News of Friends of Grasslands

Supporting native grassy ecosystems

May-June 2005

ISSN 1832-6315

Program

SAT 21 MAY 9:00AM to 3:00PM **FOG and Field Naturalists Grassland fungi workshop** with Heino Lepp.

This will be an interesting and exciting workshop and costs only $10 for lunch and venue hire. So please book early. See advertisement on page 3.

Venue: Mugga-Mugga Education Centre, Narrabundah Lane, Symonston ACT (opposite Therapeutic Goods Administration).

Enquiries Geoff Robertson or Benj Whitworth (details back page).

To register send payment of $10 to FOG, PO Box 44, Majors Creek NSW 2622.

SAT 18 JUNE 1:00pm to 4:00pm. **FOG Winter Grassland Tour with David Eddy at Majura Field Firing Range (FFR).**

We hope to see grassland and woodlands sites. These are some of the best natural temperate grassland and yellow box red gum grassy woodland remnants (containing around 330 native plant species) in the region and not usually accessible. Seven threatened animal species and button wrinkewort have been recorded there.

We will initially gather at the Majura FFR, Range Control Office, off the northern end of Majura Rd, not far from the police driver training centre. Just turn off Majura Rd and drive in for about 2 km.

For program after June see previous newsletters.

4-5 JUNE **World Environment Day** – see insert from Conservation Council.

In this issue

Photos of the FOG – Greening Australia tour 10 April 2005. Story on page 8.

Top photo: looking at restoration work on the *Uriarra* property.

Bottom photos: GA's Susie Wilson and Lori Gould.

News Roundup

FOG's new committee

26 FEBRUARY FOG AGM There was a bit of changing of the guard on the committee. Again no one stood for president but Kim Pullen and Geoff Hope were both elected vice presidents, and between them will act as president, although Geoff warned that he will be doing a bit of travelling. Cathy Robertson stood down as secretary, and Di Chambers was elected to that role, but unfortunately will be leaving Canberra about mid year and therefore FOG will then need to find a new secretary. Sandra continued as Treasurer.

David Eddy, Roger Farrow, Margaret Ning, Geoff Robertson, Janet Russell, Dierk von Behrens, and Benj Whitworth were re-elected as committee members. They were joined by Christine Kendrick. Cathy Robertson, Rosemary Blemings and Stephen Selden decided not to re-stand for the committee, so there are some vacancies and opportunities for anyone interested.

Margaret Ning will continue to look after membership and, with help from Roger, the program. Geoff Robertson will continue with the newsletter and general rouseabout. Janet Russell will

continue with minutes of meetings.

Di gave an excellent summary of the year's activities and thanked outgoing committee. Di's report was published in the last newsletter. Sandra presented the financial report. FOG's financial position has strengthened over the years, but only a modest surplus was made in 2004, she said. A number of committee members mentioned that Sandra had done an excellent job following Alan Ford's resignation from that job during the year.

There were lively debates on many issues including Canberra's water options and planting of pines throughout the Southern Tablelands, and the threats that these pose to the survival of grassy ecosystems. There was also a discussion about FOG's future and organisation.

Photos: Di Chambers, outgoing vice President and now Secretary. Kim Pullen and Geoff Hope, new vice Presidents. FOG still is President less. Also see photo page 11.

Managing Native Pastures for Agriculture and Conservation
Rainer Rehwinkel

This new publication has recently been released. In another cooperative venture that seems to be the hallmark of grassy ecosystems work in the Southern Tablelands. This booklet was written by Col Langford, Peter Simpson, Denys Garden, David Eddy, Michael Keys, Rainer Rehwinkel and Bill Johnston (and with a substantial contribution from Sarah Sharp). These authors are from NSW Dept Primary Industries, NSW Dept Infrastructure Planning and Natural Resources, NSW Dept Environment and Conservation, Southern Rivers CMA and Environment ACT. The funding was from NHT, and Hawkesbury-Nepean CMA provided support.

This is a useful guide that will hopefully fulfil a great need. More than an update of the 1996 publication *Managing High Rainfall Pastures on a Whole Farm Basis*, this booklet has a greater emphasis on native pastures and conservation than the earlier publication.

Chapter by chapter, *Managing Native Pastures for Agriculture and Conservation* explains what native pastures are, outlines common native grasses and their features, and provides an outline on property planning. There are chapters on native pastures and water, managing native pastures, and monitoring. The booklet also covers native pasture performance, livestock performance and the profitability of native pastures.

Generously peppered with illustrations, tables and graphs, each chapter is summed up with a box explaining key points. The booklet is enhanced by a glossary to explain unfamiliar terms.

To obtain a copy of publication, contact Michael Keys, Queanbeyan office of NSW Dept Primary Industries. Phone 02 6297 1861 or fax 6299 4215.

FOG display at ANBG

SATURDAY 12 MARCH FOG held its third annual display at the Australian National Botanic Gardens, as part of the Australian Native Plants Society's autumn sale. Thanks to Rosemary Blemings and Roger Farrow who organised the stall.

FOG's posters, Michael Bedingfield's photos, newsletters and brochures, and of course the wonderful display of grasses and some forbs contributed by Roger, Warren Saunders and Jo Walker, attracted many inquiries. There were steady inquiries throughout the day with many questions about grass identification, how to manage and restore remnant vegetation, and how FOG might assist in education activities around Canberra. *Photo of display above right.*

Grassland fungi workshop

with Heino Lepp

9am-3pm Sat 21 May

Heino will provide a short (indoor) introduction on the basics of fungi and what they do, as well as describe existing knowledge of Australian fungi.

He plans to look for some fungi in the open, with some discussion about the habitats and ecology of those we see.

If we see a reasonable variety of species it would be useful to collect samples for permanent herbarium storage.

