



News of Friends of Grasslands

Supporting native grassy ecosystems

ISSN 1832-6315

November-December 2020

Nov & Dec Events

FOG @ ConsCouncil Online Spring Dinner

Sat 7 Nov 6:30-8.30pm

margaret.ning@fog.org.au

Canberra Grassland Tour

Sun 8 Nov 1-4pm

maree.gilbert@fog.org.au

Annual Scottsdale Monitoring

Wed 11 Nov 8.30-4pm

linda.spinaze@fog.org.au

Best Of Monaro TSR's

Weekend 14 & 15 Nov

margaret.ning@fog.org.au

Silly Season Celebration @ Franklin Grasslands

Thurs 10 Dec 4.30-6.30pm

margaret.ning@fog.org.au

Work Parties

Franklin Grasslands

Wed 4 & 25 Nov; 9 -11am

margaret.ning@fog.org.au

Hall Cemetery

Sat 7 Nov; 9am-noon

john.fitzgerald@fog.org.au

Stirling Park

Sun 8 Nov; 9-12.30pm

jamie.pittock@fog.org.au

*See our Calendar on the
website for more info*

www.fog.org.au



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Welcome New Members!

Louise & Lawrence Gardner,
ACT

George Wilson, ACT
Nella Smith, NSW
Alice Hathorn, ACT

From the President ...

It is very pleasing to be the president of an organisation with many enthusiastic people striving to support grassy ecosystems and, more broadly, nature. There is a growing awareness that unless we understand and embrace nature she will not embrace us. There is a growing awareness that our First Nation's people learnt to live within nature's bounty and live well. However, those who embrace nature are but a small minority and in each of us there is a degree of denial that nature is overly stressed and that climate change is actually real. The impact of the 2019-20 fires are mostly forgotten. The denial is evidenced in the Australian government's budget, and the response to it, which barely mention these issues.

However, we who embrace nature need show leadership, to be braver, etc., and organisations like ours should attempt to show the way, although what direction should we take and what strategies we should adopt are unclear. So where are we?

FOG has grown and become more complex. It is attracting new people, my requests for people to take on new roles is meeting with some success, we are organising more activities and participation is growing. Our committee has adapted to Covid 19, particularly using zoom, and committee members are doing more. We have had many zoom meetings to focus on particular issues. The creation of our administrative committee has greatly assisted. We have many people with titles, e.g. president, secretary, treasurer, public fund trustees, advocacy officer, membership, sales, webmaster, public officer, health and safety, spokesperson, and inquiries officer. Consider our many projects each with a coordinators national lands, Hall Cemetery, Franklin Grasslands landcare group, Scottsdale monitoring, TSR, grassy grants, newsletter, events, Facebook, and tentatively Ginninderry scrape monitoring. We have representatives on many groups, e.g. biodiversity working group and bush on the boundary.

We have encouraged our groups and members to take on more challenges. Our projects on National Lands, Hall cemetery, Franklin grassland, advocacy, newsletter, grassy grants, and so on have all done this in recent times. Three new Canberra Park Care groups, outside of FOG, are being created by active FOG volunteers. However, co-ordinating this vast area of voluntary activity is a major challenge.

We have begun to discuss leadership. Each in our own way is a leader, but can each of us be a little braver and do a little more? We need to explore, collectively, how each of us might develop a greater vision, knowledge, and skills to be so?

Twelve months ago we began a discussion on transition as we need to rejuvenate FOG, especially as some of most experienced volunteers are ageing with accompanying health and caring issues. We need to continue this conversation.

I would like to introduce additions to our new communications group. On newsletter we now have Maree Gilbert and Susan Ross, on Facebook we now have Sarah Hnatiuk, and on events coordination and update we have Eleanor Galvin.

If any of our readers have any comments on FOG vision, directions, strategies and what part you might play, please do not hesitate to contact me. *Geoff Roberston*



*Drumstick close-up RR
Narrandera Field Trip*

Advocacy Report

- Naarilla Hirsch -

August

After considering the Interim Report on the EPBC Review again, FOG did provide some feedback via the on-line survey. This included concerns about the ACT Government's potential conflict of interest if EPBC decisions are devolved to other jurisdictions, since it would be both proponent and approver. Another point was some clarity around the definition of "avoid" in the context of the avoid-mitigate-offset hierarchy. FOG's comments on the ACT's Urban Forest Strategy included support for the Strategy's objective 4: *Take an ecological approach and support biodiversity* and the concept of using the urban forest to provide movement corridors for wildlife as well as habitat. FOG asked that non-reserved patches of remnant NTG within the urban framework be considered inappropriate for trees due to their conservation values, and that trees not be planted along roadsides and other boundaries of areas of NTG as such trees provide perches for birds that may predate on grassland birds and reptiles.

September

FOG made a couple of comments on the Preliminary Documentation for the City to Commonwealth Park Light Rail project. This project is proposing that offset requirements be met by the ACT Government purchasing and retiring 82 species credit biodiversity credits in accordance with the NSW Biodiversity Offsets Scheme prior to the commencement of construction. As this is the first time this approach has been suggested, FOG asked for more information about this so that we can understand how the credits are ensuring no net loss of GSM across the landscape. FOG also asked that a small area can be left undisturbed in one of the (road) cloverleaves to provide a founder area for recolonization by GSM of the rest of the cloverleaf.

There have been EPBC referrals for two stages of the upgrade to an upgrade of the Monaro Highway-Lanyon Drive intersection. FOG supported the construction mitigation measures. The lack of targeted surveys for the Striped Legless Lizard (SLL) in the development footprint was of concern to FOG, and we thought it best to undertake surveys to ascertain the presence or absence of the SLL prior to construction commencing, with improvements to SLL habitat closer to the native grassland areas in Jerrabomberra Nature Reserve if offsets are needed.

As part of the process of developing its submission to the ACT government on the Franklin Grasslands landscape plan, FOG held a forum at which Suzanne Orr and members of the Ginninderra Catchment Group, Ginninderra Community Council, Franklin Grassland Landcare Group and FOG participated. In general FOG supported the proposed landscape plan, in particular all of the features designed to protect the areas with high conservation value and those providing an opportunity for the community to learn more about these endangered ecosystems. There were some aspects of the plan that FOG considered needed more work, such as more information about the reserve's natural and cultural values, an informal gathering space in the woodland area to allow more opportunities for educational activities, and more work on the drainage line. FOG recommended that

a western gravel path be included along the western mown strip to join the northern and southern ends of the reserve, and that all plantings be in line with the conservation values of the reserve.

Queanbeyan-Palerang Regional Council released for comment a planning proposal for a Memorial Park along Old Cooma Road. FOG supported the recommendations to design the proposal to avoid direct impacts to any hollow-bearing trees or the area of Box Gum Woodland, and to develop a Vegetation Management Plan for the site with a particular emphasis on managing and restoring the Box Gum Woodland community.

October

In response to an EPBC referral concerning a commercial development at the Poplars, Jerrabomberra, adjoining the current BioBanking Sites, FOG noted that some of moderate to high diversity Natural Temperate Grassland and a small amount of Box-Gum Woodland remains outside these sites and is included in this referral as potentially impacted by future development at the Poplars. Since these ecological communities are now considered critically endangered at the national level, FOG was of the view that both should be excluded from future development and should be managed for their conservation values and that their loss cannot be adequately offset in any way, particularly as they also provide habitat for threatened grassland species nearby (Golden Sun Moth, Grassland Earless Dragon and the Pink-tailed Worm-lizard). FOG also drew attention to potential edge effect impacts to the BioBanking Sites since the urban development will be adjacent – something that needs to be managed in the long term as well as during construction.

Vale Dr Graeme Worboys

Many members of FOG will know of Dr Graeme Worboys who recently died as reported in the NSW NPA newsletter.



"Graeme's extraordinary career reached the most senior levels in the National Parks and Wildlife before moving into academic and advocacy roles that saw him become an internationally acclaimed expert in protected area management. His publications have influenced conservation management on the international stage, while this year's "Kosciusko- A great national park" stands as testimony to his knowledge and passion for the Australian Alps. A giant of conservation and friend to NPA who will be sorely missed." Graeme was also influential in creating the Great Eastern Ranges project.

