



May-June 2017

## FOG and related activities for late April – mid-July (*see also page 2*)

### **EIANZ forum: 'Protecting the environment on Commonwealth land'**

*3 May, Wednesday, 9.00 am – 4.00 pm*

This full-day forum will include two talks representing FOG's work on National Lands. Associate Professor Jamie Pittock is speaking on: 'Conservation of threatened species and grassy ecological communities on Commonwealth land' (1.20 pm), and Peter Beutel (National Capital Authority) is speaking on: 'Good management of national lands with limited resources' at 1.40 pm. The forum is at University House, ANU, ACT, and there is an entry fee. For the full program and to book, see <https://www.eianz.org/events/event/protecting-the-environment-on-commonwealth-land>

### **Yarramundi Grassland & environs: Heritage Festival walk**

*Sunday 7 May, 9.30–11.30 am*

The National Trust ACT has arranged several morning walks near Lake Burley Griffin for Heritage Week. The three still to come are on Saturday and Sunday 29 April and 30 April, and on Sunday 7 May. For the full list, see

<http://newactonsouth.com.au/docs-public/LBG%20walks%20NT%20flyer.pdf>

The walk on 7 May involves FOG. This is Walk 4 in the National Trust flier at the link above: 'Yarramundi Shores, a forgotten corner of the Lake', 9.30–11.30 am. 'Off the beaten track. Venture where few Canberrans have trodden to explore the heritage values of Yarramundi Inland Wetlands and Grassland, Green Hills, arboreta, cork oaks. Discover more about possible futures for the Lake's shores in this special area. A 4 km circular walk, some bush tracks and long grass, wear waterproof shoes if wet. Meet at the car park on the lake side of Lady Denman Drive opposite main entrance to National Arboretum.'

PLEASE NOTE: You should be capable of walking at least 3 km per hour to enjoy these walks and keep up with the group.

Please try to arrive about 10 minutes before the walks commence. Bring a gold coin donation. **Bookings are not required.**

### **Saturday 6 May 2.00–3.30 pm FOG walk for ACT Tree week**

On **Saturday afternoon, 6 May**, FOG will hold a public walk led by Dr Sue McIntyre, well known ecologist, at the lovely grassy woodland beside **Hall village, ACT**. We shall look at the various eucalypt and acacia and other native tree species there and their relation to topography, management and groundcover. It will be a ramble of < 1 km, with stops. There are slight slopes, and the usual rocks and branches hidden in the groundcover in places. FOG has organised this walk in support of ACT Tree Week. For more details, and to find out where to meet, please register with [Margaret.Ning@fog.org.au](mailto:Margaret.Ning@fog.org.au) by 5 May.



The NCA's controlled burn at Yarramundi Grassland on 1 April 2017.

*Photo: Jamie Pittock.*

### **FOG table at World Environment Day dinner**

*Saturday 3 June, 7 pm start*

The Conservation Council's big fundraising event of the year is their World Environment Day dinner to be held on Saturday 3 June at the National Arboretum Canberra, 7 pm til midnight.

Book early (at the link below) for the early bird saving of \$36 off full price! You then have more money for raffles and auctions – it is a fund raiser, after all!! **Early bird tickets before 28 April are \$99**, and \$135 after then.

FOG has reserved a table for the evening, and welcomes all comers to join us on it (10 persons per table). It is another great opportunity to catch up with FOG friends, and in rather salubrious surroundings. Please contact [margaret.ning@fog.org.au](mailto:margaret.ning@fog.org.au) if you are interested in joining the table.

Once again Janet Jeffs of Ginger Catering will cook up a treat using local, seasonal produce. There will be a three course meal plus champagne and canapes to start and your ticket includes wine. Book your dinner ticket at <http://conservationcouncil.org.au/civicrm/?page=CiviCRM&q=civicrm/event/info&reset=1&id=81>

## FOG workparties, Stirling Park:

30 April, 28 May

*Sunday 30 April 9 am –12.30 pm*

Please join us as we return to the 'eastern front': the site of previous work parties east of Haines Creek and between Alexandrina Drive and Forster Crescent at Stirling Park, Yarralumla, ACT. Look for the FOG sandwich board signs pointing into the bush off Alexandrina Drive opposite Lotus Bay (which is the bay beside the Southern Cross Yacht Club), near the eastern intersection with Mariner Place. There is plenty of room to park.

This is a challenging area but there should be two chain saws operating, and work carried out to date has made an amazing difference. Please wear gardening clothes and solid footwear, bring eye protection, sun protection and drinking water. As always, there will be an excellent morning tea.

Please let us know by email if you intend to come on **30 April**, so that we get our planning right for tools and catering.

[jamie.pittock@fog.org.au](mailto:jamie.pittock@fog.org.au) or [pmcghie@optusnet.com.au](mailto:pmcghie@optusnet.com.au)

The **next workparty** at Stirling Park (last before the winter break) will be on **Sunday 28 May**. If you tell us you are likely to attend, we can include you when we email out the details nearer that time.



Members of the workparty at Stirling Park on Saturday 1 April, enjoying morning tea. *Photo: Jamie Pittock*

## Meeting with National Capital Authority

FOG representatives met Malcolm Snow (Chief Executive) and other staff of the National Capital Authority on 20 April, to discuss our partnership regarding grassy ecosystems on National Lands. FOG thanked the NCA for its additional efforts in 2016–17 to enhance management of these high conservation value areas, especially at State Circle, Stirling Park Woodland and Yarramundi Grassland. We particularly appreciate: a) adoption of an updated environmental management plan; b) ongoing controlled burning; c) additional funds for 'first cut' removal of dense woody weeds in parts of Attunga Point, Stirling Park Woodland and Yarramundi Grassland; and d) walking track repairs at State Circle. FOG proposed several similar activities for 2017–18.

*Jamie Pittock*

## Two exciting FOG activities coming up in June and July

***Saturday 10 June, 10.30–12.30 ish***  
**Visit Yass River Gorge, Yass NSW**

Friends of Yass Gorge (FOYG) have invited FOG to visit their river gorge almost in the centre of Yass township, where there is good Natural Temperate Grassland. In early winter, we are not likely to see many flowers on this visit, but we can see the gorge itself, and the grassland in its vegetative state.

