

News of Friends of Grasslands

Supporting native grassy ecosystems

November-December 2006

ISSN 1832-6315

Program

SAT 11 NOV 9:30am to 3:30pm **Old Cooma Common Working Bee** Spraying St. John's wort and African lovegrass, cutting and daubing briars, seed removal, mapping weeds, and applying monitoring procedures. Some tasks will not involve herbicides. Enquiries and car pooling: Margaret Ning (contact details back page).

WED 15 NOVEMBER 12:30 to 1:15pm **Visit St Mark's Grassland** with Benj Whitworth. St. Mark's grassland is a hotspot of grassland biodiversity in the heart of Canberra (Blackall Pl., Barton).*

SAT 18 NOV 1:00 to 4:30pm Workshop on discovering insects with Kim Pullen and Roger Farrow as advertised in last newsletter. Enquiries: Janet Russell (6251 8949) or fogcanberra@yahoo.com.au.

WED 22 NOV 5 to 6pm **Tarengo Leek Orchid at Hall Cemetery**. Join us at Hall Cemetery to see this threatened orchid species and many other grassy woodland specials. Meet corner Barton Highway and Wallaroo Road at5pm.

SAT 25 NOVEMBER 10-11am **Visit Mulangarri Grassland Reserve** with Benj Whitworth. Mulangarri is part of the Gungahlin grassland complex located on Gungahlin Drive opposite Palmerston. You will see the sign advertising the event on Gungahlin Drive.*

Tues-Wed, **28-29** Nov Australian Network for Plant Conservation *ACT Grassy Ecosystem Workshop*. While not a FOG activity, FOG strongly supports this workshop - it was advertised in detail in the last newsletter. For enquiries contact Sally Stephens, Ph: 02-6250 9523 or website: http://www.anbg.gov.au/anpc.

SAT and SUN, 16 and 17 DEC **Southern grasslands and swamps with Roger Farrow** See article on page 2.

* If you can assist with advertising this event (e.g. work or elsewhere), which is open to the public, or plan to attend on the day, please contact Benj (contact details back page).

Membership renewal

PLEASE READ THIS CAREFULLY: A membership renewal form is enclosed. Yes, it is time to get out the cheque book and renew your membership for 2007. We have kept our fees to the current low level: \$20 for individuals and families, \$50 for corporations, and \$5 concessions for those on social security benefits. Donations are welcome as the budget is tight.

Please complete the renewal form and send it in promptly as much effort is otherwise involved in chasing up members to renew. If you don't want to renew, please return the form or email us, and tell us that you do not want to renew. If you have any doubts about rejoining, please remember that FOG needs your support.

When completing the form, please ensure that your details, especially your e-mail address are correct. E-mail has proved an effective way of reminding members about activities/changes to activities between newsletters.

Please note that if you joined (not renewed) since 1 July your membership is up to date, i.e., paid until end of 2007, and you will not have received a membership renewal form.







Mauve diuris and two sun orchids seen at Mannifera Hill. See FOG visit to Lake Bathurst page 6.

News Roundup

Destruction of GED habitat

Geoff Robertson

On Thursday 17 August, I was contacted by Catherine Naylor (Canberra Times) who asked me whether I was aware that the site the ACT government had swapped for the long-stay caravan park, is land that is habitat for the grassland earless dragon (GED). I suggested that she was probably incorrect and I spent some time with her as we went through Figure 2.4 of the ACT Lowland Grassland Conservation Strategy which shows the location of GED habitat.

Next day she confirmed that site JE02 (GED habitat) had been chosen. The site is located at the corner of Narrabundah Lane and Jerrabomberra Avenue. FOG has visited it on a field trip.

On 19 August she reported in the Canberra Times that the land swap

Future events

Margaret Ning

FOG is planning its program for 2007 now and suggestions are welcome. Two planned events (for diaries) are:

SAT 13 JAN 9:00am to 12:30pm Workshop on propagating native grasses and forbs with Warren Saunders. For enquiries and registration contact Janet Russell on fogcanberra@yahoo.com.au or (6251 8949)

SAT 24 FEB 4 to 7:30pm FOG's AGM and free barbeque

In this issue

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- News roundup
- A FOG trip with no grasses
- Images of possibilities
- Living Murray success story
- Milkmaids Burchardia umbellata – a milk white lily

negotiated to save the Narrabundah long-stay caravan park residents from eviction is under a cloud because the site in question is home to the GED.

She said that while some type of environmental assessment is involved, FOG, amongst others, has expressed its disappointment. She quoted me as saying that the "plan for this area (Jerrabomberra Valley where there is extensive grassland and dragon habitat) was to put in place developments that wouldn't have big impact on the land. If they were to build on that spot, it would be going back on the ACT Government's own efforts to protect the animals, and that is very disappointing."

I was also interviewed on Wednesday 23 August on 2CC *Drive Time* to describe the dragon, the known science behind it, and FOG's response to the ACT Government's decision. I concluded that while there may be some commonwealth government environmental impact investigation of the JE02 site, the commonwealth has already allowed removal of dragons at the airport, and I doubt it will take a strong stand.

Southern grasslands and swamps *Roger Farrow*

On this tour (16 and 17 Dec) we plan to visit the Trigger Plant Grassland (TPG), the Gentian Grassland (although no gentians at this time of year), and Nunnock Swamp. For those staying any night, there is a choice of camping, Garuwanga or motel.

The TPG is a highly diverse little patch of woodland with a grassy understorey. It takes in an adjacent drainage line with a canopy of manna gum (*E. viminalis*) as well as more open secondary grassland with scattered snow gums and patches of low shrubs. It is in the moist top-of-escarpment belt. Apart from the eponymous trigger plants there are huge numbers of golden moth orchids (*Diuris monticola*), purple flag (*Patersonia sericea*) and the rare and en-

dangered pale golden moths (*Diuris ochroma*), which flowers in mid-December.

This is a joint FOG and Australian Native Plants Society activity. To book, contact me – details back page.