Grassland fungi are not well documented in Australia. Heino will give some guidance on how to collect (responsibly) and write up a collection for later scientific study. It's not difficult.

He strongly advises participants to bring a 10x hand lens or a magnifying glass. If you are interested in participating in collecting specimens, bring a small knife as well. For more fungi information see http://www.anbg.gov.au/fun-gi/

Book early. Please see cover page for details.

Add sugar, seed and burn in spring

A strange recipe, but the thinking behind it may also seem a little bizarre. Nevertheless, this is the suggestion by Kevin Thiele, Susan Prober, and Ian Lunt., in the Sept-Nov issue of *Australasian Plant Conservation.*

Working with the white box grassy community where the understorey is usually poor quality, the authors have pondered why it is difficult to re-establish the original understorey. They speculated that conditions such as nutrient levels have changed so much that conditions favour exotic plants.

Their surveys of topsoils in un-grazed and degraded remnants showed that soil nitrate, a form of nitrate that is readily available to plants, was extremely low in un-grazed areas, and increased in abundance across all types of degraded remnants in their study.

Suspecting that soil nitrates drive weeds, they experimented with ways to reduce soil nitrates in restoration trials. They have trialled various methods of weed reduction, adding sugar, seeding with kangaroo and snow grass, and burning, and describe their results as "preliminary but exciting." This article and its references are worth careful attention.

Members who went on FOG's western expedition, 10-14 October 2002, were shown some of these plots by Kevin. *(FOG newsletter, Nov-Dec 2002,* page 3).

No new dam in ACT

The Conservation Council of South East Region (of NSW) and Canberra is campaigning against a new dam in the ACT. Currently ACTEW, the ACT electricity and water authority, is assessing how the ACT water supply may be augmented and it is considering several options. It is due to report to the ACT government shortly.

Many options have poor biodiversity and other environmental outcomes. The Council believes that insufficient attention is being paid to water reduction and reuse. It is most opposed to one option that would dam the Gudgenby River if the Tennant Dam is built. That option in particular would destroy many hectares of the threatened community yellow box-red gum

grassy woodland, a relatively strong habitat for many of our threatened and declining woodland birds. It is also an area with a long rural history. *For more information contact the Conservation Council at www.ecooaction.net.au.*

New *ACT Flora*

Isobel Crawford is proposing to redo the *Flora of the Australian Capital Territory* by Nancy Burbidge and Max Gray. This first and only edition was published by A.N.U. Press in 1970 and contains beautiful and botanically accurate line drawings by Nancy Burbidge, and many valuable observations on the plant species and vegetation communities as they were in the 1960s. If any reader knows where the original drawings are please let Isobel know: the present whereabouts is a mystery.

Many new species (e.g. Tuggeranong lignum, *Muehlenbeckia tuggeranong*) have been recorded in the ACT since then, many of them introduced and many of these environmental an/or agricultural weeds. Many species are less common now than then, and of these some have been formally listed as threatened, on either the scientific list of Briggs and Leigh and/or the state or federal legislative lists (ACT *Nature Conservation Act*, NSW *Threatened Species Conservation Act*, and/or Commonwealth *Environment Protection and Biodiversity Conservation Act*). Likewise some plant communities are now recognised as being threatened, such as *natural temperate grassland* and *yellow box/[Blakely's] red gum grassy woodland*.

The proposed new *Flora* will be more akin to *The Flora of Victoria* which includes the conservation status of rare or threatened species, than to the *Flora of New South Wales* which rarely refers to this important character. Both an electronic and a paper copy are proposed at this stage. The project is seen as a collaboration between all local botanists, amateur and professional, so all contributions will be most welcome. Isobel's e-mail address is isobel@apex.net.au.

Grasslands nominated as heritage site

TUESDAY 22 MARCH the Conservation Council of the South East Region and the ACT nominated six entries to the draft ACT Heritage Register for their natural heritage values. It is anticipated these documents will go to the ACT Heritage Council in May 2005 for their consideration.

Each nomination was based on a natural heritage theme and certain sites associated with them. The nominations included endangered natural temperate grassland, grassland earless dragon, Tarengo leek orchid and yellow box-red gum grassy woodland at the Hall Cemetery, button wrinklewort, and small purple pea.

WEN update

19 MARCH 2005. WEN (Weereewa Environment Network) released its fourth circular. Readers might recall a news item on WEN by Geoff Butler in the May-June 2004 newsletter.

The circular provided an update on Joe Rocks Road, where there is an ongoing attempt to keep a group of ancient brittle gum (currently this matter is with the NSW Ombudsman). It also reports on a Freedom of Information request to the Palerang Council on road works on Valley View Lane which had extensive areas of high quality native secondary grassland and other remnant native vegetation.

WEN is now seeking a new convenor following the departure of Graham Parton, who has left Bungendore to live in Junee.

WEN is a working group of the Geary's Gap/ Wamboin Landcare Group, committed to the conservation of species and ecological communities of the Weereewa District. *For further information contact Geoff Butler, g.butler@iimetro.com.au*.

Translocation workshop

The Australian Network for Plant Conservation is holding a workshop on translocation of threatened plants on Wednesday 18 May in Queanbeyan. The workshop aims at people who have been or would like to be involved in some aspect of translocation of threatened plants. It will address what translocation is, its appropriateness as a conservation tool, how to go about it, and management and evaluation. It will also include some case studies.

Participation in ANPC workshops can contribute to Conservation and Land Management qualifications. Registrations close 11 May and cost is $50. Contact 02 6250 9509 or anpc@deh.gov.au.

Spotted-tail quoll

28 JANUARY ACT government released its draft Action Plan No. 30 on the Spotted-tail quoll which was declared vulnerable in the ACT on 4 September 2003. Copies of the draft plan are available from Environment ACT.

