



News of Friends of Grasslands

Supporting native grassy ecosystems

November–December 2013

ISSN 1832-6315

Program - take the diary out now

SUN. 3 NOV., 9.00 am–12.30 pm. **Yarramundi Reach Acton work party & celebration of the reservation of the land as open space.** Register with jamie.pittock@fog.org.au.

SAT. 9 NOV., 9.00 am–12 noon. **Hall Cemetery work party.** Register with john.fitzgerald@fog.org.au.

WED. 20 NOV., 9.00 am–12.30 pm. **Stirling Park Yarralumla working bee.** Register with jamie.pittock@fog.org.au.

SAT. 23 NOV., **Poplars Queanbeyan field trip.** Register with naarilla.hirsch@fog.org.au.

SUN. 24 NOV., 9.00 am–12.30 pm. **Stirling Park working bee.** Register with jamie.pittock@fog.org.au.

SAT. 7 DEC., 9.00 am–12.30 pm. **Scriveners Hut Capital Hill working bee.** Register with jamie.pittock@fog.org.au.

TUES. 17 DEC., 5.30 pm. **Newsletter collation** and 7.00 pm. **Christmas Party.** 18 Dutton St, Dickson. Contact Margaret Ning margaret.ning@fog.org.au (newsletter) and/or isobel.crawford@fog.org.au (party).

WED. 18 DEC., 9.00 am–12.30 pm. **Stirling Park working bee.** Register with jamie.pittock@fog.org.au.

See p. 2 for further details.

Photo: Mass flowering of Bulbine Lily *Bulbine bulbosa* following autumn burns in 2008 and 2011 along Ginninderra Creek in Canberra (Ken Hodgkinson).

See p. 9 for the interim results of this 'weedy grassland management experiment' by the North Belconnen Landcare Group.

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Coming FOG Events

Please register for outings to help FOG organise any catering and to receive additional pertinent information. Car pooling may be arranged.

Yarramundi Reach work party and celebration of the reservation of the land as open space

Sunday 3 November,

9.00 am–12.30 pm.

Help plant forbs, weed, and monitor the managed plots. Dress appropriately for the weather and use eye and sun protection.

Join FOG for morning tea with Andrew Smith, acting Chief Executive of the NCA to celebrate the rezoning of the land from 'national capital purposes' to 'open space', and to mark conservation management progress.

Morning tea and water will be provided. Park at the Aboriginal Cultural Heritage Centre, 245 Lady Denman Drive. We will be based on the lake side of the Centre.

Please register with Jamie Pittock
jamie.pittock@fog.org.au.

Hall Cemetery work party

Saturday 9 November,

9.00 am–12.00 noon.

The focus for this second session of summer is to continue the control of regenerating woody weeds and exotic grasses and possibly start to prepare the future garden site near the entry gate.

Herbicide is provided but please bring gloves and your favourite small cutting tool.

Morning tea is provided. Please dress for the weather and the tall dry grass.

Enquiries and registration john.fitzgerald@fog.org.au.

Stirling Park work parties

Wednesday 20 and Sunday 24 November, and
Wednesday 18 December,

9.00 am–12.30 pm.

Bring drinking water, sun and eye protection and sturdy footwear.

Work party locations within Stirling Park may vary, so please contact Jamie Pittock to confirm the meeting place: jamie.pittock@fog.org.au.

Poplars Queanbeyan field trip

Saturday 23 November,

9.30–11.30 am.

Walk through the *Poplars* grassland with our hosts from Queanbeyan Landcare. Meet on the western section of Kinlyside Avenue, Jerrabomberra Heights, adjoining the woodland. If time allows, we shall lunch on the Mt Jerrabomberra walking track.

Register with naarilla.hirsch@fog.org.au.

Scriveners Hut working bee

Saturday 7 December,

9.00 am–12.30 pm.

Bring drinking water, sun and eye protection and sturdy footwear. A thermos of hot water for morning tea would also be useful.

Please register with Jamie Pittock
jamie.pittock@fog.org.au.