STEP update

The Southern Tablelands Ecosystems Park (STEP), which is strongly supported by FOG, has announced that it likely has a permanent site as part of the International Arboretum and Gardens just off the Tuggeranong Expressway not far from the western end of Lake Burley Griffin. This is an exciting development and a great location. STEP is renewing efforts to recruit membership. A membership form (\$10 for ordinary members) is enclosed with this newsletter.

STEP plans to create a regional botanic garden focused on Southern Tablelands ecosystems, as well as an ecosystem recovery centre.

Climate change

Geoff Robertson

Hopefully the climate will change on this issue as more people see Al Gore's magnificent documentary *an inconvenient truth*. For starters, you might wish to join the *Getup Campaign* which initially aims to enlist 250,000 Australians of voting age to urge politicians to take action now. For more information look at www.getup.org.au/campaign/Climate ActionNow.

For those around Canberra join the walk against warming on Saturday 4 Nov 2006 (See brochure enclosed).

GA open farm day, Cooma

Greening Australia's last open farm day is on Friday 24 Nov (10am-3pm) at Black Plain and Black Springs, west of Cooma. Speakers will be David Eddy on grassland management and Elizabeth Lindsay on soil organisms, litter and nutrient recycling. Morning and afternoon tea and lunch provided. For more info, contact GA on 02 6253 3035.

Blundell's Flat survey

7 OCTOBER a fun and productive day was held at Blundell's Flat, where FOG had organised a biodiversity survey.

Early on the Saturday Jenny Bounds

recorded thirty bird species, including goldenheaded cisticola, golden whistler and southern whiteface. Three more were added late in the day.

The plant survey people turned up at 1:15pm after meeting at Weston. Mark Butz who is a driving force on Blundell's (see bonding without bogging in the last newsletter) described the area and the purpose of the survey before the group started to botanize properly.

Blundell's Flat is a mosaic of vegetation communities. The group undertook surveys of three grassland sites, one dominated by kangaroo grass (it had 27 native grasses and forbs (g/f) and 4 shrubs (s)) and the others by various forms of poa (21g/f and 5s, and 28g/f and 6s, respectively), a dry forest site (18g/f and 12 trees/s) and wetland (12g/f and 2t/s).

While the areas surveyed generally had many run-of-the mill species and the many woody and herbaceous weeds, several orchid species were recorded, including a huge patch of *Diuris pedunculata* a NSW threatened species of double-tail orchid. Many additional and exciting plants were also recorded outside the sites chosen. Other vegetation communities remain to be surveyed and more dry forest sites should be surveyed.

Scott Wyatt and Geoff Robertson tried their hand at finding reptiles, but the conditions were not good that. Nevertheless, they saw a water dragon. Sarah Hnatiuk also provided a large quantity of drinks on behalf of

Greening Australia which were very welcome.

Around 4:30pm, Rachelle McConville (Frogwatch) and Bayne Geike (Waterwatch) turned up with a tribe of volunteers. A few of the plant peo-





A view of Blundell's Flat from above and FOG botanists

ple joined them. As evening fell Bayne and co had collected several samples of water and undertook a macro invertebrate and water quality survey.

After dark, Rachelle fed the mob and then she demonstrated how to record the frogs. The weather was cold and the frogs were not greatly cooperative - only *Crinia signifera* and *Litoria verreauxii* talked to us.

More trips are being planned – contact Margaret (details back page) if you wish to be involved.

Held over

Editor

As I needed to advance the cut off date for the newsletter and again had the embarrassment of too much material, reports on FOG visits to Rainer

> Rehwinkel's grassland garden (5 Oct), Terrick Terrick and Hamilton (19-23 Oct), and Murrumbateman Cemetery (26 Oct) have been held over.

Turallo

Jacqui Stol

FRIDAY 22 SEPTEM-BER As an impromptu visit, Rainer Rehwinkel decided to hold a one and a half hour walk at Turallo Nature Reserve on Friday 22 September to look at early flower-

ng. We all

We all enjoyed the wander around Turallo Nature Reserve. Things were pretty quiet due to the very dry conditions, however it's always nice to see an intact grassland of significant size in a classic Southern Tablelands agricultural landscape, especially as Turallo had once been earmarked for development after its

original life as a TSR. The themeda is pretty dense and apparently will be slashed at some stage to reduce the heavy thatch and open it up a little – where is a Diprotodon when you need it (or even some of those woolly herbicides they call sheep!).

A few golden moth orchids were flowering but very little else and not in any real numbers – about the only other plants flowering were *Plantago varia*, common woodruff (*Asperula conferta*), early nancy (*Wurmbea diocia*), lemon beauty head (*Calocephalus citreus*), *Cryptandra amara* (flowering prolifically), and some burr daisy (*Calotis anthemoides*).

What I found also quite fascinating is that the sun moth (and grassland ear-

less dragon) is not found on that eastern Bungendore side of the range of hills. Rainer explained that the hills acted as a barrier to their dispersal.

We also looked at a few large old candlebarks (*Eucalyptus rubida*). Regeneration was occurring and where one of the six trees had fallen due to old age the regeneration had really taken off and was at least three times the size of the others still suppressed by the canopy overhead. Thanks Rainer for a very pleasant stroll.

FOG display

15 SEPTEMBER Margaret Ning exhibited the three FOG posters at the Catchment Expo at Young. The posters show examples of remaining remnants of our natural grasslands and grassy woodlands that one dominated large areas of south east Australia, some of the wonderful plants and animals that can be found in these remnants, and an explanation of FOG's objectives and activities. Margaret also had copies of Grassland Flora for sale and gave away complimentary copies of the FOG newsletter and other information. While a relatively quiet day, it was a chance to talk to a few people about FOG and catch up with some old friends.

PLANTS OF THE ACT

A Guide to the Indigenous and Naturalised Vascular Plants of the ACT excluding Jervis Bay

2 CD-ROM SET

- Over 4000 full-colour photographs of 1300 species of the 1350 species found in the ACT
- Information on how to identify each plant species, and how to tell it apart from similar species
- Information by field botanist with 20 years experience
- Requires 1.2GB hard drive space to download to your computer

Full Licence \$150 (student and quantity discounts available – ask us). Send payment made out to 'Wildwood Flora', Wildwood, 367 Koppin Yarratt Road, Upper Lansdowne NSW 2430

Bird fights back

Mark Rowland, CSIRO, Canberra

For those venturing to the back of our site - beware also of a rather "intimidating" red wattle bird, at the intersection of Middle and Silo Roads. It is not just the magpies that are swooping this season.



