



News of Friends of Grasslands

Supporting native grassy ecosystems

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July & August 2023

Activities

Register for activities at:
margaret.ning@fog.org.au

**Bringing life back to
Tuggeranong Creek.**
Sat 15 July 2:00 to 4:00pm

**Mugga Mugga - there be
dragons!**
Sat 26 Aug 2:00 to
4:00pm at FOG's effort to
network habitat, save
dragons and slay weeds, at
Mugga Mugga Education
Centre.

Gurubung Dhaura
Sat 12 August
Jamie.pittock@fog.org.au

**Nerriga area - heathy sites in
warmer climes.**
Sat 23 Sept 9am to 4:00pm

Armidale area - grassy sites
Thurs 26 Oct to Mon 30 Oct

Tinderry revisit.
Sat 18 Nov,
Fri 2 Dec to Sun 4 Dec
**Shoalhaven River at
Wyanbene.**

**Tasmanian Grasslands
activity** Late January 2024

For more activities
[see Page 14](#)

From the President ...

15 June 2023

Nearly 35 years ago I read Stuwe's survey report on the known remnants of native temperate grasslands in Victoria*. I was shocked at how little remained of this once extensive ecosystem. I was grateful to the Victorian Government scientists who were using data to communicate the need for conservation of these last remnants. Many of these remnants are now actively managed reserves. The report sparked in me a passion to conserve these grassy ecosystems that endures to this day.

In the Australian Capital Territory (ACT) many large remnants are now included in Canberra Nature Park, and initiatives to create linear reserves like 'Connecting Nature, Connecting People', hold much promise for conserving more. Yet year after year other biodiverse sites have been lost. Most recently part of the Ainslie Volcanics site was destroyed for an apartment complex. The Defence Housing Authority and Canberra Airport Group are revving their bulldozers at other critical sites at North Lawson and in the Majura valley.

Sadly, in New South Wales (NSW) the available knowledge to conserve grassy ecosystems has not been effectively applied on the ground. Unlike Victoria and the ACT that have established some sizeable reserves, the largest NSW has managed for temperate grasslands in the Monaro region is the 184 hectare Kuma Nature Reserve. There is a valiant group of Landcare and FOG members on the Monaro who are working to conserve some of the best remnants on public lands, including on travelling stock reserves (TSRs) and Old Cooma Common (Radio Hill). Yet, week after week reports roll in of another grassland paddock lost to the plough, over-grazing or African Lovegrass. It is deplorable that, despite the rhetoric in NSW for biodiversity conservation, there are now no effective programs by state agencies on the Monaro to reserve more habitat and work with landholders to conserve grassy ecosystems on their land. The Australian Government was an enthusiastic supporter of the Convention on Biological Diversity decision in late 2022 to conserve 30% of the Earth's ecosystems in nature reserves: what does this mean for the Monaro grasslands?

I would like to hear more from FOG members and supporters on what we can do to advance conservation of grassy ecosystems on the Monaro. Many high quality remnants of grasslands on the Monaro have been mapped over the years, but this data is not being applied well to conserve them, and there is limited information on the state of these remnants since they were mapped years ago.

For this reason, FOG is supporting a proposed research project led by Deakin University to map changes in the condition of known grassland sites the better to target conservation. Hopefully, this can be a Stuwe-style audit of the grasslands of the Monaro.

Yet more is required. We need to be advocates for programs to work with conservation agriculture landholders to sustain extensive grasslands on freehold land. We need the new NSW Government to once again prioritise grassland conservation. Further, we need new nature reserves to conserve core areas of the remaining grassy ecosystems.

Thank you to all the members who have contributed to our end of financial year donations campaign. In the next newsletter, I shall report on the funds raised. Funds will be allocated to our grassland conservation projects and FOG's management of the Top Hut TSR. The FOG Committee will look to allocating funds to further initiatives, as outlined above - for conservation of the Monaro grasslands.

See you in the grasslands!
Prof. Jamie Pittcock, President.

* Stuwe, J., 1986. An assessment of the conservation status of native grasslands on the Western Plains, Victoria and sites of botanical significance. Technical Report no. 48. Arthur Rylah Institute for Environmental Research, Heidelberg.

Opinion on the Voice

Geoff Robertson

I believe that each of us needs to embrace the Voice - we should not just passively vote for it but take the opportunity to confront our own deeply held prejudices, welcome what might flow from the Voice and encourage our friends to do likewise.

At the Conservation Council dinner (3 June) we were confronted by two powerful truth-telling sessions by our much loved and highly respected First Nations Elders, Wally Bell and Richard Swain. "Confronted" may seem like a harsh term as their words were spoken with patience, kindness and respect. Nevertheless, two powerful messages were conveyed. First, non-First Nations people have not walked in the shoes of the First Nations people, and second, the culture of non-First Nations people is destroying Australia and its unique landscapes, vegetation and culture.

At different points throughout my adult life I have gradually learnt these truths (and others) for myself - learning which has often been confronting and painful, but nevertheless healing and liberating, and which has opened up new ways of thinking and learning.

I grew up sharing the views (or prejudices) still held by many of my fellow non-First Nations Australians. These prejudices are deeply ingrained in most of us. They arrived with the First Fleet and largely remain undiminished. I believe that I cannot be angry with those who are slower to confront these prejudices within themselves.

While we need to support and accept the Voice as a matter of long-overdue justice (we can never make up for what our culture has taken from First Nations people) we should focus more on what its acceptance will mean for us.