There are defined paths on both sides of the river through the gorge. One side is such easy walking it's wheelchair friendly (< 1 km). The other side is more rugged, with a steep climb up to the cul-de-sac at the north end of Meehan St, and on this side we may be able to walk on as far as the wall of Yass River dam, checking out good grassland all the way (1 – < 3 km).

At the end of this visit, Jill McGovern (of FOYG) suggests we may all like to have lunch together. Various dining styles are on offer in six differing cafes, and once we have decided what we want as a group FOYG can book us some space; we shall be paying for ourselves.

Since beginning work at Yass Gorge, FOYG has removed large amounts of blackberry, which while good has opened up grassland that was hidden and protected before. We shall be able to discuss this and other management. Each spring, the gorge management plan requires a floristic survey. This year, FOYG would be very happy if FOG people are interested in being involved to help with plant identification. We can discuss this on 10 June also.

For 10 June, register with [ann.milligan@fog.org.au](mailto:ann.milligan@fog.org.au) by **8 June**, to find out meeting & parking place, and to suggest your preference for lunch.

***Saturday 15 July, 2–5 pm***

## Mid-winter talks & tea, Mugga Mugga

The annual gathering of FOG people at Mugga Mugga environment education centre in Symonston ACT is on again this year. We have invited two speakers.

**Dr Kate Auty**, the ACT Commissioner for Sustainability and the Environment is coming to share her thoughts with us. You may remember that we had expected to welcome her last year, but she was taken ill and unable to attend. Also, **Dr Lydia Guja**, Seed Conservation Biologist at the Australian National Botanic Gardens Seed Bank, will tell us about their program of collecting and storing seed of Natural Temperate Grassland species as well as species in Box–Gum Woodland. Both these talks promise to be fascinating and generate plenty to chat about over the usual splendid afternoon tea. To register for this FOG activity, please contact [paul.archer@fog.org.au](mailto:paul.archer@fog.org.au) by 11 July (for planning the catering and setting out the chairs).



## From the FOG Committee

### Welcome to new members!

These people have recently joined FOG:

**Lorraine Kennedy**, ACT

**Harry Binnendijk**, NSW

**Didi Sommer**, ACT.

### FOG Committee 2017

The new FOG committee was installed at the AGM this year, which was a pleasant and low-key evening attended by a small proportion of the FOG membership. Kim Pullen gave the (Acting) Presidents' report (which is reprinted on this page). The full FOG annual report is on the FOG website at <http://fog.org.au/AGMs/2016%20annual%20report.htm>. Andrew Russell again accepted the role of returning officer, and the nominated officers and committee members were elected in an orderly process. There were no nominations for Treasurer at that stage, and we are fortunate that Janet Russell has since taken on that role.

The resulting committee of FOG for 2017 is therefore:

Geoff Robertson	President
Kim Pullen	Vice President
John Fitz Gerald	Secretary
Janet Russell	Treasurer
Paul Archer	Committee member
Ross Dennis	Committee member
Tony Lawson	Committee member
Katherina Ng	Committee member
Margaret Ning	Committee member
Barbara Payne	Committee member
Sarah Sharp	Committee member
Andrew Zelnik	Committee member.

Several members of the 2016 Committee did not make themselves available for re-election.

The following people also contribute to FOG without being formal committee members:

Richard Bomford	Website manager
Jamie Pittock	NCA Projects
Peter McGhie	Stirling Park work
Andy Russell	Public officer
Linda Spinaze	Scottsdale projects
Ann Milligan	Newsletter, activities
Naarilla Hirsch	Advocacy group
Bernadette O'Leary	Advocacy group.

### (Acting) Presidents' report 2016

The year 2016 was one of continued consolidation for Friends of Grasslands. Membership remained steady at just over 200, with a majority in the ACT and surrounding areas of NSW. FOG maintained strong activity in the areas of advocacy, on-ground conservation and rehabilitation work, and field excursions. We continue to enjoy a high standing within the regional conservation community and in our work with the ACT and NSW local governments. FOG is represented on the Biodiversity Working Group of the Conservation Council ACT Region, and has strong links to Bush on the Boundary (BoB) and Kosciuszko to Coast (K2C). Our field activities in 2016 included trips to Cowra, Moruya and the Bundian Way near Delegate, which reached out to NSW members.

A revised FOG Strategic Plan was posted on our website, which continues to be well visited.

Advocacy Group coordinator Naarilla Hirsch had a full year with a total of 22 submissions.

FOG continued rehabilitation work in remnant grasslands and grassy woodlands on National Lands in central Canberra, at Hall Cemetery and on the Old Cooma Common and adjacent areas. FOG members volunteered for the annual vegetation monitoring event on Scottsdale, a Bush Heritage property near Bredbo, south of Canberra.

Our bimonthly newsletter, *News of Friends of Grasslands*, continued under the able editorship of Ann Milligan with an average page count of 14.6 for the six 2016–17 issues. An increasing proportion of members are electing to receive their newsletter by email.

The Acting Presidents wish to thank the committee and other members for their inputs and support during 2016.

Particular thanks go to Naarilla Hirsch and Leon Pietsch who are stepping down from their roles this year, Naarilla after eight years as Advocacy Coordinator and Leon from the Treasurer position. Also on behalf of FOG, we thank Webmaster, Richard Bomford, for all the invaluable work he does for the FOG website.

(Note: Friends of Grasslands was without an elected President for the year to March 2017. The role of Acting President was shared between Kim Pullen and Ann Milligan.)

### FOG activities classification

The committee has approved a proposal to upgrade the way we have been describing FOG's upcoming activities when advertising them, and the information we have been collecting on the sign-on sheets when activities begin. Since February 2017 we are asking people to read an event advice sheet before signing on, and also to provide an emergency contact number. The event advice sheet is the one used in earlier years, now augmented with some extra alerts.

The FOG Activities team (Paul Archer, Margaret Ning, Kat Ng, Ann Milligan) has also come up with a classification scheme for hazards and distances that may be involved in activities, which could be used as a guide when advertising activities.