Barking up a gum tree

Rosemary von Behrens, active FOG member, is holding her first solo exhibition as a painter, 23 Oct to 10 Nov in the Belconnen Community Council Gallery, weekdays for three weeks. The exhibition title is *barking up a gum tree*, focusing on the clash-of-nature-and-technology. Paintings are colourful, semi-abstract, featuring patterns found in gum barks and wood, often contrasting with chainsaw marks.

Kaleen HS grassy woodland Margaret Ning

SATURDAY 23 SEPT I made a flying visit to Kaleen High School to have a look at an area in front of the school that had been replanted with grassland and grassy woodland plants to replace the old dead acacias that had become an eyesore, and indeed a fire hazard. A handful of volunteers were weeding and tidying up the area after the long winter. The area is to be used primarily for education purposes and the group has a number of ideas on specific ways that can happen.

It was already looking good as some of the earlier season forbs were flowering, though some others would be a while yet, e.g. the lemon beauty heads (*Calocephalus citreus*). A couple of members of the Kaleen High School group are already FOG members and they are keeping FOG posted re their efforts, and would of course, welcome any help that FOG members would like to give them.

I know that there are some of you out there who love to roll your sleeves up to do battle with the weeds that invade our area, so please give some thought to whether you could give some of your time next time the group has a working bee.

An article on the Kaleen HS landscape project was included in the Sept-Oct 2005 newsletter and a further mention of the project was made on page 5 of the Jan-Feb 2006 issue. – editor.

ACT as biosphere reserve

31 AUGUST. Following a further request from the Standing Committee on Planning and Environment Legislative Assembly for the ACT, FOG has made another submission on the ACT as a biosphere reserve. FOG has been following this development closely and made an earlier submission (see May-June and July-Aug newsletters). A copy of the latest submission may be obtained by contacting fogcanberra@yahoo.com.au. The Conservation Council has been requested to prepare the ACT Government's submission.

Stipa article on Garuwanga

JUNE 2006 Stipa Newsletter Sue Rahilly, Stipa President and FOG member, recounts a weekend in Nimmitabel, the romance of native grasses she and partner Patrick spent at Margaret Ning's and Geoff Robertson's property, Garuwanga.

Nat veg training, Geelong

Greening Australia is offering a wonderful one day training series on native vegetation on your property in Oct, Nov, Feb, March and Apr). To enquire contact Rebecca Passlow rpasslow@gavic.org.au or visit www.greeningaustralia.org.au.

BulbudgereeGeoff Robertson

boulder outcrop.

24 SEPTEMBER Margaret and I had a brief visit to Bulbudgeree, the property of George and Kerry Taylor (neighbours of Sue and Patrick Rahilly) near Wellington, to see a population of *Zieria obcordata* which occur on a stunning granite

George was not exactly sure where the plants were but he eventually located them. A previous survey in 2002 had placed blue ribbons on the surviving plants. The zieria is a small delicate shrub which occurs under the base of large granite boulbers. It is a deep green with a very small greenish white flower. Unfortunately we saw only three flowers on the four plants that we saw. To try to get photos of it, not very successfully, one had to crouch or try to curve around the boulders.



There were many dead plants with blue ribbons, nothing like the 77 plants found there in 2002. No doubt this was due to the drought. *Zieria obcordata* is known from five populations, on westerly slopes, on rocky outcrops, one near Wellington (Bulbudgeree) and four around Bathurst. The Bulbudgeree site is the biggest (1ha) and has the most plants, 77 out of the 221 found in 2002.

There are 44 species of zieria, 43 are endemic to Australia. Twenty-two of these species are listed as threatened, and seventeen of the 33 species found in NSW are listed as threatened.

The rest of our time was spent at Alma, Sue and Patrick's property, exploring the different ecosystems and looking for birds and an elusive



Alma. Native pasture in foreground and box woodland and dry forest in background.

plain legless lizard (*Delma inornata*) which she had seen before our arrival.

At Alma, cattle graze on native pastures and secondary grasslands (with many magnificent forbs) and the grassy understorey of some wonderful box woodland. Cattle are excluded from a large part of the dry forest areas which are managed for conservation. We were struck by many flowers which seemed familiar but somewhat diminutive.

As many readers know, Sue is President of Stipa where she does a magnificent job. Manipulating native grasses to produce good quality native pastures for profit is a passion. She is also very interested in many of the ideas coming out of biodynamics.

Reference: *Draft recovery plan*, *Zieria obcordate*, February 2005.

Victorian alpine mossland

The winter issue of the *Web* has reported that alpine mosslands (alpine bogs) have been listed as threatened in Victoria and have been nominated for Commonwealth listing. The plan is now to start restoring this community.

LA report on DV 257 – Crace *Grasscover*

The ACT Legislative Assembly Planning and Environment Committee released its report on Variation to the Territory Plan No 257 - Suburb of Crace Gungahlin in August and it is available on the web (www.parliament.act.gov.au/committees/index1.a sp?committee=55). Under the Land (Planning and Environment) Act 1991, the Minister must take the findings of the committee into account before making his decision on a draft plan variation.

FOG's submission to the Committee (see page 6, July-Aug newsletter) emphasised the need for retaining biodiversity and/or compensating for its loss (especially as the area has numerous old growth yellow box and red gum trees), and voiced its concerns about possible impacts of the suburban development on nearby grassland reserves and striped legless lizard habitat. (The submission is available from FOG or from the website).

The recommendations in the report address: the protection of aboriginal heritage, widening buffer areas to protect grassland reserves, strengthening woodland corridors, cat containment, the introduction of a "biodiversity restoration initiative", community education initiatives, greater

protection for existing trees, use of seed 'from local seed provenance', and a range of water design issues.