I believe that the Voice will transform this country, although this will take time. It will encourage First Nations people to share their culture and knowledge with us. It will hasten what has been the growing resurrection of First Nations culture. We non-First Nations people will see every aspect of our lives through different and more enlightened eyes. We will learn to love this country anew with its unique landscapes, nature and culture. It will allow us to face our collective guilt and find healing - this I believe will be liberating and powerful and will promote greater equality.

It will also help us to accept recent migrants. While we call ourselves a multi-cultural society, in reality we expect newcomers to assimilate. Hence by learning to accept First Nations culture we are likely to accept more fully the many other cultures present in our midst.

I respect those First Nations people who are hesitant about the Voice, they have had many previous promises and disappointments. It will help if we demonstrate that we welcome and support the Voice, treaty and truth-telling. This is an opportunity to go beyond aspiration and make the words “we are one and we are many” a reality.

Advocacy report

Sarah Sharp

Submissions

1. Proposal to Install a New Mobile Phone Base Station at corner Quick Street and Limestone Avenue, Ainslie ACT 2602 (AINSLIE: Block 3, Section 60). RFNSA 2612016

The proposal is objected to on the basis that it is within critically endangered Natural Temperate Grassland habitat. The proponents are urged to consider alternative sites.

2. OECM Principles consultation paper, submission to DCCEW¹

Support for implementing ‘other effective area-based conservation measures’ (OECMs) in Australia and in particular ACT where conservation areas are outside the formal legislated reserve system. However, there is a need to ensure legislative protection for OECMs. Use of NRM funds to support management of these areas. Recommend inclusion of cultural heritage sites. Need criteria to identify OECM sites.

3. Senate Standing Committees on Environment and Communications Inquiry into management of feral horses in the Australian Alps

Pointed out yet again the impacts of feral horses on biodiversity and water quality in the NSW Australian Alps. Lack of concern for impacts on neighbours including ACT and Victorian governments and property owners.

4. Yass Valley Shire DA200091B

Review of the proposal is urged. In the latest proposal the intention is to remove 22 mature Blakely’s Red Gum and two mature Yellow-box trees. In the original proposal no trees were to have been removed.

5. Namadgi National Park Plan of Management Review

Recommendations were for:

- Inclusion of biodiversity indicators;
- Stronger focus on conserving species diversity and conservation values;
- Management of all invasive species with potential to establish and spread within Namadgi; and
- The possible impact of the Uluru Statement from the Heart.

*6. Consultation on Species Listing Eligibility and Conservation Actions *Lepidium ginninderrense* (Ginninderra Peppercress)*

The listing was supported, ensuring that adequate resources are directed to the conservation of this species and its habitat.

7. Nature Repair Market Bill, submission to Senate Standing Committees on Environment and Communications

While the intent of the bill to conserve ecosystems across the landscape is supported, FOG doesn’t support the Bill in its current form. In summary the Bill has failed to establish prerequisite actions to ensure the Bill will achieve the

¹ Department of Climate Change, Energy, the Environment and Water
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.. desired outcomes, including a comprehensive and strategic policy framework, a minimum standard for management of the land, lack of protection in perpetuity of project areas, lack of clarity in regards to its relationship with offsetting and lack of clarity about likely demand.

8. ACT Government 2023-24 Budget

Our submission addressed particularly the need to restore biodiverse remnants across all tenures, better coordinating and undertaking effective ecological management on leased, unleased and public land. This was addressed in the context of the Biodiversity Network, and its correlation with the Planning Review's District Strategy component, the Blue-Green Network. The submission proposed the establishment of bigger and more effective conservation management teams; improved threatened species management; and to maintain the support base for environmental NGOs and volunteers.

9. Invasive plants matters

Issues included:

- A list of weeds being planted by Transport Canberra and City Services (TCCS) that are of concern was provided to Te ACT Environment, Planning & Sustainable Development Directorate (EPSDD). This has been supported and FOG was asked to elaborate on the concerns.
- Invasive Plants working group: A Government/Community stakeholder group was established. Hugh Coppel is FOG's representative. FOG looks forward to opportunities to work with Government and other stakeholders to improve outcomes across all biodiverse remnants.

Close up - a few of the weeds at Hall Cemetery

John Fitz Gerald

For this issue, I've chosen seed from three species that have grabbed the attention of FOG volunteers at Hall. These three are not in our list of highest concern, but they deserve attention and hopefully can be controlled at the site since the number of plants today is relatively small. Our objective for the 3 species is firstly to prevent new seeds falling, and to progressively remove plants.

My first example is *Potentilla recta* or Sulphur Cinquefoil. I first learned of this perennial member of the Rosaceae family 10ish years ago when FOG put significant effort into Old Cooma Common, around Radio Hill. *Potentilla* was present in the Common area but abundant outside the Common's fence. Cooma-Monaro Shire mounted a big chemical programme to control the weed both in and outside the fence, and it proved difficult to battle. Therefore, we'd be wise to defeat it at Hall while we can. Concerningly, a check of sightings via Canberra Nature Map reveals that populations are appearing since 2016 in several areas in the N of the ACT, but also in the range country and national park areas to our south.

Small plants have been dug from 3 or so spots at Hall for many years. The literature notes that the plant has a spreading root base and that new plants can grow from root fragments. This, together with the fact that a moderately-sized plant can spill several thousand seeds after flowering, presents challenges for manual control. Also, the grass cover at Hall is presently very thick, so the search for new plants to be removed has to be systematic and slow.



