News of Friends of Grasslands

Supporting native grassy ecosystems

ISSN 1832-6315

January–February 2019

Sarah Sharp – ACT Environmentalist of the Year 2018

At the the Conservation Council ACT Region 'Spring Mingle', Friday 26 October, ***Sarah Sharp of Friends of Grasslands was announced as ACT Environmentalist of the Year 2018***. 'Working both in her own ecological consultancy and providing countless volunteer hours to Friends of Grasslands, Sarah has dedicated her life to conservation of delicate grassland ecosystems in the region. Under Sarah's leadership, Friends of Grasslands has been significant in raising the profile of grasslands as key environmental components and as habitats for various threatened species. She initiated the Biodiversity Working Group's project to have the removal of mature native trees recognised as a threatening process under the Nature Conservation Act. It is the first threatening process declared under the Act and represents a turning point in the protection of mature trees in the ACT.' (*Conservation Council Member Group Update 10*).

FOG people at Threatened Species Day rally

This rally at Parliament House was on 7 Septemher, national Threatened Species Day. Geoff Robertson was there (holding the notice), and so was Andrew Zelnik, who took the photo.

During 14–20 January, you can see live displays, feeding and handling of snakes, lizards, frogs, turtles & crocodiles, **between 10 am and 4 pm each day**

At the Australian National Botanic Gardens (ANBG), in the **Crosbie Morrison Building** (near the cafe).

Feeding times at the display: 11 am, 1pm & 2 pm.

Book online at www.actha.org.au

Tickets cost: $6 (adult), $4 (kid), $5 (concession)

ANBG is on Clunies Ross St, Acton, ACT.

Welcome to our new members!

Jayne Roberts, ACT; Mark Jenkins, NSW; Brigitta Wimmer, ACT; Brian Palm, ACT; Laura Williams, ACT

Congratulations to 'Canberra Nature Map'!

On Thursday 30 November, the citizen science project originally known as Canberra Nature Map won the **2018 Banksia Foundation Community Award**. What an accolade! 'The Banksia Foundation is internationally recognised as highlighting innovation and leadership in sustainability through the lens of the UN Sustainable Development Goals' (see link below).

Now called NatureMapr, this 'community-led animal and plant identifier' is closely associated with FOG, through members of the expert software team behind the platform. FOG members are also among the expert ecologists who check every upload to ensure its correct ID. For more information, see https://bit.ly/2Cg8E7Q

First FOG activities for 2019

1. January – Theodore ACT, grassland visit: A visit to the grassland around the 'famous' axe grooves in Theodore, on **Thursday 31 January, in the afternoon**. Please register your interest with ann.milligan@fog.org.au, so you can receive details when they are sorted out.

2. FOG workparty: Scriveners Hut, 17 February. See page 7.

3 & 4. February & March, visits to TSRs & grassland: in NSW, near ACT. See 'STOP PRESS', on page 14.

5. Wildlife walks: A series (3) of twilight wildlife survey walks. The walks will be **between 7 and 10.30 pm** at **Stirling Park** on **Saturday evenings**. The first walk will be on **16 March 2019**. Details of meeting place, etc., will be in the February newsletter. ***These walks are open to anyone interested***. If you want to attend, you must register with Jamie.pittock@fog.org.au at least 2 days beforehand.

Some of the contents of this *News of FOG* ...

FOG people can speak up to defend environment values

TSR Plan of Management – Calling on FOG members to contribute

Geoff Robertson

On 29 Nov, Local Land Services (LLS) released the draft Travelling Stock Reserve (TSR) Plan of Management (PoM) for **public comment by 21 December**. This represents significant progress on the future status and management of TSRs.

I urge readers to read the draft PoM, check out the mapping tool, read the frequently asked questions (FAQs) and complete the survey (see https://www.lls.nsw.gov.au/livestock/stock-routes).

The FAQs document states that TSRs will not be sold off and will continue to be managed by LLS. Each TSR has been mapped and allocated to one of four categories. The vast bulk of TSRs are classified as Categories 2 and 3 which have important biodiversity conservation, Aboriginal cultural heritage or recreational values. Category 2 reserves are still used for travelling stock, while Category 3 are rarely used for travelling stock. However, it appears that a flag which indicates whether a TSR has a high, medium or low level of conservation status is yet to be applied.

The draft PoM has taken many years to develop and FOG has made many submissions over that period. The draft PoM is largely consistent with what FOG has urged in its submissions.

The draft PoM also encourages contact between local LLS offices and the community, and FOG is pleased to report that it has a very positive relationship with South East LLS and its very positive and committed staff.

I think that the draft PoM is a good outcome, especially given that it is written from the viewpoint of LLS and what it might realistically achieve. However, ***much more should be done to secure the future and better management of TSRs*** but this depends upon political leadership and community support – these are matters over which LLS has little control.

The level of funding for biodiversity continues to suffer and the funding model for TSRs is inadequate. The recent Commonwealth Government cut of 40% to its three-year landcare program is just one example and is resulting in serious staffing cuts at LLS.

Staff shortages, lack of funding and poor community attitudes on biodiversity hamper better management of TSRs with conservation values. This means that we can expect to see further deterioration of Natural Temperate Grassland, grassy woodlands and rare and threatened species on TSRs. While grazing is not inconsistent with good conservation outcomes, it needs to be carefully managed. Too frequently, illegal grazing on public land is inadequately controlled.

There is much that FOG members and supporters can do to assist, including responding to the LLS survey.

I encourage readers to familiarise themselves with local TSRs, make contact with local LLS staff, arrange and participate in citizen science at TSRs, report any abuses that take place at TSRs and possibly encourage the formation of a 'Friends of' group.

FOG will assist you if you wish to take any initiatives on TSRs.

Dr Jamie Pittock speaking out on behalf of high-country species threatened by hoofs

In an article called 'Top scientists blast NSW government over brumbies', by Steve Evans, in *The Canberra Times*, 9 November, Jamie Pittock, as spokesman for the group, was among those quoted. He was speaking at a 'special conference of some of the country's top environmental scientists', organised jointly by The Australian Academy of Science, ANU and Deakin University.

Hoofs cause erosion and stream pollution when they trample vegetation near streams, particularly the high-country swamps 'known as "moss bogs" ', and they damage habitats of endangered animals that depend on the swamps, 'in particular the Corroboree frog'. 'Dr Pittock said that 61 years ago, Australian scientists pointed out that other introduced, hooved animals – cattle and sheep – were also damaging the Kosciusko National Park, and the result of this scientific advice was that cattle and sheep were removed. The same should happen now with brumbies, according to Dr Pittock. "What the scientists are calling for is for the wild horse act in NSW to be repealed and for the NSW government to commit to a feral horse control program", he said.'

In response, Mr Barilaro said ' "The Brumby Bill was introduced [only months ago] to acknowledge the cultural and heritage significance of the Wild Brumby. [It] has not changed the status of the Brumby to 'protected', nor has it changed existing population control operations. It has maintained a ban on aerial shooting of wild horses which has been in place for nearly 18 years." ... The NSW government was going to set up a group to study ways of control without actively killing horses (unless they posed a direct threat to people). One option could be sterilisation, for example, leading to the gradual decline of the population. "The Wild Horse Management Plan, which will be implemented in coming months, aims to find a balance between humanely controlling the Brumby population and preserving sensitive areas of the National Park", said Mr Barilaro.'

The full article is at https://www.canberratimes.com.au/environment/sustainability/top-scientists-blast-nsw-government-over-brumbies-20181108-p50etv.html

FOG matters

FOG is on Facebook again

FOG has reappeared on Facebook. This time we have Laura Canackle as FOG's Facebook Administrator (Geoff Robertson is the other administrator). Follow FOG on Facebook for news updates, reports on past events, and announcements of upcoming events. Share FOG posts with your friends.