Woodlands for Wildlife:
Recovery of our birds
Saturday 4 June 2005, 1.30 to 4.30pm

This is a free seminar to promote the conservation of woodland birds and their habitats at the CSIRO Discovery Centre, Optus Theatre, off Clunies Ross Street, Black Mountain, ACT. Registration from 1pm.

Woodland birds continue to decline in our region against a background of loss of habitat and other factors. There is less than five percent of the original woodlands left in the SE of Australia, and much of this is in small, unconnected patches. What is being done, and what more can be done, to bring some of our declining birds back to local woodlands? What research is needed to answer the questions we don't have the answers to? How can we restore and re-connect habitat for particular species of birds?

This seminar will focus on what individual land owners, community groups, academic and research organisations, and governments are doing - "on the ground". Speakers include Professor David Lindenmayer, Dr Geoff Barrett, Dr Jack Baker, Ms Alison Rowell. Hosted by Canberra Ornithologists Group in collaboration Environment ACT, and CRES/ANU.

How to Register: Booking before 1 June is required to ensure a seat (and to ensure enough afternoon tea for everyone). To register, contact seminar@canberrabirds.org.au, COG PO Box 301, Civic Square, 2608, or phone 02 6247 4996.

Old Cooma Common
David Eddy

SATURDAY 2 APRIL FOG held another working bee at Old Cooma Common Grassland Reserve and reached a significant milestone in the process.

One of the most obvious tasks when we began working at the reserve in 1999, was to rid the naturally treeless grassland of a large population of woody weeds, mainly hawthorns and sweet briars. They were scattered over about 15 ha on the eastern, southern and south-western aspects. Many of the hawthorns must have been there many years and were up to 3 or 4 m high and with multiple large stems. Although somewhat smaller the briars were many and some quite large too. These horrible, awkward plants needed chainsaws, herbicides and a chipper capable of chipping up to twelve inch stems, to remove them - not to mention some serious protective gear for the workers.

By the time the reserve was officially opened in September 2001 I estimated that we'd put in about 600 person hours of volunteer labour. But quite a few hawthorns and many briars remained. Having continued to whittle away (if you'll pardon the pun) at the remaining population for the next few years, we have now at last removed the last of the original hawthorns! Unfortunately, there are some small patches of re-growth needing a second treatment, but the bulk of that work is now done. There is still a liberal sprinkling of smaller briars which we'll attend to over the next few years.

The other major task we attended to was to begin replacing the gate posts for the new gate - the one that was stolen only a short while after the fencing was originally done. The posts were a little light and puny to hang the new gate on, so we decided to replace them with some larger hardwood ones. Having spent a good few hours cutting the fencing wire, extracting one of the pine posts, re-digging and deepening the hole, setting and ramming the new post and restraining the wires, we decided to leave the second post for another day.

When the other post is in, we'll hang the new gate, which we hope will reduce the illegal traffic volume on the hill.

The next working bee is scheduled for 17 September - maybe you'd like to join us?

Photos: Above, tackling hawthorn at Old Cooma Common in 1999 (photo from David Eddy archives). Bottom, 2 April 2005 working bee: Katy Mallet, Wendy Hain, Benj Whitworth, David Eddy, and June and Bob Wilkinson stop for a photo taken by Margaret Ning.

Aranda snow gums heritage site

After almost seven years, the Aranda snow gums site moves from the interim Heritage Places Register to the final register. The site was initially nominated to the interim register on 26 June 1998 by Friends of Aranda Bushland (FoAB).

As Jean Geue reported to FOG, the FoAB snow gums project started as Peter Ormay's vision to conserve, protect and interpret the largely intact Aranda snow gums and the best remaining ACT example of a frost hollow with its edging snow gums and native vegetation zones. The passage of time, and later ACT *Action Plans* (numbers 1 and 28 plus 10 and 27), have affirmed this as an incredibly valuable vision.

One of the first activities of the newly formed FoAB was Peter Ormay's familiarisation walk on Saturday 27 October 1990. Jean has photos showing the parkcare group tackling the fence to enter the rural lease.

Action to save the snow gums was triggered in 1992 when briar spraying

on a fire-alert day vaporised the chemical and killed the three really old trees. Subsequently it was decided to submit a proposal for Heritage Places registration.

***Austrostipa aristiglumis* grasslands**

In January the Department of the Environment and Heritage (DEH) received a nomination under the *EPBC Act* to list the Austrostipa aristiglumis grasslands of the Liverpool Plains in NSW as a nationally threatened ecological community. The nomination covers natural temperate grasslands and grassy open woodlands characterised by the dominance, in the ground layer, of Liverpool Plains grass *(Austrostipa aristiglumis).*Other grasses that may commonly occur, but are not dominant, include Queensland blue-grass *(Dichanthium sericeum)* panic *(Panicum spp.),* wallaby grass *(Austrodanthonia bipartita)* and native oat-grass *(Themeda avenacea).* The tree overstorey, when present, includes white box *(Eucalyptus albens),* yellow box *(E. melliodora)* or bimbil box *(E. populnea* ssp. *bimbil).* The nominated ecological community typically occurs on deep, alluvial cracking black clays on Tertiary basalt.

The nomination is undergoing an assessment process that includes advice from experts familiar with the grassland and comments from the public. Although the formal public comment period closed on 21 March, the Ecological Communities Section of DEH would be interested to obtain any further information on the Liverpool Plains Grassland. These can be sent by email to epbc.nominations@deh.gov.au, or by fax to (02) 6274 1105. The nomination is available on the Department's website at www.deh.gov.au/biodiversity/threatened/nominations/liverpoolplains-grassland.html.