Potentilla recta. Small veined seeds. Scale bar 0.5mm

My image shows the small seeds of this *Potentilla* with a distinctive pattern of veins or ridges on their outer surfaces. The species is native to the E Mediterranean region and Eurasia. It reached N America by 1900 and has naturalised in quite a few states there. In Australia, it seems to prefer our cooler higher parts and, while most common in SE NSW, is also recorded from the NE tablelands of NSW and parts of Vic and Tas.



Cynosurus echinatus. Florets with awned lemmas that envelop seeds. One seed lies at right in top row of the image. Scale bar 1mm

Species 2 is the introduced annual grass *Cynosurus echinatus* or Rough Dog's Tail. This again is native to Mediterranean regions. ALA shows almost 9000 sightings across Australia, generally within 200 km of the coastlines of Vic, NSW and Tas, plus some from populated areas of SA and WA.

At Hall the weeding team aims to carefully bag the seed heads from the few small patches we know. My image shows a few florets with their long awns on spiky lemmas that wrap (with the palea) around cylindrical seeds; one seed has been unwrapped and sits at the right in the top row of my image (all images by John Fitz Gerald).

Species 3 is Slender Pigeon Grass, native to the Americas. ALA shows about 8000 records in a distribution very like the *Cynosurus*. This species is perennial with distinct rhizomes. Canberra Nature Map shows sightings around urban ACT. I suggest this grass is on the increase here, and its prevalence around the edges of roads and paths indicates it is spread by open-space mowers. It is sometimes regarded as an environmental weed in NSW and Vic.

My image shows that florets detach from the inflorescence with glumes and lemmas remaining attached to plump seeds. The seed can be seen as the rough brown surface poking out from inside the other structures.



Setaria parviflora. Plump seeds, each enclosed by glumes and lemmas. Scale bar 0.5mm

Micrographs were taken at the National Seed Bank of the Australian National Botanic Gardens. They can be reproduced freely if attributed and linked to the Creative Commons licence CC BY.

Some of the information above came from websites, principally: ALA - www.ala.gov.au; Plantnet - plantnet.rbgsyd.nsw.gov.au/search/simple.htm; and Canberra Nature Map.

Austral Ellipsoid Cockroach

What's so bad about Australian cockroaches? Let's check!

Michael Bedingfield

Cockroaches have a poor reputation. They are described as ugly scavengers, unhygienic and disease-carrying, and even harmful to humans. Many people get quite upset at the sight of one. Commercial pest exterminators take advantage of this attitude and add to it with negative imagery and language to enhance their business prospects. This kind of propaganda has created fear and loathing amongst our population. But do they deserve such a reputation?

There is a tiny minority of cockroaches that are unhygienic and disease-carrying, and these are all species that are exotic to Australia. The vast majority of cockroaches are harmless, beneficial to the environment, and some are even quite beautiful. Of about 4500 species of cockroaches that occur worldwide only about 30 species are actually considered to be pests, and of these only four species infest houses and are a serious problem. So I wish to present the Austral Ellipsoid Cockroach, which is a very attractive insect and absolutely harmless to humans.



The Austral Ellipsoid Cockroach goes by the scientific name of *Ellipsoidion australe*. It grows to a body length of 10–15 mm with the antennae being about the same length as the body. The adult is winged with the males and females being very similar.

From above the wing colouring is mostly brown, with dark brown or black in patches. The pronotum, which is the plate-like structure at the front of the body, is yellow and white around the edges and black or brown in the middle.

From above the downward pointing head is hard to see as it is mostly concealed by the pronotum. Underneath the body is mostly black. The legs are also black and have numerous spines along them. I have included photos of the adult and of a wingless nymph.

The nymph is mostly black or dark brown, with intricate decorative markings in white or cream. At the rear of the abdomen there are two small, red-brown erect projections known as cerci. These are present for all cockroaches and act as sensors. The cerci act in a similar manner to antennae, sensing vibrations through air or ground. They help to detect possible predators. On the adult photo shown, the cerci are invisible beneath the wings.

The Austral Ellipsoid Cockroach is native to the eastern part of the Australian continent from the tropics down to Victoria and into eastern SA. It is usually seen on shrubs, trees or other flowering plants. It is not inclined to take shelter in houses as some cockroaches do.



It is active during the day and is believed to feed on pollen, honeydew and mould fungi. Locally it is found in grassy woodlands, dry forests and suburban gardens. Cockroaches join back to back when they are breeding, and copulating pairs remain joined for some time. Like most cockroaches, the female Austral Ellipsoidion produces groups of eggs enclosed together in a single capsule called the ootheca. The ootheca or egg-case remains attached to the female for a period until it is mature. Then the egg-case is deposited in a suitable place, usually on a plant stem or leaf.



I have included a photo of another species of cockroach, the Eastern Wood Runner or Common Shining Cockroach *Drymaplaneta communis*. The photo is of a female with the ootheca attached to the rear of the body. This is typical for cockroaches but not universal. The cerci are also visible on this specimen.

The Eastern Wood Runner is dark brown in colour, wingless, has cream-white edging on the front part of the body and a red head. The name Eastern Wood Runner is indicative of many cockroaches' ability to run very fast for their size, often in a zigzag motion in order to avoid predators. This species feeds on organic matter and it is common to find it in leaf litter, under logs or under the bark of eucalypt trees.

