

News of Friends of Grasslands

Supporting native grassy ecosystems

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November-December 2016

Opportunities to join in FOG activities coming up

Bungendore Open Gardens – Call for FOG volunteers to help

Tom Baker and Rainer Rehwinkel are organising an Open Garden event at Bungendore (it will benefit FOG) on the weekend of 26 and 27 November, 2016. Apart from the traditional open-garden style opening, there will be an open event at Turallo Nature Reserve, with two walks to be run each day, at 11.00 am and 1.30 pm. Rainer and Tom are putting out a call for volunteers to help guide interested members of the public around a defined walk through the nature reserve. Rainer will be the main walk leader, but it will be good to have a number of others to assist, especially if there is a crowd.

High-level expertise will not really be required. Rather, an interest to share with the general public, many of whom will probably not have been exposed to grasslands before. So, a basic understqanding of the more common grassland species, and some general interest knowledge of grasslands will be all that's required. Rainer will give an overview about the site and grasslands prior to each walk.

If you can help, please contact Rainer at rainer.rehwinkel@hotmail.com.



Scrambled Eggs *Goodenia pinnatifida* and Convolvulus among the Kangaroo Grass in the recently burnt trial patch at Turallo. We can expect many more flowers in late November. *Photo*: Rainer Rehwinkel.

FOG End-of-year picnic – Tuesday 13 December

Come and chat with other FOG members and celebrate the end of another successful FOG year on **Tuesday 13 December at Jerrabomberra Wetlands Office, Dairy Road, Fyshwick**. This evening was run last year for the first time, and was good fun – and perhaps the rain will hold off this year so we can go on walks round the wetlands. The newsletter will be being packed, starting around 5.30 pm, and many hands will get the job done quickly.

Bring your own picnic or barbecue fodder, and there are basic cooking facilities. **Contact** <u>activities@fog.org.au</u> to say you'll be there!

Stirling Park wildflower walk – Sunday 13 November

This annual ramble around Stirling Park shows off the native forbs in this grassy woodland that FOG has been restoring since 2009, now with the Yarralumla Residents Group. The wildflowers are stunning at Stirling Park now. Masses of Bulbine Lilies, Yellow Burr Daisies, and Hoary Sunrays (photo below, by Jamie Pittock), to name a few.

Start time: 2 pm, meeting at the dirt car park behind the Norwegian embassy in Fitzgerald Street, Yarralumla. **Finish by** 4:30 pm. Please dress for the weather, for any sunshine, and for walking on unpaved earthen tracks, and register with Jamie.Pittock@fog.org.au.



Welcome to two new members – and an early reminder about renewals

We welcome two new members: **Fiona Rayner**, of Cowra NSW, and the **Southern Tablelands Ecosystem Park** (STEP) which has joined as a not-for-profit organisation.

And ... it's nearly that time of the year again. Membership renewals are due on New Years Day 2017, at the same cost as in 1994! If paying online, please be sure to put your **name in the reference** box so we know the payment is from you. See http://www.fog.org.au/membership.htm.

Opportunities coming up in FOG, continued

Stirling Park workparties coming up: Sundays 30 October and 27 November



FOG volunteers and their haul of rubbish from Stirling Park at the August 2016 workparty. Photo: Jamie Pittock



Nine volunteers on 25 September at Stirling Park cleared privet into a huge beautifully stacked pile, ready for NCA staff to collect. The photos by Paul Ratcliffe show a privet thicket before (top) and after (below) the day's work.

FOG's adventure to the Bundian Way area, southern NSW, 5–6 November

All who have registered for this adventure have recently been sent the latest details available. **Have you responded?** If you think you have missed out, please urgently contact ann.milligan@fog.org.au.

'Scottsdale' – volunteers needed NOTE: Wednesday 2 November

FOG's annual monitoring of the vegetation on 'Scottsdale Reserve' near Bredbo, NSW, will be held on **Wednesday 2 November, between 9.30 am and 3.00 pm**.

We need some volunteers to assist us to put out the lines and record the vegetation. This is another opportunity to see parts of 'Scottsdale' not usualy accessible (see page 13 for FOG's recent (22 October) visit there). Lunch is provided. No experience is necessary.

We meet at 8.30 at Calwell to car-pool.

If you are interested please contact me for further information and registration: linda@xamax.com.au or linda.spinaze@fog.org.au

NB. The date was originally planned for 9 November, but has been re-scheduled.

Details for Stirling Park on 30 October and 27 November

A very wet late winter and spring has all our planting in Stirling Park flourishing. Some of the acacias have put on remarkable amounts of growth and even the eucalypts which tend to be slow are showing new young growth.

But life wasn't meant to be easy, and weeds are taking full advantage of the conditions. On **Sunday 30 October at 9.00 am** we shall mount an attack on St John's Wort in particular, and also Paterson's Curse which is making an appearance, and Fleabane, although we largely have this last one under control. We will also chainsaw the clump of Birches in the middle of the sewer chimney paddock. There are some woody weeds to be dispatched and rubbish to be picked up. If we have enough people it would be useful to straighten up some of the tree guards and tidy up some of the planting where long grass has established itself inside the guards.

We will set up camp on the top of the ridge near the water tank. For those coming by car, it is best to park in the open area behind the Danish and Norwegian embassies (Fitzgerald St, Yarralumla) and walk up the short track onto the ridge. Wear outdoor gardening clothes and footwear, and be prepared for the weather conditions and possible thirst. Of course, there will be morning tea. Please email Jamie.Pittock@fog.org.au or pmcghie@optusnet.com.au if you intend to come, to enable planning for number of tools required and catering.

For the **27 November workparty**, meeting time will be **9 am** at a place to be advertised in the late November ebulletin.

Yarramundi Grassland workparty

Sunday 27 November

A small FOG group will work at Yarramundi Grassland (which is at 245 Lady Denman Drive, ACT) on **Sunday 27 November**, again concurrent with work at Stirling Park the same morning.

Tasks and start times will be advised to those who register with John.Fitzgerald@fog.org.au. It is important to register, because John will be providing a welcome and re-energising morning tea for us.