Newsletter collation and/or Christmas party

Tuesday 17 December,

5.30–9.30 pm.

18 Dutton St Dickson.

Come and help despatch the newsletter, a week earlier than normal.

Please contact Margaret if you are planning to help margaret.ning@fog.org.au or 'phone 6241 4065 or 0427 788 304.

From 7 pm, please join us to celebrate the end of the year. Bring a plate to share.

Weather permitting, we shall walk around the Dickson wetland, and listen to the frogs, if they are not inhibited by the full moon.

RSVP isobel.crawford@fog.org.au.

Other Events

ACT Weed Swap

Saturday–Sunday 2–3 November

8.30 am–4.45 pm

a joint initiative of the Australian Native Plants Society and the ACT Government

Swap your weeds for free Australian native plants at Canberra Sand & Gravel at the end of Southern Cross Dr, Belconnen, or Corkhill Bros near Mugga Lane Tip.

Potential of Native Grasses: National Stipa Native Grasslands Conference

5–8 November 2013

in the Town Hall, Murray Bridge, South Australia, organised by the Stipa Native Grasses Association.

Further information at stipa.com.au/Events/Conferences2013.html.

FOG Membership

To join or renew

FOG membership entitles you to receive our newsletter and e-Bulletin, to attend FOG's many and diverse activities, and much more.

The cost is small: \$20 for individuals and families, \$5 for students/ concessions and \$50 for organisations, due on 1 January each year.

Membership forms are available on our website: www.fog.org.au.

For inquiries, please contact membership@fog.org.au.

News Roundup

ACT Landcare Quiet Achiever Awards 2013

Grasscover

John Fitz Gerald, FOG vice-president, and Ken Hodgkinson, North Belconnen Landcare Group, were co-winners of the above award from the ACT Government, announced 5 September 2013 and presented by ACT Minister for the Environment and Sustainable Development, Simon Corbell. This award is for 'a group or individual who has shown consistent contribution in volunteer work for the environment. This award is designed to recognise long term dedication and commitment to the environment'.

John was awarded for his tireless work with several environmental groups. He commented that it was good that the awards drew attention to landcare issues in Canberra.

Ken was awarded for his experiment into some of the management techniques that might be used to improve the quality of weedy grasslands (p. 9).

Sarah Sharp was pleased that the awards recognised the many individuals and groups who are working on grassland and grassy woodland conservation. Angela Calliess from Greening Australia won the Landcare Facilitator/Coordinator Award. Caroline Wenger, who convenes the Umbagog Landcare Group, won the Individual Landcarer Award, and Jenny Horsfield who convenes the Minders of Tuggeranong Homestead was highly commended in the same section. The Hughes Garran Woodlands Group and the Friends of Aranda Bushland were winner and highly commended respectively in the Qantas Landcare Innovative Community Group Award. The Lanyon Cluster of Schools' Giving to the Environment Project won the Junior Landcare Team Award, and the North Belconnen Junior Landcare Group, led by Lenore Hodgkinson, was highly commended in the same section.

For more information go to landcareonline.com.au/?page_id=12157.

News Roundup (con.)

Hall Cemetery working bee

Janet Russell

On 21 September, the band of five volunteers enjoyed a delightful display of wild flowers such as Early Nancy *Wurmbea dioica* ssp. *dioica*, and Billy Buttons *Craspedia variabilis* sprinkled through the grass. The team were very impressed with the crop of Blue Devils *Eryngium ovinum* that have appeared as well as the Australian Buttercups *Ranunculus lappaceus* and Bulbine Lilies *Bulbine bulbosa* in the woodland. They put some branch borders around them and other patches of good native vegetation. This will make it easier to maintain the quality of these areas once they have died down again, keeping them looking good, and, indeed, improving or enlarging them.

At our autumn working bee we had discovered a few Australian Indigo *Indigofera australis* on the fence on the northern side of the woodland. They had been overlooked on all of our previous working bees possibly because they are woody and unprepossessing. They have been transformed by their flowering.