It can be found in gardens where it is beneficial in breaking up leaf litter. Since it likes to hide under things it may crawl under doors for shelter and enter houses, but it poses no health risk to humans.

There are over 400 species of native cockroaches in Australia, and none of them is a serious pest. Most are nocturnal though others such as our main subject are active by day. Most are ground-dwelling and omnivorous, eating any kind of decomposing organic matter. They may be found hiding during the day under logs, rocks or any understory debris. Some feed in trees on pollen, bark and leaf material, and others eat decomposing wood. They perform a valuable function in various ecosystems, helping in the decomposing and recycling of organic materials. They are also a significant part of the diet for many larger animals, including birds, mammals, reptiles and frogs, but also other insects. Their importance cannot be overestimated.

Cockroaches have to deal with other natural enemies. The Hatchet Wasp is from the Evaniidae family and is a parasitic wasp. The females of this family lay their eggs into the freshly produced egg-cases of cockroaches; one egg is laid for each ootheca. When the wasp egg hatches the larva eats the cockroach eggs and then pupates, later emerging as an adult.

The humble Australian native cockroaches are suffering from a poor reputation because of a very few exotic species that have bad habits. This prejudice gives them an undeserved poor image. They are in need of a few friends and allies, and a good public relations professional!

Main references:

<https://australian.museum/learn/animals/insects/native-cockroaches/>

https://www.brisbaneinsects.com/brisbane_cockroaches/BushCockroaches.htm

<https://www.smithsonianmag.com/smart-news/how-many-species-of-cockroaches-plague-humanity-180948133/>

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Ecological Burn at Yarramundi Grasslands

John Fitz Gerald

On the afternoon of Sat 22 April, two management units at Yarramundi Grasslands were burnt by the RFS in conjunction with the NCA. These management units were last burnt in 2017 and had been on the recent burn calendar for some time but consistently too wet to implement.

The ecological burn covering 4.8 ha was led by the Molonglo brigade but involved volunteers and water tankers from 3 other brigades. It was a perfect afternoon with light winds at ground level and a grass moisture that was surprisingly low. The resulting active burn removed grass cover very well and its smoke plume created no problems on adjoining roads. As well as reducing biomass, the burn destroyed seeds being held on many invasive plants such as St John's Wort, Paspalum and Plantain. This was also the first occasion where FOG's miniscrapes were burned and it will be exciting to see how they recover.



As an overview of regreening after the fire, Poa tussocks resprouted immediately while Themeda was slower but did put up some new growth before late-autumn frosts arrived. Tricoryne also quickly resprouted, as did Bulbine Lilies, Blue Devils, Carex and Juncus species. For the weeds, perennials such as Tall Fescue, Paspalum, Hypochaeris, Plantain, St John's Wort and Sanguisorba shot new leaf from blackened stem bases. Also of concern are some patches where 'mass' germination has been stimulated by biomass removal and maybe smoke and heat - I fear these are unwanted plants like Hypochaeris, Wild Mustard and Plantain.

Importantly, in the beds of both scrapes, native plants grown from seed sown in 2019, including Themeda and Chrysocephalum (image), have sprouted nicely. Both photos of new growth were taken 5 weeks after the burn.



Majors Creek for a day 10 June 2023

Margaret Ning

10 June 2023. Other than a quick stop for a meat pie in Bungendore, we travelled uneventfully to our destination on Wallace's Gap Road just outside the small township of Major's Creek. We settled in for a planning session in our host Jane's lovely warm cabin before venturing outside on basically flat, easy to traverse, grassy ground in increasingly pleasant weather.

It took us a while to get going as we thought we should focus on the grass species around us, which of course were virtually bereft of ID characteristics at this time of the year. Then we found ourselves getting down and dirty amongst the grasses to see what forbs were hiding amongst them. Finding Pennywort (*Centella asiatica*), Australian Buttercup (*Ranunculus lappaceus*) and Variable Raspwort (*Haloragis heterophylla*), we realised we were dealing with a damper than normal part of the landscape. A handful of sedge and rush species also indicated that. We proceeded to wander around approximately one half of the 15ha property with its mostly open grassy areas, occasional patches of Snow Gum (*Eucalyptus pauciflora*), Ribbon Gum (*E. viminalis*) and Narrow-leaved Peppermint (*E. radiata*), and intermittent dense patches of Violet Kunzea (*Kunzea parviflora*) and Teatree species *Leptospermum* spp.



Foreground: Tall Spike-rush *Eleocharis sphacelata* and further back Broad-leaved Cumbungi *Typha orientalis*.
Photo by Andrew Zelnik.

Passing one of the dams, we recorded species that ranged in size from Small Mud-mat (*Glossostigma elatinoides*) (0.5cm high) to Tall Spike-rush (*Eleocharis sphacelata*) (2m), and included yet more sedge and rush species.

After our morning walk we enjoyed a warm and filling soup and a scrumptious chicken pie lunch that Jane had prepared. The property is densely grassed, which is in contrast to when Jane acquired it only two years ago, when it was pretty bare following many years of horse activity. And when I say 'grassed', I actually mean 'vegetated', as there were many species of sedges and rushes, which kept us on our toes. We prepared a species list of around sixty native plants and expect to add a lot more in spring/summer when things are flowering.