### ALERT! Small project grant applications due this weekend!

As advertised widely, FOG is offering grants of \$500–\$1500 each to promote investment in understanding and management of grassy ecosystems. Recipients might use the funds for a small project or add them to funding for a bigger project.

Suitable projects might include: publications, research, education, on-ground work, advocacy, publicity and training.

Applications are due by **30 April, this weekend**. You don't have to be a FOG member to apply. Email [grants@fog.org.au](mailto:grants@fog.org.au).

## (Re-)Introducing FOG's new president – an invited article

Geoff Robertson\*

Despite my age, I remain a strong advocate for grassy ecosystems and biodiversity more broadly, and maintain the strong belief that each of our efforts as volunteers greatly contributes to our cause and society more generally, while contributing to our own knowledge, skills and sense of self worth. Hopefully as President in 2017 I may make a positive contribution to our efforts.

FOG remains strong, maintaining a strategy developed from its inception. That includes being science-based (including being informed and supporting research); providing strong advocacy and communication; organising well conceived conferences and workshops, field-trips and on-ground work; maintaining and developing strong partnerships and networks; providing sound governance and finance structures; attracting and or developing highly skilled volunteers; and respecting others. We also aim to respect and learn from the land management practices of our Indigenous people.

Our membership continues to consist of professional biodiversity researchers, landowners and on-ground managers managing land partly or fully for conservation, and others with a passion

for grassy ecosystems. Each in his or her own way contributes to understanding of grassy ecosystems and their conservation and or restoration. With a membership of 200, without an active recruitment program, FOG functions well and effectively delivers services in support of grassy ecosystems. FOG's reputation in the community is high.

Our on-ground and research projects at Canberra National Lands sites, Hall Cemetery woodland, Cooma sites, and Scottsdale are well designed and supported. FOG's visit this month to Kama Reserve, best described as a workshop-in-the-field, illustrates the contribution of grassland restoration science, long advocated by FOG. Visits to members' properties often illustrate the progress that has been made in conservation practice on private land and reserves. Our advocacy work is organised by a strong team and continuously illustrates the need to support good public policies and for pushing out the envelope and greater biodiversity resourcing. Our contribution and influence is spread through many networks; this is a two-way process. Many organisations follow our

innovations. Our newsletter and website are constantly spreading the learning.

A recent innovation is our supported projects grants which are attracting a wide and varied interest. This formalises FOG's long-recognised position that our financial resources should be invested in projects. While the return on investment may not be a cash one, each investment contributes to understanding, supporting and advocating of grassy ecosystems. To support these projects we encourage FOG members and supporters to contribute our FOG Public Fund; donations are tax deductible.

While FOG members do fantastic work in support of grassy ecosystems, this work is often detailed and time consuming and we often neglect sharing our insights and knowledge amongst our friends, circles in which we move, and in the media. ***I urge you all to be greater public advocates for grassy ecosystems.***

I am happy to hear from anyone (via [president@fog.org.au](mailto:president@fog.org.au)) about ideas and opportunities to do more for grassy ecosystems. Send me your phone number.

*\*Geoff is a former long-standing FOG President.*

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## FOG advocacy

Naarilla Hirsch & Sarah Sharp

**February: 1.** While not a formal submission, in February FOG wrote to Mick Gentleman (ACT Minister for the Environment and Heritage) in support of Garra and Hughes Residents Action Group and others concerning their views over a proposed development of 120 residences at the Federal Golf Club (FGC) course abutting the Red Hill Nature Reserve. FOG did not support the approach of FGC to undertake its own limited public consultation process, and submitted that a community panel be required of FGC before the development proposal proceeds further. FOG has had a response, in which Mick has indicated that, while not a formal part of the statutory process, he has asked the Environment, Planning and Sustainable Development Directorate to convene a community panel to promote dialogue between the Federal Golf Club and interested community groups. He also indicated that the ACT Government would undertake its own statutory consultation if the proponent decides to continue with its proposal.

**March: 2.** The Conservator of Flora and Fauna released the 2016 draft Eastern Grey Kangaroo Management Plan for public comment. FOG has for many years supported the need to control kangaroo numbers for the reasons given in the draft control

plan, and believes that the control program should be ongoing and should not be subject to an annual process of approval. In its submission, FOG congratulated the authors on the research that has taken place to support the control plan and the presentation of that research in the report. FOG also provided some specific comments about part of the report.

**3.** The National Capital Authority has received an application for demolition of existing buildings on the former CSIRO headquarters site in Campbell, and asked for public comment. FOG has had a long-standing interest in endangered species and communities on and adjoining this site. FOG's comments included concern about the steps to be taken to ensure that there will be no impact on threatened species on areas adjoining the demolition zone, and lack of clarity about removal of mature, naturally occurring trees. The latter concern relates to FOG's identification of loss of mature native trees in woodland and grassland as a threatening process in critically endangered Yellow Box-Blakely's Red Gum Grassy Woodland.

**April: 4.** The ACT Government asked for comment on the Development Application for stage 1 of the Ginninderry development (West Belconnen). ... ***Continued at end of page 5***



## Close-up: Yellow Box and Blakely's Red Gum

John Fitz Gerald

Most previous 'Close-up' contributions have looked at small plants in grassy systems. This month I'd like to look up into the big plants of the canopy.

Yellow Box-Red Gum Grassy Woodland is listed as an Endangered Ecological Community in the ACT, and a Commonwealth listing covers similar systems across south-eastern Australia. I'm sure readers are quite familiar with the plight of these beautiful areas.

Over much of the extent of this community, the eucalypts Yellow Box *E. melliodora*, and Blakely's Red Gum *E. blakelyi*, are co-dominant tree species. Both of these trees become huge when allowed to grow to maturity, and produce large numbers of seeds after flowering in the right conditions. Photo A (at right) shows a majestic Yellow Box, almost 20 metres tall, now isolated as a paddock tree on the outskirts of Canberra.

Each small fruit of these giants opens when ripe and dry to release packages of seeds. Photo B shows such material from a Red Gum. There is a mixture of size and colour – mature seeds are more equidimensional and dark while the elongate and more colourful particles are infertile seeds. Such contrasts can make seed sorting straightforward, but seeds are usually stored and sold as mixtures of seeds and infertile 'chaff'.