Happenings at Hall, elsewhere in ACT, and in other states

New disappointment with *Bursaria* at Hall, and new hope for 12 November workparty

John Fitz Gerald

In the last issue of the newsletter I reported on the state of 30 *Bursaria* plants growing at Hall Cemetery woodland (ACT) and affected by a controlled burn on 27 April. About one-third, 35%, of these were actively shooting in July, rising to 60% by August. Rechecking their condition early this month I found a startling drop, to fewer than 10% putting out shoots.

The flat ground at Hall has been totally saturated for effectively all of August and September, and this possibly has had a negative impact. It seems likely now that most of the plants will die. The wet weather prevented any work at the September work session planned in the Cemetery woodland. A few keen volunteers did go to the site but quickly realised the large areas of standing water made weeding impossible. I have been describing this as the Hall 'tidal flat' recently – every time it rains the water comes back to stand for days and weeks.

We hope the 'tide' will stay 'out' and soils will be dry again by **Saturday 12 November for our next work date**. To join in, please register with lohn.Fitzgerald@fog.org.au by, at latest, 10 November, to find out the start time. Come dressed for gardening in long grass, and bring your favourite digging tool.

There are plenty of weeds to tackle: many rosettes of *Lactuca*, *Sonchus* and *Cirsium*. Our old enemy *Galium* is active, an exotic *Ranunculus* has spread, and large areas of exotic grasses including troublesome *Anthoxanthum* and *Lolium* need work.

On the positive side, the native wildflower display is looking terrific, especially within the Cemetery block.

Help needed for ACT grassland restoration project

FOG member Dr Ken Hodgkinson is lead scientist on a long-term project recently started in the Ginninderra Creek catchment (NW ACT) to find out how to restore weedy grasslands. These were once Natural Temperate Grassland (NTG). Ken and the Ginninderra Catchment Group are testing if the NTG can be restored by prescribed fire and transplanting. Over the next month (November) they need to determine what plant species are at the project's 13 sites.

This is a call for volunteers to become involved. If you can identify native and exotic plant species or would like to improve your plant identification skills we would appreciate hearing from you. Measurements will be made during the weekends 5–6 November and 26–27 November, and the weekdays between now and end of November. The plan is to team up competent leaders with less confident volunteers.

Can you **volunteer 3 hours at a time or even a day or two** to help? If so, please email <u>ken.hodgkinson@csiro.au</u> or call him on mobile 0429 606 788.

Come dressed to be out in a grassy landscape, with a hat, water and food. Start times will be 9 am and 2 pm.



Hall Cemetery woodland – the 'tidal flat' with standing water on 10 September 2016. The cemetery is on Wallaroo Road, near its intersection with the Barton Highway.

Other happenings in the near future

28 October: Closing date for registrations for the **APCC11 conference** in Melbourne, 'New Approaches To Plant Conservation Challenges In The Modern World'. Australian Network for Plant Conservation (ANPC). http://www.anpc.asn.au/conferences/2016.

31 October: Closing date for <u>submitting abstracts</u> for the 'Restore, Regenerate, Revegetate' conference, 5–9 February 2017, Armidale, NSW. See http://conferencecompany.com.au/revegconf2017/ for all the details. FOG member Wal Whalley is part of the organising team for this great-looking gathering.

5 November 9.30–11 am: Greening Australia annual plant sale at 1 Kubura Place, Aranda, ACT. Trays of native tubestock at \$40 per tray of 20 plants (mixed or not), <u>cash only</u>, including Bulbine Lilies, Chocolate Lilies, Yam Daisies, Billy Buttons, Trigger Plants, Paper Daisies, Daisy-bushes, Bitter-peas, Tea-trees, Wattles, She-oaks and Eucalypts. Member discounts, and you can join up on the day.

11 November (RSVP) for 18 November 9 am: Kosciuszko to Coast (K2C) forum on tree dieback and what is being done to restore woodlands. Scientists and practitioners speaking. http://www.uppersnowylandcare.org.au/2016/10/k2c-forum-on-dieback/. Email Rainer.Rehwinkel@hotmail.com to register and for details.

11–14 November: 'Spring on the Victorian Volcanic Plains', meeting and field trips, Camperdown, Victoria. To register and for all details, see https://vvpspring2016.eventbrite.com.au.

FOG advocacy

Naarilla Hirsch

October

Two EPBC referrals concerning ACT grasslands and grassy woodlands were released for public comment in October.

- 1. The first concerned an urban development in Greenway impacting on a small Natural Temperate Grassland (NTG) patch. This patch is small but has persisted in the midst of urban development and is one of the only two remaining NTG patches in the Tuggeranong valley. Given the critically endangered status of NTG and the lack of data about the site's condition that has been collected recently and in the right season, FOG's view was that an Environmental Impact Statement is needed for this referral and that the community should be consulted further in the referral process.
- 2. The second referral is in relation to the ACT Second Electrical Supply Project, which involves a new electricity substation and transmission line in Belconnen. Several options for siting the proposed infrastructure were considered and the option presented is considered the best, taking into account a number of criteria including environmental values. However, there will be some impact on Pink-tailed Worm-lizard (PTWL) habitat, so FOG considered preparation of an Environmental Impact Statement (EIS) essential and supported the proposed development of detailed mitigation measures and Spring/Summer targeted surveys. Other issues raised by FOG include the presence of the Little Eagle near Strathnairn, loss of hollow-bearing paddock trees, and the potential for invasive species being introduced.

The full text of FOG submissions appears on our website.

Congratulations!

Dr Roger Farrow's book, *Insects of South-Eastern Australia*, received a Certificate of Commendation from the Whitley Book Awards, presented annually by the Royal Zoological Society of NSW at the Australian Museum. (See the October Bulletin of the Australian Native Plants Society Canberra Region Inc.) Roger is long-time member of FOG.

Books available from booksales@fog.org.au

- Grassland Flora, a field guide for the Southern Tablelands (NSW & ACT). Eddy, Mallinson, Rehwinkel & Sharp, 2011.
- Woodland Flora, a field guide for the Southern Tablelands (NSW & ACT). Sharp, Rehwinkel, Mallinson & Eddy, 2015.
- Land of Sweeping Plains: Managing and restoring the native grasslands of south-eastern Australia. Williams, Marshall & Morgan, 2015. (4 copies only)
- Grassy Ecosystems Management Kit. Postage cost only. Some other items (books, cards, teashirts, small brochures, etc.) are also available, usually at display stalls, or email booksales@fog.org.au.