The grasses will also be easier in a few months' time. Many years ago, mauve Donkey Orchid *Diuris* sp. were recorded on the property, and while Jane knows she still has Blue Grass-lily *Caesia calliantha* and Austral Ladies Tresses *Spiranthes australis* there, we shall be on the lookout for the *Diuris* as well on our return visit.



We saw a mysterious (for me, anyway) Euc, which obviously liked having wettish feet, which I hope we can identify on our next visit, but its image is below, if you would like to have a shot. It was great to 'see' an absence of St John's Wort, Serrated Tussock and Chilean Needle Grass on a property. Patches of *Paspalum*, a few Umbrella Sedge, and a handful of Blackberry are Jane's main weed targets. Of course Fog and Sweet Vernal Grasses have advanced over the La Niña years, but that may improve from now on.

I have no idea what the geology is on the property, and other than a large rock shelf that was submerged in a chain of ponds I don't think I noted another rock all day. It was a glorious day for a walk! Many thanks to our generous host Jane, and her sidekick Alex

The mystery gum - *E. camphora*? (it's found on swampy flats and gently sloping valley floors). This pic also shows the highly vegetated ground layer and ponding with *Carex gaudichaudiana*?. In the lower part of the site and higher up, in the background, shrub cover dominated by *Kunzea* and tea tree and a few *Hakea microcarpa* plus a few of what look like Snow Gums on the right. Photo: Andrew Zelnik

FOG Tassie trip

Margaret Ning

Exactly twenty years after FOG first visited some Tassie grassland sites, we are planning another trip there to see some of the work the Tasmanian Land Conservancy (TLC) and Bush Heritage Australia are doing to protect native grasslands there now. This planning is being done in cooperation with Pierre Defourny of TLC, which is a FOG member.

The Tasmanian Midlands are home to some of the most threatened ecosystems in the world - temperate grasslands and grassy woodlands. The Midlands Conservation Partnership (MCP) brings farmers and conservationists together to protect these important landscapes and the species who call them home. Established in 2011, the MCP is a joint initiative of nature conservation organisations, Bush Heritage Australia and the Tasmanian Land Conservancy. It is supported by the generosity of philanthropists.

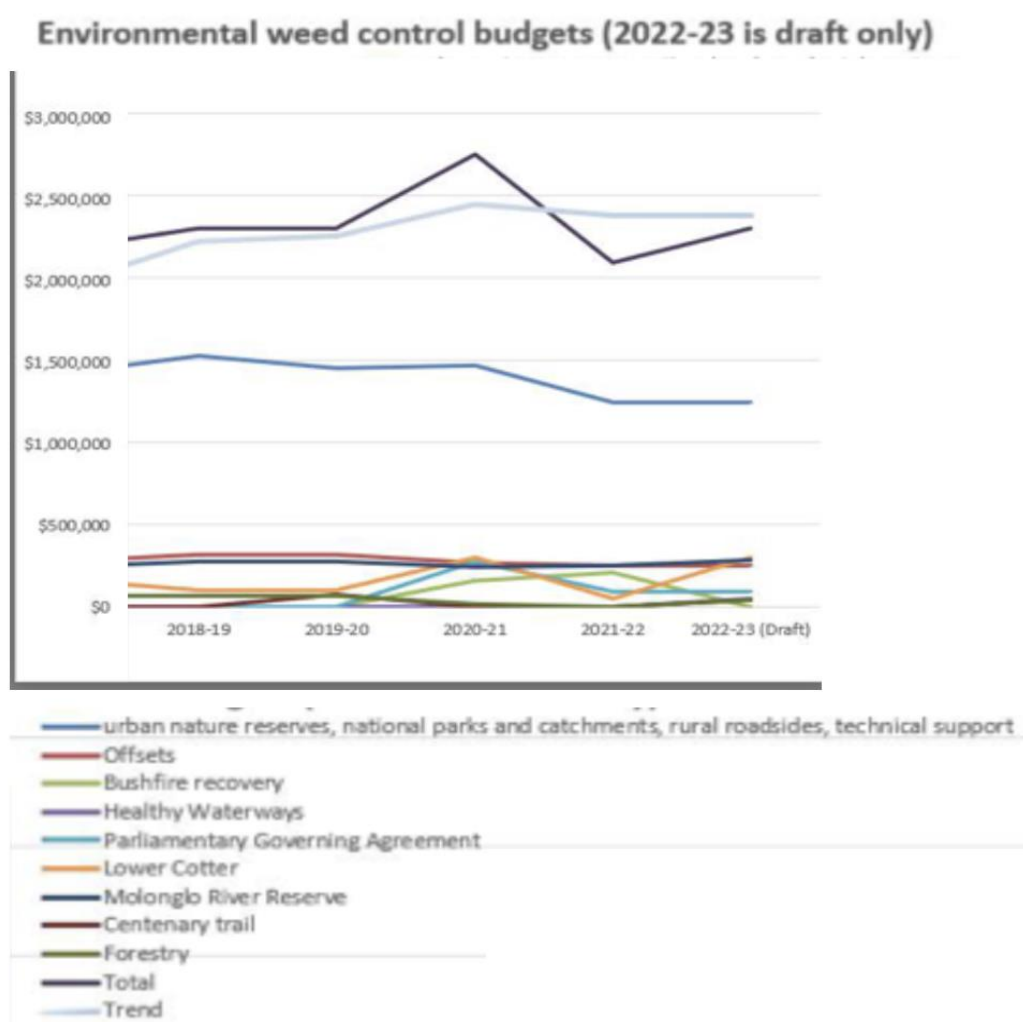
Broadly, we plan to travel there at the end of January 2024, either the week beginning Mon 22 or Mon 29 January, for 2-3 days program of property visits and discussions with ecologists and landowners. If you are interested in joining us for this activity please get in touch (margaret.ning@fog.org.au) with your preferred dates and we shall do our best to plan around them to accommodate everyone. How hard can that be? We envisage that the trip will mean about a week away from home, including a day or two of travel time at each end. If you wish to fly, transportation from Hobart to the Midlands and back, and for the duration of the visit program, can be organised through TLC.