The Committee's report is another example of this Committee's willingness to listen to the community and research the issues presented to it. FOG would like to congratulate it on its report. It has certainly responded positively to FOG's and others' submissions.

FOG visit to Lake Bathurst Groundcover

14 OCTOBER 2006 While only a small contingent (five people) headed off to Lake Bathurst to visit newly discovered grassland sites that had been found as part of the surveys undertaken by the National Temperate Grassland Recovery Team, they were in for a treat. Given the poor season until now, the group expected to see poor specimens of grasslands, but as the area around Lake Bathurst has had slightly higher rainfall, they were pleasantly surprised.

Greg Baines who was to have led the group had had to pull out and so we were shown around by David Eddy who had been involved with Greg in undertaking the surveying. Greg did excellent preparation work and David knew of the site in the first instance and was very familiar with the second site. The weather forecast had promised a hot day, but in the morning apart from a strong wind the conditions were good – but not for photographing. During the afternoon, the wind grew increasingly strong and unpleasant but that did not stop the group from thoroughly enjoying themselves.

The first site was on Cullulla Road, which was crown land leased to young grazier who was developing sympathy for conservation and who was slowing taking control of bad patches of serrated tussock. Unfortunately, he could not join us on the day. The site was relatively flat with occasional slight rises and channelled in some areas. On the slightly higher areas there was themeda grassland with a rich biodiversity, while the somewhat lower areas which would be very damp in wetter times could

also be described as grassland but were a little more weedier. There were occasional clumps of snow gums and a small clump of *Eucalyptus aggregata*.



Margaret, Richard and Bernadette struggle against the wind on FOG's Lake Bathurst trip.

As FOG had been asked to prepare a species list on the day, Margaret produced the survey form and the plant name calling commenced. We counted 41 native forbs, 16 native grasses, and three sub-shrubs. Morning tea was taken late, and while the group had decided to move to the second site, they were distracted by a large roadside reserve, also a high quality grassland, which held plenty of interest.

After lunch the group moved to the second site where we were met by the enthusiastic owners, Naomi and Richard. The name of the property was Mannifera Hill owing to a nice remnant mannifera forest on the top of the hill. That is where the plant surveying started and gradually moved down the hill, recording many plants only found in the ecotone and then the high quality grassland. As the groups moved down the hill from the woodland to the grassland they were overwhelmed by the sheer profusion of tiger and mauve diuris orchids growing in the grass - many hundreds were seen. While more

cryptic, there were huge numbers of sun orchids with at least three species in flower. For the birdos, a pair of white fronted chats were seen, and did I mention a brown snake!

Regional bird decline

Geoff Robertson

The June issue of Canberra Bird Notes published by the Canberra Ornithologists Group (COG) contains a statistical analysis of trends in detection rates of woodland birds in the ACT, 1998 to 2004 by Ross Cunningham and Alison Rowell. The analysis is based on observations of 63 birds species surveyed over six years. While the analysis is capable of providing hard evidence of what is happening to our woodland birds, the detailed graphs and the authors' conclusions reveal that for many species it is unclear what trends are actually emerging.

Clear declines have occurred with eastern rosella, tree martin, willie wagtail, black-faced cuckoo shrike, white-plumed honey eater, grey currawong, common starling, redrumped parrot, superb fairy wren, dusky wood swallow, mistletoe bird, olive-backed oriole, and common myna. Clear increases have occurred with golden whistler and speckled warbler. A number are described as stable including crested pigeon, scarlet robin, weebill, striated thornbill, noisy miner, grey butcherbird, Australian magpie, and crimson rosella. According to the authors, explaining the factors that underpin the data is very difficult. The 2003 fires and drought have had impacts and the paper provides some interesting insights into possible impacts. For many of the threatened species, low numbers of observations make any clear emergence of trends very difficult to discern, which one might interpret as at least not bad news - they are still hanging in there.

For someone such as myself, who has spent a lifetime pouring over such analysis, these are very interesting data and particularly useful for analysis of individual species. Congratulations COG.

Endangered plant discovered

Steve Douglas reported on the discovery (*Biodiversity Research Newsletter* issue no. 20, July 2006 of the NSW Biodiversity Network) of the endangered plant *Cullen parvum*, a mauve-flowering pea. This was found in the recent ecological survey, in which FOG and ANPS participated, of degraded remnant woodland at the former Catholic monastery at Galong NSW.

The discovery confirmed by Dave Mallinson (Australian National Herbarium), is a significant range extension for this species which was previously unknown from the NSW Southern Tablelands botanical division. *C. parvum* is recognised as threatened in NSW, Victoria and SA.

The survey was undertaken as part of Steve's research into the potential for identifying and protecting significant ecological values on land owned by religious institutions that have undergone an 'ecological reformation'. Readers will recall Steve's article on *Australian mainline churches and environment* in the Sept-Oct 2005 newsletter.

The remnant woodland patch is recognised as an endangered community in NSW and nationally (box/gum



Cullen parvum photo by Margaret Ning

grassy woodland) and is used by the threatened superb parrot. The remnant is to be protected under a voluntary conservation agreement. Other ecologically significant properties owned by religious organisations in eastern Australia have been identified, and it is hoped that these will be progressively surveyed and protected.

Grasses of South Australia

For the first time a comprehensive handbook has been prepared on the *Grasses of South Australia*, published

by Wakefield Press Distribution (\$49.95). It includes 450 line drawings and twenty coloured paintings illustrating the typical members of each tribe. For further information contact 08 8362 8800 or www.wakefieldpress.com.au.

David Tongway workshop

23 NOVEMBER BRAIDWOOD If you have seen David Tongway in action teaching about landscape function here is your chance. Contact the Shoalhaven River CMA by 8 Nov on 4842 2594. The workshop is from 9:30 am to 3:30pm and is free (lunch provided).

Cat among the pigeons

In the latest edition of Gunsmoke, the Gungahlin Community Newsletter, Michael Haywood (Gungahlin Veterinary Hospital) talks about the issue of cat confinement in the new ACT suburbs of Forde and Bonner. While he states that "a lesser known fact is that in a city like Canberra, the population density of native species is actually higher than in surrounding pasture and bushland ... and the scientific literature is somewhat contradictory and confusing about the impact of cats on wildlife", he concludes that cat confinement is a win/win for cats and conservation.