News from the FOG Committee

Sponsorship for APCC11: Last newsletter, we advertised an offer to sponsor a FOG member to attend the 11th Australian Plant Conservation Conference APCC11 on 14–18 November. We received and are honouring one application, and look forward to that member's account of the conference for a future newsletter.

Tax-deductible donations: FOG is now registered as a deductible gift recipient, which means that when we donate to FOG, as many do when renewing memberships, that donation can be claimed as a tax deduction.

Opportunities for members to share expertise, in two ways: Oddly enough, it is rather fun being on Radio Landcare 98.3 FM. Chatting on air with FOG members Tom Baker and Margaret Piper is not the ordeal I expected. A third FOG interview this year is coming up on Tuesday 8 November, and Geoff Robertson and Kim Pullen will be our representatives. If you would be happy to talk about grasslands and grassland-related activities on a Tuesday morning on air, please contact president@fog.org.au.

We are getting a number of requests for expertise in plant identification, to help in restoration and conservation in this region. If you'd be willing to be on a list of people we can call on, please email president@fog.org.au.

Old Cooma Common Monaro Golden Daisy project: On Monday 24 October, Margaret Ning and Ann Milligan met with Luke Pope of South East Local Land Services and two representatives of the National Landcare Program to show them progress in the project. We looked at the results of weed control during this year and checked on clumps of the Monaro Golden Daisy, now in bud.

Nominations for the 2017 committee: Please start thinking about whom you might nominate for the FOG committee for 2017. The AGM will be in mid March as usual.

New guide brochure about the updated listing of NTG-SEH

The Department of the Environment has produced an illustrated 18-page guide to the updated listing of Natural Temperate Grasslands of the South-Eastern Highlands (NTG-

SEH; see the July–August 2016 *News of FOG* for a summary of what this means, by Sarah Sharp).

A online version of the guide is at http://www.environment.gov.au/biodiversity/threatened/publications/natural-temperate-grassland-se-highlands-guide/, or you can google Natural Temperate Grasslands guide. Remember that the name now includes 'South Eastern Highlands', not 'Southern Tablelands'.



FOG's weekend visit to the NSW south coast grasslands near Moruya

Jackie Miles

Around 16 members of FOG met at Moruya for a weekend excursion to view grassland areas. On the Friday (2 September) there was almost 50 mm (2 inches) of rain at Canberra, and the heavy rain was continuous to Moruya and into the night. But Saturday was fine and clear at the coast.

Near-coast FOG members Jenny Liney and Jackie Miles had arranged this visit for us, and we joined the local Australian Plants Society (APS) for the first day, meeting at the property of Carolyn and Mark Noakes, at Glenduart, as Jackie describes here.

After a talk from Geoff Robertson about FOG for the benefit of APS members (photo at right), we went for an investigating ramble around Mark's and Carolyn's large garden. Their block of land used to be an overgrazed paddock, but a surprising number of native grasses and forbs have appeared since the Noakes started managing it more sympathetically (in between the areas planted with native trees and shrubs). Quite a substantial plant species list was compiled on the day, adding to several species not visible at the time that have been identified there previously.

After we had eaten our picnic lunches, a short walk across the road took us to Glenduart Reserve and old cemetery, which Eurobodalla Council have been managing, largely by removing environmental weed infestations. Courtney Fink-Downes, from the Eurobodalla Council, told us they still have problems with occasional slashing and firewood removal by locals. The reserve carries the 'Lowland Grassy Woodland' Endangered Ecological Community. There is a good array of typical tree and shrub species, but apparently not a very great groundcover diversity. Thickening up of trees and shrubs in the absence of grazing or fire was pointed out as a management issue by Jackie. Whether this is deleterious to the ecosystem depends on the quality of the groundcover to start with.

Late on Saturday we drove out to Toragy Point on the southern headland at the mouth of the Moruya River. FOG visited this site in 2001, when it was still a grassland. These days, with the help of some ill-advised planting by a Landcare group in about 2004, it has almost completed the transition to forest. Between the native trees and shrubs and the exotic grasses and forbs, there is very little left of the original *Themeda* grassland.

This theme – the need for active management to maintain areas as grassland at the coast – was continued on Sunday with a visit to Bingie Point south of Moruya. This is a large basalt headland, and it has changed less than Toragy in the last 15 years. However, native shrubs are encroaching on the grassland, particularly at the less exposed northern end, and an additional threat is overgrazing by kangaroos. The difficulty with managing the grassland at this site is that the roos have left no fuel to carry a fire, so some other method such as slashing might be needed to slow shrub encroachment.

Despite the extremely close grazing of the *Themeda*, we did manage to locate small numbers of plants (1 to 5) of a few species that had not been recorded here before, a *Craspedia* (probably *variabilis*,

Top two photos: Geoff addresses the group at the Noakes's; FOG at the Nepalese restaurant, Saturday night.

Lower two photos (by Kat Ng): Craspedia sp.; The group at Bingie Point, showing the encroaching shrubs at the northern end.









Continued from p. 5, FOG trip to Moruya

but possibly *canens*), the pea *Chorizema parviflorum* and *Pimelea curviflora* var. *sericea*. On the negative side, species that had formerly been common seemed to have declined, and everything was very dwarfed, suggesting that plants might be struggling to produce seed.

We decided against the planned visit to Jemison's Point, where the National Parks & Wildlife Service have attempted some belated burning in recent years. The access track was likely to be too muddy after recent rain.

The next port of call was a pair of headlands between Dalmeny and Kianga, where Eurobodalla Council has experimented with burning of *Themeda* for the last 2–4 years. The most northerly, Duesbery Point, has been burnt every August from 2013 to 2016 (it had just been burnt when we saw it), while the southern one, with more *Kikuyu* than *Themeda*, got its first and second burns in 2015 and 2016.

These are very small patches of headland grassland, and they have the opposite management problem to Bingie Point, in that they get <u>no</u> grazing, being situated in suburbia. The *Themeda* therefore regrows very tall and dense after a burn, and forbs struggle under the dense cover.

Nevertheless, the annual monitoring done by Jackie Miles since just before the first burn, has detected a decrease in some annual weedy grasses and a slight increase in the rare native *Polygala japonica*, so overall the effect has been positive.