It should be noted that confidential parts of this nomination, such as the names of individuals who provided unpublished information and sensitive location information, have been blacked out.

Stipa

Fourth Native Grasses Conference

Grasslands for production and conservation: both sides of the fence

11-13 October 2005

Burra SA

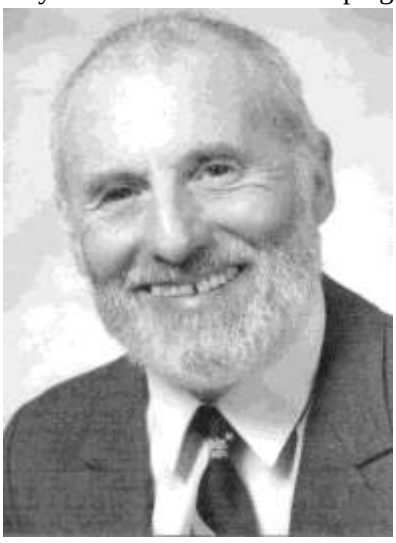
The sub themes are: where we have come from, where we now are, healthy landscapes - healthy profits, healthy landscapes - healthy biodiversity, establishment of healthy grasses, and healthy systems - a burning issue.

Inquiries: Sue Rahilly, suerahilly@bigpond.com.

Grassy ecosystems in the Port Phillip and Westernport Catchment

Groundstorey

Ray Maino continues to campaign to protect grassy ecosystems in the Port Phillip and Westernport Catchment. Ray is qualified in town planning and environmental management, the Coordinator of the Threatened Species Network, and President of the Diamond Creek Landcare Group. Readers might recall that Ray wrote a short piece for the *January-February 2003 Newsletter.*



According to Ray, "over the last thirty years there has been a net increase in native vegetation in the Port Philip (Melbourne) region of Victoria, but on closer examination we find abundant vegetation types have become more abundant while depleted types have continued to decline. More species go onto the threatened species list than come off and some are still coming off the wrong end. These species can only survive in precarious remnants for so long. It is generally agreed we must restore habitat - the right sort of habitat!"

Less than thirty kilometres north of Melbourne, on the floodplains of the Plenty River near the township of Mernda, there are significant remnants of some of the most threatened ecosystems in south-east Australia, plains grassy woodland and (derived) grasslands (trees removed). Here is an opportunity to not only preserve 700 year old trees but also the seriously threatened ecosystem of which they form part. There is abundant land here for ecosystem restoration and to provide much needed buffer areas to ensure long term sustainability. Instead, amendments C30 and C45 to the Whittlesea Planning Scheme propose the area be developed for 50,000 people when there are plenty of infertile and less environmentally important areas around Melbourne that could be used.

Ray recently submitted a nomination for river red gum woodland under the Commonwealth *Environmental Protection and Biodiversity Conservation Act (EPBC Act)*[1]. In that submission he pointed out that when Europeans arrived, the two main ecosystems in Victoria were red box woodland and river red gum woodland each covering around four million hectares. Both have been depleted by our occupation. While seventy percent of red box woodland remains, less that four percent of river red gum woodland remains and could go extinct in ten years (to-

[1] While the period for comment on the nomination has closed, the nomination is listed on DEH's webside and the Department is happy to receive any comments from FOG at any time.

gether with the unique species it supports). The reason for this difference is that river red gum woodland occurs on fertile soil and it was heavily cleared for farming - red box woodland occurs on infertile soil.

When farming ceases in the Melbourne area, instead of allowing the river red gum woodland to regenerate, these areas have been designated development corridors. At the same time red box woodland is protected in reserves and green wedges. Almost no river red gum woodland is protected even though houses do not need to be built on fertile soil.

In an attempt to try to rectify this imbalance (and to stop its extinction) the river red gum woodland community north of Melbourne (Western Basalt Plains Grassy Woodland EVC 55.04) was nominated under the *EPBC Act* as c*ritically endangered* in September 2003. This floristic community mainly occurs west of the Plenty River from Whittlesea to Epping (as far west as Craigieburn). Most of it consists of small degraded remnants or individual old trees which if properly managed could be expected to recover with time.

Ray stated that the nomination process is far from easy and if this community is eventually listed as critically endangered it will probably be as much the result of determination as anything else. The public comment phase was completed in January and it is now with the Scientific Advisory Committee to make a recommendation to the Minister.

Ray has also lodged objections about the proposed development on the Plenty River floodplain near Mernda with the Victorian State Department of Sustainability & Environment. In that submission he pointed out that the floodplain includes a large area of river red gum grassy woodland as well as areas suited to and essential for its recruitment. It also includes many significant trees of heritage value and is richly endowed with items of Aboriginal and European heritage value. Like all areas where river red gums occur, their presence indicates an abundance of groundwater (not necessarily because of river flooding). Draining the area will kill the trees even without the impact of development.

Photos of plains grassy woodland community (above left) and chocolate lily, by Anne Buchan.

Unlike river red gum trees, houses do not need fertile soils. In fact the basalt clay soils in this area provide poor foundation for any type of construction. While these problems can be overcome this cost could be saved and applied elsewhere. Adjacent areas of Silurian sandstone do not pose such problems. They are elevated and there are no drainage problems. Houses can have a view (over red gum woodland for example). Houses built on slopes are less likely to be overshadowed and could have better solar access. "Five Star" houses could reach their full potential. On steeper slopes terracing may be necessary and is not incompatible with the stable infertile soils associated with Silurian sandstone.

BROAD VEGETATION TYPES (BVT) IN RESERVES IN THE PORT PHILLIP AND WESTERNPORT CATCHMENT
(Source: Draft Native Veg Plan – Vic Govt.)