A FOG trip with no grasses

Maggie Nightingale, Sarah Hnatiuk and Jane Paul

For FOG's trip to Eden, Saturday was written by Maggie, Sunday morning by Sarah and Sunday afternoon by Jane. Maggie's contribution included notes on each of her list of sightings which make fascinating reading, but were too long to include. I am happy send her complete article to anyone who is interested- editor.

Saturday

16 SEPTEMBER a group of FOG members and others visited Green Cape, south of Eden, and nearby heathlands of southern Ben Boyd National Park, with Jackie Miles.

It's cheering that, in a drought year, there was somewhere to go for a good spring display. The far south coast had had good winter rains. This trip was well-timed for flowering, and we had the luxury of instant identifications by Jackie Miles if we couldn't name plants ourselves, although as I didn't quite catch all the names there are some '?' below. No doubt a few more species that don't appear below were seen by other people - we were a bit strung out along the track at times due to our absorption and the frequent use of many cameras and the three excellent books by Betty and Don Wood Flowers of the South

Coast and Ranges of New South Wales, published from 1998 to 2000.

Plants and other interesting phenomena are listed below in the order that they were encountered. Many plants were seen repeatedly, with varying abundance.

Eight yellow-tail black cockatoos
Aotus ericoides
Leucopogon parviflorus
A whale breaching
A large group of seals
Leptospermum laevigatum
Comesperma volubile
Lomandra ?filiformis
Fungi
Allocasuarina littoralis
Lindsaea linearis

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Lepidosperma concavum Ring-tail possum nest, probably abandoned.

Banksia integrifolia Monotoca elliptica Acacia longifolia var. sophorae Centrolepis strigosa subsp.

Strigose

Selaginella uliginosa Hypolaena fastigiata Burchardia umbellate Mating 'cockroaches'

Banksia serrata

Very bright orange bracket fungus. Pycnoporus coccineus, a common and widespread species on small dead wood..

Darwinia camptostylis Petalochilus carneus

Whipbirds were heard.

Vegetation height decreased

Banksia serrata

Acacia suaveolens

Crowea exalata

Aotus ericoides reappeared.

Bossiaea ensata

Epacris impressa

Hovea heterophylla

Tetratheca thymifolia

Crowea exalata

Hybanthus vernonii

Lasiopetalum macrophyllum

Vegetation was of varying height.

Aotus ericoides was evident again.

Patersonia glabrata, and possibly also P. sericea

Kennedia rubicunda

Crowea exalata in flower at last.

Sprengelia incarnata

Allocasuarina littoralis

Allocasuarina paludosa

Ricinocarpos pinifolius

Schizaea bifida

Small Bossiaea ensata and Selaginella uliginosa

New Holland honeyeaters were about Dillwynia rudis

Hakea decurrens subsp. physocarpa

Pimelea linifolia

Xanthosia pilosa

Drosera auriculate

Euphrasia collina

Comesperma ericinum

Hakea ulicina

Grevillea lanigera

Argentipallium obtusifolium

Scaevola ramosissima

Prasophyllum elatum

Pomaderris ferruginea

Glossodia minor Pultenaea daphnoides

Craspedia canens

Helichrysum scorpioides

Wrens were heard. Hibbertia empetrifolia Dampiera stricta Indigofera australis





Some images on day one

Correa reflexa Persoonia levis Acacia ulicifolia Allocasuarina paludosa again Baeckea ramosissima Lyperanthus suaveolens Dillwynia rudis again.

A Sea Eagle drew our eyes upwards for a

Over this walk of only a few km, I was fascinated by the small size at which familiar species or genera were flowering, and by the change in the species mix over short distances, that was associated with changes in aspect, altitude and probably fire history and previous human use.

It was a wonderful walk, with perfect weather and this amazing diversity of plants (at least 58 species in 30 families) seen just from the track or close by, plus plenty of faunal and fungal

interest. Many of us felt that we had 'learned' many new species. (See more photos of these plants by Jackie

> Miles and Max Campbell at www.thebegavalley.c om/plants.html, and plot the vouchered Australian distributions of most species

www.anbg.gov.au/av h). A big thank you to Margaret, Jackie and Max for making the trip possible.

Bibliography:

Jones, D.L. (2006), A Complete Guide to Native Orchids of Australia Including the Island Territories, Reed New Holland, Sydney, NSW. Harden, G. (ed.) (1990-1993), Flora of New South Wales, Volumes 1-4. Royal Botanic Gardens Sydney, NSW. Wood, B. and Wood, D. (1998, 1999, 2000), Flowers of the South Coast and Ranges of New South Wales (I, II, III), Wood's Books, Weetangera, ACT.

www.anbg.gov.au/cgi-bin/apni (accessed Sept-Oct 2006), Australian Plant Name Index (APNI) and.www.anbg.gov.au/win/index.html (accessed Sept-Oct 2006), What's Its Name?

Sunday morning

17 SEPTEMBER Jackie guided us to a patch of red bloodwood/blackbutt forest a few kilometres north of Eden, where a rather hot controlled burn went through about 18 months ago. There was more leaf litter than we expected, perhaps not surprisingly given the burning of the trees to a considerable height. And there was a scattering of flowering plants, abundant compared with those on the rather denser parcel of unburnt forest across the road. The plants that particularly caught our attention were Caladenia catenata, Correa reflexa, Pimelea linifolia, Poranthera corymbosa, Ricinocarpus pinifolius, Stackhousia monogyna, Viola hederacea,

and several peas (Kennedia prostrata, Bossiaea obcordata, Platylobium formosum and Pultenaea linophylla).

We drove on to a loop walk through forest and along the coast that gave us views of the orange and white clays of the Pinnacles. The first part of the path crossed low banksia shrubland where we saw the parasitic subshrub, Olax stricta. We then passed into coastal woodland where Podocarpus spinulosus, Bossiaea cinerea, and Boronia muelleri or pinnata were among the things of in-

ended among mature pines, remnants of an early arboretum.

