weather gets cooler and some rain falls in April/May. Ground cover is consistently higher with all deferred grazing regimes due to limitation of grazing over summer/autumn and increased perennial native grass population.

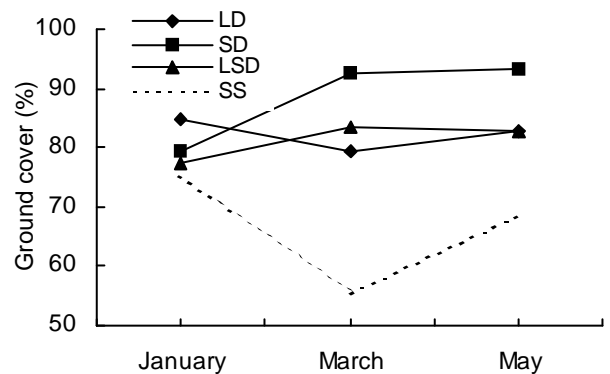


Figure 1 Ground cover under various grazing regimes (SD, LD and LSD - short-term, long-term and late-start deferred grazing; SS - set stocking).

Soil seed reserve

Soil seed reserve in autumn affects the botanical composition of pastures in the following seasons. Figure 2 shows the germinated seed population (an estimation of soil seed reserve) of perennial and annual grasses, 2 major species categories in hill pastures.

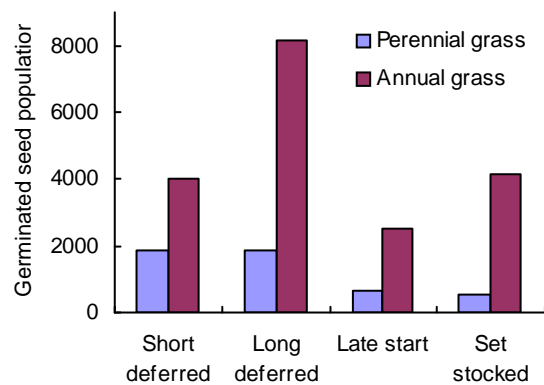


Figure 2 Germinated seed population (seedlings/m²) under short-term, long-term and late-start deferred grazing and set stocking.

The germinated seed population of perennial grasses was 1850, 1840 and 640 seedlings/m² for SD, LD and LSD, respectively, compared with 570 seedlings/m² for SS. The germinated seed population of annual grasses was 4030, 8180, 2500 and 4130 seedlings/m² for the four grazing regimes, respectively. This demonstrates that long-term and short-term deferred grazing are the most effective treatments to increase perennial native grass seed reserve in the soil whereas late-start deferred grazing is the effective treatment to reduce annual grass seed.

Plant population density

Plant population density under deferred grazing regimes increased by 31-48% for perennial grass, and reduced by 45-68% for annual grass in 2003, one year after the treatments were imposed, compared with set stocking (Table 1). These differences were further enhanced in 2004 despite strong growth of annuals across all treatments. Late start deferred grazing was the treatment with highest perennial grass density and lowest annual grass density in 2004.

Table 1 Plant population density (tillers or plants/m²) of perennial grass (PG) and annual grass (AG) under various management regimes in October 2003 and October 2004.

Treatment	2003		2004	
	PG	AG	PG	AG
Short deferred	8800	4000	8400	6900
Long deferred	9500	3900	9200	5700
Late start	8400	2300	10000	3700
Set stocked	6400	7300	5500	11500

Practical implications

To make deferred grazing work effectively, a prerequisite is to have at least 5 – 10% of desirable perennial native species such as wallaby grass and weeping grass in the pasture. The higher the proportion of desirable species, the more effective the deferred grazing will be to achieve the objectives. What deferred grazing regime to choose will depend on a number of issues:

- The proportion of desirable species in the pasture, monitored in early to mid spring;
- The objective of the practice change – whether it is primarily to increase the ground cover or to change the species composition;



- Requirement for intensive grazing – subdivision and number of livestock;
- Backup paddocks where stock can be grazed from spring to autumn;
- Rainfall and length of growing season; and
- Fire risk assessment.

Long term deferred grazing is used to build up the soil seed bank and restore ground cover in a relatively short term. If a paddock is very degraded and there is very low percentage of the desirable species, the best option would be to implement long term deferred grazing. Short term deferred grazing, though not as effective, will also increase soil seed reserve,

therefore plant population density. The additional benefit of short term deferred grazing is to utilise feed in mid summer, when there is feed shortage. Late start deferred grazing is designed to alter pasture composition – lifting the perennials while suppressing the annual grasses. This method should be used when there is a reasonable amount of desirable species (>20%) in the pasture and the capacity for intensive grazing in spring (e.g. subdivision and stock requirement) is met. The timing of grazing in spring for this method is critical – heavy grazing is required whenever most annual grasses elongate (depending on season) and before seed heads emerge so that the growing points can be removed. What can be achieved and requirements for individual grazing management strategies are given in Table 2.