The South-Western Plains Laid It On, Again!

Our Narrandera and district long-weekend trip

25-28 August 2020

- Rainer Rehwinkel, Emily Sutcliffe and Alice Bauer -

It was a wet start at Gundagai Cemetery, where Andrew, Geoff, Marg and Rainer stopped briefly to inspect the new signs at this White Box Woodland remnant. These were funded by a FOG Supported Projects grant. The signs, one of which is pictured here, were of a suitably high professional standard. The cemetery's vegetation was interesting: Rainer had surveyed this site many years ago, and his recollection was that then, Kangaroo Grass, *Themeda triandra*, had dominated the groundlayer, but on this visit, there seemed to be a greater density of forbs, including extensive stands of chocolate-lilies, *Dichopogon* sp.. We were delighted here to see nesting Willy Wagtails!

Our Friday afternoon's stop was Galore Hill Reserve. The opening act here couldn't have been more delightful. Participants of the trip were greeted by a pair of Glossy Black-cockatoos feeding at the top of a she-oak, *Allocasuarina* sp., near the reserve's entrance. Making our (slow) way towards the top of the hill, we were treated to the reserve's diverse groundlayer. The site contains an isolated dry woodland remnant, prominently set amid the sweeping plains of the sheep-wheat country west of Wagga Wagga. The highlights in the groundlayer were the numerous Murrnongs, *Microseris lanceolata*, and Waxlip Orchids, *Caladenia* (syn. *Glossodia*) *major*. After enjoying the view from the lookout, intermittent showers forced an early finish here for most participants.

Saturday dawned fine and sunny, and our Narrandera and Leeton resident members, Nella Smith and Eric and Rowena Whiting, proved once again to be invaluable guides and western flora species identification specialists. Nella showed us one of her favourite sites, another dry stony hillside woodland remnant with a groundlayer resplendent with daisies, orchids, emerging chocolate-lilies, and many other forb species. Highlights here included some *Diuris* species, whose identities are still in dispute, and the locally endemic Gillenbah Spider-orchid, *Caladenia rileyi*.

A stop at Wire Yards TSR, a site with Sandhill Pine Woodland, didn't yield the floral diversity that we saw at the same site on our last year's stop here. However, a brief look at a roadside ditch adjacent to the northern end of Lake Coolah gave participants great photo opportunities with some magnificent Broughton Peas, *Swainsona procumbens*. There was also a newbie for most, the misnamed Forest Germander, *Teucrium racemosum*. Both species were growing with their feet in the water of the table drain.



Drumsticks growing in a roadside ditch were everyone's favourites

Our afternoon stops were at a couple of sites in woodlands dominated by Grey Box, *Eucalyptus microcarpa*, and White Cypress-pine, *Callitris glaucophylla*. Here, we found more orchids, including the lovely Marung Leek-orchid, *Prasophyllum beatrix*, another western endemic, and two additional swainson-peas, *Swainsona* spp.

Sunday morning's focus was on the extensive natural Riverine Grasslands stretching south from Gillenbah TSR and along the length of Back Morundah TSR. At the multiple stops before lunch, participants fanned out across the plains, delighting in the sheets of white and golden coloured everlastings, *Rhodanthe corymbosa* and *Hyalosperma semisterile*, patches of sky-blue Native Flax, *Linum marginale*, and in company with many other species.

The undisputed highlights were the Drumsticks, *Pycnosorus globosus*, looking like supercharged billy-buttons. They were growing in the table drains along the roadside, also with their feet in the water. Here we also saw another fauna highlight in the form of a Tawny Frogmouth, sitting on its nest in a roadside River Red Gum, *Eucalyptus camaldulensis*.

Our youngest participant, Margaret's grandson, a budding birder, took a while to spot this cryptic bird, but when he did, his excitement was palpable!

We spent the afternoon in another local forest patch, where we saw more orchids, some by now familiar, others new to us. The most interesting were two more western endemics, the Neat Spider-orchid, *Caladenia concinna*, and the endangered Sandhill Spider-orchid, *C. arenaria*. We also found the miniscule Hairy Stylewort, *Levenhookia dubia* - in Alice Bauer's words "a tiny-tiny species of triggerplant, which made Margaret leap for joy!" To quote Alice further: "This pristine cypress-pine woodland, with the spring sun shimmering through, felt like a fairy's wonderland".

We finished Sunday's outing at another familiar site, where Round-leaved *Wilsonia*, *Wilsonia rotundifolia*, sat with their feet in the water of a table drain along Gap Rd. This was to introduce newcomers to this interesting and endangered saltmarsh plant, here growing in a site a great distance from any other known population.

Monday saw us visiting another natural grassland TSR, The Gums, where we once again fanned out across the plains in search of grassland forbs or the abundant woodland birds using its eponymous Red River Gums. We had our final day's lunch stop and a leisurely walk at The Rock Nature Reserve near Wagga Wagga, where there were numerous tiny annuals, including the super-diminutive *Siloxerus* (syn. *Rutidosis*) *multiflorus*, a species that has recently turned up in the ACT.

The spring wildflowers seemed to be more abundant and more vigorously tall than those we usually encounter on these western trips. However, Andrew remarked that there appeared to be fewer insects about. I felt too that there seemed to be a paucity of small insectivorous birds and small honeyeaters at most sites, with the ironic exception of the mixed flock I saw at Wire Yards TSR (the poorest site for wildflowers). As already mentioned, there was also an interesting mix of small and large birds actively feeding, and in some cases breeding, in the stand of isolated gums at The Gums TSR!

Some sites on our trip were truly spectacular, but at some, we stayed all too briefly. I would strongly urge readers who are passing these sites, to drop in should you be passing by, in particular at Gundagai Cemetery, Galore Hill Reserve, the multiple TSRs and state forests in the Narrandera district, and The Rock Nature Reserve..

We had a truly wonderful weekend of grassland, woodlands, flowers birds and great company! I'd like to thank all participants for coming along, especially our "cousins from out west", members of the Murrumbidgee Field Naturalists. With a diverse group, including bird, plant, moss and insect specialists, there was an answer to almost every question, which I feel sure our younger members, two recent graduates in the fields of ecology, Emily Sutcliffe and Alice, and the grassland novices from Leeton appreciated. I especially thank Marg for assistance in organising, Andrew Zelnik for his superb navigation maps (and a great eBird data recorder), Eric, for invaluable assistance in plant identification, and Nella, for sharing some truly special locations.



Marung Leek-orchid



Hairy Stylewort, a miniature triggerplant, in Rainer's hand!



This forest reserve yielded a number of orchid species

Viruses - an Intrinsic Part of Natural Ecosystems

- Michael Bedingfield -

In recent time viruses have received a lot of publicity, mostly not so good, and I thought it would be useful to say some positive things about them. Viruses are an integral part of nature. They can be found anywhere in the Earth's biosphere, on mountaintops and in the ocean, deep in the soil as well as high in the atmosphere, in all types of ecosystems, anywhere in the environment. They are very small, ultramicroscopic in size, much smaller than bacteria and only visible with an electron microscope. They are extremely light, and once airborne can be taken anywhere on the wind. But what is a virus?

The word virus comes from the Latin and means "slimy liquid, poison". This name was chosen because when viruses were discovered back in the 1890's they were associated with various diseases. Since then most study of them has been as pathogens. But a virus is more than that. At first scientists regarded them as nonliving poisons, later still they were thought to be very simple life forms and later again were regarded as biological chemicals. Seen as nonliving, study of them was neglected. But now they are considered to exist in a grey area between living and nonliving, on a vague space between lifeless chemistry and living organisms. Nonetheless they adapt and evolve over time like living organisms.

Basically, a virus has a core of nucleic acid, either RNA or DNA, and is surrounded by a protein coating. The complete form of a virus when outside the host cell is called a virion. It doesn't have the ability to reproduce by itself. But is able to enter the cells of living things: animals, plants, fungi or bacteria. Then the outer coating is shed and the RNA or DNA strands get control of the cell's chemistry and thereby make multiple copies of the original. Eventually the new virions spread to other cells.