Sunday afternoon

terest. The loop walk

After visiting the Pinnacle on Sunday morning, two of the 'Escape from Winter' group were fortunate enough to have time to spare and accompanied Jackie and Max to assess a severely burnt strip of vegetation along the cliff fronting the sea at Merimbula. On New Year's day 2006, with the temperature at 44 degrees and a strong wind blowing, a gas bottle explosion at the nearby caravan park led to the ferocious fire that engulfed this strip of *Melaleuca armillaris* heath community. Only the width of the roadway separated the fire from houses facing the street, no doubt a terrifying experience for the home owners.

It was a shock when we pulled up at the site. Blackened and ghostlike stems stood as though crying in the breeze, while a pale and ashen deposit covered the stratum. Sounds of the sea murmuring and sucking at the rocks below added to the melancholy of the sight before us. Suddenly it became apparent that there was actually





Burnt forest and jewel beetle day two.

life among the gloom. Throughout the disastrous vista was a scattered green and mauve vision of life, quickly recognised as a member of the Solanaceae family, Solanum vescum. Many shrubs more than two metres in height were everywhere to be seen. Nothing else appeared to be alive until, crawling on hands and knees, other plants were found: Kennedia rubicunda sending out tiny runners, Zieria littoralis, Pratia, Glycine and another Solanum. Picking our way gingerly, more tiny sprigs of vegetation were discovered Kunzea ambigua, Acacia ulicifolia and A. suaveolans, Gahnia adula, Eucalyptus longifolia, Crassula decumbens (spotted by Jackie and a plant she had not seen before), and Dichondra repens. Tiny seedlings of M. armillaris

were just visible among the more robust solanums and peas. This was a great relief, as there had been no sign

> of them a month or two earlier and Jackie feared the seed might all have been consumed in the intensity of the fire. Best of all was the fleeting glimpse of a jacky lizard and the everhopeful laugh of a kookaburra, other indications of life returning and of the ecology recovering.

Around the perimeter of the fire many

weeds had already sprung up. The worst of these was probably a wide encroachment of fireweed (Senecio madagascariensis) and African lovegrass (Eragrostis curvula), both common in the district. Another weed that Jackie had not seen in the area before was lesser swinecress (Coronopus didymus), which hails from South America (Tim Low in Feral Future 1999). A golden opportunity could be taken up by the local residents to eradicate all the weeds from this area, many of which are garden escapees regenerating from rubbish being dumped on the road verge, before they have a chance to dominate the natives. Perhaps Coast-Care would be the best group to contact, although Jackie mentioned that meetings calling for environmental support from the public had not had much success.

Soon time had run out, and the two blackened inlanders took their leave of our wonderful South Coast hosts, and set off for home.

Images of possibilities Grasscover

26 AUGUST This FOG winter slide afternoon was an opportunity for FOG members to present slides on a topic/travel of interest as long as there was some ecosystem/grassy theme. Four longer and a cameo presentation

were given. Each had a strong ecosystem theme with a focus on the role of grasses within those systems, and provided some spectacular images on the chosen themes to the eighteen FOG members present. Each also had a conservation theme and challenged those present to reflect on possibilities in conservation practice.

Monaro grasslands and beyond

David Eddy, well known to FOG members, provided a tour de force of native grasslands across the continent, starting with the Monaro grasslands, then wending his way through the alps, the northern parts of the Southern Tablelands, the Hay Plain, far north-west NSW, Tasmania, grassy ecosystems of the Northern Territory, and into the Kimberley. David's slides had been taken over many years and one dated from the time he was fifteen, showing that his love of open landscapes has been a life long passion.

David is renowned as an artist with a camera who has a wonderful sense of composition, often combining up close and distance images, and extremes of colour and light, often in startling ways. FOG is indebted to David for his photos in many ways (e.g. FOG posters and FOG slide presentations), and, again on this occasion, his images were wonderful.

David is a subtle student of nature and because of repeated visits to certain haunts over many years and seasons, he was able to show the same scene through many seasons, and thus illustrate the immense apparent change that can occur in a patch over time due to seasonal, rain and drought events. FOG members would have been aware that a patch that can look unspectacular at one time can be a mass of colour on another, but what was surprising is that flower composition can also vary tremendously in good times – another example of biodiversity of grasslands. For those present, will they ever forget those many scenes of The Brothers?

Of course we were treated to many images of sensational wildflowers, and to images that illustrate that while our grasslands have much in common, they also have tremendous variation and subtlety from place to place. David's images emphasise the beauty, complexity and subtlety of our grassy ecosystems, and why FOG is committed to their identification, protection, management and recovery.

Brandy Marys

Geoff Robertson showed some wonderful slides of Brandy Mary's, a NSW State Forest grazing lease owned by Jim and Mary Kelton. An article on Brandy Mary's and its immense biodiversity and Aboriginal heritage was included in the last FOG newsletter.

Geoff said that he had visited Brandy Marys on two occasions, December 2003 and 2005, and had received a huge amount of material from Jim on the leases themselves and Bago State Forest more broadly. It had taken Geoff a long time to get his head around the many issues associated with this area of the world. He had prepared the presentation and article for the newsletter to assist Jim in his cause of publicising the importance of protecting these areas.

Geoff's presentation was a combination of his own images and images supplied by Jim Kelton. Many of the

spectacular photos of orchids and other flowers had come from Peter Branwhite, an orchid botanist, who has worked with Jim to document the 64 orchid species of Bago State Forest, including Brandy Mary's. Some fifty orchid species, including some not found elsewhere in Bago Forest, occur on Brandy Marys. Geoff's presentation showed images of what might be kept or lost.

Iran's grasslands

Roger Farrow showed images of his and his partner, Christine Kendrick, early spring botanical tour to Iran with the Alpine Garden Society. Although rainfall is low, and temperatures are low in winter and high in summer, the areas visited are relatively well watered at this time of year as a result of winter snow melt which is conserved in the gypsum-impregnated, self-mulching soils.