We used the whipper-snipper to reduce the weed growth round the planted Australian Blackthorn *Bursaria spinosa* ssp. *lasiophylla* and to reduce excessive growth of exotic grasses around the garden gate. The previous work done, as well as the spraying, is paying off as the regeneration of the Weeping Grass *Microlaena stipoides* var. *stipoides* is magnificent. Outside the woodland fence there was significant St John's Wort *Hypericum perforatum* which had not been tackled before. It took 10 L of Brushoff spray to deal with it. Where it had been sprayed before, inside the fence, only 10 plants were found. This encouraged us to believe that we would be able to keep it under control. Extensive spraying has been done of the exotic Ribwort *Plantago lanceolata*, and there is at least one small patch of the native Variable Plantain *Plantago varia*, on the north side. We haven't seen it recently, but in 2005 Sarah Sharp recorded it and Narrow Plantain *P. gaudichaudii* in the woodland.

Many fewer woody weeds such as Sweet Briar *Rosa rubiginosa* and Hawthorn *Crataegus monogyna* ssp. *monogyna* were regenerating. The briars outside the

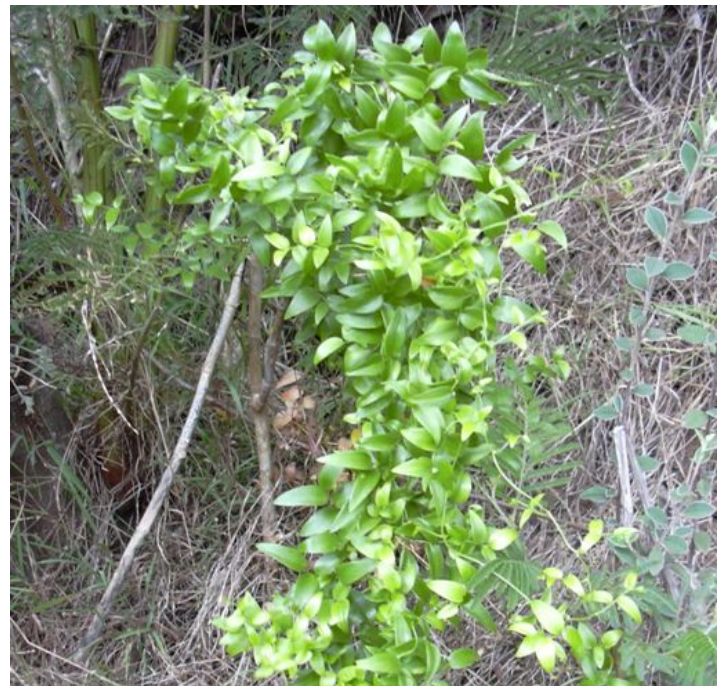
fence along the road were more substantial and were cut and dabbed. In the process, a bag of rubbish was collected. This is an ongoing problem, because if rubbish is not removed regularly, the site looks unmanaged and this encourages more dumping.

Milk Thistle *Sonchus asper* and Spear Thistle *Cirsium vulgare* are being kept under control. Cleavers *Galium aparine* have proliferated and there was discussion of how this and the Fumitory *Fumaria* spp., should be tackled. Bridal Creeper *Asparagus asparagoides* was recorded last autumn and sprayed. There was no sign of it this spring. The *Vicia* sp. is still very apparent.

One female kangaroo had a joey less than 30 cm high. It was adventurous enough to cross the road and survived. The birds were prolific including a chorus of Noisy Miners. Three Kestrels did some magnificent springtime acrobatics and an Echidna was happened upon by two of the workers.

A working bee is a collegiate, social activity where you can make a difference. If you would like to join us at our next working bee on 9 November, please contact John Fitz Gerald at john.fitzgerald@fog.org.au

Photo: Bridal Creeper has not yet been collected and formally recorded in the ACT. If you find it, please collect herbarium material before spraying (Forest & Kim Starr commons.wikimedia.org/wiki/File:Starr_031114-0006_Asparagus_asparagoides.jpg)



News Roundup (con.)