Details of fertile seeds are shown in Photo C: two *E. blakelyi* on the left, two *E. melliodora* on the right. The *E. blakelyi* are relatively smaller and bear some tiny teeth, while *E. melliodora* seeds have patterns of ridges across their surfaces.

Being fascinated by numbers I did a back-of-the-envelope estimate of volumes of plant matter. I calculate that the ratio between volumes of plant matter in seed and mature tree for the Yellow Box is of the order of  $10^{11}$ . In other words, the tree has one-hundred-thousand-million times more matter than the seed from which it grew. Truly astonishing.



A



B



C

### FOG advocacy, continued from page 4

FOG has been involved in the community consultation concerning this project for some time, and noted that the stage 1 proposal is well removed from the high-conservation-value grassy woodlands and grasslands in the area. FOG regretted the loss of mature native trees, including some with hollows, in the paddocks planned to become Ginninderry's first suburbs, and drew attention to the Nomination of Loss of Native Hollow-bearing Trees as an Environmental Threatening Process, recently submitted to the ACT Government. FOG urged close re-examination of these planned tree removals to see whether all these hollow-bearing trees do need to be felled. On the positive side, FOG was pleased to observe using the Landscape Master Plan the retention of many remnant trees and sensitive design of surrounding areas to assist the trees to continue in good health to function as a major ecological connection across the planned development.

The full text of FOG submissions appears on our website.

Photos by John Fitz Gerald.

Photos B and C are micrographs recorded at the Seed Bank of the Australian National Botanic Gardens. The black lines in the corners of photos B and C represent a length of one millimetre. Both images B & C are ©ANBG.



## Canberra Nature Map – a short history (part 1 of a 2-part series)

Michael Bedingfield

### From one orchid ...

The Canberra Spider Orchid, *Caladenia actensis* (photo below), was the inspiration for the creation of the Canberra Nature Map website (CNM) and its logo (above). This orchid is an endangered plant that is endemic to the ACT. When Aaron Clausen accidentally encountered these beautiful orchids he began a search to find out more about them and how to ensure their continued survival. Eventually he linked up with Michael Mulvaney who is a senior environmental planner in Conservation Planning and Research (CPR) in Environment ACT. Following discussion with Michael, Aaron decided to create a small website to map the location of these orchids using GPS technology.

After some months and continued discussions with Michael, the concept grew to cover rare plants in general. With Aaron's talent and professional IT experience, and Michael's long career in working as a botanist, biologist and ecologist they put together the basics for a website to map rare plants in the ACT.

In May 2014 I received an email from Michael, inviting me to join in helping with the running of the website, by being a Local Moderator for Tuggeranong Hill and Rob Roy Nature Reserves. This meant taking responsibility for the website content of these reserves. I cautiously accepted and began getting to know the website (username michaelb). I was very impressed with the concept and saw it had a great potential. It was also an opportunity to show off the great diversity of native flora that I had discovered in my area.

A short time later I explained my ideas for the project and its future and told them of my plans to use CNM to document the local flora in the above reserves as well as the nearby Murrumbidgee River Corridor using my stash of old photographs. Seeing my enthusiasm Aaron made me an administrator for the website so I could help with its development. Again I was cautious about this new role, but eventually found it to be very fruitful, and the three of us have done it ever since. During the 1970s and 1980s my public service career was in computer programming and systems analysis, and this background made me quite useful to the development of the website.



*Caladenia actensis*, Canberra Spider Orchid, which was the impetus for Canberra Nature Map and all that has followed its creation.

Photo: Aaron Clausen



Left: Aaron Clausen  
(with Atticus).



Right: Michael Mulvaney.

Photos courtesy of the subjects.

### ... to all wild plants

The amateur naturalist members often didn't know the difference between common plants and rare ones, so it was soon realised that, in order to optimise the recording of rare plants, we had to fully embrace reporting common ones. It was also very valuable to know about the complex flora communities that rare plants were part of.

Then, by the end of 2014 we were receiving reports of exotic plants and noxious weeds. A few of our regular users were shocked and protested. At first we tried to separate them away from our normal records, but as they kept coming in we had to make an adjustment and embrace exotic plants and weeds as well. So we began to cover the whole range of wild plants. This has been extremely useful.

Our knowledge of the whereabouts of rare plants has grown enormously since our humble beginnings. Also the Park Rangers have become involved and if a serious weed problem is reported then Michael can inform them immediately, and they can use the GPS location to go directly to the site and deal with it.

This is how our growth has happened, in a natural organic way, learning as we go, being responsive to the needs of our users and accepting their discoveries willingly.

It has been a huge job to create a plant species structure which is easy for amateurs to understand yet scientifically sound, as well as getting the spelling right for all those names, doing countless identifications, selecting the best photos for our species lists, etc. The efforts of Betty Woods and Michael Mulvaney need to be acknowledged here. Betty Woods kindly allowed us to bulk-import the photos of regional plants, with locations, from her and Don Woods' books. Also David Nicholls (ferns), Heino Lepp (fungi, mosses, etc.) and Tony Wood (orchids) were there for us from the start.

Our greatest success has been with plants, and now after several years of receiving sightings and much support from local enthusiasts, our plant species lists and photographs are quite excellent and the major source of information and education on the flora of the ACT.

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Canberra Nature Map – a short history (part 1 of a 2-part series) – continued from page 6

### From a simple concept to a complex and sophisticated website

At the time I joined CNM there was a very limited agenda, namely the mapping of rare plants with photographic data solely from modern digital cameras with GPS tracking technology. All my photos were from a pre-digital camera, and most of them were of common native plants. It was not difficult to persuade Aaron and Michael to broaden their horizons and accept historical photos without GPS data. So Aaron amended the reporting process and linked into Google Maps so that all that was required to give the location of a plant was to click on the point on a map. This utility is now given to users on request; such users are called 'Trusted Contributors' and have elevated privileges.

### Atlas of Living Australia

There has always been a big emphasis on accuracy of data. From the beginning CNM developed a strong relationship with the Atlas of Living Australia (ALA). Our sightings are exported to them. In reality what happens is that on a regular basis they scan our website and take a copy of all new sightings that have come in since their last visit, as well as all those which have been edited in any way. They like our data because it is verified by experts, and they make great use of our photographs that become part of their galleries. We align our species names with theirs for this reason. Michael and Aaron have meetings with their staff at CSIRO when necessary to discuss any issues.