ACT Invasive Weed Expenditure and Budget

Geoff Robertson

In an attachment to the Invasive Plants Annual Report 2021-222, the ACT Government has published the following graph on environmental weeds expenditure¹. I am grateful to Lisa Bradley for bringing this to my attention. I also wish to congratulate those who prepared the graph and put this analysis together. My professional background in economics and social statistics, including familiarity with government finance statistics, often leaves me frustrated by the lack of statistics on biodiversity. At best official reports usually only include anecdotal data.

[Note: Readers of the printed version of this newsletter will not be able to interpret the following graph because the lines are coloured. The full colour version is available [here](#). Ed.]



As with any official expenditure data these have their limitations, of which the user of the data should be aware. I should also point out that data for 2021-22 are actual expenditure, whereas those for 2022-23 show what is budgeted

¹ See attachment to ACT Parks & Conservation Service and Biosecurity & Rural Services, ESPDD (ACT Environment Planning and Sustainability Directorate) and TCCS (Transport Canberra & City Services) - https://www.environment.act.gov.au/data/assets/pdf_file/0004/2072488/22_92559-Documents.pdf.

for or expected. Nevertheless they are satisfactory for the purposes of understanding what is happening in the ACT invasive weeds program. Those familiar with government accounting and budgeting processes will know that each year various units within government vie for funds. Usually, there is a mix of longer and shorter term funding requirements. In the graph, we can see that the lion's share goes towards "urban nature reserves, national parks and catchments, rural roadsides and technical support". This shows a decline from 2018-19, although in 2022-23 there is only a slight drop on the previous year.

Two other important programs are "offsets" and "Molonglo River Reserve" which, more or less, have a steady expenditure pattern. More erratic elements include the "parliamentary agreement" which peaked in 2020-21 and has fallen since. This is COVID-related. The "Lower Cotter" has moved around somewhat, peaking in 2020-21 and 2022-23. The "bushfire recovery" funds were spent in 2020-21 and 2021-22 and are zero in the current year. These components explain the total expenditure. The expected increase on the "Lower Cotter" will mean that expenditure in the current year will exceed that in 2020-21. There is a slight decline in the "trend line", but it is difficult to interpret trend on so few observations.

What can we make of all this?

1. This type of analysis, I believe, is very helpful. It shows that in 2022-23 the government is likely to spend around \$2.3m on invasive weeds, an improvement on the last financial year.
2. It is important to know what is included in the weeds control budget. While this is not clear, I have assumed that it includes EPSDD on-ground expenditure on weeds, including weed contractors and herbicide, and the staff cost of the special ACT weeds unit. However, it would not include expenditure by other agencies, monies that may be spent on weeds through environmental grants, or the in-kind value of the labour of Parkcare and other volunteers. Nevertheless it is a very good indicator of overall ACT government expenditure on invasive weeds.
3. Expenditure on weeds is subject to government macro-economic settings, government priorities and external factors. Having spent large sums during COVID, the government is looking for spending cuts. They have demands on many fronts and nature or biodiversity is a low priority. In early 2021-22 COVID and rains prevented weeding taking place. Another factor is that during the COVID period, the "parliamentary agreement" led to the employment of people to undertake weeding, leading to a kick-up in expenditure.
4. An analysis of the 2022-23 budget papers shows that EPSDD expenditure in 2021-22 was \$281m and increased slightly to \$298m in 2022-23. However, the budget allocation for Parks and Conservation actually fell.
5. The budget papers also reveal that EPSDD had budgeted to treat 60,000ha in 2021-22 "to reduce risk of invasive species". However, only 55,000ha were treated "mainly due to COVID 19 and wet weather which disrupted the schedule of control work in the early half of the year". This would explain the drop in expenditure in 2021-22. In 2022-23 it is planned to treat 60,000ha.
6. While the environmental weeds budget will return to around pre-COVID levels in money terms, in real terms it will drop. To get an indication of expenditure in "real terms" we would need to know the quantum of the various component inputs and price increases for weed contractor fees, herbicide, fuel, and so on.
7. Some back-of-the-envelope calculations show the smallness of government expenditure on nature in the city. The EPSDD budget is around 3% of government expenditure. However, when we exclude planning, climate change and other elements we see that Parks & Conservation's share is only 0.6 percent of the whole budget. The environmental weed component of EPSDD is a small fraction of that.

I believe that we in the ACT need to lift our game and spend more on invasive weed management. Three years of La Niña have resulted in an explosion of weeds (e.g. phalaris grass and St John's wort) in our reserves. These, I believe, are destroying our remnant vegetation and we are failing to exercise a proper duty of care for our threatened species and ecological communities. Unmanaged exotic grasses also present a tremendous fire hazard and pollen health risk. We should not only be attempting, at a minimum, to maintain real expenditure, but also to go much further and raise real expenditure to abate climate change impacts.