Table 2 Effectiveness and requirement of the long term (LD), short term (SD), and late start (LSD) deferred grazing and set stocking (SS) in achieving specific targets (P=Yes, O=No).

What is to be achieved or required?	L D	S D	L S D	S S
Increase ground cover	P	P	P	O
Increase plant population density	P	P	P	O
Strongly effective in building soil seed bank	P	O	O	O
Increase perennials and suppress annual grasses	O	O	P	O
Need intensive grazing control	O	O	P	O
Provide feed in summer	O	P	O	P
Reduce fire risk	O	P	P	P

Reto Zollinger, co-author and FOG member, provided this lovely photo of a 'Well managed paddock under deferred grazing near Ararat SW Victoria'.

Australia's Biodiversity Conservation Strategy 2010-20

Tony Lawson

The Consultation Draft of *Australia's Biodiversity Conservation Strategy 2010-20* (ABCS) was released on 23 March. It was prepared by the National Biodiversity Strategy Review Task Group under the auspices of the NRM Ministerial Council. The document sets out a national framework to address the decline in biodiversity, by aligning activities across all governments and the community and private sectors.

The draft strategy is intended to guide how governments, the community, industry and scientists manage and protect Australia's plants, animals and ecosystems over the next ten years. This is particularly important in the face of threats to the environment from climate change, habitat loss and fragmentation, and invasive species. Public information sessions were being held around Australia in April and comments closed at the end of May.

As this is an important document, I considered it useful to summarise for FOG members the principles that underpin development and implementation of the strategy, to examine the threats to biodiversity described in the strategy and to list the six priorities for change.

There are ten principles. These underscore much of FOG's thinking. First, biodiversity is essential for our existence, Second, biodiversity is of value in its own right. Third, biodiversity is best conserved in its natural state. Fourth, the state of biodiversity reflects the state of the nation. Fifth, natural systems are dynamic but have a finite capacity to respond to changes in their biodiversity. Sixth, everyone should apply the precautionary approach to biodiversity conservation. Seventh, all Australians have a stake in biodiversity and should contribute to its wellbeing. Eighth, our efforts to conserve biodiversity must acknowledge and respect the culture, values, innovations, practices and knowledge of Indigenous peoples. Ninth, biodiversity should not be further degraded by the actions of the current generation. Tenth, an ecosystem approach to biodiversity conservation should be used to maximize conservation outcomes.

The main threats to Australia's biodiversity are seen as one, climate change (resulting in conditions such as prolonged drought); two, invasive species; three, loss, fragmentation and degradation of habitat; four, unsustainable use of natural resources; five, changes to the aquatic environment and water flows; and six inappropriate fire regimes.

The proposed actions sit within a list of six 'priorities for change' that must be made as a matter of urgency. The first is *building ecosystem resilience* – ensuring that our natural environments are able to retain their biodiversity values and critical ecological functions

in the face of growing pressure, including from climate change. The second is *mainstreaming biodiversity* – ensuring that all Australians understand how their lives and actions affect biodiversity, and how biodiversity supports them. The third is *knowledge for all* – improving, sharing and using our knowledge of biodiversity. Four is *getting results* – improving delivery of conservation initiatives. Five is *involving Indigenous peoples*. Six is *measuring success* – measuring and reporting the strategy's implementation and effectiveness and being accountable for meeting the targets that are set.

In the draft strategy, each priority for change is linked to objectives, actions and results.

The ABCS contains eleven case studies, including *Environmental Stewardship* (ES), which in the first instance is targeted on the box gum grassy woodland (BGGW) ecological community. Less than five percent of BGGW remains in good condition occurring as scattered remnants across its geographic range. ES provides long-term payments to land managers to protect high value environmental assets on private land.

Wadbilliga camping weekend

cont. from page 8.

and lightning, happened to glance down in time to see his keys slipping out of his pocket onto the ground. The *Casurina nana* had ripped a hole in his pocket. Very lucky!

My only disappointment for the weekend was the devastation along the Tuross Rd just to the south of where we camped. Hundreds of hectares of ribbon gum (*Eucalyptus viminalis*) have been brutally cleared, even along the road verge! There was ploughing going on – no 'minimum till' in this neck of the woods!