For more information, contact laura@fog.org.au

Glyphosate ruling

Geoff Robertson, FOG OH&S Officer

Many readers will be aware of the recent Californian Court decision that awarded money to someone whom it was judged contracted cancer after using glyphosate. Herbicides remain an important tool in FOG's restoration work but this decision raised some concerns. FOG exercises great care when using herbicides, and on our working bees herbicides are mixed, and their use supervised, by someone who has herbicide accreditation. Sarah Sharp has drawn our attention to an APVMA statement (quoted below) that has been recently released on this issue. We will continue with our current practice, but if you have any concerns please contact me.

"The Australian Pesticides and Veterinary Medicines Authority (APVMA) is aware of the August 2018 decision in the Californian Superior Court concerning glyphosate. Glyphosate is registered for use in Australia and APVMA approved products containing glyphosate can continue to be used safely according to label directions. Australian law requires appropriate warnings on product labels, which include relevant poisons scheduling, first aid, and safety directions detailing personal protective equipment when handling and using products containing glyphosate. The APVMA reminds users of the importance of following all label instructions. As the national regulator for agricultural chemicals, we continue to track and consider any new scientific information associated with safety and effectiveness of glyphosate, including the information available from other regulators. In 2016, following the IARC assessment, the APVMA considered glyphosate and found no grounds to place it under formal reconsideration. Further information may be obtained from the APVMA website, https://apvma.gov.au/node/13891 "

There was also a very good article on glyphosate in *The Conversation* recently: https://theconversation.com/stop-worrying-and-trust-the-evidence-its-very-unlikely-roundup-causes-cancer-104554

Kosciuszko2Coast news update

Geoff Robertson

On 16 November, Kosciuszko2Coast held its AGM which witnessed a major change in its structure, operation and personnel. Long-serving office holders Tony Robinson, John Fitz Gerald and I hung up our gloves and a new committee was elected.

New office holders are Karen Williams (President), Ryl Parker (Secretary), Peter Horniak (Treasurer), John Briggs, Gary Howling and Lesley Peden (committee members).

I would like to thank John Fitz Gerald who has made a major contribution as FOG's representative on K2C over many years. He is replaced by Ryl, FOG's new representative to K2C, whom we wish well, along with the new committee. We look forward to continuing FOG's support and participation in K2C.

FOG Advocacy *by Naarilla Hirsch*

October

1. FOG made submissions on the proposed critically endangered listing in NSW of the following two communities: Monaro Tableland Cool Temperate Grassy Woodland in the South Eastern Highlands Bioregion, and Werriwa Tablelands Cool Temperate Grassy Woodland in the South Eastern Highlands and South East Corner Bioregions. Comments included suggested name changes for the two communities, coverage of common species from lower quality examples of the communities, and expansion of the list of dominant invasive species.

2. A proposal for the Federal Golf Club Retirement Village Project was referred to the Commonwealth for consideration under the EPBC Act. Mitigation for removal of 19 hollow-bearing trees within the project area was their relocation into the remaining area of Box–Gum Woodland. FOG argued that, in the long term, nesting habitat for the vulnerable Superb Parrot will be reduced since there will be a lack of recruitment in nesting hollows over time. FOG also deplored the proposed chipping away at critically endangered Box–Gum Woodland.

3. FOG made a brief submission to the ACT Government's 2019–20 budget process. FOG supported the Government's efforts to retain threatened grassland species and communities by protection and management such as weed control. However, we drew attention to lack of compliance, at times, with the provisions of the *Nature Conservation Act 2014*, and asked for increased funding for this area.

November

4. FOG made a brief submission to the Senate inquiry into the impact of feral deer, pigs and goats in Australia. It pointed out the negative impact feral animals have on threatened ecological communities and supported both development of a national abatement plan for these feral animals and resourcing to enable full implementation of the plan.

5. A major upgrade to the Snowy scheme was referred for approval under the EPBC Act. This upgrade has been declared Critical State Significant Infrastructure by the New South Wales Government, but is situated within Kosciuszko National Park. FOG asked for quantification of the negative impacts on the various threatened communities and species that will be affected by the proposal, and that they be assessed by an independent scientific committee together with alternatives for avoidance and mitigation. Offsets should only be applied as a last resort if there is truly no alternative.

The full text of FOG submissions appears on our website.

Raspy or Tree Cricket, *Paragryllacris* species, and watching 'ecdysis'

Michael Bedingfield

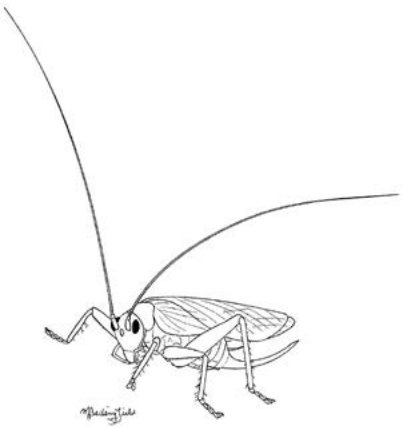
Late one night last summer, when all the sounds of the world had settled down and it was very quiet, I went out into my garden with a torch to see I if would see anything unusual. After a short while I found what looked like a misshapen insect, partially emerged from a wizened replica of itself and hanging off the slender branch of a Vanilla Lily, *Arthropodium milleflorum*. It was a Raspy or Tree Cricket, in the midst of the very delicate process of shedding the external skin or exoskeleton.

The exoskeleton is the rigid external covering of an insect's body and the moulting process is known as 'ecdysis'. Like many other insects, Raspy Crickets have a relatively inelastic outer skin that is shed at intervals during growth. They emerge with a larger body and a more mature version of themselves. As well as allowing growth of the individual, ecdysis can regenerate damaged tissue and sometimes partially or fully restore missing limbs.

The long curved ovipositor at the rear of the body showed that the insect was a female. She was extremely vulnerable and not able to move away or do anything else until the process was complete. In the earlier stages of life this cricket has no wings, so she was about to enter the adult stage of life while undergoing a sort of rebirth. I watched patiently, occasionally taking a photograph, for half an hour or more. At first she was positioned with her head below while the rear part of her body was still encased in the old skin. Gradually her body slid out of the old skin and the extraordinarily long antennae emerged from their curved position above the body. She turned around to be in an upright position, as in the photo, and grasped the discarded skin with her forelegs. Slowly the wings unfolded from their crumpled state to be open and properly formed. In that position she waited for the body and wings to harden and become strong enough for activity. The photo series from that evening can be viewed on Canberra Nature Map at reference (a).

Ecdysis may take several hours to be complete. The body is very soft at the beginning and gradually hardens until the exoskeleton is firm and all body parts and limbs become fully functional. While waiting, the insect is virtually immobile and unable to defend itself or escape from predators. The process of ecdysis is described in detail in Wikipedia reference (b).

Paragryllacris is a genus of Raspy or Tree Cricket and belongs to the family Gryllacrididae. They are nocturnal, omnivorous



and have strong back legs for hopping. They have an annual life cycle. The young nymphs emerge in spring and grow to adulthood by a series of moults. When mature they mate and create the next generation. Using her long ovipositor, the female lays her eggs in the soil, where they overwinter. The crickets get their name 'raspy' from the sound they make when threatened. The specimens I saw had a body length without the ovipositor of 25–30 mm. The drawing here is of a different female when active, and of the same genus.

These crickets are related to the Canberra Raspy Cricket, *Cooraboorama canberrae*, which is a flightless grassland species endemic to the ACT. It is now quite rare as a result of overgrazing and the fragmentation of its habitat, and only occurs in small isolated populations.

In his poem *Miracles*, 19th century American poet Walt Whitman wrote: 'As to me I know of nothing else but miracles'.
To further quote from him:

> *Whether I walk the streets of Manhattan, ……*
> *Or watch honey-bees busy around the hive of a summer forenoon,*
> *Or animals feeding in the fields,*
> *Or birds, or the wonderfulness of insects in the air,*
> *Or the wonderfulness of the sundown, or of stars shining so quiet and bright,*
> *Or the exquisite delicate thin curve of the new moon in spring;*
> *These with the rest, one and all, are to me miracles,*
> *The whole referring, yet each distinct and in its place.*

Miracle or magic, certainly mystery and wonderfulness, it was for me a precious glimpse into the private life of a fascinating wild creature.