Prior to 2013 the headlands were slashed, and the bare strips created when windrows of grass killed the underlying grass are still detectable. It appears that fire (with some follow-up weeding) is making gradual slight improvements in condition, while slashing was likely to make things gradually worse.

It would be nice if a bit of between-burn biomass-reduction could somehow be added into the mix – tethered goats perhaps? Ironically the southern headland with little *Themeda* and many more weedy grasses has a higher diversity of forbs, because the weedy grasses are less dense than *Themeda*. But those forbs include a lot of non-native Fireweed (*Senecio madagascariensis*). Clearly headland grassland management is a difficult business, and we should all be thankful it is Someone Else's Problem!

The take-home message seems to be: don't leave it too late to start managing coastal grasslands and grassy woodlands, because by the time groundcover diversity has been lost and tree and shrub thickening has occurred it may be too late to bring them back.

In the higher rainfall and longer growing season conditions of the coast, change can be very rapid. On the far south coast of NSW, most of the changes have occurred in the last few years since the breaking of the Millennium Drought in 2010.

Many thanks to Jenny Liney and to Jackie Miles, and to Carolyn and Mark Noakes our hosts on the Saturday for this very interesting and enjoyable visit.







Photos by Kat Ng. *Top*: Very recently burnt headland at Duesbery Point between Dalmeny and Kianga.

Middle: Bossiaea prostrata at Bingie Point. Bottom: Viola banksii at Bingie Point.

Native grassland restoration funded in 2016-17 ACT Environmental Grants

Nicki Taws

Native grassland restoration features as one of the successful projects in the recently-announced 2016–17 ACT Environment Grants Program.

Greening Australia was granted \$21,000 for 'Fixing the Phalaris', a project which will work with the ACT Government, FOG and other interested community members.

The restoration aims to demonstrate an effective technique for restoring grasslands in areas of the exotic perennial grass Phalaris, which currently occurs over a significant proportion of the low-lying areas in the grassland Nature Reserves. The restored grassland will enhance habitat connectivity for Natural Temperate Grassland remnants, reduce the area of exotic grasses and weeds, increase the abundance of rare and threatened grassland flora species, and provide a site that can be used for future seed collection, demonstration of grassland restoration techniques, and colonisation by or reintroduction of threatened grassland fauna.

The community will be engaged through a workshop on native grassland species identification and collection of seed for the restoration, and through involvement in monitoring of the restoration.

More details? Nicki Taws, ntaws@greeningaustralia.org.au, ph. 0408 210736.

Species emerging in a 2015 grassland restoration site include *Rytidosperma* spp., Austrostipa bigeniculata, Leucochrysum albicans, Chrysocephalum apiculatum, C. semipapposum, Plantago varia and Vittadinia muelleri. Photo: Nicki Taws.



FOG Midwinter slide afternoon, 16 July 2016

Andrew Zelnik

On a sunny, clear and unusually warm day, around 25 FOG members and guests gathered at Mugga Mugga Environment Centre for the annual FOG midwinter slide afternoon (photo at right). Unfortunately our initial intended speaker, Dr Kate Auty, the new ACT Commissioner for Sustainability and the Environment was not well and couldn't attend. However, this allowed more time for our second speaker, author and explorer John Blay, to treat us to an adventure through space and time on the Bundian Way, the subject of his latest book, *On Track* (see review in May–June 2016 newsletter). Using photos, old survey maps and anecdotes John took us on a 360 km environmental, archaeological and personal journey along this ancient Aboriginal pathway, starting with traditional camp sites and feasting on aestivating Bogong Moths at Targangal (Mt Kosciuszko), and ending on deep middens at Bilgalera (Fisheries Beach) and the recently opened Bundian Way Story Trail at Turamullerer (Southern Twofold Bay) near Eden.

We journeyed to Dead Horse Gap, Cascade Hut, the Byadbo Wilderness, Bondi State Forest (Bondi is a derivation of Bundian), Merambego Creek area and the Monaro, travelling along the Snowy and Ingeegoodbee Rivers and across many other waterways. Along the way we encountered swamps and hanging bogs, grasslands, woodlands and forests, and traditional Aboriginal food sources (Early Nancies, orchids, lilies and Yam Daisies), wild horses and their damaging impacts, and a tree climbing tiger snake carrying out feral cat control. Amongst the Aboriginal community the Bundian Way is considered to be a healing track. The multitude of traditional camp sites (many in travelling stock reserves) and artifacts (including one of Greenstone sourced to a quarry site 700 km away near Melbourne) that have been found all along the way testify to its past and present historical and cultural significance. In closing, John showed us an interesting image of Oswald Brierly's 1847 painting at Whale Beach, in Twofold Bay, surrounded by grassy woodland, and then contrasted this with a recent photo which shows it has since been replaced by a band of thick forest, providing testimony to the change in land use since that time.





Afternoon tea at the FOG mid-winter slide afternoon. In the centre Dierk von Behrens (right) explaining to John Blay (left) that Bogong Moths taste like walnuts. Photo: Andrew Zelnik

Successful environment care groups display at Jamison Plaza

Several FOG members, including display organiser Jean Geue, were involved in the sixth annual environment care display, on 2–4 September. FOG contributed photos, newsletters and equipment. Jean reports the display was surprisingly successful, given the different location relative to the shops this year. People staffing the stall touched base with an extraordinary number of people who support what we all do.

Close-up corner

Inter-tussock species in Blue Devil Grassland

John Fitz Gerald



We all know that the ideal state in a native grassland is to have many spaces for other plants to grow between large grass tussocks. I was reminded of this when checking the state of *Microtis* orchids that we noted during the series of monitoring afternoons last year at the Blue Devil Grassland alongside Ginninderra Creek in Latham, ACT.

The orchids in early October this year were abundant but none were flowering. My eye was drawn past the orchids to many tiny caps suspended on thin stems above much of the 'bare' ground. (In the top photo, Image 1, each cap is 2–4 mm across.) These turned out to number in the thousands when I looked into other inter-tussock spaces, and I took the opportunity to pull a couple of specimens, to lodge with the identification process generously operated by the Herbarium and Botanic Gardens' staff here in Canberra.