FOG Advocacy

Naarilla Hirsch

Translocation of Ginninderra Peppercress to Crace and Dunlop Grasslands

John Fitz Gerald

In mid–September, nearly 1600 plants of the endangered Ginninderra Peppercress were translocated to two new sites in the ACT, one in Grace Grassland, the other in Dunlop Grassland.

The plants had been grown for the seed bank at the Australian National Botanic Gardens from seed collected from Lawson. Translocation was arranged through Greening Australia Capital Region for the Ginninderra Catchment Group and many volunteers turned out to help.



Photo: A population of empty pots mysteriously 'floats' above translocated Ginninderra Peppercress plants at the Dunlop Grassland (John Fitz Gerald).

It remains very quiet on the advocacy front. There has been one wind farm proposal in the Yass area, but this proposal had good avoidance and mitigation strategies for the Yass Daisy population and Box Gum Woodland areas near and in the proposal site. This is pleasing to see, and we did not feel it necessary to write a submission.

Weeds, damn weeds and more weeds

Sarah Sharp

Earlier this year FOG took part in a national survey to find out who is tackling invasive species problems in Australia and the obstacles they face. The survey was run by the Invasive Species Council and funded by the Ian Potter Foundation.

Just over 800 groups responded, representing a broad cross-section of organisations. The findings show that weeds and invasive animals were ranked just above habitat loss as the highest threats to Australia's native plants and animals. A lack of funding and of public awareness of how invasive species are harming our native plants and animals are proving the greatest obstacles to tackling invasive species. More than half of respondents blamed a lack of strong laws and policies for hampering their organisation's ability to combat invasive species.

The survey also revealed the huge levels of both volunteer and paid hours spent tackling invasive species in Australia. This information shows both the high cost of tackling invasive species and the interest in the community in contributing to control efforts.

The results will be used to create an Australian database of groups working on these issues, and to help share information on current invasive species threats and the opportunities for improving laws and policies. The survey was also a way to build closer links with those working to protect Australia's native plants, animals and ecosystems from invasive species.

More information is at us5.campaign-archive1.com/?u=5a02d0c5ba045796a288f0506&id=12055f85df&e=5ecdca619.

FOG/UC Golden Sun Moth Monitoring Project 2008-2009

Anett Richter

Spring has sprung around Canberra and the warm, cloudless, light breezy summer days are quickly approaching. With the prospect of warmer weather, and after a dry winter, the Golden Sun Moth is likely to emerge from the soil earlier than normal.

A few years back, FOG, along with Anett Richter and Will Osborne from the University of Canberra, were funded by WWF Australia to trial a citizen science project to foster awareness of the Golden Sun Moth, an endangered grassland species, and to conduct a field study to monitor and collect information about the moth's biology and ecology in the ACT.

The project was a great success, with 37 volunteers participating in the training workshops and carrying out counts of moths and searches for pupal cases. The data collected by FOG volunteers and others were analysed by Anett and Will and the results published as two papers in the international *Journal of Insect Conservation*.

The first paper was *More than an empty case: a non invasive technique for monitoring the Australian critically endangered golden sun moth*, *Synemon plana* (Lepidoptera: Castniidae) with Dana Weinhold (volunteer), Geoff Robertson (FOG), Matthew Young (UC), Ted Edwards (CSIRO Ecosystem Sciences) and Sarah Hnatiuk (FOG) as co-authors. It presented the analysis of the 650 pupal cases collected from grasslands in and around Canberra by many FOG members. The main finding was that the cases were recorded not only in native grasslands but also in grasslands comprised entirely of the exotic Chilean Needlegrass *Nassella neesiana*. The analysis also showed that cases of *S. plana* were durable, with most persisting in the field for greater than three weeks after first sighting, and indicated a male-biased sex ratio.