When looking at ecological communities, it is easy to focus on the plant and animals that we are able to see. But there is much less study of the invisible life forms which live in and on the flora and fauna. Also in any handful of dirt there is a multitude of small living things, including lots of bacteria, fungi, algae and viruses. These smaller life forms are very much a part of the ecological communities and interact with the plants and animals in both healthy and destructive relationships. Viruses have significant roles in the context of ecology and in the history of evolution of life on Earth.

Viruses are looked upon as a parasite because they get all their nutrients from the host. But that is not the full picture. While they cannot reproduce by themselves they can have a profound affect on their hosts and are major players in the complex web of life. It has been discovered that some viruses are important symbiotic or mutually beneficial partners with their hosts and are important for their health. These advantageous relationships have been discovered in mammal, insect, plant and fungal viruses. Some examples are given in references (a) and (b), but the scientific language and detail is difficult to put in laymen's terms without long explanations.

A quote from reference (a) under the sub-heading of "Animal and plant invaders": "In plants, invasive species can bring

viruses with them that contribute to the process of invasion by weakening competing native species as exemplified by the invasive annual grasses that are outcompeting native bunchgrass in California". The invading species is a healthy host for the virus, but the native species gets sick. Both the invading grass and the virus benefit from their association.

Viruses are also abundant in the guts of mammals, including healthy humans. Our immune system is designed so that it responds better to infections from foreign viruses when there is a healthy and diverse colony of gut microbes, including viruses, present in our gut. So we live happily and benefit from having viruses in our tummy. The same is true for other mammals.

A three way mutualistic symbiosis with a fungus and a virus explains how the rosette grass *Dichanthelium lanuginosum* has amazing heat tolerance and is able to grow in geothermal places with soil temperatures of over 50 C. in Yellowstone National Park, USA.

Another example of a beneficial virus is with parasitoid wasps such as ichneumon wasps and is described in detail in references (a) and (b). Many parasitoid wasps lay their eggs inside the body of a living insect larva such as a moth caterpillar and the wasp larva eventually eats the caterpillar. In very simplistic terms, when the female wasp lays an egg she deposits the virus at the same time. The virus protects the egg from the immune system of the caterpillar that would otherwise prevent larvae from developing. The virus then lives on in the next generation of wasps. The virus is a polydnavirus (poly-dna-virus) and whether it is living or not over 50 species have been described. This partnership is a case of symbiogenesis, where two species cooperate intimately over a long period of time to the point where there is a partial merging of the two entities. For a better explanation you can check the references.

No doubt lots more cases of beneficial viruses will be found in time. When we get down to the nitty-gritty of life in nature it seems we can only be totally bamboozled by it. There are so many thousands of species with complex intertwined relationships that it is bewildering. Looked at in its totality, nature is mysterious and incomprehensible. Perhaps we are not meant to understand. It has been said in philosophy, he who thinks he knows, does not know, and he who admits he doesn't know, he knows!

References:

(a) http://web.gps.caltech.edu/classes/ge246/roossinck_natrev2011_goodvi.pdf

(b) <https://jvi.asm.org/content/89/13/6532>

<https://www.scientificamerican.com/article/are-viruses-alive-2004/>

<https://simple.wikipedia.org/wiki/Virus>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4373533/>

Close-up on Pollen from *Carex appressa*

- John Fitz Gerald -

We are so pleased that John is now able to give us another Close-up, following his regaining access to the National Seed Bank - ed

I wrote in News of Friends of Grassland Nov-Dec 2015 about pollen flying from this sedge growing in a strip along a drainage line at Hall Cemetery. I decided to revisit this since the event was again notable this wet and warm spring.

Pollen started to disperse early around mid September this year and brushing past a plant was sufficient to dislodge some of it from the anthers of the male flowers. A sharp tap on a cylindrical inflorescence produced a little yellow cloud that drifted off in the breeze and dispersed.

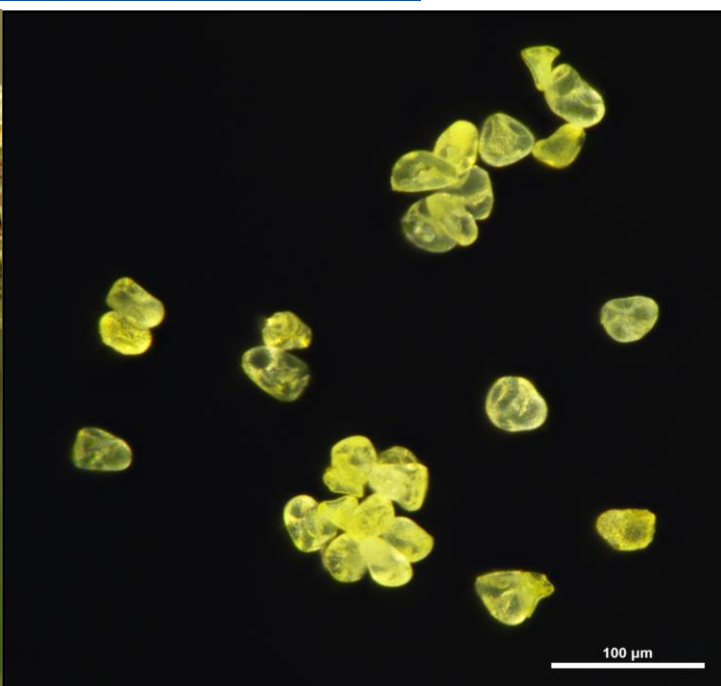
My first photo of part of one *Carex* inflorescence (about 1 cm diameter) shows many anthers that have finished dispersing and become pale - you might just be able to pick out a little pollen dust especially at the left side.

My second photo, a micrograph, of just a few pollen grains at quite high magnification shows how tiny each pollen grain is. The white scale bar in the image represents 0.1mm - for reference human hair is 0.07 mm thick, (give or take 0.02 according to Wikipedia) - so the pollen grains are distinctly smaller than that. No wonder they waft away so easily in a breeze! For hay fever or asthma sufferers, *Carex* pollen does not appear to create significant allergenic reactions.

Photo 2 was taken at the National Seed Bank of the Australian National Botanic Gardens. It can be reproduced freely if attributed and linked to the Creative Commons licence CC BY, see <http://creativecommons.org.au/learn/licences/>.



Carex inflorescence



Carex pollen grains

Donations to FOG

As a special Xmas gift to a relative or friends, why not gift them a donation to FOG? FOG makes small grants to researchers, educators and on-ground projects, known as grassy ecosystem grants, a highly effective way to support grassy ecosystems. It also supports FOG's TSR project.

To support these projects, you can make a tax-deductible donation to **FOG Public Fund** by:

Direct debit: BSB 633 000 A/C 153493960 (Bendigo Bank).

Please include your name and advise our Treasurer: treasurer@fog.org.au.

Cheque: payable to 'Friends of Grasslands Public Fund. Mailed to Treasurer, Friends of Grasslands Inc., PO Box 440, Jamison Centre, ACT 2614. Include your name and postal address.

Note: if you want your donation to go to the TSR project please indicate this when you make your donation. A receipt for tax purposes will be sent to you. You may also include a donation when you complete your membership application. For more information, contact info@fog.org.au

FOG's Grassy Ecosystem Grants 2020

- Andrew Zelnik -

As reported in an earlier newsletter, four applications were successful in FOG's 2020 Grassy Ecosystem Grants. Letters of Offer have been sent and accepted, and projects commenced.

Bushland Regeneration Project, East Street, Cooma, NSW, awarded \$1200, is a two-year small scale grassy woodland bush regeneration project. The site is a 4ha property, mostly grassy woodland in varying condition, abutting North Ridge Reserve, managed by Snowy-Monaro Regional Council. The project involves on-ground works involving targeted weed control and public education via a strip of about twenty small signs labelling native plants (including 'cartoon' images) along an access path to the adjacent reserve. The project aims to serve as a model for Council and local residents to restore the adjacent bushland reserve and form a Friends group for the Reserve. FOG's grant will contribute to costs of herbicide, spray equipment and signs. FOG will visit the site, and hopefully gain from the project a "how to guide" for small scale grassy woodland bush regeneration, and potential to make use of the cartoon images.