The tiny species was identified very quickly by Heino Lepp and Chris Cargill as the liverwort *Asterella drummondii*, a relatively

common species. Not only did these two experts make the ID, they also provided links to great information accessible via the web about bryophytes such as this one.



I shall try to summarise briefly. This liverwort has, as a main component, a small thallus that anchors into the soil surface (shown in Image 2, on my hand). To reproduce, it shoots up an 'umbrella' on a stem. (In Image 2, the stem is about 20 mm long.) This umbrella covers spore-producing structures underneath it.

Image 3 (third photo from the top) shows detail of four white 'papery' structures underneath one umbrella cap (the white scale-bar is 0.5 mm long). The papery structures have split, presumably allowing spores to be released from underlying spore sources. A beautifully intricate pattern is revealed

by getting very close up to a capsule cover. Image 4 (below) is an enlargement from the top-left quadrant of Image 3. They look to me for all the world like minute silvery snake skins.

Images 3 and 4 are ©ANBG. These microscopic views were recorded in the Seedbank of the Australian National Botanic Gardens (ANBG).

The web information about bryophytes can be accessed via https://www.anbg.gov.au/bryophyte/index.html. The thallose liverworts can be accessed as a subset, at

https://www.anbg.gov.au/bryophyte/liverwort-thalose.html/. The



species is recorded on Canberra Nature Map (though I have not yet registered it at the Blue Devil Grassland location) and the page edited by Heino Lepp also links to the ANBG information and species images. Please go to:

http://canberranaturemap.org/Community/Species/20739

So, check out those inter-tussock spaces. Who knows what you will find in there!

Note: In Image 1, the big green leafy plant in the top left corner is a weed, Common Centaury. *All photos*: John Fitz Gerald



FOG walk at Conder, ACT, Tuesday 18 October

Our visit to the Conder grassy woodland showed us a beautiful and very peaceful hillside covered in a rich array of grassland species. You had to be really careful where you put your feet, there were so many treasures! Michael Bedingfield, our host and leader, had recognised the value of this area of land years ago, and fought hard and long to rescue it from planned housing development 'Conder 4A'. Thank goodness he did.

Michael has amazing knowledge of the plant species of the hillside, many of which were in flower or bud during our visit. Luckily for those of us who continually asked 'What's this?', Michael was supported by the expertise of, at least, Andy and Janet Russell, John Fitz Gerald, Kim Pullen and Sarah Sharp. Michael gave us each a species list, made in 2002: 66 forbs, 4 ferns, 28 grasses, 7 orchids, 11 lilies, 25 shrubs, 16 sedges or rushes and 12 species of tree, all native. Although the list does not include weeds, apparently some, including Briar Rose and St John's Wort, were present then as they are now.

Of those numerous natives on the list we saw some interesting examples. *Swainsona behriana*, with its deep pinky-purple pea flower, was standing out brightly just beside the track on our visit – one of apparently around 100 plants of this species at this Conder site. There were glorious golden areas of *Bulbine bulbosa* Bulbine Lilies, and flowering patches of *Hibbertia riparia* and *H. obtusifolia*, and *Wurmbea dioica* Early Nancy. Swathes of Sundew *Drosera peltata* glistened in the afternoon sun, and several species of orchids were seen. Michael pointed out one inconspicuous sun orchid *Thelymitra* sp., which is shown as 'rare' on his list. None of these could be here had Michael not won the argument with the government planners.



Over a decade ago, Michael was able to inspire Canberra's environment community and coordinate a campaign to save this piece of land from planned development into a housing estate. There was much resistance from the then Liberal government

and plenty of controversy, with publicity through the media and support from the Green and Labor opposition. Assistance came from anonymous lawyers and there was legal action through the Administrative Appeals Tribunal. An important aspect was Michael's complaint to the ACT Commissioner for the Environment, Dr Joe Baker, who produced a comprehensive and favourable report. There was delicate diplomacy with the Conder Landcare Group which was having the Conder Wetlands built as part of the impending development, and the first testing in the public arena of Action Plan 10, Yellow Box/Red Gum Grassy Woodland (An Endangered Ecological Community). Throughout the prolonged campaign, FOG and the Conservation Council contributed persistent effort and support. Finally, in May 2006, after 7.5 years, the remnant was added to



Tuggeranong Hill Reserve and the process was complete. It was an historic period that brought a lot of attention to the plight of our grassy woodlands, and they now have far greater protection and recognition.

Thank you very much, Michael, for leading and hosting this very enjoyable and amazing FOG visit, and telling us the site's history.

Having seen this lovely part of Tuggeranong Hill Reserve, we now plan to make another FOG visit to the area in spring next year.



Swainsona behriana. Photo: Michael Bedingfield



Above: *Hibbertia obtusifolia*. Left: A field of Bulbine Lilies. Below: *Pimelea curviflora*. Photos: Andy Russell





Above: Ajuga astralis. Left: Michael addressing us. Photos by Andy Russell

FOG at the Central Tablelands Cemeteries, 8-9 October 2016

Alan Ford and Margaret Ning

Fifteen FOGgers and four locals visited five cemeteries over the weekend of 8–9 October 2016. From the start we were informed by the locals that we were lucky with the weather. The area had obviously had considerable amounts of rain and there was one other site that we did not try to get to because there was water over the road.

The yellow carpet - and recordings at Koorawatha

Yellow Box (*Eucalyptus melliodora*), Grey Box (*E. microcarpa*) and White Box (*E. albens*) form the canopy, along with *Callitris glaucophylla*, of the extensive site that is Koorawatha Cemetery. A bright sunny Saturday greeted the party as it entered past the *Calotis cuneifolia* and the *Dianella longifolia*. Once past the entrance weeds we noticed an *Arthropodium fimbriatum* Chocolate Lily – the only one flowering out of thousands at the site. Then we turned the corner and were confronted with a carpet (and I mean carpet) of *Bulbine bulbosa*. There were also little groups of *Stackhousia monogyna* scattered around the landscape, with occasional *Linum marginale*, *Arthropodium minus* and *Microseris lanceolata*.