References

(a) https://canberra.naturemapr.org/Community/Sighting/3402371
(b) https://en.wikipedia.org/wiki/Ecdysis
https://www.poets.org/poetsorg/poem/miracles-0
https://www.britannica.com/animal/raspy-cricket
http://www.environment.act.gov.au/parks-conservation/environmental-offsets/central/jarramlee-offset-area

Close up on Tubercles

John Fitz Gerald

For this issue I'll zoom into a single word: tubercles.

The glossary of website plantnet.rbgsyd.nsw.gov.au defines such features as 'small wart-like outgrowths, e.g. forming the base of hairs'.

A common grass with tubercles is Hairy Panic. Quoting again from Plantnet: '*Panicum effusum* – Leaves with sheath with tubercle-based hairs, the basal sheaths covered with long shaggy hairs; …. blade 2–6 mm wide, with tubercle-based hairs'.

I was surprised when I tried a basic web search that I could find no photos of hairs attached to tubercles in plants, so I've selected two from the Seed Bank to pass on to readers.

The first shows the edge of a *Panicum effusum* leaf with sparse hairs extended 3 mm, more or less perpendicular to the leaf, each coming from a tubercle 0.1–0.15 mm in diameter. The very hairy underside of this leaf can also be seen in the top half of the image.

My second image is a leaf sheath wrapped around a main stem lower down on the plant. Readers should see longitudinal ribs and many hairs 0.5 mm long, each coming from a 0.1 mm tubercle.

In good light, the 3 mm hairs and tubercle at the edge of Hairy Panic leaves can be seen with the naked eye. The shorter 0.5 mm hairs probably need a lens to bring them into focus, even though there are many more of them. Hairs and tubercles are very useful for identifying this summer-growing grass well before it develops any of its distinctive large inflorescences.

Both images were captured at the National Seed Bank of the Australian National Botanic Gardens. They can be reproduced freely if attributed and linked to the Creative Common licence CC BY (http://creativecommons.org.au/learn/licences/).

Above: Edge of a Hairy Panic leaf: three single hairs (pointing downwards in this photo) emerging from tubercles. At the top of the photo, the underside of the leaf is very hairy. Scale bar: 1 mm long.

Above: Small tubercles, short hairs and ribs at higher magnification on the sheath of a Hairy Panic leaf. Scale bar: 0.5 mm long.

Update on Yarramundi Grassland Demonstration Revegetation Project

You will recall (Nov–Dec *News of FOG*) that FOG has received an ACT Government grant to work with Greening Australia to prepare a small-scale demonstration of the 'scrape and sow' technique for grassland restoration.

The photo here shows machinery at work on one of the two small scrapes located in the block closest to the buildings of the Aboriginal and Torres Strait Islander Cultural Centre at 245 Lady Denman Drive, Yarramundi Reach, ACT. KDM Earthworx did a very efficient job putting in these scrapes on the morning of Friday 26 October.

FOG is currently monitoring growth in these scrapes. So far, the weeds that have returned by reshooting from roots are those expected: *Plantago* and *Hypochaeris*. A population of clover has germinated, presumably from seeds in the small amount of soil left on top of the scrapes. A few native forbs have grown, again likely to be from resprouting. So far, grass does not seem to be a problem, but the significant rain in mid-December might encourage it. Weeds will be controlled with herbicide before they set seed.

The next stage will be sowing native seed into the scrapes, most likely in March–April if the weather is suitable.

Anyone interested in more information should contact john.fitzgerald@fog.org.au.

John is particularly keen to hear from volunteers for 2019 sowing work.

John Fitz Gerald

Victorian FOG members' news

Melbourne Grassy Plains Conference delegates hear about FOG

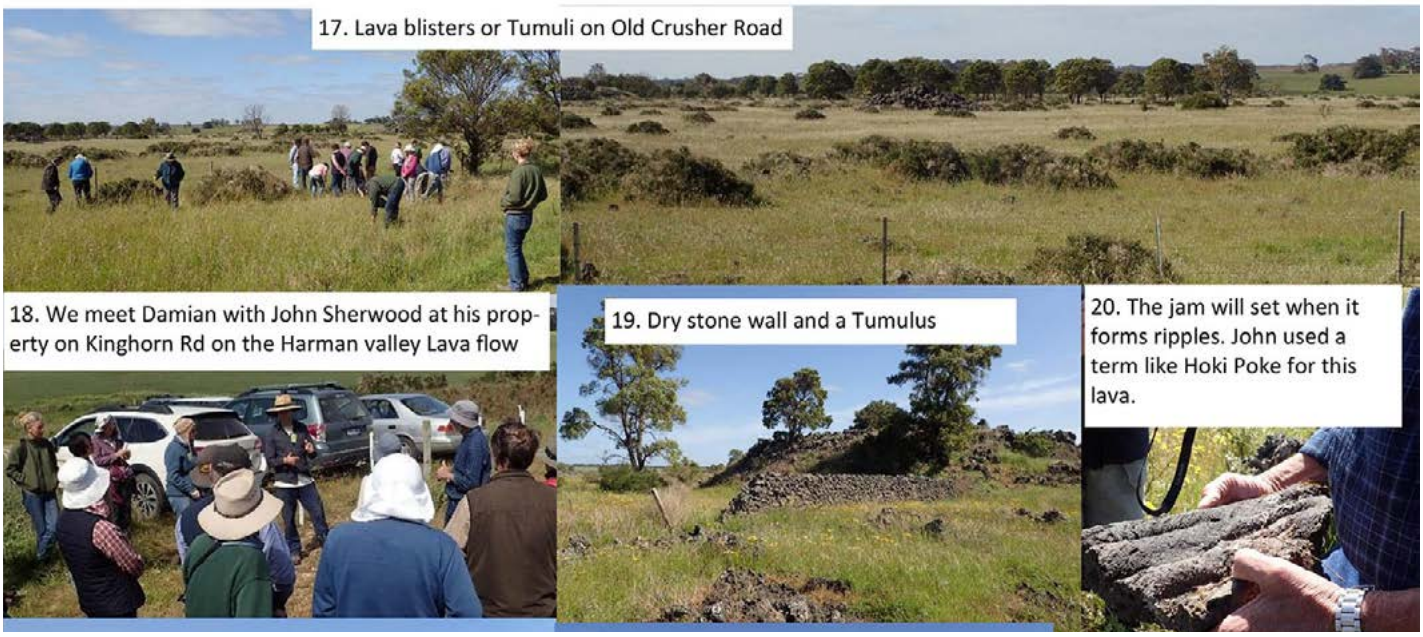
Long-time FOG member Michael Treanor, now based in Victoria, spoke at the Grassy Plains Conference (October, Melbourne) about the history and ethos of FOG, in his paper '**Mobilising the community to protect grasslands in the ACT and SE region**'. Michael says: 'It was quite well received, though I had the last spot for the conference on a Saturday arvo!'.