Table 3				Table 7		Table 9			
BVT	Original vegetation (ha)	Existing vegetation (ha)	Proportion Remaining (%)	Area reserved (ha)	Proportion original reserved (%)	Proportion existing reserved (%)	Proportion of total reservation (%)	Cumulative proportion (%)	Conservation status
Valley Grassy Forest	28,891	274	<1	131	<1	48	0.09	0.09	Endangered
Grassland	204,724	6,137	3	780	<1	13	0.52	0.61	Endangered
Riverine Grassy Woodland	5,128	213	4	1	0	<1	0	0.62	Endangered
Plains Grassy Woodland	176,091	8,351	5	501	<1	6	0.34	0.95	Endangered
Riparian Forest	26,621	1,308	5	214	<1	16	0.14	1.1	Endangered
Box Ironbark Forest	6,246	314	5	81	1	26	0.05	1.15	Endangered
Swamp Scrub	26,696	1,456	5	509	2	35	0.34	1.49	Endangered
Montane Grassy Woodland	125	7	6	0	0	0	0	1.49	Endangered
Lowland Forest	93,973	7,150	8	1,089	1	15	0.73	2.23	Endangered
Coastal Scrubs and Grass-lands	35,054	4,436	13	1,912	5	43	1.29	3.51	Threatened
Coastal Grassy Woodland	33,549	5,175	15	1,626	5	31	1.09	4.61	Threatened
Montane Dry Woodland	847	184	22	11	1	6	0.01	4.61	Threatened
Heathy Woodland	44,017	13,578	31	9,126	21	67	6.14	10.75	Not threat-ened
Heath	26,213	8,123	31	2,168	8	27	1.46	12.21	Not threat-ened
Dry Foothill Forest	278,718	123,502	44	35,785	13	29	24.07	36.28	Not threat-ened
Herb-rich Woodland	6,688	3334	50	822	12	25	0.55	36.84	Not threat-ened
Moist Foothill Forest	266,236	179,916	68	82,127	31	46	55.25	92.08	Not threat-ened
Montane Moist Forest	11,308	11,304	100	9,993	88	88	6.72	98.81	Not threat-ened
Unknown	6,647	2,066		1,582			1.06	99.87	
Undefined	0	2,344		196			0.13	100	

After the pine forests

Geoff Robertson

SUNDAY 10 APRIL Twenty five people, including several youngsters, attended the FOG tour of Greening Australia (GA) sites in the ACT. Our hosts were Susie Wilson and Lori Gould of GA who had organised two small buses, morning tea and lunch. While many FOG members attended, this activity had been widely advertised to give many people involved in catchment, land and natural resource management an opportunity to see revegetation work at first hand. Mick Gentleman, Labor MLA, wanting to get to know at first hand some of the after fire planning issues, also joined the tour and many in the group took the opportunity to press their views about replanting with pines and community consultation.

Holden's Creek

The first stop was Holden's Creek, part of the area set aside for Deek's Forest Park. The highly eroded creek bed was naturally regenerating quickly with native shrubs (particularly sweet bursaria, silver wattle, mat rush, and blue bells), grasses and sedges. As the day unfolded it became clear that areas which were formerly dominated by native vegetation, or in which native vegetation had retained a strong foothold, needed little encouragement to regenerate and were relatively weed free. Areas away from the creek which had been dominated by pines were a battle ground for blackberry, thistle, mullein, African lovegrass, occasional introduced trees and other nasty exotics, and various native herbs (eg bindweed), particularly a species of native fire weed *(Senecio* sp.). In some areas silver wattle were quickly establishing hegemony.

It was into such areas that GA had been planting a mix of nineteen trees (eight acacias, ten eucalyptus, and river she oak), seven shrubs, river tussock and kangaroo grasses, and ten herbs, all local to the area. The plantings did not follow any strict ecological community approach and certain trees considered fire prone such as stringy bark and ribbon gum were excluded from the mix. The overall aim was to get plants established that would attract birds.

It was realised that protocols were needed to decide what plants were suitable. The species list was drawn up by Jonathan Banks, EACT and NPWS. The protocols recognise that seed has to be properly locally sourced and documented. GA has now produced a *Revegetation Planting*

Companion which participants on the day hope to receive in their mail boxes shortly. GA provided a list of species being planted in each area.

The plantings were more than holding their own. GA had been measuring their survival rates. Overall, the worst result was 86 percent (i.e. 86 percent of plants were still alive). In areas such as the Cotter the result was as high as 98 percent. Underpinning the success was follow-up watering, particularly as plantings were done during the prolonged drought.

In Deek's Forest Park, 1200 volunteers had planted 9,500 plants Eighteen thousand plants have been planted by volunteers throughout the forest areas. GA is also establishing a seed bank and will ensure that seed sourcing is properly documented.

These landscapes are planned to be covered with pines. See cover page for more photos.

Weeding will be a management issue for the future, and in fact GA is gradually changing the balance of its focus from plantings to overall land management. People remarked that it was surprising that so few pine wildings were present. The response was that any that appear are usually pulled out by those undertaking follow-up work.

Holden's Creek is across the road from Narrabundah Hill, which Lori explained is still subject to a government decision about its revegetation. She hopes that the government will ensure that the yellow box-red gum remnant there is kept and appropriately managed in any future plans.

***Uriarra* property**

The next stop was not a pine location but an example of GA's work with *Uriarra* property owners Tony and Helen Griffin who have fenced off several kilometres of Tarpaulin Creek (to a wide width in places) and excluded grazing to protect the creek from further erosion and to improve water quality. While there had been large scale plantings along the creek earlier, these had been destroyed in the Canberra fire and drought. Replanting after the fires was carried out by volunteers from the Department of Environment and Heritage and the Department of Agriculture, Fisheries and Forestry, and are growing well with good ground cover along the creek.