Revegetation of Grassy Woodland, Two Rivers Catchment Reserve, Ballyroe, NSW, \$1500. This project is located on Two Rivers Catchment Reserve, a 537ha private nature reserve adjoining the Abercrombie River (see HSI Wildlife Land Trust website). The owners are two years into a ten year revegetation project, on a basalt area of the property, rehabilitating degraded grassy woodland caused by previous overgrazing and infestations of weeds, mostly serrated tussock. In the open grassland areas as patches of weeds are progressively controlled they are being replanted with local native grass and forb species using seed, tube stock and some limited plant translocation from other parts of the property. These regeneration areas are temporarily fenced to exclude wildlife grazing while the plants establish. The fencing will be reused on other enclosure plots. Rehabilitated areas will be a seed and plant source for future regeneration work. The owners have a strong commitment, high degree of knowledge, and close engagement with Local Land Services, Landcare, and the surrounding local farming and landholder community. FOG's grant will assist with purchase of fencing materials, native plant tube stock and grass seed, and is designed to help speed this project along.

Control invasive weeds and mowing in remnant NTG, Bass Gardens, Griffith, ACT, \$1500. Bass Gardens is a 4ha high quality NTG urban open space, in the ACT suburb of Griffith and contains a population of critically endangered Golden Sun Moth. Its Conservation Management Plan, established in 2002 requires the ground cover to remain as native plants. Site management is coordinated by the ACT Government's City Services Division. However, repeated mowing has resulted in the spread and increased density of invasive perennial weeds such as African lovegrass (ALG), Chilean needlegrass (CNG), and serrated tussock (ST) into and around the main NTG

conservation zone. While the ACT Government undertakes periodic selective weed spraying (Conservation Zone only) and the Friends of Bass Gardens (FoBG), a parkcare group, also undertakes additional weeding, this is insufficient. FOG's Supported Projects (FSP) team undertook a site inspection with FoBG, ACT City Services personnel and ACT Environment Division (Michael Mulvaney). FOG's grant will fund an experienced professional weed spray contractor to get on top of the invasive weeds in the areas of concern, allowing FoBG volunteers to stay on top of it. FoBG will work closely with ACT Government regarding both the weed spraying and mowing regime.

Dung beetle species richness and composition in grasslands, Narrabri, NSW, \$1500 is an experimental research project being undertaken by Armidale based University of New England academic staff and students at the University of Sydney's Narrabri field station. The project's full title is *Dung beetle species richness and composition between natural and introduced grasslands: impacts on ecosystem functioning and services*. The project will determine which species of native and exotic dung beetles are present in native and introduced grasslands at the field station and other sites and their role in the functionality and health of the grassland ecosystems. A focus will be on their role on soil organic matter reincorporation. Dung beetle species variation by animal dung type (e.g. cow, sheep and kangaroo) will also be investigated. FOG regards this project as fundamental and important research. On the suggestion of FSP team member, Ken Hodgkinson, the project will examine the relationship between native grassland types (by landscape) and condition levels and dung beetle occurrence and function. FOG's grant will assist with meeting travel and survey materials costs for fieldwork to collect dung beetles and dung samples.

Renewal of interpretative signs at South Gundagai Cemetery, \$650 awarded 2019, has been completed. This project to renew the signs in a Grassy Whitebox Woodland remnant was undertaken by Miriam Crane, Manager Community and Culture, at Cootamundra-Gundagai Regional Council with assistance from Mason Crane, who will be familiar to FOG members for his work in environmental research and management. The pics show a couple of the new signs, which include FOG's logo, taken on my recent visit. A good outcome for FOG's modest investment. Thanks to Janet Russell for coordinating FOG's input to this project.

The Tassie Project, awarded \$1000 in 2019, is completed and we look forward to publishing a report on it in a future newsletter. Our three other uncompleted projects, all of which provide assistance to PhD students, COVID-19 impacts aside should be completed by the end of 2021. Sarah Bates gave a very well received presentation on her work and preliminary findings at the FOG mid-winter's event, and the first of three articles by her appears on PAGE 8.

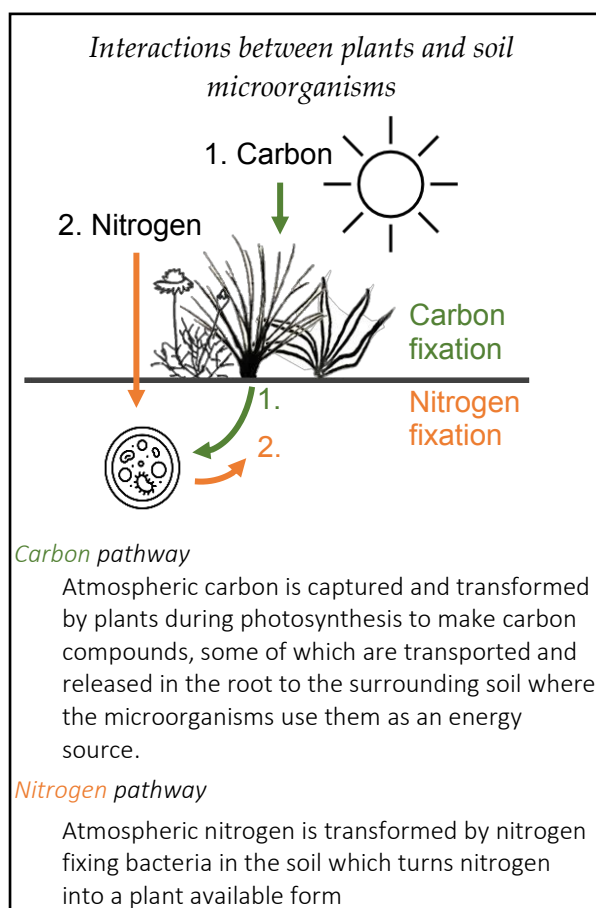
Interaction between plants and the life in the soil

- Sarah Bates -

Sarah Bates is a PhD looking into the interaction of plants and soil microorganisms on weed invasions. She is also a FOG member and a recipient of a FOG grassy ecosystem grant and recently updated us on her project at the Winter Talks.

This is the first of three articles and introduces some of what we know about the interactions between plants and soil microorganisms as the scientific world gains an understanding of what the influence of these interactions could have on plants and ecosystems - ed.

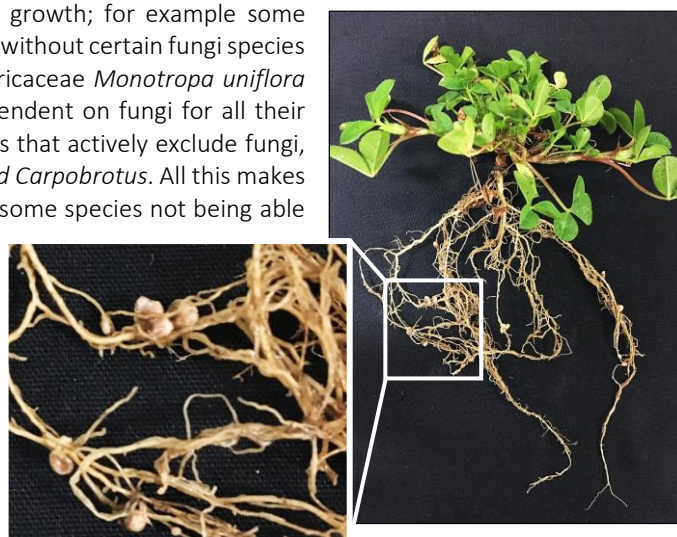
Soil microorganisms are an integral part of our ecosystems. In every patch of soil there are microorganisms. In fact, soil is teeming with life, with estimates of 1 g of soil containing up to 1 billion bacteria and around 10,000 fungi. This is a functioning ecosystem in itself, but it is also where plants grow. This results in inevitable interactions between plants and soil microorganism.