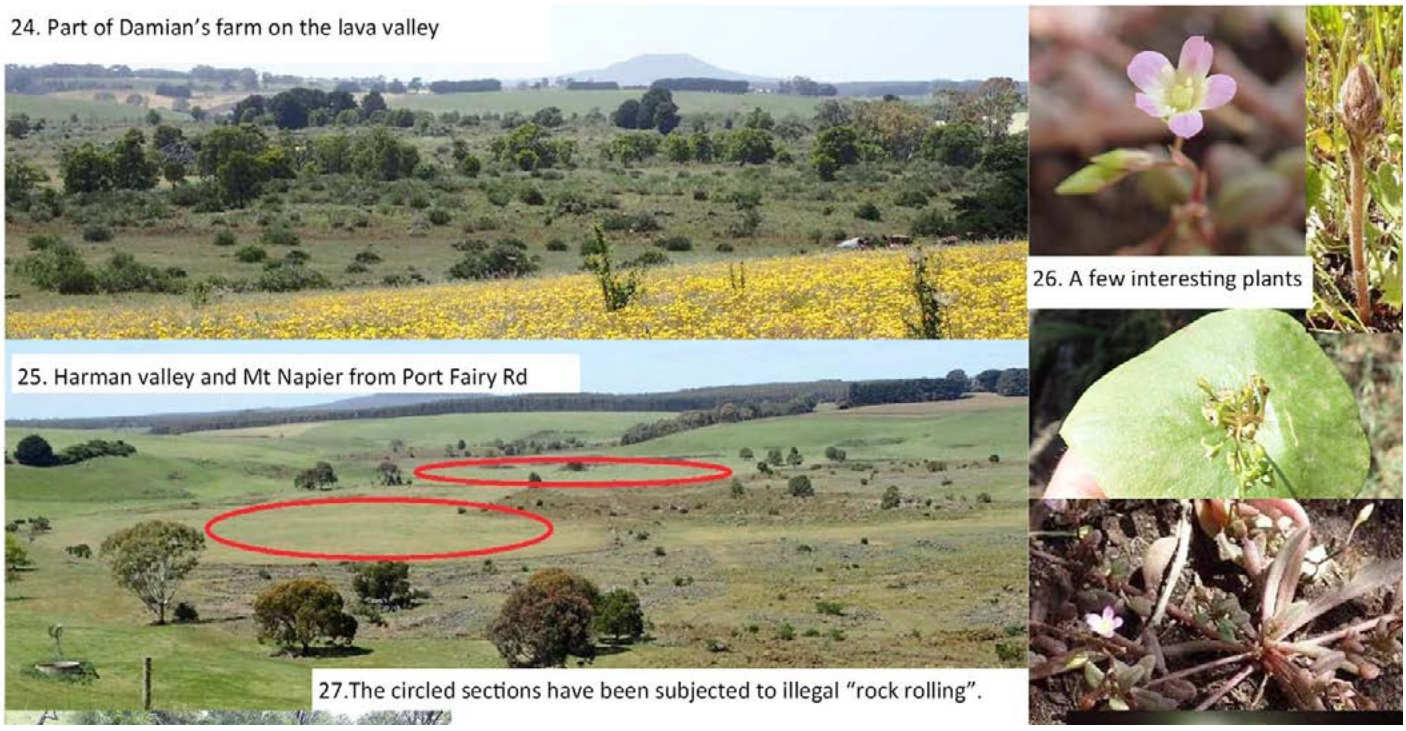
All the conference papers are published on the Grassy Plains website, http://grassyplains.org.au/blog. The conference ('Respect, Protect, Reconnect Melbourne's Grassy Plains'), run by the Grassy Plains Network, produced a **Grassy Plains Declaration**, which '*declares ... actions and recommendations* [to] *be enacted to ensure the better conservation, protection, management and engagement with Melbourne's Western Grassy Plains...*'.

'The Grassy Plains Network [is] an alliance of community based groups and organisations focussed on seeking positive ways forward for the conservation of Melbourne's Grassy Plains and ecosystems' (quote from the website).

Victorian Volcanic Plains weekend, 27–29 October

Several members of FOG went on the VVP Biosphere weekend tour of grasslands around Budj Bim (Mt Eccles), an extinct volcano and cultural landscape near Heywood, SW Victoria. Here are a few of the summary photos that Stuart McCallum (Secretary of Victorian Volcanic Plain Biosphere Inc.) sent to participants afterwards. You may spot a well-known (ACT) FOG hat below!





2019 workparties on National Lands

Your help is needed and always welcome.

Tools are provided. You need to wear eye protection, gardening clothes (including hat) and solid footwear appropriate for the work and the weather, and bring your own drinking water. The workparty convenor **provides morning tea**, making these into pleasant social occasions.

Please **register by two days before** the workparty with jamie.pittock@fog.org.au so there are enough tools and tea for everyone, and so you can be told if the weather forecast has led to a cancellation. Workparties are cancelled if there is lightning; or there is heavy rain; or the forecast is for 35C or more; or there is a total fire ban.

Sunday 17 February, 9 – 12.30

This morning's work will be our only visit to the **Scrivener's Hut grassy woodland** for 2019.

Meet at the carpark at Scriveners Hut, between State and Commonwealth Circles, just west of Parliament House (near the Chinese Embassy).

Sunday 31 March, 9 – 12.30

The start of this year's assault on the invasive plant species at Stirling Park. Details of meeting place, etc., will be in the next newsletter (out in February).

Reports from recent FOG activities

'Scottsdale' monitoring report 2018

Our yearly monitoring of African Lovegrass at 'Scottsdale' took place on a beautiful, sunny, wind-free day in early November. Those of you who monitor will know how lovely it is not to have wind blowing the tape off the line!

We had some new faces to assist us this year. Ryl Parker and Alice Bauer joined 'the usual suspects' Margaret Ning, Sarah Sharp and Linda Spinaze. Lorraine Kennedy had hoped to make it but had to pull out at the last minute.

Matt Appleby, the ecologist for Bush Heritage, first refreshed our memories of the newest monitoring that has been undertaken by FOG on the 'Scottsdale' property.

We then split into two groups to survey the 20 sites.

Some of these sites had been aerially sprayed from a helicopter about 2 years ago, and some had been left unsprayed as control areas. Generally most of the sites were *less* infested with thick African Lovegrass than last year, but whether this is due to the spraying or the recent winter drought it is hard to know. Matt has taken away all the data, and he will process it to make some sense of our findings.

There were a few sites which had some lovely forbs, including *Chrysocephalum apiculatum*, *Goodenia pinnatifida*, *Laxmannia gracilis* and *Calotis anthemoides*.

Thanks to Phil Palmer and to Bush Heritage for a delicious lunch, and to our fabulous volunteers who made it a special day.

Linda Spinaze
FOG Coordinator for 'Scottsdale' monitoring

Matt Appleby points out an item of interest to our intent team.

Work at Stirling Park, November 2018

Paul Archer, Peter McGhie, John Fitz Gerald and Ben Galea pause for a cuppa and a photo by Jamie Pittock at Stirling Park in November.

Friends of Grasslands Monaro Golden Daisy survey trip, mid-November 2018

Rainer Rehwinkel with Andrew Zelnik

The main aim of this two-day excursion was to map and assess the health of all known populations of the Monaro Golden Daisy *Rutidosis leiolepis* (MGD), other than those within Kosciuszko National Park.

David Eddy led Day 1, Saturday 17 November, and I led Day 2 on Sunday 18 November. The planned two-day trip was extended to four days with Geoff Robertson and Andrew Zelnik completing the exercise at Cooma on the following Wednesday (21 November) and Monday 3 December.

We wanted to locate all known populations noted in my Grassy Ecosystems Database that I had collated to the NSW BioNet in 2015. Margaret Ning ably coordinated the excursion, including asking for access to one extensive site on private land – unfortunately denied.

At each site, we took a fresh GPS point-location and mapped each population or sub-population. We made estimates of each population's area and the number of plants: however, with MGD it is not always possible to see whether a plant is a genetically isolated individual (a "genet"), or whether closely clustered plants are clones ("ramets").

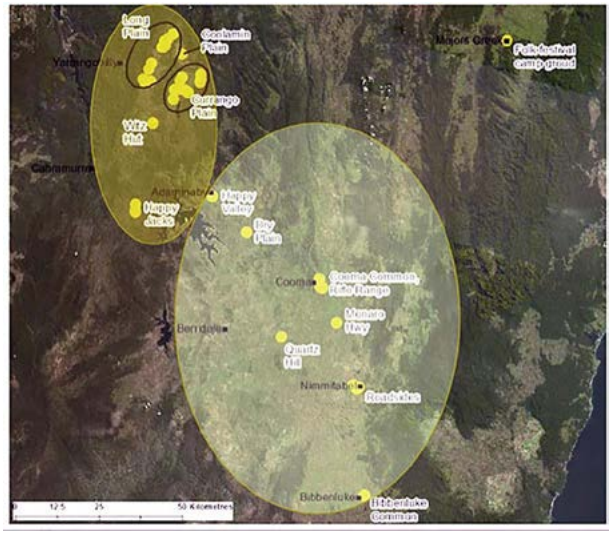
Those difficulties aside, the teams – David, Margaret, Geoff, Andrew, Alice Bauer, Janet Russell, Andy Russell and myself – had several glorious days in the Monaro grasslands. The wildflowers at some of the grasslands that I saw on the Sunday were truly spectacular – as good as I've seen in my 28 years of studying the grasslands of the Monaro. Margaret reported similar observations about some of the sites she surveyed on the Saturday. Andrew and Geoff similarly observed abundant and healthy flowering, particularly of MGD, at Old Cooma Common.