Readers will know that government in a roundabout way reflects the will of the people. We need to convince the community and the government that we must pay more attention to nature and invest in practical climate-abatement programs such as those for weeding. The good news is that we spend so little now, any major increase would not impact the budget greatly.

The Tinderry Mountains

Margaret Ning and Andrew Zelnik

Sat 20 May 2023. I think my last visit to the always-enticing Tinderry Mountains south of Canberra was at least 15 years ago on one of Roger Farrow's annual Tinderry visits. These always commenced with a brief roadside natural temperate grassland wander to the east of Michelago, followed by a longer walk through an area at a much higher elevation further up into the Tinderry hills. The tallest Tinderry peak is just over 1600m and the mountain vegetation was always very different to that at the places FOG normally visits. I guess at the very least we are all familiar with the views of the Tinderrys to the east from the Monaro Highway at Michelago.

Since the big Tinderry fire in 2009 when extensive expanses of the range were burnt, the recovery appears, from a distance, to have been slow, as huge areas still glisten following rain events as water sheets down the relatively bare granite outcrops. Acting on intel from a FOG member, we arranged to visit a property just south of the Tinderry Nature Reserve, with the expectation of a couple of brief walks, a slightly longer loop walk and later a wander in a more open grassy woodland.

Our first walk was to one end of a reasonably open heathy wetland, our second was to an extensive rocky area with stunning views to the west, our 1.8km loop walk took us through yet another vegetation community, and finally, slightly further along Tinderry Road, we were walking over a cushion of bright green snow grasses amongst majestic Mountain Gums *Eucalyptus dalrympleana*. Finally, I was amongst a veg community that rang a bell with me! I have to say that I felt very 'out of area' most of the day, but that doesn't stop me being extremely excited about going back for another visit in November this year.



Above: The flowering Costin's wattle *Acacia costiniana*

Naturally, not much was flowering at that time of year and altitude (1230m-1300m), so we could only speculate on what we were looking at on occasions.

Nevertheless, there were many botanical treats at hand including: the locally endemic and abundant Costin's wattle *Acacia costiniana*, beginning to flower (left); some flowering Kybean grevillea *Grevillea oxyantha* subsp. *oxyantha* (below, chiefly flowers August–December); some flowering Alpine boronia *Boronia algida* (next page, typically flowers September–January); and, in the grass-carpeted snowgum woodland, a couple of examples of the locally endemic daisy-bush *Olearia montana* (next page, typically flowers from September–October).

Right: The flowering Kybean grevillea *Grevillea oxyantha* subsp. *oxyantha*



Among the many other plant species (small to big) and cryptogams piquing our interest and curiosity we encountered a variety of orchid leaves and rosettes, a tantalizing foretaste of things to come - we understand at least 20 species of orchid have been identified to date.

Our hosts, Markus and Julie, have owned the property for six years, and already know an impressive amount about it. Their hospitality and guidance were amazing, and they have invited us back in November, when we hope to be able to compile a species list for them which will add to the existing comprehensive inventory courtesy of ANPS, CNM and NSW BioNet. With peak flowering at that time, we should be on more familiar ground when we return for what should be a floral (and birdwatching) smorgasbord.

While looking up some details for this write-up, I came upon the following document 'Southern Ranges Region Tinderry Nature Reserve Fire Management Strategy 2012' which gave some wonderful background on the area and is available [here](#).



The Alpine boronia *Boronia algida*



The Daisy-bush *Olearia montana*



A grand vista looking west to the Clear Range and Namadgi NP

Aboriginal tree carving

Geoff Robertson

The National Gallery of Australia 'News to members' (2 June) included an item headed 'Telling Ancient Stories', featuring Dr Matilda House and her son Paul Girrawah House, who have been commissioned by the Gallery to make carvings in trees in the Sculpture Garden. Dr House and Paul House are described as Canberra local Ngambri (Walgalu), Wallaballoo (Ngunnawal), Pajong (Gundungurra) and Wiradjuri (Erambie) people. Matilda and Paul are known to many readers.

One of the saddest stories I ever read was about white people destroying Wiradjuri carved forests in the 1820-30s. According to Natalie Muller ('National Geographic', June 6, 2011):

"For thousands of years Aboriginal groups in central NSW marked important ceremonial sites by carving beautiful, ornate designs on the trunks of trees. The carvings, comprising symbolic motifs, intricate swirls, circles and zigzags, were intended to be long-lasting but, instead, only a handful of the trees on which they were carved are still alive today. In the early 1900s several amateur anthropologists, including Clifton Cappie Towle, showed an interest in indigenous culture, documenting and photographing rock art, ceremonial sites, and examples of tree carvings."

Thanks to their photographs (see example of photograph by Henry King), we can get an understanding of these carved trees. More information on this practice may be found [here](#). It is fantastic that our local Matilda and Paul House are reviving this art. More information on their work and images may be found [here](#).



Ongoing work parties from Page 1

Budjan Galindji (Franklin Reserve).

Wed 28 Jun; Wed 5 & 26 July; Wed 2

& 23 Aug (all 9-11:30am); margaret.ning@fog.org.au

Gurubung Dhaura (Stirling Park)

Sat 12 Aug 9-12:30pm; Sat 9 Sep 9-12:30pm

Register: jamie.pittock@fog.org.au

New members

Welcome to: **Brian La Rance**, ACT; **Tracey Rail & Tim Mullaney**, ACT; **Seeding Natives Inc, SA**; **Zohara Lucas**, ACT; **Mia Chahoud**, ACT; **Jane Irwin**, ACT; **Ann Milligan**, ACT; **Helen Cross**, ACT.