The dominant vegetation is steppe dominated by hummock shrubs while the grasses have been largely suppressed by heavy grazing by sheep and goats. There is a spring flush of lilies and other bulbous and tuberous plants in the steppe before grasses develop. Roger showed many wonderful landscapes often dominated by mass flowerings of fritillaries, tulips, and muscari among others. He also showed many individual and beautiful flowering forbs which have been brought into cultivation and appear as exotics in gardens, as well as a number of spectacular flowers which have not been successfully cultivated. For those who like irises, this was a treat.

Roger said that he was particularly struck by the features of the self-mulching soils which appear to allow such prolific plant growth to occur in early spring despite the low rainfall. Ephemeral water meadows occur along drainage lines and provide spectacular displays of fritillaries and ornithogalums. On the mountain tops at 2000 to 3000m there are extensive alpine meadows with more displays of anemones, primulas, scillas and many other spring flowering bulbs.

Plants of the steppe have developed many techniques to survive the heavy grazing pressure. Many of the lilies and other bulbs have bitter sap and are possibly poisonous, while some plants grow as cushions close to the ground, others are almost rock-like to make grazing very difficult, and yet others were protected by thorns that protruded beyond the leaves and flowers. Interestingly, convergent evolution has led to the appearance of similar adaptations from many different plant families.

In a reminder of pasture cropping (where seed is directly drilled in a pasture), Roger showed us cultivated fields of wheat which were full of flowering bulbs and other perennials. Roger explained that ploughing only affected the soil surface and did not damage the deep-growing bulbs. The areas visited were either village common land or national parks, but as Roger pointed out, national parks have multi uses in Iran, including grazing.

Finally Roger spoke about the restored Tehran botanic garden which is being redeveloped along ecological

themes and the strides that were being made in Iran to obtain a better understanding of conservation issues.

Roger's presentation reminded us that the conservation of native vegetation is a global issue and we thank him for bringing to FOG an international perspective.

Alice Springs Desert Park

John Nightingale, who worked as the Curator of Botany at the Alice Springs Desert Park for almost two years, showed some wonderful slides of the constructed habitats at the park which integrates a botanic garden with a zoo, displaying characteristic plant and animal associations of central Australia. The interpretation, which aims to inform visitors about the interconnected, often cryptic and fragile natural histories of the central desert ecosystems, has a strong element of storytelling about the profound Aboriginal connections with the native plants, animals and landscapes. Many forms of interpretation can be found throughout the park but presentations on a wide range of subjects by paid guides, many of whom are Aboriginal, are very well received by visitors. The twice a day bird of prey shows, where raptors are free flown by specialist bird handlers, creates a special memory for many tourists.



Creating an ecological botanic garden in the desert

Visitors are invited to explore, experience and learn within each of the three major desert habitats that have been created in the core precinct of the park. The Desert River habitat leads into representations of sand country and then onto the woodland habitats. Specialist ecological niches have been created within each major habitat type, e.g. a salt lake and a gypsum soak have been created in the sand country habitat. Characteristic plant taxa, plant types and associations are integrated into walk-in or walk-by aviaries and mammal enclosures. Each fauna exhibit is designed to blend into the surrounding vegetation, giving the visitor a sense of immersion and a more personal and memorable experience. A free-ranging Australian bustard display was created while John was at the park to give visitors an appreciation of these majestic birds.

The nocturnal house provides an opportunity to see mala, bilbies, mulgara and various other, often threatened, mammals, reptiles and birds. The attached diurnal reptile displays attract a lot of visitor attention. Even the indoor fauna displays attempt to truly represent the natural ecosystems by including living or preserved plant materials. Spectacular cultivated wildflower displays enhance the various entrances into the park and dominate the centre of the entrance precinct. More understated, but nonetheless beautiful, wildflower displays are cultivated to represent different aspects of each habitat. For anyone who has visited the park, as this writer has, the results are stunning. Since its opening in 1997 the park has been a tremendous tourism boost for Alice Springs.

The core precinct of the park, where the habitat displays and visitor facilities are located, occupies an area of around sixty hectares within the greater park site which covers about 1,100 hectares and incorporates most of the Heavitree Range, a small part of the greater MacDonnell Range system. The escarpment of the range provides a wonderful backdrop to much of the landscaping within the core precinct. At the time of construction, a predator proof fence was erected around the core area and this, along with a systematic trapping program, has seen bird and reptile numbers around the park bounce back. John was lucky enough to live on the park site and is a cat owner. However the cat was restricted to being totally indoors and could only contemplate catching the many reptiles and birds outside the house. In contrast, neighbours who had dogs confined within back yards had very few reptiles in residence.

John also spoke of the serious threat to Australia's arid and semi-arid ecosystems posed by buffel grass (Cenchrus ciliaris, which was actively introduced by NGOs and government departments as a dryland pasture grass and dust suppressor from the 1960s onwards. This vigorous exotic grass is very drought resistant, produces abundant biomass which smothers many smaller plants and, without considerable grazing pressure carries frequent intense wildfires. Despite its value to the pastoral industry the grass threatens many areas of native vegetation and has caused the general demise of ephemeral wildflowers and grasses across large areas of central Australia. The Alice Springs Desert Park, through its huge and expensive efforts at removing and excluding buffel grass from the core precinct display areas, is able to show aspects of native landscapes as they were prior to the introduction of buffel grass. Despite this, the grass remained problematic across the greater park site.

John's slides illustrated what we have lost over extensive areas of our deserts, what can be done to recover and preserve what's left, and how this can be combined in an educationally rewarding and tourism-attracting way.

Living Murray success story

Paul O'Connor

The fourth use of the Barmah-Millewa environmental water allocation (EWA) in 2005-06, and the first under the new 'Living Murray' management arrangements, resulted in the largest environmental water delivery ever undertaken. At 513 GL it surpassed the 341GL event in 2000.

The environmental water was used to provide good medium level flooding of the Barmah-Millewa floodplain, equivalent to a one-in-five year return flood event which resulted in 57 percent of the floodplain being inundated.