We were joined by Phil Cranney and Milton Lewis from Central Tablelands Local Land Services. Milton, complete with active video equipment, talked to Geoff Robertson about FOG's history, strengths and why it takes an interest in sites such as this. From Rainer Rehwinkel, Milton heard about Box–Gum Woodlands and the diversity the site demonstrated. With Roger Farrow, Milton recorded information about insects found at such sites; and from Margaret Ning he heard how to identify a Yam Daisy. The LLS generously treated us to a varied and tasty sandwich lunch at Koorawatha, which was greatly appreciated by the party.

This site was also notable for the Grey-crowned Babblers that flew around

The Senna conundrum

As you approached the next site, Morongla Cemetery, we were intrigued to notice what turned out be *Senna artemisioides* in full flower along the edge of the Grey Box (*E. microcarpa*) woodland that constitutes the surrounds of the main cemetery proper. Rainer led us through an area of woodland with a very weedy understorey, but under which we continually found an assortment of native gems. Rainer had been to the cemetery on a number of occasions and he said that the woodland this year had the richest native plant display that he had ever seen at the site. It included *Dodonea viscosa*, *Calotis lappulacea*, *Calotis cuneifolia*, *Xerochrysum viscosum* and a *Goodenia* species. The rear of the site included three orchids, viz. *Caledenia fuscata*, *Pterostylis mutica* and a *Diuris* species.

The Kingdom in the Sun

The White Box (*E. albens*) remnant that forms the overstorey to Woodstock Cemetery dominates the site as you approach it. There are few White Box remnants that have a native groundcover equivalent to the array at this site. We soon managed to tick off a decent plant list, including the Yam Daisy (*Microseris lanceolata*), *Arthropodium minus*, *Bulbine bulbosa*, *Einardia nutans*, *Cymbonotus* sp., *Rytidosperma* sp., *Crassula sieberiana* and *Solenogyne dominii*.

We were serenaded by a family of Kookaburras as we wandered through the site. We were joined at both Woodstock and Neville Cemeteries by Donna Johnston from Mandurama who had led the FOG activity to the same broad area 16 years earlier.









FOG visit to northern cemeteries, continued

The Themeda Grassland at Neville

Neville Cemetery is a *Themeda triandra* grassland at 900 m above sea level, so we were too early for the spectacular display that will occur later in the season. Donna had provided us with a plant list and associated report that confirmed the site is subject to careful and sensitive management. (Indeed, it is probably a model for others to follow.) In the managed section we found the orchid *Diuris chryseopsis* flowering, as well as Early Nancy (*Wurmbea dioica*). The other section also produced an interesting plant list. We were joined by a local, Al Cartwright, at the cemetery and he related how the cemetery boundaries were being whittled away by a new neighbour. This was a new danger to add to the list of indignities that cemeteries can have to bear.

Lyndhurst Cemetery

Lyndhurst is at lower altitude than Neville, and it was the right timing for the threatened species Yass Daisy (*Ammobium craspedioides*), but too early for an anticipated abundant flowering of Milkmaids (*Burchardia umbellata*).

Management

This journey showed, once again, that it is the management regime (or lack of one) that will determine the fate of these sites. It is crucial that they be subject to some form of intervention to preserve the native values that they contain. Four of the cemeteries had roughly similar numbers of native species recorded – more or less 50 species – with the exception being Koorawatha which had around half that number. However, Koorawatha was the prettiest of the bunch in terms of floristics, specifically with its mix of Bulbines and Candles, and interestingly there were nearly as many bird species recorded at Koorawatha as native plant species.

FOG would very much like to thank, once again, Rainer Rehwinkel and also Donna Johnston for sharing their knowledge of these small remnants.

And special thanks to Alan Ford for all the energy he put into making a success of this activity. He devised a leisurely program that allowed us plenty of time to explore each site and to appreciate what they had to offer.



Above: Andy Russell, Jane Paul & Janet Russell adopting the classic FOG field trip pose, at Woodstock Cemetery. Photo: Andrew Zelnik.



Three scenes at the Koorawatha Cemetery, and Caladenia fuscata (right) beside an ants' nest at Morongla Cemetery. Photos: Ann Milligan.







Native Grasses Workshop, 8 September, Cooma

Geoff Robertson

Margaret Ning and I attended a 'Native Grasses Workshop' organised by South East Local Land Services in Cooma. The speaker, Ian Chivers, fascinated the 40 people who attended, mostly landholders. A great morning tea and lunch were provided. After lunch I spoke briefly about FOG's Monaro Golden Daisy Project, and after the workshop about 14 of the group visited Old Cooma Common to see an example of a Natural Temperate Grassland, and to hear more on FOG's project.

Returning to Ian. He founded Native Seeds Pty Ltd many years ago and I have heard him talk on a number of occasions over the years. The workshop was an opportunity for me to understand how his lifework was evolving. Ian based his presentations on his book *Australian native grasses: Key species and their uses* (now in its fourth edition), written by him and Kath Raulings. This is a great book and available for \$30 via his website, at www.nativeseeds.com.au/.

As readers can acquire his book, I will limit myself to a few observations. His operation in selecting, sowing, harvesting, improving, researching and establishing native grasses in a variety of situations is truly impressive. His work, based on well-founded research undertaken by him in co-operation with a number of research institutions, clearly establishes that native grasses are equal in value, including nutritional value, to introduced grasses, and in many ways they are better adapted to Australian conditions. Native grasses may be used for many purposes including revegetation, landscaping and gardening, horticulture, native grass pastures and lawns.

Ian has focused on relatively few grasses, considering that Australia has over 1300 Australian native species. He produces some 14 species of warm season grasses and about 12 species of cool climate grasses as well as several

varieties of Weeping Grass. He showed slides of each of these species growing in healthy swards and explained the characteristics and uses of each.

His contribution to research has been remarkable. Some of his work is fascinating and results are mentioned in the book. One item not mentioned in the book is that wild rice species may have evolved first in northern Australia and that some of these wild populations may be capable of producing large seeds of high quality rice for human consumption. The book mentions that some native grasses seem to cope well with high levels of toxins and may be grazed without passing on those toxins to grazing animals. The research has also focused on what techniques may be used to deal with the issue of seed dormancy.