### Adding mobile phone capability

Aaron is a mountain biker and loves the great outdoors, and enjoyed photographing orchids and putting them on the website when he got home. But he realised that the process would be much quicker if he could take the photos and load them onto the Internet on the spot. So he started the development of an App, so he could do it with his iPhone. This required paying another party to do the work. Later he had someone do the same App for Android. This was very expensive and cost tens of thousands of dollars. Fortunately he has been able to recoup the money from government grants and nowadays he looks after the App software himself. But this broadening of the method for reporting has been a great boost to the reporting and also membership.



As the months progressed it became clear to Aaron that this project was very useful and practical and that the platform could be transferable to cover areas other than Canberra. So he then began rewriting the software in such a way that other areas and projects could be taken on without too much effort, provided there were the willing local experts. The new platform is called **NatureMapr** (logo above) and CNM is its primary project.

Eventually in 2016, after many negotiations with people down the coast, our sister website for the **Atlas of Life Coastal Wilderness (ALCW)** became a reality. There is also another project for monitoring Koalas that uses the same platform. Anyone who is a member of CNM can login to the ALCW or Koala websites, and automatically be accepted as a member, and vice versa.

### Growth of coverage of fauna

After our successful beginning with plants we gradually broadened our coverage to include various types of fauna. We began with reptiles and frogs in 2015, linking up with ACT Herpetological Association through Geoff Robertson and with Frogwatch via Anke Maria Hoefer. Gradually our members took on this expanded coverage. When these two faunal groups were running well we added butterflies with the help of Suzie Bond. Then we became emboldened enough to try birds.

This was a much more difficult task because we wanted to incorporate the Canberra Ornithologists Group (COG) database into CNM. They have been surveying birds around Canberra and nearby for many years, and their data is invaluable. We tried at first adding a part of the database, with about 1 million records. This being done the whole system collapsed and our software failed.

*Alisterus scapularis*,  
Australian King Parrot (male).

Photo: Michael Bedingfield

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*Canberra Nature Map – a short history (part 1 of a 2-part series) – continued from page 7*

Despite Aaron's best efforts to fix it there was no recovery. The problem was the jump from several thousand records to over a million, and everything was going too slow and we kept having system crashes. So Aaron reluctantly cut the COG data out, and began a period of rewriting some of the more inefficient software.

Eventually we were ready and added back the COG data. This time things went more smoothly. By the beginning of 2016 the bird section was in full flight. The contribution from bird enthusiasts grew well and we now have excellent photos of many of our birds and a happy relationship with the COG people who can use our website to explore their data in a new way.

In the winter of 2016 we quietly added mammals.

Then in August 2016 we took on the enormous task of receiving sightings of all insects and other arthropods (mainly spiders but also centipedes, scorpions, etc.). Our founding experts here were Kim Pullen and Roger Farrow. The huge number of species and the number of different sorts of insects and spiders made this a very complex addition. Since I know very little about insects and spiders, my organising their addition has been 'a steep learning curve' to say the least.

Our members have been very keen to participate. In the second half of January 2017 the number of sightings of insects and spiders was roughly double those for plants. This was a significant moment for CNM and a gigantic leap forward from the original plan for the website. Gradually we are getting the support of specialist entomologists for more of the insect groups. Although at the time of writing we have 17 experts just for insects and other arthropods we need more to cover them properly.

Overall the development of CNM has been an enormous task, with thousands of hours of volunteer work. At the time I joined there were only about 50 members and just a few experts covering plants, fungi and mosses, etc. Since then our membership has grown to approximately 1000 and we have 35 experts covering over 4000 species in the various fauna and flora groups.

## Conclusion

We now map the location and abundance of most types of wildlife in the Canberra region, in a way that is useful to science and researchers as well as easy and enjoyable for members. This is our basic purpose.

We also aim to present the flora and fauna we have recorded in a way that is educational and informative, with species lists and photographic libraries. The website is a venue to communicate and share knowledge in a friendly setting which is run almost entirely by volunteers. We also provide the ACT Government with readily accessible and up to date locational information. This is used in decisions regarding the protection and enhancement of Canberra's natural treasures and is a significant benefit of the project. In return the



*Apina callisto*, Pasture Day Moth. Photo: Michael Bedingfield

Government provides funding for the website hosting expenses. From its very simple beginnings CNM has become a highly sophisticated and valuable wildlife mapping website and is a leader in this field.

For the future we are set up to extend the coverage of NatureMapr to other regions, such as we have done with ALCW, and there are several possibilities in the pipeline. We also intend to allow for reports using sound recordings of animals instead of photos. This is especially valuable for frogs, which are very hard to see let alone to photograph, and also birds. We would also like to include private properties as defined locations when they are managed for conservation purposes. The accuracy of our altitude data will be improved too, and lots more.

But for the moment we are taking a break from expansion. We are happy with the enormous progress we have made and want to consolidate for a while. Also Aaron is a new father and has increased family duties as well as his demanding professional career to cope with. However, there will be further growth and change in the future, when time allows. With technology always changing we will have to continue to evolve.

While FOG has not been directly involved in CNM, its members have made a major contribution to its development and success, and that is something worth recognising and savouring.

## References

<http://canberra.naturemapr.org/>

<http://atlasoflife.naturemapr.org/>

Part 2 of this story, 'Canberra Nature Map – explaining a few things', should be in July–August FOG newsletter (next issue).



## **Achievements at Hall Cemetery woodland so far this year**

*John Fitz Gerald*

Finally, after three episodes of dodgy weather in summer, and a wet workparty in early March, a perfect day dawned for the Hall team to work on Saturday 8 April!

It was nice to see a relatively large team of volunteers that day, and even more so to see new faces (most of whom are in the photo, below right). The recent rain and warm weather has produced terrific growth, but that involves lots of weeds as well as natives. Spiders were everywhere.

Most of the effort in April (as well as in March), went into bagging remaining seed heads of Prickly Lettuce, though work was also done on Spear Thistle rosettes, the dreaded Cleavers, and Deadly Nightshade. A little spraying was directed onto rosettes of various types (in April only).