Plants provide an important resource for this below ground ecosystem, mainly that is carbon compounds which can come from plant tissue breaking down or from actively released carbon compounds from the plant roots. Much like how we rely on plant carbons as a food source, soil microorganism do too. Plants rely on soil microorganisms for nutrients essential for plant growth. Nitrogen fixing bacteria for example, transform atmospheric nitrogen into another form that is available for the plant to take up from the soil. There are some cases where plants house these bacteria in their roots for more efficient transfer. Some species that know how to house nitrogen fixing bacteria in their roots are legumes, such as *Acacia*, *Indigofera* or clovers which are commonly used in agricultural systems to boost soil nitrogen. Soil organisms also decompose organic matter, transforming litter or fallen trunks into rich soil; there are a lot of fungi that are responsible for this. Out of the fungi groups, there is one group of mycorrhizal fungi that is an amazing example. Mycorrhizal fungi are fungi that grow either on the surface cells or within the cells of the root of the plant, making the exchange between plant-derived carbon and fungal-derived nutrients efficient. The benefits for the plant from this relationship can be seen as an increase in plant growth, a decrease in plant disease and even an increase in tolerance to drought. Mycorrhizal fungi are very common and are found in 80% of terrestrial plants. You might be able to find evidence of this in plant roots if they feel spongy or if they look swollen. There is another important function soil microorganisms play for plants, and that is pathogens or disease. There are many examples of soil microorganisms having a detrimental effect on plant growth; an extreme example of this is *Phytophthora*, which causes death to many Australian species. All this results in plants gaining a positive or negative effect on their performance depending on what organisms are in the soil.

Interactions between plants and soil organisms are considered to have been present throughout evolutionary history. In fact, there is evidence building to say that the plants would not have made it on land without the symbiotic relationships that they formed with microorganisms. Because of this long evolutionary history, we can see a wide range of types of interactions between plant and soil microorganisms. Some plants are completely reliant on fungi for growth; for example some orchid species' tiny seeds do not have enough resources to establish without certain fungi species to supply nutrients. There is even an example of a plant (Family Ericaceae *Monotropa uniflora* from Canada) that lacks photosynthetic ability and is entirely dependent on fungi for all their needs. At the other end of the spectrum, there are groups of plants that actively exclude fungi, including the family *Brassicaceae*, and genera *Atriplex*, *Rhagodia* and *Carpobrotus*. All this makes for a very plant species-specific reaction from soil organisms, with some species not being able to grow without the certain type of organism present, to others being able to grow despite unhealthy soils.

Understanding soil microorganisms and their function has many implications for land management. Restoration success could be improved if we understand plants response to certain soil microorganisms. Farming practices can include knowledge to promote healthy soil to increase soil nitrogen and water retention. And of course, our beloved grassy ecosystems can be better understood, and we can improve resilience to weed invasion, drought and disease and promote and protect species diversity.



Grassland Conservation in the ACT- what is being done

- James Benjamin Smith -

James is a student of Environmental Science and Sustainability at the ANU, undertaking a course on "Biodiversity Conservation" which requires 7 hours work experience in Biodiversity Conservation. James chose FOG and here is what he posted on the ANU Blog: <https://biodiversityconservationblog.wordpress.com/author/biodiversityconservationblog/page/2/>. There are also many other worthwhile contributions on the site including Niam Foxcroft's work with FOG planting grasses at Stirling Park, and reports on Striped Legless Lizards, Pink-tailed Worm Lizard and evaluating offset sites. Here is what James reported:

Canberra's Friends of Grasslands (FOG) community is dedicated to conserving the native vegetation of local grasslands.

On the 14th of August, Geoff Robertson (President of FOG) and I visited Franklin Grasslands. Despite much of the grassland being infested with weeds, Geoff explained that future programs will be aimed at restoring this area. Geoff outlined possible strategies to aid this process such as tilling, spraying of weeds and replanting of native plants.

Stirling Park, Yarralumla

On the 16th of August, I visited Stirling Park, a critically endangered Yellow Box – Blakleys' Red Gum Grassy Woodland, with members of the FOG community.

Work at Stirling park has been ongoing for over a decade and has seen great success with weed control and the replanting of native vegetation.

Our task was to protect vegetation from animals such as hares, rabbits and kangaroos. We were placing barriers consisting of sticks and logs around and over the plants and grasses to cover them. Jamie Pittock stated that this would deter animals from trampling or eating them.

In the past, this has proven to be effective. And although it isn't necessarily pleasing to the eye, it is important for the future protection of the vegetation.

On this day I met Jamie Pittock, a professor at the ANU who is also heavily involved in the FOG community. He invited me to aid him in a project at the Yarramundi Reach Grasslands a few weeks later.

Relocation of native vegetation

Professor Jamie Pittock, Dr John Fitz Gerald and I relocated Kangaroo grass tussocks (*Themeda triandra*) from Ginninderry (a site that will soon be lost to development) to Yarramundi Reach Grasslands with the hope that they will grow and outcompete the invasive species in the area.

The relocation of Kangaroo Grass is a sort of last resort, as previous weed control measures have failed.

Jamie Pittock describes the project more precisely "Among the native temperate grasslands (endangered ecological community), invasive weed grasses have been sprayed out by FOG volunteers over the past decade. However, there has been little or no regeneration of native species in these gaps but rather, many new weed species have colonised. Burning, past direct seeding and plant multi-species tube stock restoration efforts have failed to engender recolonisation.



James and Jamie Pittock – Yarramundi Reach

of dead weeds that have been sprayed. The replanting of native tussocks will hopefully take their place.

It is expected that the tussocks taken from the Ginninderry site will have a high survival rate. For the remaining tussocks, it is optimistic, but there are still some uncertainties around what the outcome will be.



Stick and log barriers placed over recently planted vegetation to protect them from animals

The weeds of African Love Grass (*Eragrostis curvula*) and Chilean Needlegrass (*Nassella neesiana*) are a major pest. Both are transformative, meaning they degrade the soil and quickly outcompete native vegetation. This makes it difficult for native vegetation to recolonise these sites.

We used three methods of replanting to see which one would be the most successful.

We began our day by digging out 20 mature *Themeda* tussocks from the Ginninderry development site. These were to be replanted in a clustered area on Yarramundi Reach.

We also planted ~80 tube stock tussocks with soil from the native *Themeda* site, to see if 'seeding' the soil biome helps.

Finally, we planted ~30 tube stock tussocks directly into the soil at Yarramundi reach.

Yarramundi Reach Grassland has been cleared of weeds quite successfully by FOG, however, there are still some bare patches

Upon completion of my work experience, it became apparent that conservation in the A.C.T region is widespread, with many volunteers donating their time. It is thanks to communities such as FOG, that Canberrans are able to enjoy parklands that are rich with native flora and fauna.

I would like to thank Geoff and Margaret Robertson for introducing me to the Friend of Grasslands Community and teaching me about the ecology and management techniques of the local grasslands.

I would also like to thank Jamie Pittock and Dr John Fitz Gerald for allowing me to join their project and for teaching me techniques for grassland and developmental management and the ecology of native vegetation.

Citations:

ACT Government, 2020, *Invasive Plants*, available at: <https://www.environment.act.gov.au/parks-conservation/plants-and-animals/Biosecurity/invasive-plants>

Greening Australia, 2003, *Revegetation Techniques*, available at: https://www.greeningaustralia.org.au/wp-content/uploads/2017/11/GUIDE_A-guide-for-establishing-native-vegetation-in-Victoria.pdf

Rod Taylor, 2020, *Ask Fuzzy: What is a Transformational Weed?*, *The Canberra Times*, Canberra

Sharp S., 2016. *Ecological Management Plan for National Capital Authority Conservation Areas. Report to the National Capital Authority, Canberra, April 2016.*

Recent FOG Events

Franklin Grassland Open Day

The open day, on Sunday 6 Sept was organised by the Parks and Conservation Service with help from Friends of Grasslands to promote the grassland reserve and to get input on the Franklin Grassland Reserve landscape plan.