His presentations on revegetation, and using native grasses in landscaping and gardening, pastures and horticulture (e.g. to provide groundcover in a vineyard) illustrate his years of experience and ever increasing success. I was intrigued by his method of revegetation which involves establishing one grass species at a time, and subsequently using over-planting techniques. One important issue he stressed was the appropriate use of herbicide before and after grass establishment to control weeds. An intriguing suggestion is that native grasses seem to produce more soil biota than introduced species – this is not only good for soil health but may also lead to a richer food source for native fauna which is hence better for biodiversity.

One thing that I was not aware of is that most grasses he uses are self-pollinating but diversity is maintained 'because they have more than two sets of basic chromosomes. Kangaroo Grass has from two to six sets and Weeping Grass four sets', thus enabling genetic diversity.

The final chapter of lan's book has an interesting discussion on the importance or otherwise of 'provenance'.

or otherwise of 'provenance'.

Left: Ian's new book.

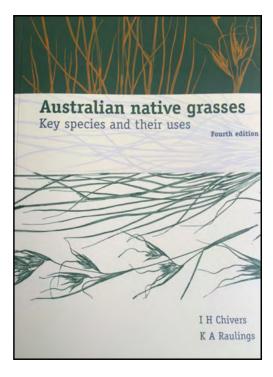
Right: At Old Cooma

Common.

Below: At the workshop.

Photos: Geoff Robertson.







Getting better every day - 'Scottsdale Reserve'

Geoff Robertson and Ann Milligan

This year, 2016, Bush Heritage Australia (BHA) celebrates 10 years ownership of the former farm now called 'Scottsdale Reserve', near Bredbo NSW. On Saturday 22 October, BHA, in the persons of managers and ecologists Phil Palmer, Matt Appleby and Peter Saunders, together with Nicki Taws of Greening Australia (GA), welcomed around 30 enthusiastic members and associates of Friends of Grasslands and BHA and GA to the property. An invitation to visit in June had been rained off, and none of us wanted to miss this new opportunity, in spite of challengingly wintery weather.

After a networking morning tea, our group in a convoy of 4WDs visited the two grassland restoration sites BHA has set up, with GA, on former farm paddocks. Both sites had been scalped and sown in 2014 to a mixture of 40 native grassland grasses and forbs. When we saw them, each 0.3 ha patch was alight with white Hoary Sunray flowers (*Leucochrysum albicans*). The farthest patch (first visited) resembled snow from a distance (especially given the wind-chill) because the flowers are so densely spaced (see photo 3rd down at right). Other species are also growing well in both patches, though in smaller numbers. These patches are large compared to trials of scalping and sowing being made by other landholders in this region, Nicki told us. The cost of the earthworks and seed and labour seems expensive upfront, but there will be progressive recouping of the costs as seed is harvested for future areas, she said.

In this scalping method, the top few centimetres of soil, which are rich in nutrients and weed seeds from farming days, are removed by earthmovers and piled up elsewhere, leaving a relatively unthreatening seed bed for native grassland species. Then a modified turf-seeder (borrowed from Victoria for a few days) does the sowing. (The techniques involved are described in two papers in FOG's 2014 Forum 'Grass half full or grass half empty' which is online at www.fog.org.au/2014forum: look for Graham Fifield and Paul Gibson-Roy.) Nicki said an alternative method would be to spray out the weeds before sowing, but that would not remove the residual topsoil nutrients as scalping does. However, when scalping is so deep that it reaches the subsoil, the grassland regeneration is slowed: seedlings do not establish very well in subsoil.

After a delicious and ample lunch that Nicki had arranged for us from a local Bredbo café, the group was shown the Building Understorey Diversity website, currently being built for GA by Kathryn Wells. We also visited the small nursery beside the main buildings, where Sue Connelly sows and raises thousands of forbs, grasses, shrubs, eucalypts, wattles and Kurrajongs for use on the property.

Scottsdale's 1328 ha includes extensive remnant woodlands. During its life as a farm, with grazing, clearing and cropping, about 300 ha of those woodlands became degraded and dominated by African Lovegrass and Serrated Tussock. BHA is working with GA to restore these areas to grassy woodlands and grasslands. Planting has been an important aspect, applying GA's 'whole-of-paddock-restoration' approach. There are 'hundreds' of junior trees to be seen across the landscape, protected by tree-guards. BHA has also had impressive success in effectively removing much of the African Lovegrass by strategic boom-spraying with herbicide, which has allowed native grassland forbs to recover in situ. Some of us were shown this later on Saturday after the main part of the visit, and Peter then also showed us some heavy-duty works for erosion control at one of the property's creeks. Indeed, Geoff Robertson (of FOG), who through his involvement with Kosciuszko to Coast (K2C) has observed BHA's work here over several years, commented on the truly amazing

progress BHA has made towards restoring the whole 300 ha.

Altogether, it was a most interesting day. Thank you, Phil, Nicki, Matt and Peter, for showing us so much.











Photos. Left: Geoff at the erosion control works. *Right, top down*: Nicki, Phil and Matt speaking to us at the first-visited scalped site. The weedy understorey of this adjacent remnant Yellow Box is typical of the groundcover that the scalping removed. The first site close-up. The second site: sparser groundcover but a similar number of forb species.

Cultivation corner Wildlife living the high life

Janet Russell

Cultivation Corner articles are Janet's observations on grassland species in ACT, now from an apartment instead a block in Aranda.

We have been in our apartment for six months. It has been an uncharacteristically wet winter and spring and our balconies have been very inhospitable places particularly on the south-west side where we keep our pots.

We had not been here very long and I noticed scale on the Waratah. There was one black scale on the stem. We decided that we had brought it with us. Within a week the white shell was empty and the one black scale had disappeared. Maybe as there are no ants to farm the scale and spread it round we will be spared the scourge of it.

We have seen one spider and a bush fly in the house and a moth outside. I got rather excited to see a beetle-like insect on one of the pots but it was very small and it quickly disappeared from sight. We disposed of the six snails we brought with us. I hope there have been no eggs laid.

Some common birds such as Sulphur-crested Cockatoo, Crimson Rosella and Magpie visit and perch on the balcony balustrade or on the overhead beams, but it was only a Magpie and Peewit that have been game enough to land on the balcony to inspect it. We came home one day to find a Wood Duck sitting on the northern balcony. There is a partition between our balcony and the neighbour's and it was perched there scanning the landscape.