Further Events information from Page 1

Bringing life back to Tuggeranong Creek. Sat 15 July 2:00pm to 4:00pm. Lots of aspects to this activity: environmental, historic and social, so please see the FOG website

Mugga Mugga, There be dragons! Sat 26 Aug 2:00 to 4:00pm: FOG's effort to network habitat, save dragons and slay weeds, at Mugga Mugga Education Centre. There will be four sessions: Biodiversity Network - Sarah Sharp; Canberra Grassland Earless Dragon (GED) - Berndt Gruber; Top Hut TSR management for Cooma GED - Andrew Zelnik and Weeds - Hugh Copell.

A Grass Revegetation Trial in Canberra

John Fitz Gerald and Ken Hodgkinson

In early June, we looked around a neat set of unirrigated trial plots near Forest 103 at the southern end of the National Arboretum, Canberra. This trial was set up recently by Complete Turf and Landscaping (who manage the Arboretum's grassing) in association with Vital Industries from Queensland.

We were guided by Michael Waring, managing director of CTL, who explained that the trial objectives were to evaluate effects of surface treatment on establishment of species, to maximise plant growth after seeding and to increase soil carbon, principally when sowing the dry-land grass mix specified for use in Canberra's open spaces. The trial area was first treated with herbicide then tilled. Rigorous monitoring of trial plots will include regular expert measurements of growth and analyses of soil chemistry. Treatments were unreplicated.

Michael also showed us four plots at one end of the trial which will be of particular interest to FOG readers (image below). Here, native seeds of grasses and forbs were sown after herbicide application and tilling, then four treatments were applied to the surface. Michael explained that the seed sown in these plots was a quarter the weight of seed sown in dry-land grass plots, reflecting the much higher cost of native seed. The native seed was track-rolled onto the surface, and half of each plot was also sown with sparse sterile rye corn, which germinates quickly



The surfaces of plots were then covered in different ways: with open jute mesh, with polymer plus recycled wood fibre, and with polymer plus recycled clothing fibre. (Polymer is currently applied widely to stabilise turf and grassland seeded onto slopes, simultaneously protecting seed and preventing erosion). The effects of the various treatments on plant establishment and growth in the cold Canberra winter will be exciting to follow and results are likely to guide methods used in large-scale projects for the future.

News Roundup

Paul Archer

GED: 3 species listed under the EPBC Act

Source: Tim McGrath, DCCEW

Three species of grassland earless dragon have been added to Australia's list of species facing extinction and a fourth has been uplisted. Details [here](#).

GED: Artificial home for the rare Monaro Grassland Earless Dragon

Source: NSW Department of Planning and Environment, [Media release 3 May 2023](#)

Members of Cooma's Men's Shed are channeling their wild side, helping to save the rare Monaro Grassland Earless Dragon by creating artificial spider-hole habitat across the Monaro Plains.

GED: There be dragons

Links by Paul Archer and Margaret Ning. Available [here](#) and [here](#)

These are stories about the Victorian grassland earless dragon which had not been seen since 1969 but has now been found in grasslands west of Melbourne.

Latham's snipe

Link and introduction by Geoff Robertson

This is a fascinating story about Lori Gould and Latham's snipe. Lori and FOG have collaborated on many occasions both on activities and behind the scenes and now she is doing her PhD on the snipe, a dearly loved bird often found in our grasslands around the edge of ponds, dams and so on. Details [here](#)

Bruce Pascoe on 'The Voice'

Link by Susan Archer

Bruce Pascoe on the Voice, treaty and sovereignty: 'Society used to respect experts'. Available [here](#)

Meadows restoration

Link by Margaret Ning

Wildflower meadows across 100 historic sites in England are to be created or enhanced in a 10-year project celebrating King Charles' coronation. The intention is to return these landscapes to how they once would have looked. Details [here](#)

Farmers for nature repair loans

Link by Rosemary Blemings

Nature repair loans could help biodiversity recover and boost farm productivity. Details [here](#)

Dam rescue podcast

Link provided by the ABC

A recent podcast series from the ABC 'Saving the Franklin' is now available [here](#)

Canberra Nature Map

Link and details by Michael Bedingfield

Alison Milton has put together the first CNM newsletter. It is available for download [here](#)

Restored roadside grasslands provide an exciting template for road network conservation

Link by Jamie Pittock

This is a study by Paul Gibson-Roy and Frank Carland "Restored roadside grasslands provide an exciting template for road network conservation". Details [here](#). "Summary: This innovative roadside restoration project aimed to replace two historic non-endemic block tree plantings with diverse native grassland. A secondary goal was to reintroduce populations of threatened species as part of the restorations (Button Wrinklewort; Clover Glycine; Hoary Sunray; and the Yam Daisy) *Glycine latrobeana*; *Leucochrysum albicans* subsp; i."

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About the newsletter

News of Friends of Grasslands is published six times a year. It is sent by email (or posted on request) free to [members](#). The current issue and most prior issues are fully searchable and available [here](#) as text (no pictures or graphics) or in pdf format (1 to 4 MB files), including colour pictures and graphics. [Acrobat Reader](#) is required.

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