A fair crowd of up to 100 people gathered during the two hours and many heard about grasslands and particularly about Franklin Grassland from Minister and local MLA, Suzanne Orr, Ian Walker, the ACT's Executive Director Environment, and Friends of Grasslands' President, Geoff Robertson.



A number attended walks led by Ranger Thea O'Loughlin and Geoff through part of the grassland. They showed us patches of grassland with varied native vegetation, and tiles laid out to provide shelter for small animals and a means for checking what was there. There were lush green leaves but no flowers yet. The walk ended in the box-gum woodland at the north end of the grassland. A fire truck, and lizards, snakes and skinks from Canberra Snake Rescue were a drawcard, and



staff from PCS, FOG and Ginninderra Catchment Group answered questions.

Grassland plant seedlings from Provincial Plants attracted attention and questions, and went home with some of the visitors.

Franklin Grassland Parkcare Group

At the time of writing, the park care group, initiated by FOG and regarded as a FOG project, has held ten work parties with an average attendance of 5.5 people who between them have contributed 176 volunteer hours. The group works closely with ranger Craig Wainwright and initially focused on weeding one of the higher quality grassland patches, but more recently has focused on the major weed problem in the woodland area. It has been meeting every second Thursday afternoon from 1.15 to 3.15pm, apart from a break in August. In November it will switch to the 1st and 4th Wednesday mornings 9-11am and hold its last work party on 2nd Dec. The group has a sprinkling of members with Chem. and First Aid certification. Sue Ross is mapping the group's weeding efforts.

Parkcare display at Jamison

FOG again participated in the annual Parkcare display at Jamison Centre, 11-13 Sept. Many of the usual participants plus some newcomers were present. As there was a lengthy report on the previous year's display in July-August newsletter, we will keep this brief. As usual it was an impressive display. FOG provided its display boards, posters and some volunteers as part of the mix, and it was a great opportunity to catch up with friends and talk to members of the public. Thanks to organisers Jean Geue and Linda Beveridge.



Wild Nature by John Blay

On 3 Oct, a number of FOG members travelled to Braidwood and attended one of many launches of John Blay's latest book *Wild Nature*. John spoke at the event and while he apologised for a lengthy deliberation, the audience waited on his every word and encouraged him to take longer. I was reminded of a similar interview he gave on the ABC's *Conversation* program on 25 September.

Listening to John, like reading his latest book, one gets a sense of meandering, but with a purpose, in the south east forests. Nowadays many of us aspire to feel part of the bush and seeing it, as it were, through the eyes of First Australians. John, to me, comes closer to this model than any other white person I know. His words are poetry and uplifting, but solidly based on science, an awareness of Aboriginal lore and culture, and the many experiences of people who have a deep appreciation of nature.

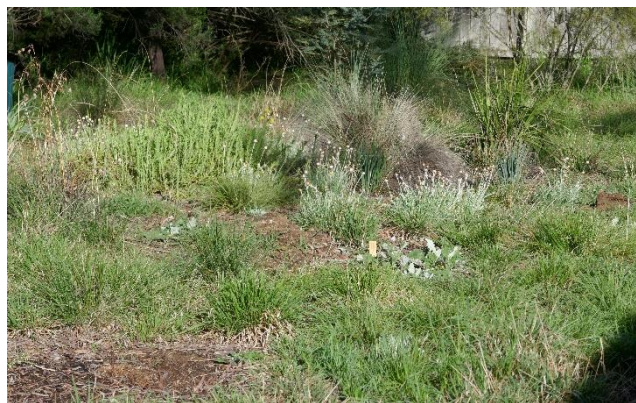
The book is also a history of the battles that are being won and lost over our treasured landscapes and biodiversity. It finishes with an afterword on fire trails. This is a vivid and personal description of the 2019-20 fires and places the reader in the midst of the fire. Hopefully reading this book will attune us more with nature and seek to protect her for her to protect us.

While in Braidwood we caught up with Fog members Andrew Kavunenko and Karen Warburton, who were exhibiting their delightful artwork.

You may order *Wild Nature* from <https://southeastforests.com.au/books/wild-nature/>. The site provides an opportunity to read about others' reactions to the book. The book costs \$40, postage included.

Grassland Garden

FOG has long supported the people growing grassland gardens. This is an ideal way to learn about growing grassland plants and their habits and habitat requirements. It is also a way to encourage insects and their predators, such as small insectivorous birds, to the garden. Recently, I received a reminder when Alan Ford sent an image of his garden. Many years ago, I became very excited about his establishing a grassland garden and there is news story of a FOG visit to his garden. He stated "A long time ago you wrote some letters that got this garden to the start stage. I attach a photograph taken in the back garden. After years of drought it has started to come back." The photo says a lot.



Origin of FOG Hotspots Group

Emily Sutcliffe & Margaret Ning

On Sunday afternoon 6 Sept a handful of FOG members set out on an impromptu adventure to Guy's Cross, the conservation property of FOG member Tim Booth, near Carwoola. We set out with the promise of prolific Early Nancy (*Wurmbea dioica*) and were rewarded with many, after a decent walk through an olive grove and beautiful grassland. The Early Nancy were particularly numerous lower down the slope, and especially beautiful where they were interspersed amongst the wispy remains of five-minute grass (*Tripogonella loliiformis*). Other flowering favourites were Golden Moths (*Diuris chryseopsis*) and Yam Daisy (*Microseris walteri*).

The Early Nancy certainly are the early flowerers, and we shall need another month for more flowerers to join the mix. It was still obvious, however, that Guy's Cross had a diverse mix of native plants including 14 grass species, 5 lilies species, 3 orchids, 9 rushes/sedges, 2 fern species, 39 species of forbs, 12 species of woody shrubs and at least 7 tree species. Of special interest were the Hoary Sunray (*Leucochrysum albicans*) which Tim had planted many years before and had successfully spread over his property. We had a fantastic afternoon in the warm spring weather and appreciate very much Tim and his partner Ros for having us and showing us around their magnificent property.



Early Nancies at Guys Cross

Out of this arose the FOG Hotspots Group, a group that can be contacted if there is flowering or other happening to which a quick visit can be organised. Margaret keeps an email list of interested persons.



Early Nancy at Guys Cross

More Hotspots

Margaret Ning

The hotspot group has made a couple of visits this month to some truly magnificent sites.

First there was Gungahlin Hill, adjacent to the Gungahlin suburb of Crace, on Sunday 5 October. We briefly checked out the colourful peas (*Hardenbergia violacea*, *Indigofera australis*, *Glycine clandestina* and *Daviesia leptophylla*) on our way to the handful of orchids flowering in the forest section of the reserve. One by one we sighted *Caladenia* (formerly *Glossodia*) *major*, several *Caladenia* species, including possibly *C. carnea* and *C. ustulata*, *Diuris pardina* and the somewhat cryptic *Pterostylis pedunculata*.

Arriving at the more grassy woodland in the lower slopes, the display from the *Bulbine bulbosa*, *Microseris walteri*, *Wurmbea dioica*, *Triptilodiscus pygmaeus* and *Stackhousia monogyna* was truly glorious. *Diuris chryseopsis* were also still apparent, along with *Arthropodium minus*.

There were a few plants of the uncommon *Sebaea ovata*, and another highlight was the extremely majestic old-growth *Eucalyptus rossii* trees. Still to flower were sun orchids and onion orchids, and chocolate lilies and fringe lilies.

On 8 October we travelled to a Crown reserve at Burra NSW to see the *Swainsona recta* that was discovered there a few years ago. It was another scene of a colourful grassy woodland that's experiencing a perfect season. The colour came from *Leucochrysum albicans* var *tricolor*, *Bulbine bulbosa*, *Microseris walteri*, *Chrysocephalum apiculatum*, *Wurmbea dioica*, *Stackhousia monogyna*, *Podolepis jaceoides*, and two *Swainsona* species (*S. recta* and *S. sericea*). *Pterostylis cycnocephala*, *Arthropodium minus*, *Ajuga australis*, *Diuris chryseopsis*, added additional colour as we came across them. Less common at the site were *Ophioglossum lusitanicum*, *Brachyscome willisii*, *Calotis scabiosifolia*, and *Opercularia hispida*.