Saturday's team visited Old Cooma Common, where one sub-population was mapped, mainly to set the procedure. That team then visited the Dry Plain and Adaminaby sites, with a side trip to Top Hut Travelling Stock Reserve (TSR) to assess the quality of the grassland there. (There are no MGD plants at Top Hut TSR, surprisingly, and there have not been any for as long as we've known about that site.)

My team headed out to a known site at the Bibbenluke Common on Sunday morning. While this site looked very beautiful, with wildflowers of many species in glorious full-flower (e.g. *Leptorhynchos*, left below), unfortunately, there were no MGD plants here at all. I discovered this population in the late 1990s, and my recollection was that it was quite a healthy one, with a documented 20 plants or so. Also present then was a large population of Native Flax, *Linum marginale*. While that species was still present on Sunday, numbers were severely reduced to about three plants. Other rare plants were present, including Showy Copperwire-daisy *Podolepis jaceoides*, Dwarf Milkwort *Polygala japonica* and fields of the tightly compact Monaro Plains form of Chamomile Sunray *Rhodanthe anthemoides*.

Leptorhynchos squamatus, not to be confused with *Rutidosis*. *Photo*: Rainer Rehwinkel.

The lack of MGD and the very much reduced population of



Google maps extract to show the places named in this story. *Image*: Margaret Ning.

Above: Searching in vain for *Rutidosis* at Bibbenluke Common. *Photo: RR*. *Below*: Rare *Rhodanthe anthemoides* and Common Everlasting *Chrysocephalum apiculatum*, with two of our group, at Bibbenluke Common. *Photo: AZ*.

...continues on next page

Friends of Grasslands Monaro Golden Daisy survey trip, mid-November 2018, continued

the flax at this site points to the vulnerability of the biodiversity of the Natural Temperate Grasslands.

The Bibbenluke Common has been exclusively used, as far as I know, for cattle grazing for as long as 150 years or even more. In the last 15 years or so since I first found this site, an entire population of a vulnerable species has apparently been extirpated by what is most likely to have been a combination of too-heavy grazing, grazing at the wrong time, and a series of droughts. The flax population is likely to have been subjected to the same pressures and has fared only slightly better!

Fortunately, populations of MGD at the other sites have fared much better, with those on Ryedale Road at Nimmitabel hanging on, flowering profusely. Here, we were lucky to find additional sub-populations nearby that hadn't been documented previously. Of the two sub-populations of MGD on the Springfield Road, we located only one, though I'm thinking that maybe there's only been one site, and two were mistakenly recorded due to the vagaries of the early GPS technology.

The population at Lake Williams Reserve also proved to be quite healthy, though weeds of many species dominate that grassland, and misguided tree-planting at that site has the potential to shade out the MGD plants there.

The real surprise of the day was the rediscovery of a very much expanded population of MGD on a private land site just north of Rock Flat. I initially discovered this while gathering data for mapping grasslands in the mid-2000s. The plants are visible from the roadside, and keen-eyed Margaret spotted these plants again while we were travelling slowly north, in the hope that we would indeed re-locate them. This population was growing in a seemingly degraded or previously disturbed grassland, and has possibly escaped grazing pressure from sheep or cattle. There was only one horse in the paddock at the time!

There are only three other known MGD sites on the Monaro Plains. One of those comprises a number of sub-populations at the Cooma Rifle Range. Margaret saw these a few weeks previously and reported that they had been hammered badly by a mob of sheep. Sheep were still present as we passed the site on the Sunday. Since then, Margaret reports, they have been removed.

Above: A continuous strip of flowering Monaro Golden Daisy *Rutidosis leiolepis* stretching past David Eddy (foreground right) and the rest of our group, to near the cars (background centre) at our second roadside MGD site, Bushrangers Hill Road, near Adaminaby. *Below*: Monaro Golden Daisy *Rutidosis leiolepis* flowers (around 2 cm diameter) at one of the six MGD sites along Dry Plains Road, near Adaminaby. *Photos: Andrew Zelnik.*

The second-last population, a very small one, is on another private land site south of Cooma. No information is currently available on that population.

Finally, I had a report of MGD growing on land owned by the meatworks between Old Cooma Common and Kuma Nature Reserve (on the way to Nimmitabel), though I have very limited information about that site as well.

Geoff and Andrew completed the survey by mapping and counting the remaining sub-populations of Monaro Golden Daisy on the Old Cooma Common, the adjoining Crown Lease to the north and at Cooma Rifle Range to the east. The significant impact of recent grazing, by cattle on the Crown Lease and more so by sheep at Cooma Rifle Range, possibly on top of the effects of reduced rainfall over the past year, made finding the MGD populations at these sites more challenging. Virtually all MGD plants were stunted (most chewed back or barely above ground level) and devoid of flowers. While Snowy Monaro Regional Council manages Old Cooma Common we have been informed the Crown lease and Rifle Range sites are separately managed by NSW Crown Lands. FOG will follow this up, hoping for a better management outcome for both sites.

I thank all participants who took part in this valuable exercise. Thanks also to Rob Armstrong at NSW Office of Environment and Heritage for help with site data and the GPS that we used for the survey. I believe that we have gained really important and valuable information! All the new MGD population data, collated by Andrew Z, will be entered onto NSW BioNet, and photos of MGD and all other associated flora will be lodged on Canberra Nature Map. Additionally, Andy R was diligent in taking photos of pollinators that he saw on any of the flowers over the weekend, and I have entered all bird records onto eBird.

Information about the Monaro Golden Daisy, including the Saving Our Species project that guides FOG's work at Old Cooma Common, is here: https://www.environment.nsw.gov.au/threatenedspeciesapp/profile.aspx?id=10738

Beanies and Buttons!! From 150 to 5000 in 20 years!!!"

Margaret Ning

I love the Button Wrinklewort (*Rutidosis leptorhynchoides*) patch on Crace Grassland Nature Reserve (ACT), as it looks like the Natural Temperate Grasslands I remember seeing 20 or so years ago, with lots of inter-tussock spaces between the grasses and forbs, and no armada of weeds lurking, without and within!

Sarah Sharp discovered 150 *Rutidosis* plants at the heavily scalded site in 1998, after they had been eaten down by cattle. With the removal of cattle grazing, the population has been managed to the point that now an estimated 5000 plants have spread over a much larger area. Staff of ACT Government Parks & Conservation inspect the site at least annually to determine if there are any major management issues and to estimate the population size.

Sarah led a total of 10 of us on our visit on Thursday 22 November. The temperature reached its maximum for the day (14°C but apparent temperature of 1°C) at 3 pm as we arrived at the site for the activity. We were all well rugged up and were driven in, which was particularly appreciated given the weather. The sun shone for an hour or so while we asked Sarah about the site and wandered around from one delightful patch to another, taking pictures and discussing issues such as the erosion, cattle grazing, (lack of) weeds, genetics, etc. By just after 4 pm 'cool and windy' had become 'colder and windier', and the temperature was down to 12°C. It was time to cut and run, so we piled into the vehicles and arrived back at our own vehicles just as it started to rain and hail. By 4.30 it was 7°C!

Everyone's pictures tell the story, from the weather, the erosion scald, to the grassland beauties that accompanied the star of the show! The Button Wrinklewort is having a spectacular season.

Janet and Andy Russell, Michael Bedingfield and Sue McIntyre contributed the photos here from the activity. Sue commented afterwards: "Well worth the weather today, in my view. Thanks, Sarah, for organising."

* Note, all times and temps were recorded at Canberra airport, but how different could it be?