The second paper, published in September 2013, was *Moths in fragments: Insights into the biology and ecology of the Australian endangered golden sun moth Synemon plana (Lepidoptera: Castniidae) in natural temperate and exotic grassland remnants*. It was

written by Anett and Will along with co-authors Sarah Hnatiuk and Alison Rowell (both FOG members). It describes the abundance, population structure and reproductive biology of adult moths and larvae. [An interesting incidental finding was that 12 larvae found before the adult flight period in October were on average 32 mm below the soil surface, most at the uppermost end of a silk-lined burrow. Ed.]

A third paper, on the feeding study that Anett Richter conducted, and a children's booklet on the Golden Sun Moth story, are underway and will be promoted through the FOG Newsletter.

Anett Richter and Will Osborne wish to thank FOG: we recognise the importance of your contribution to this citizen science project which has provided a much better understanding of this precious moth of our native grasslands (and exotic grasslands unfortunately). Many thanks for your laborious hours in the field and at workshops.

If you wish to receive a pdf copy of the papers, please contact anett.richter@canberra.edu.au.

New editor for FOG newsletter

FOG is looking for a new editor for the News of Friends of Grasslands, from January 2014.

If you think that you might like to learn a little of what is involved, please contact either Sarah Sharp sarah.sharp@fog.org.au or Isobel Crawford isobel.crawford@fog.org.au.

We would be delighted to talk to you.

A Competition Experiment on Native Forbs

David Johnson

Much of the diversity of forbs once found in the gaps between the tussocks in native grasslands has been lost following agricultural use of the land: the conversion to crops or improved pasture, grazing, nutrient enrichment, weed invasion, and altered disturbance regimes. Native forb seeds are typically short lived, so the reintroduction of such species usually requires the use of imported seed or seedlings. This is challenging, as forb species are sensitive to soils with increased nutrient levels, and to competition from the existing vegetation. Native grasses can become over-dominant if there is insufficient disturbance from fire, grazing or slashing. Such grasslands provide poor forb habitat. Intense competition from the grasses makes it difficult for many forb species to survive. When restoring forb diversity to these grasslands, it is advantageous to choose forb species which can tolerate greater competition.

My experiment aimed to facilitate the selection of those species which would best tolerate competition. I tested the hypothesis that plants with the same growth form will respond similarly to increasing competition from a native grass species, in terms of growth and survival. I tested nine forb species, representing three different growth forms or traits (photos p. 8):

- roots fleshy or tuberous;
- initial leaves in a rosette and subsequent ones on stem; and
- no rosette, leaves only on stems.

Plants of each species were grown in pots in a greenhouse under four levels of competition from a native grass, ranging from zero to high. Seeds were germinated and grown under the same moisture and nutrient conditions for four months. Survival data and the final above and below ground biomass of forb and grass plants were recorded.

Individual plant growth for all species reduced dramatically with increasing competition, as you would expect, but not by a consistent amount within trait groups. However, the survival rate for species with fleshy or tuberous roots was consistently higher than for species with the other two traits.

Therefore the hypothesis was not proven in regard to growth rate, but it appears to be at least partially true in

regard to survival. My results suggest that plants with fleshy or tuberous roots are more likely to survive high levels of competition than those with the other two traits. However, these results need further testing in field trials, using a broader range of species, and for a longer time, before we can confidently say whether the high survival rate observed was due to the type of roots, or to other traits of each species tested.

It is interesting to note that the forbs with fleshy or tuberous roots had a higher proportion of overall plant tissue stored within their root system compared with those in the other groups. For most species, this proportion was greater in plants growing under higher competition. All the species in the other two groups have fibrous roots except for Blue Devil which has a tap root. The grass plants they were competing with also have fibrous roots, but the proportion of plant tissue stored within the grass roots was similar to that in the fleshy and tuberous rooted forbs.

These observations raise questions about growth and survival trade-offs, and the interaction between above and below ground competition, and they emphasise the value of understanding a plant's traits and how these relate to their preferred niche within the grassland. Further research will improve our ability to determine the particular micro-scale conditions that different forb species need for successful restoration.