Both of these sites were sights for sore eyes! We wait a long time between good seasons in our grasslands, and it is a pleasure to be enjoying one again.

To be placed on the hotspots mailing list for short-notice grassland visits (weekday and weekend) please contact me. Also please let me know of great floral sightings. I also have Cooma members interested in being advised of good spots.

Convention on Global Biodiversity 2010 - Sue Ross

A rather depressing article by George Monbiot in The Guardian on 30 September 2020 outlines the United Kingdom's lack of effort in meeting the targets set at, and subsequent to, the Convention on Global Biodiversity 2010. The article also states that of the 20 pledges made at the Convention in Nagoya, not one has been met. The full article which includes further links is at https://www.theguardian.com/commentisfree/2020/sep/30/johnson-pledges-environment-un-biodiversity-summit?utm_term=.29613299aa53b03106d8f4c13944cdaf&utm_campaign=GreenLight&utm_source=esp&utm_medium=Email&CMP=greenlight_email

Stirling Park Group

13 Sept. How many seedlings can you fit into a car? I managed 200 this morning. Excellent day restoring Haines Creek and other parts of Stirling Park with 14 Friends of Grasslands volunteers.



3 Sept. Yesterday's fun staycation activity - experimental translocation of native grass tussocks to restore Yarramundi Reach grasslands.



Yarramundi

Last month some FOG members met at Yarramundi Reach to monitor the forbs and grasses at the two scrape and sow sites. Many of the species were flourishing as were (unfortunately) the weeds.



Hall Cemetery - John Fitz Gerald

Work continues by FOG on weeds in Hall Cemetery Woodland, with both occasional visits by volunteers and contractor spraying using Slasher funded by our grant from ACT Chief Minister.

Work has also been hugely boosted by ACT government Natural Resource Management, firstly by making some time of their Jobs-for-Canberra crew available on several days, secondly by a generous payment to assist the costs of FOG's weed work in this Box Gum Grassy Woodland. We particularly thank Laura Williams for organising both of these and wish her well in her new job in South Australia.

Finally, and traditionally at this spring-summer time, a team of FOG volunteers gave even more, with about 24 hours of effort in a work morning on Sat 3rd October. A team of 4 trimmed areas of tall exotic grasses and Plantains using machines including FOG's new battery trimmer, in the hope of delaying seed set. Another team of 4 went around the woodland hand weeding, mostly on isolated Capewoods, Milk Thistles and Prickly Lettuce. The photo shows two of them, Margaret Ning and Sarah Hnatiuk, bagging their catches in the grassy open area close to Wallaroo Road.

However, to back up all of this effort, even more hands are needed on deck for the next work morning on Sat 7th November - see the work calendar for details. This event will be critical as unwanted seeds will ripen fast now and FOG will not return to Hall Cemetery until February.



News Update

Proposed DHA North Lawson development - GR

In our last issue, Naarilla Hirsch reported on FOG, the Conservation Council and others cosigning a letter to Defence Housing Australia, copied to other agencies, urging it to reconsider its development proposal at North Lawson east. The letter was signed by 28 organisations and 81 individuals, including numerous grassland experts.

Following a press release by the Conservation Council, the issue was covered in the *Canberra Times* 17 Aug, *Conservationist band together to save rare grasslands* and in the *Canberra Weekly*, 26 Aug, *Endangered grasslands "vulnerable" to proposed development*.

Responses to the letter were received from; Louise Vickery, Ass Sec, Environment Assessment Branch, Department of Agriculture, Water and Environment, 20 Aug; Mr. Barry Jackson, MD, DHA, 21 Aug, copied to the Minister of Defence Personnel; and Mick Gentlemen, ACT Minister for the Environment and Heritage. Responses were not encouraging. Mr. Jackson stated the DHA proposal would be moving forward and would continue to consult experts – hopefully he will consult the numerous experts who signed the original letter. Ms Vickery stated that when they received the proposal, under EPBC processes, it will be put out for two weeks for public comment. Mr. Gentleman replied that the proposal “would involve two (further) community engagement processes, the first at the concept planning stage and then at the works (development) approval stage ... as outlined in the NCA's Development Control Plan No. 12/09 (Belconnen Naval Transmission Station.” We have asked each for further discussion, but no response so far.

If anyone would like further information please contact me.

ConCouncil and ACT elections - GR

At the time of writing, the ACT elections are less than a week away. I'd like to congratulate the ConCouncil for its efforts in the election. It put together its election asks (collating the views of its many and diverse member organisations), conducted three successful election webinar forums, and put out its guide to candidates (its scorecard assessing party commitments against ConCouncils asks).

Congratulations to Helen Oakey, her staff and volunteer support team who made this happen. This is an enormous task and complex task. What is often overlooked is that the process is enormously important as it attempts to inform and seek clear commitments from parties and candidates.

Biodiversity groups such as ours, while they rely on volunteer labour and know how to get resources from the system, are not good at formulating clear statements on what we want. This is not helpful when politicians ask what we want at election time. It was noticeable during the process that groups, for example, associated with transport, waste and climate change were much better articulating clear positions and are more comfortable talking to politicians. This is something we should work on.



Poplar Demise at Blue Gum Point

Jamie Pittcock has reported (Facebook) on 23 Oct on the removal of poplar trees from Blue Gum Point. He stated “Big thanks to ACT Government who lent their parks Jobs for Canberra crew to help Friends of Grasslands over the past two days at Blue Gum Point Yarralumla. This rescue mission to save my beloved (& endangered) Button Wrinklewort (look it up) involved slaughtering vast numbers of invading woody weeds. Many poplars died.”

Additional assistance for Blue Gum point

Great news! As reported on in our last issue, FOG has been awarded an environment grant of \$20,856 for work at Blue Gum Point to extend the restoration of flora and fauna habitat from adjoining land at Gurubang Dhaura – Stirling Park. The ACT NRM Team has now arranged for some additional tree removal resources for the project. This is a great example of how our projects increasingly attract additional resources. Maybe this is a silver lining of Covid 19 following the ACT government Covid 19 funding more resources for landcare activity.

Bredbo Grassland Conversion - ALG to Native Grasses Project

This interesting project has just commenced with the following report from Lauren van Dyke

Thanks to SE Local Land Services, Upper Murrumbidgee Landcare Committee (UMLC) and Greening Australia, our Bredbo Grassland Conversion - ALG to Native Grasses Project has formally commenced.

On 2 October 2020 Nicki Taws and Ange from GA assisted by Georgeanna Story from UMLC and some Bredbo Landcarers gathered to seed a small patch of ground down at the Bredbo Rivers junction with native grasses. The site had been sprayed initially by Will Goggin but more recently by James Byrnes, and Errol helped give it a cool burn to get rid of the ALG thatch. See small video of the seeder in action <https://photos.app.goo.gl/JyqxqACJ3ef63VeLA> and a photo of the seed and sand being mixed and what it looks like in the seed box. There is an important image also attached of the seeded site dated 18 September 2020 for our records so we can compare it to future photos.

This is phase 1 of our project and in autumn 2021 the seeder will be back and we will also trial hand seeding on the Council Road verge.

But our freshly seeded patch needs protecting as it is at risk of bikes or cars driving on it. To mitigate this we are going to plant a Poa Grass perimeter with tree guards in place to fortify the area as we watch the grasses grow.

Contact: landcarebredbo@gmail.com

Capeweed breakout

Capeweed is everywhere in Canberra. Jamie Pittcock posted on Facebook (14 Sept) “Colleagues, after 11 years with virtually no Capeweed at Stirling Park, like many places this season we have been over run with it in key areas we are trying to restore (see photo). What is the collective wisdom on the weed? Do we ignore it on the basis that unfavourable seasons will peg it back? Or does it need spraying?” He received numerous and varying comments.