Thanks to everyone, quite a pile of bags were filled and needed to be carted away to the green waste – thanks to Margaret Ning for doing this. Now we can rest over winter and get back on the job in mid-spring.



Happy soggy 'FOGgies' (including one holding camera) on 4 March (above), and the dry team on 8 April (below).



Dripping wet and still focused: Margaret on 4 March.



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## **FOG visit to 'Ballyhooly', 18 March**

'Ballyhooly' is rich in native plant species – at least, that is the impression we gained from the very small proportion of the property that we saw during our pleasant and relaxed afternoon there on Saturday 18 March.

Our hosts, the Mossops, who are FOG members, made us feel very welcome as we trampled and exclaimed over the grassy woodland near the house, where there are many more forbs than grasses. That area is a relatively tiny and very beautiful part of this moderately hilly conservation property occupying 1000 acres, SE of Bungendore.

The 18 of us (including our hosts) at this FOG excursion had a range of interests in the visit. Part of the group spent most of the 2–3 hours excitedly focused on the ground and its numerous species, while others wandered through the woodland area exploring the mixture of eucalypts, acacias and unusual



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### FOG visit to 'Ballyhooly', continued from page 9



After our visit, Helga and David extended an invitation to FOG and/or Wednesday Walkers to visit again. They have mapped out a number of walks on the property, from 1 km to 8 km long, which would be particularly nice in autumn and winter. If you are interested in taking up this opportunity, then please email [ann.milligan@fog.org.au](mailto:ann.milligan@fog.org.au) so I can put you in touch with each other.

shrubs, taking photos and looking out for birds. Few plants were in flower – an orchid (Parsons Bands *Eriochilus cucullatus*; see photo) was one of the exceptions. In hindsight, we could have split into several groups, with one group updating the plant species list while others went for a walk (therefore, see box below). Possibly a third group would have preferred to be discussing aspects of managing that landscape.

Thank you again very much, Helga and David, for your hospitality and for showing us your lovely property.



### FOG visit to grassland ecosystem restoration trial plots, Kama, 11 April

18 people, from FOG, other local landcare groups, University of Canberra and the Australian National University joined hosts Brett Howland and Richard Milner at Kama Nature Reserve on Tuesday 11 April afternoon to see and hear about their work to restore native grassy landscapes.

The team's research trials for the ACT Government aim to test various ways of recovering the area's Natural Temperate Grassland and its value as habitat for Striped Legless Lizards *Delma impar* and other fauna. Kama is one of several sites where they are testing methods for enhancing forb diversity, following findings made by others – for example, Greening Australia, and FOG member David Johnson in his trial plots at Kama.

Scalping is one method that will be used; it has already proved successful (if expensive) at Barrer Hill in the Molonglo Valley. Mowing and burning are also being tested. Brett and Richard drove us across Kama to part of the track where mowing of the verge has produced a contrast in native species diversity compared to the adjacent unmown paddock (photo at right). Although Kangaroo Grass is dominant across this area, the unmown areas are also full of Fleabane, St John's Wort and thistles. The long-term outcomes will compare the effects of mowing and grazing (by roos) and ecological burns. (FOG member Ken Hodgkinson is also testing mowing and burning for restoring grassland, as well as replanting; we visited his plots in early 2016.) These ways of managing grassland biomass are known to support richer biodiversity by producing varied plant heights and densities across habitat patches.



...continued next page



## FOG visit to grassland ecosystem restoration plots, Kama, continued from page 10

One of two other trials we saw today at Kama is bringing back rocks (photo at right): do added rocks affect plant diversity and density, and improve habitat for reptiles, invertebrates and possibly small mammals? Another trial is bringing back actual animals. Near the rock plot we visited a dug-in corrugated metal fence (photo below right) enclosing a patch where Striped Legless Lizards have been reintroduced in the hope that they will breed here to re-establish a viable population: this threatened species of lizards is not likely to reinvade Kama without help. Brett monitors lizard presence by checking under concrete roof tiles placed as hidey-hole covers (or under rocks, in the rock-plots). Individual lizards are recognisable by patterns in their scales.

Indeed all the work Brett's and Richard's team is doing is being monitored regularly. For plants, for example, during three weeks last November–December, Margaret Ning was part of the ACT Government's grassland monitoring program identifying the spring-emergent forbs and grasses, including in some of the Kama plots. The monitoring is producing plenty of data which are already showing strong relationships, and the first year's results are currently being written up as a scientific paper.

Our FOG group found this activity very enjoyable as well as informative and "a very worthwhile event", in words sent later by one of the participants. Thank you, again, Richard and Brett.

As background to our visit, Richard and Brett provided several interesting handouts outlining all these trials. Copies are available. Also, the team will need 1–2 helpers again for plant surveys in spring 2017. Contact [margaret.ning@fog.org.au](mailto:margaret.ning@fog.org.au) if you are interested in either the handouts or the survey opportunity.

**Acknowledgement:** These projects are funded by the National Landcare Programme in partnership with the ACT Government Parks and Conservation Service.



*Photos p. 10: Top: Part of the group at the first stop. Below: More of the group with Richard (far left) & Brett (next left) on the mown area (with unmown area beyond), explaining the mowing, burning and translocation work (Photo: Paul Archer).*

*This page: Top: Richard and Brett explain a rock plot. Middle: A lizard tile. The fenced area with Geoff Robertson (crouched) and Brett inside it. Bottom: Returning to the cars at day's end (Photo: Paul Archer).*

### Snippet

#### Draft ACT Native Grasslands Conservation Strategy – open for comments until 12 May

The ACT Government invites comments on the revised draft ACT Native Grasslands Conservation Strategy, at <https://www.yoursay.act.gov.au/nativegrasslandsstrategy/>. The final strategy will guide the conservation of ACT native grasslands and their resident species with a vision of supporting a diverse flora and fauna for now and the future. Comments can be emailed or mailed, or hand delivered, as directed on the web page which also links to a brochure (4 pp.) and the draft strategy document (257 pp.), both downloadable.