Items available from FOG via booksales@fog.org.au

- *Grassland flora, a field guide for the Southern Tablelands (NSW & ACT)*. Eddy, Mallinson, Rehwinkel & Sharp, 2011. $20 + postage.
- *Woodland flora, a field guide for the Southern Tablelands (NSW & ACT)*. Sharp, Rehwinkel, Mallinson & Eddy, 2015. $20 (FOG members) or $25 + postage.
- *Field guide to plants of the Molonglo Valley*. Barrett, Cosgrove & Milner, 2018. $45 (includes postage).
- *Land of sweeping plains: Managing and restoring the native grasslands of south-eastern Australia*. Williams, Marshall & Morgan (Eds), 2015. $48 + postage.
- *Restoring disturbed landscapes: Putting principles into practice*. Tongway & Ludwig, 2011. $20 + postage.
- FOG t-shirts. $15 + postage.

Enquiries to booksales@fog.org.au. Postage costs vary depending on quantity and destination.

Grassland Forum and field trip, 24–25 October 2018

Geoff Robertson & Maree Gilbert

The Grassland Forum on 24–25 October (hosted by FOG, Kosciuszko2Coast, Ginninderra Catchment Group and the ACT Environment, Planning and Sustainable Development Directorate) was a great success with about 100 people attending the forum on the 24th, and more than 60 on the field trip on the 25th.

The event focused on the many recent achievements that have been occurring in the understanding, management and restoration of our Natural Temperate Grasslands. Key themes included: biomass management, habitat enhancement, use of fire, weeds strategies, community involvement and grassland advocacy. Another recurring theme was the synergy between traditional Aboriginal land management practices and our attempts to manage and restore our Natural Temperate Grasslands to their original diversity and functionality.

The event was attended by land managers, policy makers, researchers, volunteers, NGOs and anyone with an interest in grasslands. We had many presenters from the ACT Government and from a wide range of other organisations.

Above: Dean Freeman (centre rear), Aboriginal Fire Management Officer, ACT Govt Parks and Conservation Service, at Mulanggari Grassland Nature Reserve in the group session on cultural burning in grasslands.

Below: Karen Ikin (centre rear), ACT Govt Parks and Conservation Service, in the group session on site values at the southern edge of remnant woodland in Franklin (North Mitchell) Grassland. *Both photos*: Andrew Zelnik.

Each of the presenters has extensive knowledge and experience in grassland management and restoration. They included Dr Paul Gibson Roy (Greening Australia) and Dr Nathan Wong (Djandak) who shared their enthusiasm and experience. We were privileged to have Professor Kate Auty (ACT Commissioner for Sustainability and the Environment), Ian Walker (ACT Conservator) and Sarah Sharp who chaired sessions and took part in our panel discussion.

Striated Pardalote feeding young at a nest hollow in a branch of Blakely's Red Gum *Eucalyptus blakelyi* during the group session on site values at the southern edge of remnant woodland in Franklin (North Mitchell) Grassland. *Photo*: Andrew Zelnik.

The field trip involved four sites: Molonglo River Reserve, Ginninderra Creek in Evatt, Mulanggari Grassland Nature Reserve and Franklin Grassland Reserve where various grassland management and restoration trials are taking place.

Many participants were 'bowled over' by what they saw and experienced. The forum was supported by a very good write-up in the *Canberra Times* and an interview on local ABC radio 666. See https://www.canberratimes.com.au/national/act/native-plants-put-on-a-colourful-show-as-wildflowers-spring-to-life-20181026-p50c4e.html for the *Canberra Times* article, which includes a large photo of Dr Brett Howland with Scaly Buttons and Australian Bindweed.

We are gathering together the various materials presented at the event and will compile an informal report for circulation to attendees. We hope to have this finished in early 2019.

Some URLs of interesting articles relevant to FOG

About Leek Orchids:
https://theconversation.com/leek-orchids-are-beautiful-endangered-and-we-have-no-idea-how-to-grow-them-103224
(An article from 'Beating around the Bush'.)

Good reason for protecting small patches of grassland and woodland.
http://www.nespthreatenedspecies.edu.au/news/small-and-isolated-habitat-patches-crucial-to-species-survival

Anxiety over inadequacies in the Australian Threatened Species strategy.
https://www.smh.com.au/politics/federal/government-experts-say-plan-to-prevent-animal-extinctions-is-failing-20181105-p50e2d.html

Weekend trip to Deua National Park, 1–2 December 2018

Alice Bauer

On 1–2 December 2018, a total of 22 members of FOG and Australian Native Plant Society spent a lovely weekend with fine weather exploring part of Deua National Park and surrounds. The trip was organised thoroughly and superbly by Margaret Ning.

This trip was unique in two ways: (i) access to great contacts, thanks to Libby Keen, meaning we gained special access to places otherwise not accessible; (ii) the Deua Tin Huts accommodation, owned by Andy and Clare, which was simply magnificent.

On the first morning we piled into 4WDs, crossed the Shoalhaven River, and crawled along the dirt track to Berlang Swamp in Deua National Park. Here, Rainer Rehwinkel, as group leader, gave a talk on legislation and environmental protection, as his work has been in this field. Steve, the owner of the private property we'd just driven through, explained the headache that is Scotch Broom – which has completely dominated his land and much of the region. Interestingly, as we walked into the bush we noticed the lack of Scotch Broom; it doesn't grow among the dry sclerophyll forest. After the talks, half the group hiked to 'the Big Hole' while the others completed a grassland survey with Rainer.

The first part of the survey passed through a low-lying community dominated by Snow Gums, with a groundlayer dominated by Weeping Grass – Low Bush-pea. Rainer explained that this is part of the NSW-listed Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland endangered ecological community (EEC*). The bush-peas (*Pultenea subspicata*) were in full-flower, creating a spectacular orange blanket over much of the site. Other forbs were *Hypoxis hygrometrica*, *Hydrocotyle laxiflora*, *Goodenia hederacea*, *Gompholobium minus*, *Tricoryne elatior*, *Triptilodiscus pygmaeus*, *Oxalis perennans*, *Stackhousia viminea* and *Patersonia sericea*.

After the 'Big Hole subgroup' returned, we all explored Berlang Swamp. Some delights included *Polygala japonica*, *Velleia montana*, *Viola betonicifolia*, *Ajuga australis*, *Brachyscome scapigera*, *Craspedia variabilis*, *Hypericum japonicum*, *Xerochrysum palustre*, *Lobelia pedunculata*, *Isotoma fluviatilis* and wombat holes!

Gundillion Cemetery, across the road from the Tin Huts, provided charming sights of *Veronica gracilis*, *Chrysocephalum apiculatum*, *Triptilodiscus pygmaeus*, *Leptorhynchos squamatus*, *Hydrocotyle laxiflora*, *Caesia calliantha*, a Hyacinth orchid and a nice chunk of tall sundews (*Drosera peltata*).

Some members having a tour of Andy and Clare's (owners of Deua Tin Huts) far paddock. *Photo*: Kat Ng.

Margaret Ning and Libby Keen amongst *Pultenea subspicata.* *Photo:* Kat Ng.

Rainer briefing the group before the walk to the Big Hole + grassland survey at Deua National Park. *Photo:* Kat Ng.

Lobelia pedunculata (Matted Pratia) in Berlang Swamp. *Photo*: Andrew Zelnik.

Jacket exchange at Deua NP?

LOST – one men's size BLACK fleecy jacket, presumably on the Deua weekend

FOUND – one men's size GREEN fleecy jacket, also on the Deua weekend!!!!!!!!!!!!

Please get in touch with Margaret on phone 0427 788 304, margaretning1@gmail.com, so we can arrange an exchange!!!!

...continues on next page

Weekend trip to Deua National Park, 1–2 December 2018, continued

On Sunday morning the group visited a private property a short distance down the road from our accommodation. We were awestruck by the beauty of this place nestled by the Shoalhaven River with a backdrop of Deua National Park. Flowering *Patersonia sericea*, *Dianella revoluta*, *Gompholobium minus*, *Hibbertia obtusifolia* and *Goodenia hederacea* were abundant around the house. We also found *Veronica gracilis*, *Veronica perfoliata*, *Tetratheca* sp., and a Bearded Orchid.

The hill behind the house provided an amazing array of colours and diversity – and barely a weed to be found!