No new weeds have appeared apart from ones we recognise from Aranda. The *Viola betonicifolia* has begun colonising other pots. We lost an *Acacia flexifolia* in late winter but everything else has survived. Plants are surprising. The *Hardenbergia violacea* is flowering but is a very spindly looking plant. The wet forest plant Gum Vine, *Aphanopetalum resinosum*, is looking very robust and is in full flower. The Mother Shield Fern, *Polystichum proliferum*, is also thriving with five new fronds well on the way. After high winds and cold temperatures many of the plants are now exposed to the sun for the greater part of the day and will need to be moved to stop them drying out.

Scale (*above*) and moth (*below*). Examples of wildlife biodiversity visiting plants on the ninth floor balconies at Reid ACT.



I thought that we would find few insects coming onto the ninth floor, but today I saw a moth in a protected spot on the north balcony (photo below)



and a hover fly on the plants. I was surprised and I am more optimistic about possible increases in biodiversity than I was.

I do get rather nostalgic for times when it was possible to go out and come across an attractive yellow hairy spider shining in the torch light.

Photos: Janet Russell



Above: One person's nightmare, another's nostalgia!

The Wolf Spider, family Lycosidae, genus Venatrix, an eight-eyed ground-dweller

Michael Bedingfield

We are accustomed to seeing spiders that catch their prey in webs – clever snares made of silk and strung between trees, bushes and grass stems. But Wolf Spiders have a different strategy.

There are many species of Wolf Spiders and they belong to the family Lycosidae. The species shown in the photographs is from the genus *Venatrix*. The meanings of these scientific names come respectively from the Greek for 'wolf' and Latin for 'hunter'. The names allude to the behaviour of some species in catching their food, which is to hunt small insects and other invertebrates by chasing them down. Other Wolf Spiders use ambush tactics.

Wolf Spiders have eight eyes. They have two large ones facing forward, another four small ones in a row under them, with the remaining two further back on their heads looking upwards. You can see them (reflecting the light) if you look closely at the photos. These eyes give them the excellent vision required of a hunter, and it is better than that of spiders that catch their prey in webs. Other spiders that have eight eyes are the Huntsman Spiders (family Sparassidae) and Jumping Spiders (family Salticidae), which are also hunters.

It was difficult to find much information on the genus *Venatrix*, so my description is of the family Lycosidae or Wolf Spiders in general. They are stoutly built, agile and can run swiftly over short distances. They are venomous and can deliver a nasty bite. They live on the ground and most species are wanderers, without a permanent home, which shelter among the leaf litter or vegetation. But some create a burrow and travel away from its safety when foraging. Burrows may be open or have a protective door, and some have a ridge around the top. The hole helps them avoid predators such as spider-hunting wasps.

The different species of Wolf Spiders are hard to distinguish from one another and may require examination of minute parts of their anatomy. They generally have dull colouring of greys and browns with patterns in black and white. This is a form of protection and helps as camouflage to blend with the colours of their natural habitat. Their bodies are covered in short hairs or bristles. The photos I have shown here were taken of a specimen from my garden which came indoors. It remained quite still for me, perhaps hoping it was invisible due to its natural colouring, so it was relatively easy to photograph. It was about 4 cm long including its spread-out legs. Other species can be smaller or larger.

When a female is ready to mate she attracts a male using scent. When he approaches he performs a courtship display, waving his legs, moving his pedipalps, or giving abdominal vibrations. She may signal back if she accepts his advances — various species have different methods. Spiders have silk-spinning organs at the rear underside of the abdomen called spinnerets. When a female Wolf Spider gives birth to her young, she produces many eggs that she lays onto a silken mat. Afterwards she weaves it into a sac. She then carries the egg sac with her, attached to the spinnerets, keeping her abdomen raised when moving about. When the eggs hatch the dozens of spiderlings climb onto their mother's back and she carries them around. The mother does not feed them, but looks after them until they are old enough to care for and feed themselves, giving them transport and protection from predators.

The spread of Wolf Spiders is enhanced by the ability of the spiderlings to disperse aerially. They find an appropriate perch, lift their abdomens high, and let out a stream of gossamer thread. The long thread is picked up by the wind and they are carried off to an unpredictable destination. Some achieve only a few metres but others travel hundreds of kilometres. So they are widely distributed in a variety of



A Wolf Spider, *Venatrix* sp., and close up of its face (below). Photos © Michael Bedingfield 2016.



habitats including grasslands and grassy woodlands. In grasslands the endangered Grassland Earless Dragon *Tympanocryptis pinguicolla* sometimes uses the burrows of these spiders for a home.

The life of an insect is quite challenging. Imagine being that small and exploring a nice patch of tussocky grass, then suddenly being confronted with an eight-eyed eight-legged hairy creature larger than oneself and with aggressive intentions! Fortunately, however, Wolf Spiders are not aggressive towards humans unless provoked, so I am quite happy to have them living in my garden.

References

http://australianmuseum.net.au/wolf-spiders/, https://museumvictoria.com.au/ discoverycentre/infosheets/spiders-found-invictoria/wolf-spider/, https://en.wikipedia.org/wiki/Wolf_spider/.

Contacts for FOG groups and projects

Refer to the website www.fog.org.au for more information

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Promoting wider knowledge of grassy landscapes

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Activities: activities@fog.org.au

Media contact: Kim Pullen (mob: 0400 447 958)

FOG activities & workparties late October – 1 January 2017

Date	Activity	Contact
Sun 30 October	Stirling Park – workparty	pmcghie@optusnet.com.au
Weds 2 November (Note new date)	'Scottsdale' monitoring	linda.spinaze@fog.org.au
5–6 November	Delegate and Merambego grasslands / Bundian Way – visit	ann.milligan@fog.org.au
Sat 12 November	Hall Cemetery woodland – workparty	john.fitzgerald@fog.org.au
Sun 13 November	Stirling Park – wildflower walk	jamie.pittock@fog.org.au
Sun 27 November	Stirling Park – workparty	pmcghie@optusnet.com.au
Sun 27 November	Yarramundi Grassland – workparty	john.fitzgerald@fog.org.au
Tues 13 December	FOG end-of-year picnic	activities@fog.org.au
1 January 2017	Renew membership of FOG	membership@fog.org.au

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