Many FOG members were delighted to see a small grassland comprising kangaroo, red leg, wallaby, nine awned, rat's tail, hairy panic, spear and native love grasses. Other areas turned up water couch and pennisetum grasses.

While this was a GA Rural Conservation Fund (Environment ACT) project, the Griffin's had done much of this work at their own expense. Keep up the good work.

Mt McDonald

The next stop was Mt MacDonald in Uriarra Forest. The site was a somewhat steeply sloping hill side previously planted to pines. Again it was very weedy but plantings to date had been successful. Here the plantings had been limited to four wattles, seven eucalypts, and black cypress pine.

In contrast to areas previously planted to pines, areas of natural vegetation nearby were regenerating quickly. Susie Wilson took the opportunity to mention that a proposed GA project assisted by NHT and the ACT Government will map the areas of native vegetation, regeneration and plantings in riparian and hill tops, and establish further areas for native vegetation corridors.

Dry Creek

Next stop was at Dry Creek at the base of Sugarloaf Mountain. Plantings of native vegetation had taken place, which according to Lori was hard work getting the materials and plants up the hill. Between the higher vegetation and the road was a strip of pine plantings, which surprised and dismayed many of the participants. Between the road and creek, and the area on the other side of the creek, the area was set aside for native plantings. This was the site of GA's treeathon, as well as mother's and father's day and religious group plantings. Plantings and natural regeneration were responding quickly along the creek.

After Dry Creek our guides then toured Pierces Creek and many other roads to provide some further impressions. The species list for Dry Creek and Pierces Creek included three wattles, six eucalypts, including ribbon gum, river she oak, river tussock grass and the sedge *Carex appressa.*

Lunch

Lunch was suburb, although there was the suggestion that "light lunch" was not an appropriate description, and that "gourmet lunch" would be more apt. Again, much conversation ensued along a few quick announcements and thankyous.

The pine debate

Throughout the day, it became clear that GA had exerted some influence regarding the ACT's approach to reafforestation after the Canberra fire. A much larger area of

what was previously pine forest was being replanted with local vegetation than was originally anticipated.

GA has shown that native revegetation can be successful east of the Murrumbidgee and on steeper slopes and in river corridors. Cost is one consideration and ACT Forests considered that planting with native vegetation rather than pines would be much more expensive. GA's bringing together cheaply sourced plants and a very large volunteer labour force has demonstrated that planting with native vegetation is achievable, although GA would not have the resources to replant the whole area of the previous forests in this way.

Most people on the trip were clearly not in favour of the government's proposal to replant 86 percent of the former pine forests with pines and considered ACT Forests as being too entrenched in a pine culture. Participants considered that there is a growing perception that native vegetation has a better environmental outcome, is better aesthetically, and provides good opportunities for habitat. The overwhelming view was that pine plantations were both environmentally and commercially counter productive. As pine plantings will take place over the next ten yeas, maybe there are opportunities to reduce the pine targets.

A big thanks to Lori, Susie and GA for such a well organised, sustaining, informative and impressive trip. We look forward to seeing how these areas will look in a few years.

Western (Basalt) Plains NTG

Grasscover

Introduction

The comment period recently closed on the nomination of Western (Basalt) Plains natural temperate grassland (NTG) as a nationally critically endangered ecological community under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). However, any further comments by FOG would be welcome. The seventeen page nomination makes excellent reading and provides a very good understanding of many aspects of this community.

Important issues addressed by the nomination include the extent and description of the community and its soil and rainfall characteristics, what remains of the original community, including what has been reserved, and the criteria for listing. Very useful data are included in the appendixes to the nomination.

The pre-European vegetation of the Western (Basalt) Plains of Victoria was a mosaic of grassland, woodland, forest, shrub land and wetland. It is unlikely that the original grassland existed as one continuous expanse but, instead occurred as a series of discontinuous patches. It is uncertain how much of the original vegetation was sufficiently treeless to be classified as natural temperate grassland, rather than as woodland or wetland.

Various estimates are quoted in the nomination as to the original extent of the grassland area and what currently exists. The most conservative estimate of original area is 220,073 ha (minimum verified pre-European grassland in the bioregion), while the most conservative estimate of extant area is 1,650 ha, giving a result of 0.75 percent extant. Whatever estimate is taken, all are well below five percent, the criteria for listing an ecological community as critically endangered.

Bioregion, NVIS and CRA classes

The community is largely confined to the Victorian Volcanic Plain Bioregion shown in the map accompanying the nomination. The bioregion extends north and west of Melbourne and as far west as Portland and Hamilton. While somewhat qualified, the map shows the vast area where the community may occur and areas where it is likely to occur now, the latter mostly little more than pin pricks on the map. Under the National Vegetation Information System (NVIS), the grassland ecological community belongs to the major vegetation subgroup, *other tussock grasslands.* The community covers two *ecological vegetation classes* (EVCs) under the *Comprehensive Regional Assessment for West Victoria* (Department of Natural Resources and Environment 2000): EVC132 – *plains grassland* and EVC897 - *plains grassland/plains grassy woodland mosaic*.

General description

The ecological community is dominated by tussock-forming perennial grasses interspersed with a variety of perennial herbs that occupy the inter-tussock spaces. Woody vegetation is absent except for occasional, scattered trees and shrubs. NTG was the most prominent ecological community of the Western (Basalt) Plains in pre-European times (Muir 1994).

McDougall et al. (1994) identified seven grassland sub-communities, each characterised by differences in the composition and frequency of the dominant grasses and associated herb or shrub species. Four of the sub-communities occur on flat plains and three on stony rises. One sub-community is excluded from the nomination because it is a very small (<0.1 ha) degraded roadside fragment that now has the structure of a low open woodland.