Yellows were *Gompholobium minus*, *Goodenia hederacea*, *Stackhousia viminea*, *Hypericum gramineum*, *Isopogon prostrata*, *Hibbertia obtusifolia*, *Calocephalus* sp., *Coronidium gunnianum*, *Hydrocotyle laxiflora* and *Tricoryne elatior*.

Pinks and purples came from *Stylidium graminifolium*, *Laxmannia gracilis*, *Wahlenbergia gracilis* and *Patersonia sericea.*

Private property visit on the Sunday. *Photo*: Kat Ng.

Whites were displayed by *Poranthera microphylla*, *Thelionema caespitosum*, *Philotheca salsolifolia* and *Pimelea* sp., and a beautiful pinky-white was presented by *Xanthosia atkinsoniana* (the most beautiful flower I've laid eyes on) (*photos left & right*, *by Brigitta Wimmer*).

In addition, Onion Orchid, Sun Orchid, and Greenhood Orchid were sighted, as well as many native grasses, trees and shrubs.

To show you the significance of this site, I overheard Margaret say the property was 'the best private property I have seen in my years with FOG'. Wow! What a weekend, accompanied by film producers, authors, experts on grasslands, insects and birds, reptile lovers, and those who simply enjoy chocolate and wine.

Thank you, FOG!

Kat on the private property visit, Day 2. *Photo*: Sharon Koh.

A more complete species list can be seen here: https://is.gd/u5ZxGK

* Information about the Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland endangered ecological community (EEC) is at this website: https://www.environment.nsw.gov.au/threatenedspeciesapp/profile.aspx?id=20259

Left: Walking to the Big Hole. *Photo: Sharon Koh.*

Right: Pultenea subspicata (Low Bush-pea) and native Red-bottomed bee (*Exoneura* sp. possibly *Exoneura* cf *bicolor* as per Kim Pullen's advice and Roger Farrow's book *Insects of South-eastern Australia*). *Photo:* Andrew Zelnik.

Distinguishing native from invasive St Johns Wort when 2 inches (5 cm) high!

Margaret Ning

Hypericum perfoliatum (exotic SJW) shoots, a few centimetres long, showing the black dots along the leaf margins. *Photos*: John Fitz Gerald.

Over the last three summers I have needed to make firm decisions as to whether some 5–10 cm tall *Hypericum* plants have been young *Hypericum gramineum* Small St Johns Wort (native), or a very young exotic/invasive St Johns Wort (SJW) *Hypericum perfoliatum*.

Most of the time the answer was obvious, but occasionally it was very difficult. Closer examination with my hand lens revealed that the exotic SJW had small black dots on the underside of its leaves, fractionally inset from the leaf margins.

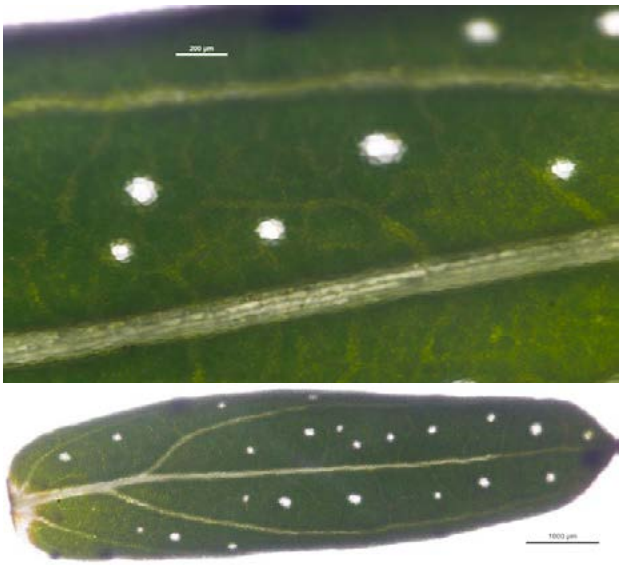
I contacted John Fitz Gerald, who used his camera and a microscope at the Australian National Botanic Gardens to investigate these black dots, as well as the well-known transparent leaf glands on the two *Hypericum* species.

The first two images at left clearly show a couple or a few black dots near the margins on the underneath side of the exotic SJW (*H. perfoliatum*) leaves. There have been black dots on every exotic SJW that I and a couple of other people have looked at, and none on the native species. **At any size, only the exotic SJW has the black dots**. No more guesswork required!

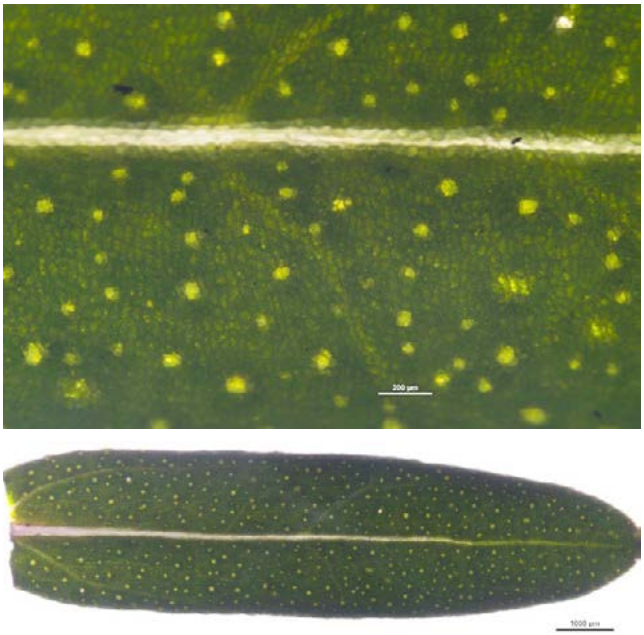
(However, I am still looking at specimens randomly, just to confirm that my observation holds true in all cases.)

Further, John was able to see clearly that the transparent glands are smaller and more abundant in the native *H. gramineum* compared to *H. perfoliatum* (images below).

Thank you John!



Close up photos of *Hypericum perfoliatum* leaves and glands. Scale bars are 0.2 mm long (upper) and 1 mm long (lower).



Close up photos of *Hypericum gramineum* leaves and glands. Scale bars are 0.2 mm long (upper) and 1 mm long (lower).

STOP PRESS: Foreshadowing two new FOG activities – February (no date yet) and 24 March!

February: A visit to one or several Travelling Stock Reserves (TSRs) near Bungendore or Yass NSW. This will be led by Rainer Rehwinkel, and be a one-day trip. This idea is inspired by the TSR review (**see page 2 of this newsletter**). Contact Margaret.Ning@fog.org.au to register. More details will be sent out as they become available.

24 March, Sunday: A visit to good quality grassland in the area of Gundaroo Common, Gundaroo NSW, led by Alison Elvin (tbc). The contact for this activity is Kat@fog.org.au

Field Guide to Plants of the Molonglo Valley

by Russell Barrett, Meredith Cosgrove and Richard Milner, 2018: A review

by Sarah Sharp and Margaret Ning

Russell, Meredith and Richard have recently published a new ID guide, *Field Guide to Plants of the Molonglo Valley*. It presents information on nearly 400 native and introduced plant species that they have identified in surveys undertaken since 2012 in the Molonglo Valley, ACT. Sites surveyed include the new Molonglo River Reserve downstream of Scrivener Dam, and offset sites in native grassland, including Natural Temperate Grassland, Box–Gum Woodland and riparian habitats.

There are multiple photographs of each species, including the whole plant as well as key features such as seeds, leaves, flowers and fruit.