CT - Cape Dandelion a pretty weed

Steve Evans, Canberra Times 3 Oct, reported that Cape Dandelion (*Arctotheca calendula*), which is brightening our lives, it is a weed according to Geoff Robertson, President of Friends of Grasslands. Steve Evans quoted Mr Robertson as saying the weed was not as threatening to native Australian plants as other imported weeds like African love grass, Chilean needle grass or serrated tussock. More worrying weeds were threats not just to vegetation but to cattle because they contain no nutrition but cows feel like they are full when they weren't, resulting in animals starving. Weeds were the result of dry weather and drought because so much land was left bare, and abundant seeds and the rains did the rest. This can disrupt nature, according to Mr Robertson. “Native plants provide food for insects and they are the basis of the food chain. Native Australian insects don't tend to eat imported plant species and that gives the newcomer a competitive advantage”. A Bayer spokesperson said that capeweed is a competitive weed which reduces production and can be toxic to livestock and other animals.

Victorian Government sued over grassland reserves affecting property values

Further to the article in the last issue, p11, Victorian property developers, the Dennis family, have filed claims against the Victorian government for about \$194m representing a land value loss caused by the property being reserved as grasslands under the Melbourne strategic assessment. FOG will continue to report on developments with the Melbourne Strategy.

Source: <https://www.theguardian.com/australia-news/2020/sep/04/property-developers-sue-victorian-government-for-194m-over-creation-of-grassland-reserve>

Launch of field guide to orchids - GR

1 Oct. The much recently advertised *Field Guide to the Orchids of the Southern Tablelands of NSW including the ACT*, was launched by David Pope, local cartoonist and amateur orchid enthusiast and photographer, on the Brittle Gum Lawn at the Australian National Botanic Gardens.

The authors of the book are Jean Egan, Roger Farrow and Tobias Hayashi. The bulk of the photos come from Tony Wood, who initiated a project to provide a photographic guide to the region's orchids. Sadly, Tony died before the project could be completed. I first met Tony when I turned up for my first job in Canberra at the Australian Bureau of Statistics in January 1967 – Tony's desk was six metres away from mine and I needed to consult him on many matters associated with the project I was working on.

The book is very professionally presented, but more importantly there is much material in the book of a general nature on orchids, describing them, their growth cycle, their habits and habitats, tips on how to distinguish between species, how to photograph them, and much more. Detailed information and photos are presented for each of the 181 species (32 genera). Apart from Tony's photographs, 30 other people have contributed photographs. For each species, several photographs, showing orchids from different angles, are included.

Roger Farrow's contribution has been to provide information on orchid pollinators, an important contribution to our understanding of these amazing flowering plants.

The book is excellent value and is available from Tobias, tobiashayashi@hotmail.com at \$45 by mail including postage and packing, the Gardens and Arboretum Bookshops for \$45 (RRP) and hopefully elsewhere.

Developments at Ginninderry- JFG

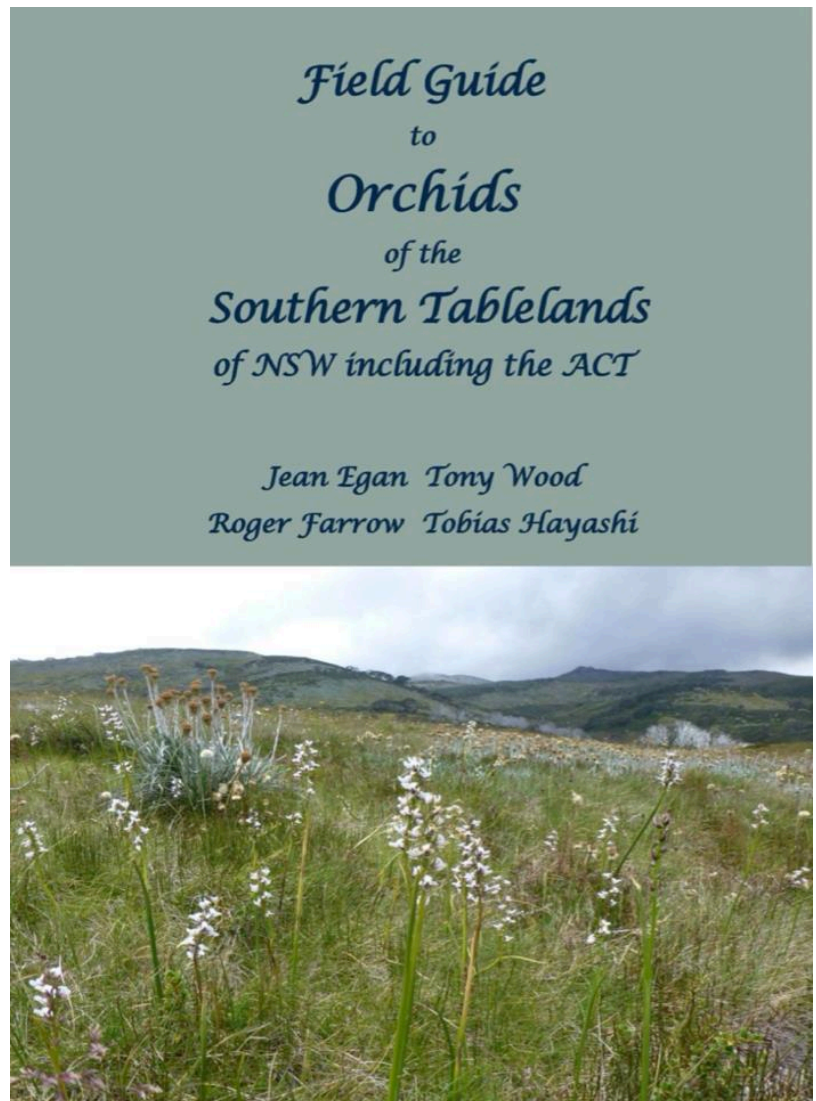
A key feature of the suburban development under way in NW Canberra and, in future, across the NSW border, has been the designation of a 596 ha area for nature conservation with balanced recreational activity along the Murrumbidgee River and Ginninderra Creek. This area is known as the Ginninderry Conservation Corridor and is managed by a Trust to handle the full range of aspects needed to operate this area with its range of highly significant natural and cultural heritage values requiring active protection.

FOG has taken opportunities to contribute to this conservation via several submissions to calls for public comment to proposals. One of the most recent was assessment by the Yass Valley Council of planning proposals for the NSW sections, and FOG drew attention in May 2019 to some problems. FOG also inputs regularly via the Ginninderry Bush on the Boundary community forum.

The management group Ginninderry Conservation Trust (GCT) has been established and oversees activity presently in the 309 ha part of the Corridor in the ACT. Its Board includes members from ACT and NSW governments, Yass Valley Council, plus community members including aboriginal representatives. David Coutts chairs this board which first met in March. Jason Cummings is the GCT's CEO and Angela Calliess (familiar to many of us from her inspirational years with Greening Australia in the ACT) is Program Director for the Conservation Corridor.

The Trust facilitates community engagement with this new Corridor, not only with new Ginninderry residents, but with everyone in our region. Its facebook page can be accessed via <https://www.facebook.com/GinninderryTrust>

More detailed information about conservation planning can be accessed at the Ginninderry website, and natural values are documented for this area in Canberra Nature Map (enter Ginninderry Conservation Corridor into NatureMapr search box to get to a site map, a species list and many images).



Large grassland scrape & sow - GR and JFG

In late May the GCT scraped and seeded a 0.27 ha site with 23 species of native grasses and forbs in a project with Greening Australia. The site was then fenced to protect it from the impact of cattle, which graze the Conservation Corridor, and other herbivores. The Trust is engaging CIT students and community volunteers to spread appropriate sized rock on sections of the site for Pink Tail Worm Lizard habitat. Greening Australia will control weeds on the site as required. As shown in the photo by John Fitz Gerald from Jun 24, six jute mat strips were installed to reduce surface and seed movement down the gentle slope of the site. Angela Calliess, the Trust's Program Director sought community-group assistance for monitoring scrape revegetation. FOG responded and was due to take a team on site with the Trust on Oct 6 until heavy rain forced a postponement.



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