This experiment was conducted in 2012 as part of my masters research, supervised by Dr Phil Gibbons. It was funded by the ACT Government under an offset obligation imposed to compensate for the clearing of a small area of protected Box–Gum Grassy Woodland at the Clarrie Hermes Drive extension..

[Editor's note: The 'fleshy or tuberous roots' of orchids, lilies and Yam Daisy, inter al., are more or less horizontal underground stems (rhizomes) or the enlarged tip of a rhizome (tubers) capable of storing food. They impart a great advantage in surviving temperature extremes, water stress and to some extent grazing and trampling. They would also seem to explain why Docks, Plantains, Bindweeds and Geraniums remain relatively common and widespread in our depleted grasslands.]

A Competition Experiment on Native Forbs (con.)



Photos (David Johnson)

Trait 1: forb species with 'fleshy or tuberous roots' i.e. underground stems. From left to right: Bulbine Lily *Bulbine bulbosa*, Yam Daisy *Microseris* sp. and Nodding Chocolate Lily *Arthropodium fimbriatum* (top)



Trait 2: forb species with initial leaves in a rosette and subsequent ones on the stem. From left to right: Blue Devil *Eryngium ovinum*, Common Everlasting *Chrysocephalum apiculatum* and Scaly Buttons *Leptorhynchus squamatus* ssp. *squamatus* (centre).



Trait 3: forb species without rosette, leaves only on stem. From left to right: Button Everlasting *Chrysocephalum apiculatum*, Fuzzweed *Vittadinia cuneata* var. *cuneata* and Tall Bluebell *Wahlenbergia stricta* ssp. *stricta* (bottom).

A Weedy Grassland Management Experiment Along Ginninderra Creek, ACT

Ken Hodgkinson

The pastoral industry has made the weedy grasslands of Canberra. Exclusion of aboriginal burning, overgrazing by sheep, fertiliser application, sowing of exotic pasture species and the spread of weeds and of human settlement are some of the reasons for their demise. Only a few isolated and floristically poorer patches of the original Natural Temperate Grasslands (NTG) remain.

There is scientific knowledge that suggests weedy grasslands can be shifted back to native plant dominance, but evaluating the management techniques to do this may be locally, but not generally, successful because remnant patches will differ in their potential for change. The North Belconnen Landcare Group (NBLCG) within the Ginninderra Catchment Group (GCG) set out in 2007 out to evaluate some 'best-bet' management options, involving fire and mowing regimes, for increasing the number of native plant species at the expense of weeds (non-native species).

Two NTG remnants near Croke Place in Evatt were selected. At each remnant and adjoining weedy grassland (about a third of each plot) five management techniques or treatments were tested: a control (i.e. no treatment), close (< 5 cm) mowing in early November, high (10-15 cm) mowing in early November, spring burning and autumn burning. The five treatments were randomly allocated at each remnant. The plots are 30 m x 6 m. The autumn burn plots were burnt in April 2008 and May 2011. The annual mowing and biennial/triennial (depending on weather and fuel conditions) spring and autumn burning are conducted by ACT Parks and Conservation. This cooperation is highly appreciated by the NBLCG and GCG.

Images of the plots are taken each spring, and in spring 2011 the plant species in each of the 10 plots were recorded (with inspection of plots most Saturdays from October to December).

Across all the plots 56 plant species were recorded: 27 forb, 24 grass, 2 lily, 2 rush and 1 shrub species. Over half (32) were weeds. Native species were recorded in all treatments but 7 of the 24 species were found only

in the autumn burn treatment: *Bulbine bulbosa* (photo p. 1), *Chrysocephalum apiculatum*, *Dichelachne crinita*, *Eryngium ovinum*, *Oxalis perennans*, *Rytidosperma caespitosum* and *R. tenuius*. There has been no obvious movement of native species into the weedy portion of each plot. Another survey is currently underway and the treatments will continue until at least 2015.