The delivery was undertaken between October 2005 and March 2006 and was managed for the first time to achieve multiple objectives including flow variation, (enhancement of flood peaks), to encourage the breeding of native fish, inundation at the required depths and duration to maximise vegetation response and regulated flows to colonial waterbird breeding colonies to sustain a major breeding event.

In order to manage the EWA delivery an operations committee was established with key agency operations and management staff involved. The committee was convened weekly by teleconference, which enabled decisions to be made directly in response to what was taking place in the field and to plan out management actions for the weeks ahead. Vegetation response and colonial waterbird breeding was monitored in Barmah(O'Connor & Ward 2006) and in Millewa (Webster, McAuliffe, Leslie and Parker). Frog activity was monitored in Barmah (Ward 2006) and Millewa Forest wetlands and a number of fish monitoring projects were also undertaken (King et al).

Colonial waterbirds

There was successful breeding of approximately 50,000 colonial waterbirds with multiple colonies established throughout the Barmah-Millewa Forest wetland system. This included the establishment of a mixed colony of the listed Nankeen night herons and three species of egret, (i.e. great egret, intermediate egret and little egret), in Barmah with over a thousand nests, the first time these species have bred in Barmah in over 40 years. Sacred ibis, straw-necked ibis and royal spoonbills also bred throughout in numbers exceeding the 2000 event.

Fish breeding

A number of fish research and monitoring projects were being undertaken throughout the Barmah-Millewa Forest floodplain at the time of the event and what was shown was quite remarkable in the establishment of an unequivocal link between the spawning of native fish species and flooding. Golden and silver perch were found to be spawning in unprecedented numbers in response to the managed flood peaks, and while Murray cod were also found to have spawned, their spawning tended to be more to the regular pattern of timing. Trout cod were also observed for the first time to have spawned as a result of this managed flood event, and the spawning and recruitment of many of the smaller native forage fish species was also significant.

Frog breeding

Frog breeding occurred in most water management areas of the Barmah-Millewa Forest wetland system. Species identified included: Peron's tree frog, pobblebonk frog, barking marsh frog, spotted marsh frog, plain's froglet and common froglet. All species were found to have successfully bred during this event.

River redgum response

The floodplain vegetation, including the majority of river red gum forest and some of the river red gum woodland, responded to the flooding with new growth and vigour, and many of the flood-dependent and flood-tolerant understorey species, including aquatic plants and terrestrial grasses, were able to complete their lifecycles.

The amount and extent of wavy marshwort with this flood surpassed the previous managed event in 2002-03 and the response of Moira grass was significant with broad areas of the Moira grass plains having flowered and set seed in response to the extended flooding.

Flow-on effects

The EWA volume diverted into the Barmah-Millewa Forest wetlands equated to 515 GL, though an estimated 92-95% (as measured by the Forest hydrographic recorders and confirmed by the newly developed Barmah-Millewa Hydrological Model), returned in through-flows to the River Murray.

These return flows to the river system were able to be reallocated to other iconic sites down stream of the Barmah-Millewa for river red gum rescue projects in Victoria and for consumptive use in NSW. The flows through the forest wetland system also resulted in the drop out of significant loads of nutrient rich sediment and importantly, because of the connection between floodplain and river, saw carbon vital for the ecology of the river recycled back to the river system.

The vegetation and waterbird monitoring report is still in production and soon to be finalised.

Paul O'Connor is the Red Gum Forest Ecologist, Department of Sustainability and Environment, Victoria.

Milkmaids - Burchardia umbellate, a milk white lily

Michael Bedingfield



Milkmaids - the name reminds us of our pre-industrial past, made more romantic by its distance in time, when dairy farms had not been mechanised and our society was more rural. These plants have quite striking clusters of flowers, which are white with pink centres and conspicuous anthers. In this plant grouping of lilies, the petals and sepals look very similar and botanists call them 'tepals'. The flowers are up to thirty millimetres across and have six tepals, which are white on the upper surface and often tinted pinkish on the underside. The pink central structure is the ovary, which grows larger and more prominent while the flowers continue to bloom. It has three stigmas and later becomes a fruit containing many seeds.

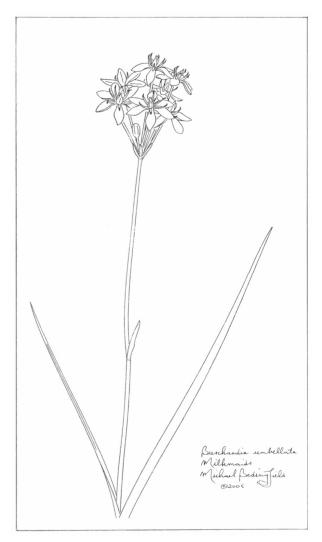
The milkmaids I have seen were 25 to 50 centimetres tall, but they can grow up to 65 centimetres in some situations. They have a large tuberous root which was roasted and eaten by the Kooris. From this perennial root, one to three grass-like leaves come forth, as well as a single, erect flower stem which has a

cluster of up to ten flowers at the top. There are usually one or two smaller leaves along this stem.

The botanical name for the plant is *Burchardia umbellata*. The genus name, *Burchardia*, is after two eminent men with the same surname, Burckhard, a Swiss (1784-1817), and a German (1676-1738). The Latin name for parasol gives us the species name *umbellata*. This is descriptive of the structure of the flower cluster which is in an umbel, that is, with all the flowers on the ends of short stalks which radiate from a central point at the top of the single stem.

Milkmaids prefer to grow in damp areas on relatively undisturbed sites. They are widespread though uncommon on the Southern Tablelands, except in the north-west. They also occur on the coast and slopes of NSW, as well as in temperate areas throughout Australia, and so can be found in all states.

If you are interested in seeing these plants, there is a healthy population of them at the Hall cemetery. The drawings shown here were done from photographs I took at the cemetery on 21 November in 2004. FOG is having an excursion there in the near future, on November 22. (Please see program on cover page.) If we get enough spring rain the visit should find the milkmaids in flower, along with a variety of other floral gems, and it would be a valuable excursion.



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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 Kim Pullen, Janet Russell or Geoff Robertson. Contact details are given in the box above. We look forward to hearing from you.

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