Otherwise the weekend had something for everyone: two grassland treats, a couple of inclines for the climbers, shady forests to shield us from the warm weather and a collection of endemic species. However we definitely need another opportunity to properly explore the other part of Adam and Kate's property, to venture further up the shady drainage line into the forest, perhaps to finally reach the tree ferns that are on their species list. Once again, it was an excellent group of campers, and we were especially privileged to have John Knight from the Eurobodalla Botanic Gardens as part of it. Of course, in spite of the few millimetres of rain on the Sunday afternoon, it was all very dry, whether in the forest or swamps, and the whole area was in dire need of a drink.

Ladies' tresses (Spiranthes sinensis)

An attractive and easy to recognise orchid which likes wet places

Michael Bedingfield

The spring and summer of 2000-2001 was a good time for native flora, a productive season for plant growth with above average rainfalls. We were lucky to have several such good seasons around that time, and the current drought doesn't allow our local wildflowers to flourish and show their glory. In January of that summer I found a spring on the slopes of the foothills to Mount Rob Roy. In recent dry summers that spring has been dry, but back then I had a great find. Growing in amongst a dense growth of rushes was a ladies' tresses orchid. It was raising its flowering head above the mass of foliage and was quite striking, with its many flowers, coloured bright pink or magenta, and white. The flowers were arranged in a beautiful and perfect spiral around the pale green, upright stem, rising to a bud-filled tip which promised that more flowers would open up soon.

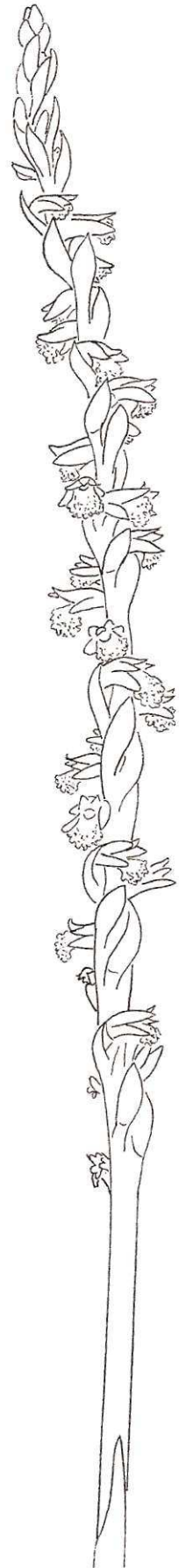
The flowers of this orchid are produced locally during January to March, and they are up to 6 mm wide, and tubular in appearance. The flower stem is slender and erect, can grow up to 50 cm tall and carry up to 60 flowers. The stem rises from a cluster of up to 10 erect, grass-like leaves at the base, which can be up to 15 cm long and 10 mm wide. The plant is perennial, having fleshy roots which apparently survive the drier times, and can produce a new flower stem each year, if the weather permits. Our small native bees usually pollinate the flowers, but there are forms of the plant which can self-pollinate. From this the plant can make up to half a million dust like seeds in a season.

Ladies' tresses are easily recognisable in Australia because it is the only species of the genus which occurs here, though there are about 42 species worldwide, the others occurring in Europe, Asia and America. Our species also occurs in Asia, New Zealand and Papua New Guinea. It occurs in eastern NSW on the coast and tablelands and spreads up into the snow country, and is also in Queensland, Victoria, South Australia and Tasmania. The preferred habitats are open forests, grassy woodlands and grasslands, in wet areas such as in swampy ground, springs or soakages. In addition to the above-mentioned find, in the same year I also found the orchid growing next to the Murrumbidgee River near Point Hut.

Some authors refer to the ladies' tresses orchid as Austral ladies' tresses. The botanical name is *Spiranthes sinensis*, and is pronounced spie-RAN-theez sie-NEN-sis. The meaning of '*Spiranthes*' comes from the Greek words for spiral and flower, with '*sinensis*' meaning Chinese. It was believed to be endemic to Australia and was formerly known as *S. australis*. But it was found to be identical to the species with the present name which occurred in South East Asia, and so was re-named. The plant does have some variations in Australia and some botanists think it may well be divided into several species in the future. For example, on the coastal headlands of northern NSW a variety exists which is stockier and has larger flowers. And self-pollinating forms are found near Sydney with smaller flowers which don't open so widely. Since the science is constantly evolving, some new names may appear some time down the track.

These days the internet provides a source with many images of our native plants. So if you wish to see the ladies' tresses in colour, simply do a Google search on "*Spiranthes sinensis*", then click on "Images", and you will see some fine photographs. The accompanying drawing shows the flower-head of the plant at normal size.

Ladies' tresses - a colourful name for a very attractive orchid.



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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.

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