### Other groups' events

**Fringe forum on ACT Environment Grants:** Learn more about what is (and isn't) funded and what's involved in planning, applying for and receiving one of these grants. Plenty of opportunities to ask questions! **2 May, 16 Challis St, Dickson ACT.** See <http://www.environment.act.gov.au/act-nrm/grants-awards-and-events/environment-grants> and please RSVP to [Alison.mcleod@act.gov.au](mailto:Alison.mcleod@act.gov.au).

**Bushfire Management: Balancing the risks:** A community symposium on research, strategies and expectations for fire management in ACT in a changing climate. **21–22 July.** See <http://www.npaact.org.au/event.php?id=1533> and <http://www.npaact.org.au/res/File/2017/BushfireFlier6.pdf>

## The Living Classroom

Wayne Brown, NGRG member

From *eGrass Notes* no. 43 Summer 2017

Most people who live in South Australia are familiar with the South Eastern Freeway, a 76-km-long dual-lane roadway that stretches from Crafers in the Adelaide Hills to the River Murray at Swanport (near Murray Bridge) and was built in stages between 1965 and 1980.

Crafers' mean average rainfall is relatively high (for South Australia) at 870 mm/annum, and mean temperature is 15°C. By contrast, 76 km away at Murray Bridge, mean average rainfall is 320 mm/annum and mean temperature is 24°C. This differential makes the South Eastern Freeway a unique environment in which to observe native – and other grass – growth changes. This 110 kph corridor, and the grasses that grow within the corridor, provides an insight into the movement of species within the context of a changing climate.

### Early soil stability controls

Over the years, the Transport Department (there have been many name changes over time) and many of us have come a very long way in regard to the type of replanting species that are utilised post soil-disturbance; revegetation along the Freeway is no exception.

Back then, a bit like now, knowledge regarding native grasses – their presence in the landscape, the availability of large quantities of seed and seeding techniques – was sadly lacking from rehabilitation projects. A few of the grass species that were used in reseeded areas during the building of the SE Freeway to assist control of soil erosion included: *Chloris gayana* (Rhodes Grass, an African native), *Phalaris aquatica* (developed as a livestock pasture grass) and Cocksfoot, Fescue and Ryegrasses (also part of a general pasture mix).

The consequences of using the above species in landscape rehabilitation, can still be seen today. These consequences include:

- Rhodes grass has spread and dominates areas around Bridgewater to Mount Barker and is found in isolated patches along the corridor;
- the *Phalaris*, Cocksfoot, Ryegrass and Fescue require constant mowing, to reduce their height, which causes visibility/safety issues for traffic, and to reduce fuel loads which may intensify bushfire outbreaks;
- difficulty in revegetation works;
- reduction of natural regeneration; and
- the likelihood that these species may not assist native fauna species to live and breed in a way that native grasses will.

### Twenty-five years of observation and treatments

Many individuals and groups (too numerous to name) have worked on the corridor over the past 25 years to improve the environmental conditions. These activities have included the development of management plans, woody weed management, revegetation with trees and shrubs and native grass establishment.



Bob Myers inspects potential fire hazard on SE Freeway in 2000.

In 2000, a presentation to one of the Transport Department's Executives outlined an opportunity to reduce long-term maintenance costs. This eventuated in an opportunity, in 2004, to reseed the median strip (from the Bridgewater exit to the Hahndorf exit) with Kangaroo Grass (*Themeda triandra*).

### Challenges

Implementing change can be extremely challenging and can be very rewarding. The South Eastern Freeway presented a great opportunity, but the challenges were immense.

The concept of reducing maintenance costs and improving the environmental condition using native grasses was – and still is – an opportunity. Our challenges included:

- convincing technical staff at the Transport Department that native grasses were an option;
- reviewing past attempts at native grass establishment which were thought to be a failure (although, with management modification, they will represent good establishment);
- examining the process of mowing the freeway (why and when);
- challenging the current – and advocating for a change in – the maintenance cycle; and
- promoting all the other benefits.

The actual sites provided to us were never going to be easy to work on in a short time-frame, with existing plant cover that included old and dying *Grevillea rosmarinifolia*, Couch grass (*Cynodon dactylon*), Paspalum (*Paspalum dilatatum*), Salvation Jane (*Echium plantagineum*), Yorkshire Fog (*Holcus lanatus*), Capeweed (*Arctotheca calendula*), Ryegrass (*Lolium* sp.), Fescue (*Vulpia* sp.), Guildford Grass (*Romulea rosea* var. *australis*).

There were other items to deal with, as well.

- Limitations were placed on us regarding equipment access and time spent at the site because the project site was between the two carriageways.



*The Living Classroom, by Wayne Brown – continued from page 12*

- A trial of direct seeding using pure seed from Kangaroo Grass was part of the program. This in itself was risky because other attempts to add Kangaroo Grass to the landscape have usually been achieved via the 'thatch and burn method' which is very successful. However, this method was not very suitable for large areas or sites where smoke from the burn may pose a problem. ('Thatching' is the hand-cutting of stems and flowering seed heads – which are then taken to a site requiring new plants – and placing this harvested material on the ground as a thatch. In South Australia, this action usually occurs in late December/early January. Germination is assisted by burning the thatch. This is done after winter rains but prior to soil temperatures increasing. In South Australia, this is usually done in September. Burning provides ideal germination conditions.)
- The inflexible nature of the mowing contract. Although the site was marked and known, it seemed to be difficult for contractors not to keep mowing the site as part of an overall contract.
- Rainfall during 2004–2010 was lower than average and the summer provided little assistance to the germination of seed or the maintenance of plant health.

### Implementation: Bridgewater to Hahndorf exit

The Transport Department were keen to see the successful implementation of a native grass species. Due to the range of weeds present, we chose Kangaroo Grass (*Themeda triandra*) as the base cover. This species is increasingly known as a very adaptable plant in varying soils and climates.

Working with John Stafford, we:

- strip-sprayed on-site weeds in June 2004,
- seeded the site in September 2004, using pure Kangaroo Grass seed,
- sprayed between the strips in December 2004 to further control weeds,
- monitored growth,
- provided on-going reports.

### Outcome

Although rainfall in 2004 was very poor, we did achieve some germination. Couch and Paspalum grasses were the two main problem weeds that competed with the young Kangaroo Grass germinates.