Flora

A comprehensive list of the vascular flora was compiled by Carr (1999), who identified seventeen vegetation formations within the bioregion. Two of these formations, the s*tony rise complex* and the *treeless grasslands/grassy woodlands*, which account for 519 plant species (including 23 tree and large shrub species), overlap with the

Western (Basalt) Plains NTG ecological community, but also include a grassy woodland component that is excluded from the nominated ecological community.

The *Western (Basalt) Plains NTG* ecological community is dominated by kangaroo grass, especially on drier parts of the bioregion. *Poa labillardieri* may be more dominant on wetter sites. Other grasses that may co-occur with kangaroo grass include species of wallaby-grass, spear-grass, fine-leaved tussock-grass (*Poa sieberiana*) and long-hair plume-grass (*Dichelachne crinita*), though they are generally less frequent than kangaroo grass. A rich variety of herbs is present in the inter-tussock spaces and mainly comprise daisies, lilies, peas, sedges and orchids. The nomination lists 97 grasses, herbs and sub-shrubs, which are described as "main plant species". It further lists 21 nationally threatened species listed under the *EPBC Act* likely to occur in, or near, the ecological community.

Some of the attendees at the FOG AGM.

Herb species that are most common in the community are: sheep's burr *(Acaena echinata)*, lemon beauty-heads *(Calocephalus citreus)*, common everlasting or yellow buttons *(Chrysocephalum apiculatum)*, Australian bindweed *(Convolvulus erubescens)*, blue devil *(Eryngium ovinum)*, scaly buttons *(Leptorhynchos squamatus)*, and fluke bogrush *(Schoenus apogon)*.

Fauna

According to the nomination the ecological community particularly supports a diversity of skinks, snakes, birds of prey and ground-dwelling birds. Few small mammal species appear to be present. Of invertebrates, species of beetles, ants and grasshoppers are especially diverse in the grasslands. It is noted that invertebrate surveys have been undertaken in the western plains grasslands, partly to investigate the diet of threatened reptiles in the grasslands, and also to evaluate their potential as a tool to assess the conservation significance of grassland sites. However no precise information is given on fauna, pointing to the need to do far more in this area. Consequently, a comprehensive list of the fauna inhabiting the ecological community is not available.

Threatened species could include the eastern barred bandicoot *(Perameles gunnii* ssp*)*, striped legless lizard *(Delma impar)*, Corangamite water skink *(Eulamprus tympanum* ssp. *Marnieae)*, grassland earless dragon *(Tympanocryptis pinguicolla)*, and golden sun moth *(Synemon plana)*. The latter is critically endangered, while the rest are listed as endangered except for the legless lizard which is listed as vulnerable.

Landform, soils and climate

The Western (Basalt) Plains is an extensive Quaternary basaltic plain with numerous volcanic cones and eruption points. The basalt plains were formed from a series of lava flows, tens of thousands to five million years old and are characteristically flat. The bioregion also features steep escarpments formed by rivers, basalt volcanic cones, scoria volcanic cones and stony rises formed by more recent, unweathered lava flows. The soils of the plains are heavy grey to red cracking clays. Black cracking clays are common in the low-lying areas. The stony rises tend to have shallow stony soils. In general, a duplex profile of clay-loam topsoil over clay subsoil is common in the region. Soils tend to be fertile and high in available phosphorus, but have a poor drainage capacity. Wetlands and lakes form in places where the drainage is poor.

The Western (Basalt) Plains typically receives a mean annual rainfall of 500-700 mm. Rainfall distribution is even for most sites, although the south-western part of the bioregion, towards Warrnambool, shows a predominantly winter-dominant pattern. The winds are mainly westerlies or north-westerlies in winter and frequently from the south-west to south-east in summer. Summers tend to be hot and dry and winters are cold, with frosts. The range of monthly mean summer maximum temperatures is 20.7 - 26.7^{o}C, whilst the range of monthly mean winter minimum temperatures is 4.5 - 6.9^{o}C.

Treelessness

The nomination states that treelessness cannot be ascribed to a single environmental factor but is due to a combination of influences. The major interactive processes are soil characteristics, competition, pattern of annual rainfall and fire, but it is not fully certain how these factors interact to cause treelessness.

The poor drainage and heavy texture of the clay soils leads to their becoming water-logged in winter and dry, with deep cracking, during summer. Such soils favour the establishment of fibrous-rooted species, like grasses, over

tap-rooted perennials, like tree seedlings. The seasonal waterlogging-drying cycle inhibits the development of tap-roots, contributing to the poor establishment of tree seedlings.

In addition, tree seedlings have to compete against the sward of established grass tussocks. In the absence of fire, native grasses are capable of dense and rapid growth, and may compete intensely for nutrients, water and light against tree seedlings. However, any tree seedlings that do manage to reach above the grass canopy may effectively escape from the competitive effects of the immediate sward.

Fire also plays an important role in maintaining grassland biodiversity and was probably used by Aboriginal people to manage the land, to stimulate fresh grass growth to attract macropods for example. "The most species-rich grassland remnants appear to be those with a history of regular fires". The grassland/woodland boundary for the western part of the basalt plains coincides with the 700mm annual rainfall isohyet (McDougall et al. 1994). Woodlands tend to occur on the drier sites.