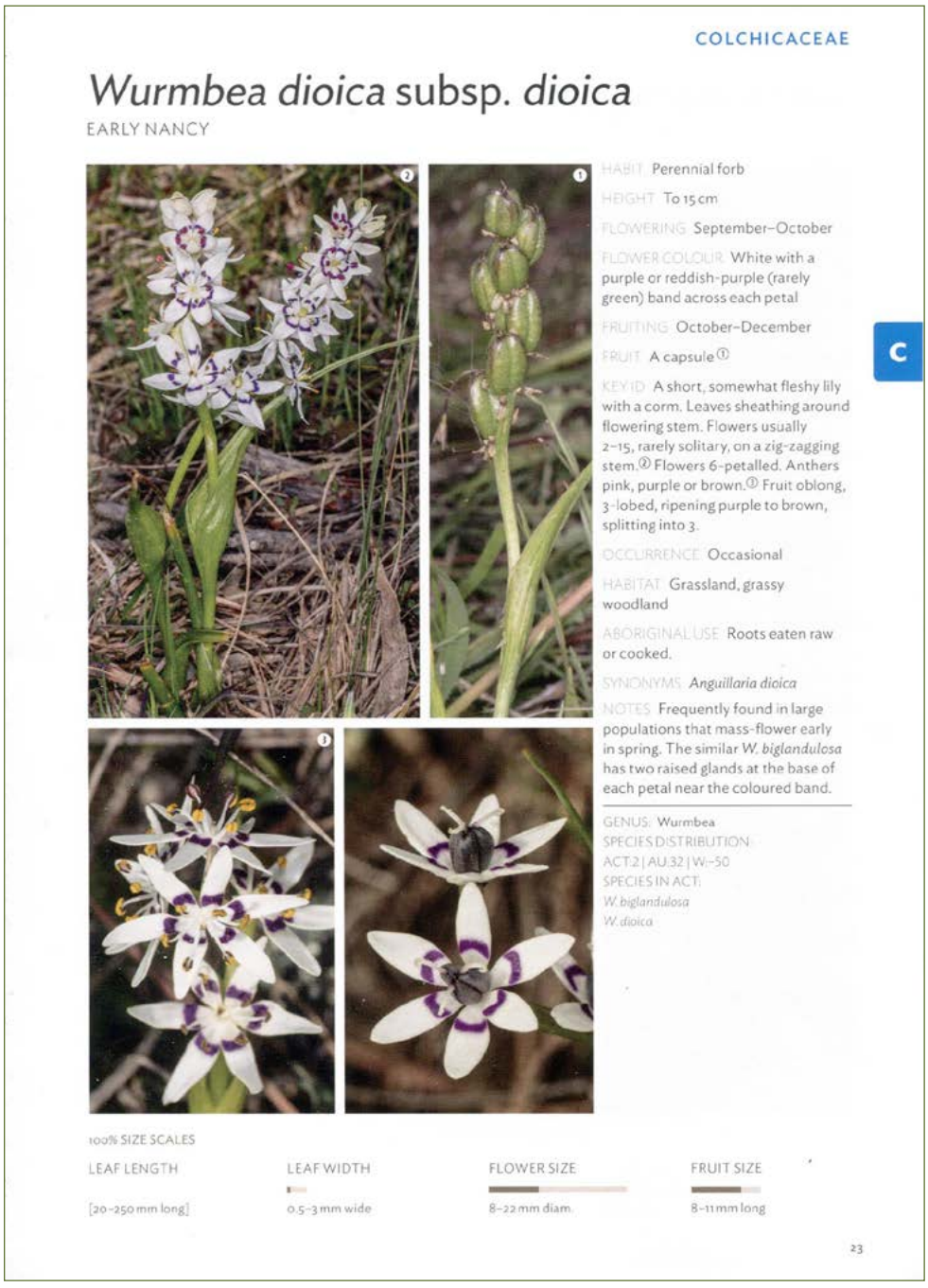
The format, consistent throughout, has graphic scales indicating the size of features, as well as descriptions of the entire plant, leaves, flowers, seed, buds and fruit and a description of the key identification characteristics.

Additional information gives the species' habitat, and traditional Aboriginal use, and other notes.

There are illustrated guides to flower colour and form, leaf shape and arrangement, flower parts, grass plant characteristics and eucalypt bud and fruit morphology, as well as a comprehensive glossary.

The species are presented in classic botanical plant key format: first the ferns, then Gymnosperms (cypress and other pine trees), followed by Monocotyledons, which include the grasses, grass-like species, rushes, sedges and lilies, orchids and grasses. These are then followed by the Dicotyledons (the rest of the flowering plants), grouped alphabetically.

By presenting the species by family, all the species with similar characteristics are grouped together. While some users may find it harder to find a species by this possibly unfamiliar grouping, it is relatively easy to find the species, especially as the photos are so clear and the descriptions of the plants are so well written – and of course the index also helps.



COLCHICACEAE

Wurmbea dioica subsp. dioica

EARLY NANCY

HABIT Perennial forb

HEIGHT To 15 cm

FLOWERING September–October

FLOWER COLOUR White with a purple or reddish-purple (rarely green) band across each petal

FRUITING October–December

FRUIT A capsule①

KEY ID A short, somewhat fleshy lily with a corm. Leaves sheathing around flowering stem. Flowers usually 2–15, rarely solitary, on a zig-zagging stem.② Flowers 6-petalled. Anthers pink, purple or brown.③ Fruit oblong, 3-lobed, ripening purple to brown, splitting into 3.

OCCURRENCE Occasional

HABITAT Grassland, grassy woodland

ABORIGINAL USE Roots eaten raw or cooked.

SYNONYMS *Anguillaria dioica*

NOTES Frequently found in large populations that mass-flower early in spring. The similar *W. biglandulosa* has two raised glands at the base of each petal near the coloured band.

GENUS: Wurmbea
SPECIES DISTRIBUTION
ACT:2 | AU:32 | W:~50
SPECIES IN ACT:
W. biglandulosa
W. dioica

C

100% SIZE SCALES

LEAF LENGTH [20–250 mm long]

LEAF WIDTH 0.5–3 mm wide

FLOWER SIZE 8–22 mm diam.

FRUIT SIZE 8–11 mm long

23

Example page from the *Field guide to plants of the Molonglo Valley.* *Image:* Sarah Sharp.

The authors have produced a clear, accurate, useful and useable guide, with an excellent scientific and ecological basis. Users of this guide will find it relevant not only in lowland ACT but throughout the Southern Tablelands and beyond. The ACT Grassland Monitoring team has been using it with great success!

The book is an extremely valuable resource to help land managers, ecologists and botanists, as well as other interested people, identify species readily. Together with other available resources, including Canberra Nature Map and other field guides, users will be well equipped to identify native and introduced plants, and be well informed about species habitat, ecology and uses.

The field guide is available from a number of sources, including FOG (booksales@fog.org.au) and a range of bookshops.

Contacts for Friends of Grasslands Inc. groups and projects

Website www.fog.org.au

To contact FOG (general & media): info@fog.org.au;
phones 0403 221 117 / 02 6241 4065 (Geoff Robertson)

Membership inquiries & payments: membership@fog.org.au
(application forms are at www.fog.org.au)

To join in FOG activities/events: activities@fog.org.au

To join FOG working bees:
Hall Cemetery woodland, ACT: john.fitzgerald@fog.org.au
Yarramundi Grassland, ACT: jamie.pittock@fog.org.au
Stirling Park woodland, ACT: jamie.pittock@fog.org.au
Old Cooma Common, NSW: margaret.ning@fog.org.au
'Scottsdale' (nr Bredbo), NSW: linda.spinaze@fog.org.au

Health & Safety matters: info@fog.org.au

FOG merchandise info (books, etc.): booksales@fog.org.au
(order forms are at www.fog.org.au)

Applying for FOG small grants: supportedprojects@fog.org.au

Correspondence & accounts:
Postal: PO Box 440, Jamison Centre, ACT 2614
Correspondence by email: secretary@fog.org.au
Accounts: treasurer@fog.org.au

Newsletters & e-bulletins: newsletter@fog.org.au,
or ebulletin@fog.org.au

To contribute to FOG advocacy:
advocacy@fog.org.au

Website matters: webmanager@fog.org.au
FOG's comprehensive website gives: the calendar of FOG happenings; information about grasslands and grassy woodlands; proformas for applications & orders; all advocacy submissions; all newsletters (including the most recent).

Seasons Greetings to all members, friends and colleagues of Friends of Grasslands Inc.
Let us hope for a collaborative 2019, full of achievements for grassy ecosystems!

Friends of Grasslands Inc.
PO Box 440
Jamison Centre ACT 2614