Controlling the mowing contractors became an impossible dream. In most circumstances, the Kangaroo Grass developed heads but, before much of the seed was mature, the Kangaroo Grass areas were cut.

### Seen any dead rabbits recently?

Researchers are tracking the effectiveness of a new strain of calicivirus released nationwide in March. Please use Rabbit Scan, either the app (Apple or Android) or the website ([www.feralscan.org.au/rabbitscan](http://www.feralscan.org.au/rabbitscan)), to report any dead rabbit you find and to request a sampling kit. If you request a sampling kit, please bag, label and freeze the rabbit until your kit arrives. Full instructions on how to take a sample can be found on either the app or the website.



Kangaroo Grass 7 December 2007, beginning to grow.

Many thought that the direct seeding method was not very successful and even a failure. However, those of us who have been around direct seeding know that it is a waiting game for success.

In October 2008, another part of the area was hand-seeded using a mix of seed and chaff. The first year's seeding resulted in the germination of five seedlings. A last count (in early 2016) showed 173 individual plants on-site.

### Kangaroo Grass continues to expand

Those of us who travel the South Eastern Freeway and know of this project are all amazed at how the Kangaroo Grass continues to grow. It is becoming a noticeable sward from the Bridgewater Interchange to half-way down to the Hahndorf turnoff.

We observe that the Paspalum and other weeds are beginning to reduce, with Kangaroo Grass becoming the dominant species.

### Observations

As for the mowing of the grass, whilst the timing has not been ideal for seed maturity for possible dispersal, it is obvious that there have been times when the seed has been mature enough for germination to occur as a result of rainfall during the following winter.

Next time you travel the South Eastern Freeway in winter, you will be able to observe the low growth rates that are due to winter dormancy. In spring, the dark green clumps will appear. These will be followed by flowering stems that turn to a bronze colour in summer ... if the mower does not cut them down too soon.

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FOG is a member of NGRG and vice versa.

For useful native grass resources, see

<http://nativegrassresourcesgroup.wordpress.com>

## Contacts for Friends of Grasslands Inc. groups and projects

Refer to the website [www.fog.org.au](http://www.fog.org.au) for more information

### Friends of Grasslands Inc.

**General inquiries:** [info@fog.org.au](mailto:info@fog.org.au)

or Geoff Robertson (mob: 0403 221 117)

**Advocacy:** [advocacy@fog.org.au](mailto:advocacy@fog.org.au)

**Committee & correspondence:** PO Box 440, Jamison Centre ACT 2614, or [committee2@fog.org.au](mailto:committee2@fog.org.au)

**Financial matters**, excluding membership:  
[treasurer@fog.org.au](mailto:treasurer@fog.org.au)

**Small grant applications:** [grants@fog.org.au](mailto:grants@fog.org.au)

**Membership:** [membership@fog.org.au](mailto:membership@fog.org.au)

**Newsletters & e-bulletins:** sent out in alternate months through the year. Contributions are welcome, to [newsletter@fog.org.au](mailto:newsletter@fog.org.au) or [ebulletin@fog.org.au](mailto:ebulletin@fog.org.au)

**Website, [www.fog.org.au](http://www.fog.org.au):** [webmanager@fog.org.au](mailto:webmanager@fog.org.au)

### Promoting wider knowledge of grassy landscapes

**Publications:** *Woodland Flora*, *Grassland Flora*, other books & sales (order forms at the website), [booksales@fog.org.au](mailto:booksales@fog.org.au)

**Monitoring:** at Scottsdale, near Bredbo, NSW  
[linda.spinaze@fog.org.au](mailto:linda.spinaze@fog.org.au)

#### On-ground work:

*Hall Cemetery*, ACT [john.fitzgerald@fog.org.au](mailto:john.fitzgerald@fog.org.au)

*Yarramundi Reach & Stirling Park* [jamie.pittock@fog.org.au](mailto:jamie.pittock@fog.org.au)

*Old Cooma Common*, NSW [margaret.ning@fog.org.au](mailto:margaret.ning@fog.org.au)

**Education:** Southern Tablelands Ecosystems Park (STEP) at National Arboretum Canberra: [secretary@step.asn.au](mailto:secretary@step.asn.au)

**Activities:** [activities@fog.org.au](mailto:activities@fog.org.au)

**Media contact:** Geoff Robertson (mob: 0403 221 117)

### FOG-related calendar for late-April – mid-July

**30 April** Sunday 9–12.30. Stirling Park ACT, **workparty**.

Email: [jamie.pittock@fog.org.au](mailto:jamie.pittock@fog.org.au) or [pmcghie@optusnet.com.au](mailto:pmcghie@optusnet.com.au)

**3 May** Wednesday 9–4. **EIANZ forum** at the Australian National University, including **2 talks on FOG work** (*speakers:* Jamie Pittock and Peter Beutel).

**6 May** Saturday 2–3.30 pm. ACT TREE WEEK **walk at Hall grassy woodland**.  
Email: [margaret.ning@fog.org.au](mailto:margaret.ning@fog.org.au) to register and get meeting place.

**7 May** Sunday 9.30–11.30. HERITAGE FESTIVAL **walk at & beyond Yarramundi Grassland**, involving FOG people. Gold coin donation.

**28 May** Sunday 9–12.30. Stirling Park ACT, **workparty**.

Email: [jamie.pittock@fog.org.au](mailto:jamie.pittock@fog.org.au) or [pmcghie@optusnet.com.au](mailto:pmcghie@optusnet.com.au)

**3 June** Saturday 7 pm. To join **FOG table at World Environment Day dinner**, email [margaret.ning@fog.org.au](mailto:margaret.ning@fog.org.au). (Book dinner via Conservation Council.)

**10 June** Saturday 10.30 am. **Visit to Yass Gorge**, Yass, NSW. For details, and to discuss a group lunch afterwards, email [ann.milligan@fog.org.au](mailto:ann.milligan@fog.org.au)

**15 July** Saturday 2–5 pm. FOG mid-winter talks and tea, with Dr Kate Auty and Dr Lydia Guja speaking. Please register with [paul.archer@fog.org.au](mailto:paul.archer@fog.org.au)

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