Justification for nomination

The community meets several criteria, any one of which would justify its listing. These include:

- *Decline in geographic distribution.* All estimates of decline exceed 95 percent, and therefore this meets the *critically endangered* criterion.
- *Small geographic distribution coupled with demonstrable threat.* Threats include clearance for cropping and pasture, inappropriate fire regimes, roadside works, tree planting, herbicide use, addition of fertilisers, unsuitable management practices, weed invasion, and sub-division for urban development (especially near western Melbourne and Geelong). Rating *endangered*.
- *Loss or decline of functionally important species.* The most important functional species is kangaroo grass which has undergone a decline of 30 to 46 percent, and restoration of the ecological community must not be likely within the next 50 to 100 years. The nomination interestingly mentions some results of attempts to restore the grasslands. Of 10,699 plantings, representing a mixture of 48 rare and non-threatened grassland species, only 1,285 plants from 19 species survived after more than five years. This represents an overall survival of 12 percent. Notable failures to establish included *Chrysocephalum apiculatum* (1.25 percent), *Eryngium ovinum* (28.8 percent) and *Leptorhynchos squamatus* (zero percent), all considered to be common and characteristic species of the community. Unfortunately, this study did not test the survival of any grass species. Rating *vulnerable.*
- *Reduction in community integrity.* Based on the evidence of weeds as an indicator, in the interval of almost a decade, the frequency of thirteen out of eighteen common weeds increased or were new records, the most dramatic increases in frequency involved clovers and annual grasses. This reinforces criteria three. Assessment *vulnerable.*
- *Rate of continuing detrimental change.* There is some evidence that the community has declined between 30 and 47 percent over the last ten years. Rating *vulnerable.*
- *Quantitative analysis showing probability of extinction.* No information is available to measure this.

Land tenure and reserves

A 1986 survey is quoted to show number of patches, hectares, and average patch size. In total this survey identified 211 patches with a total of 3,382ha, with an average size of 16ha. Table 1 shows the striking differences in area and average patch size for the different tenures. It should be noted that the overall area of NTG has probably declined markedly since 1986. In 2002, 929ha were in reserves, the largest being Craigieburn Grasslands Reserve. Table 2 shows the size of these reserves which vary from 340ha to less than 2ha.

Table 1: Western (Basalt) Plains NTG community Land tenure of sites (Stuwe's survey, 1986)

Tenure	No. patches	Total area (ha)	Mean patch size (ha)
Private land	35	1,483	42.4
Roadside verges	95	917	9.7
Unreserved crown land	17	323	19.0
Biological reserves	7	215	30.7
Disused rail reserves	6	209	34.8
Rail reserve	33	197	6.0
Cemeteries	13	22	1.7
Other	5	16	3.2
TOTAL	211	3,382	16.0

Table 2: Western (Basalt) Plains NTG community Known reserves identified by Carter et al. (2002)

Name of conservation reserve	Area of grassland (ha)
Craigieburn Grasslands Reserve	340
Derrimut Grassland Reserve	154
Illabarook Flora Reserve	100
Floating Islands	84
Holden Flora Reserve	65
Laverton North Grassland Reserve	45
Angliss, Deer Park	30
Cooper Street Grassland Reserve	30
Angliss, Fitzgerald Road	27
Banchory Grove, Sydenham North	22
Brisbane Ranges National Park	10
Lake Goldsmith Wildlife Reserve	10
Gilbertsons Grasslands Reserve	8
Point Cook Metropolitan Park	2
Pretty Hill Flora Reserve	2
O'Hearns Road, Craigieburn	?
TOTAL	929

Short wallaby grass - Austrodanthonia carphoides

One of many wallaby grasses with an identity problem!

Michael Bedingfield

There are many different species of wallaby grass, and it is hard to work out which is which. Everybody, including expert botanists, has a problem distinguishing between them. A magnifying glass or microscope is often required to examine minute parts of the plant. After becoming familiar with native grasses I wanted to be able to identify wallaby grasses by sight, but experts say that it is very difficult. Visual features can give a likely choice, but not certainty.

So it is with some trepidation that I present the short wallaby grass. Before drawing the plant, I had it identified by staff at the Australian National Botanical Gardens. The drawing is accurate at the visual level, but I've not done all the details that are hard to see. I have shown the plant at seventy percent of natural size, with a seed shown at slightly larger than normal size.

Short wallaby grass is common and widespread in our region, also occurring elsewhere in NSW, and Victoria, Tasmania and SA. Its preferred habitat is grasslands or woodlands. It also persists well under grazing, so it is common in native pastures.

This grass is perennial and is often low growing and compact. It can be just two or three centimetres tall, and normally grows only up to twenty centimetres, but in rare circumstances it can also be up to fifty centimetres cm tall. The leaves form a small tuft, with the plump and fluffy flower-heads being held somewhat higher. The flower-heads can be quite erect, but it is not unusual to see them looking almost prostrate in low growing specimens. The flowers have an ovate appearance and occur in clusters at the tops of the stems. The specimen I chose for the drawing was an average sized one, with some reasonably long stems for the inflorescences. In the more compact plants the flower stems are quite contracted, but the structures are the same.

An interesting feature of this grass is that the endangered golden sun moth uses it as a food source. Wallaby grasses in general are one of the more valuable native grasses for the Australian pastoral industry. This is due to their ability to persist under grazing, good forage value and resistance to drought and frost. The scientific name for short wallaby grass is *Austrodanthonia carphoides* (though it was formerly known as *Danthonia carphoides*).

Short wallaby grass - a hardy native grass of south-eastern Australia. If you have found a grass that looks much like that in the drawing, it may well be the short wallaby grass. But it is worth checking more closely to be sure! To do so you will need a good magnifying glass or microscope, and a good book on grasses! Then, even if you get lost in the scientific language, you can still marvel at the miniature complexity of these unassuming plants.

FRIENDS OF GRASSLANDS INC Web address: http://www.geocities.com/friendsofgrasslands
Supporting native grassy ecosystems
Address: PO Box 987, Civic Square ACT 2608

Friends of Grasslands Newsletter

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

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