The mechanisms for the germination and establishment of each of the 7 native species recorded only in the autumn burn plots, are not known. I think the creation of gaps in the grassland, warmer soil temperature in winter, and the timing of post-fire rainfall as well as smoke and heat breaking the dormancy of seed, could be explanations but I really do not know. I would expect the mechanisms to be particular to the local population of each species.

The results of this evaluation of the responses to different management techniques are encouraging and the GCG is currently discussing how else to evaluate the autumn burning of remnant native patches and weedy grassland along the creek corridor. This is a complex initiative but some key promotional ideas would be to "fight fire with fire" and "restore native plant diversity".

The GCG would be keen to hear from anyone interested in pursuing a post-graduate research program in ecology, plant science or sociology and who could build on this initiative. Volunteers may be needed to record the changes in species composition at remnant patches. FOG members may like to get involved.

Contact Karrisa Preuss, GCG Coordinator, at landcare@ginninderralandcare.org.au or Ken Hodgkinson at hodgkinson12@bigpond.com for further information, to become involved or to inspect the plots. The 2005 report on scientific knowledge for managing Canberra's grasslands is at www.environment.act.gov.au/cpr/conservation_and_ecological_communities/report_on_urban_grasslands.

FOG AGM 2013 Reports, March 2013

Advocacy

Naarilla Hirsch

The advocacy group started 2012 with a discussion of priorities and processes for handling submissions, as the workload had stretched our resources in 2011. We did spread the workload, and established guidelines for selecting which development proposals to respond to. Some of the priorities have been completed (commenting on the draft ACT Nature Conservation Act) while others will be carried over to 2013 (evaluating the Government's *Gungahlin Strategic Offsets Package* and considering another grassland forum).

The group has continued to keep an eye out for development proposals that might impact on grassy ecosystems. In 2013 we responded to 33 invitations to comment. Some were development proposals impacting on higher quality grassy ecosystems, mostly within the ACT, but also some in nearby NSW. Others were comments on legislation, policies and strategies being reviewed, both at Commonwealth and at State/Territory level. We also commented on amendments to the National Capital Plan, reserve management plans, a national heritage assessment, and a Senate Inquiry into the effectiveness of threatened species and ecological communities protection in Australia. FOG submissions are at www.fog.org.au/advocacy.htm#submissions.

It remains difficult to determine the success of these submissions. Most development applications end up being approved, but some considered under the *Environment Protection and Biodiversity Conservation Act 1999* did have conditions imposed. Over time there has been a welcome change in development applications with many now proposing construction mitigation actions and offset plans if they are impacting on high quality grassy ecosystems. As it is now some time since the first offset conditions were imposed, a priority for the coming year will be to have these offsets reviewed in terms of meeting environmental objectives of no nett loss.

Other representations were made to ACT politicians about the recommendations of the ACT Commissioner for Sustainability and the Environment (CSE) on Canberra Nature Park and about offsetting in the ACT, to the CSE about his State of the Environment Report, and to the National Capital Authority about Yarramundi Reach, Stirling Ridge and Attunga Point.

While invited submissions were the most visible part of our work, the group continued to develop close links to other groups such as Gungahlin and Molonglo Bush on the Boundary teams, the Conservation Council's Biodiversity Working Group (BWG), K2C, Parkcare Coordinators and the Canberra Ornithologists Group. We worked closely with the Conservation Council on the Gungahlin offset strategy, and made use of the new mapping system at the Conservation Council.

We attended many presentations and community consultations to gather information about development proposals, legislative reviews, reserve management plans and so on, and met regularly with Canberra Airport Group, and representatives from the Murrumbidgee to Googong Pipeline and Majura Parkway.

The group will review its 2012 priorities in March, to develop priorities for 2013, and ensure close working with both the BWG and the Conservation Council. Anticipated priorities include strategic planning for Gungahlin, progress on the CSE's recommendations for Natural Temperate Grassland and for Canberra Nature Park, and satisfaction with adherence to EPBC offset conditions. FOG members wishing to present ideas to the advocacy group are welcome to email advocacy@fog.org.au.

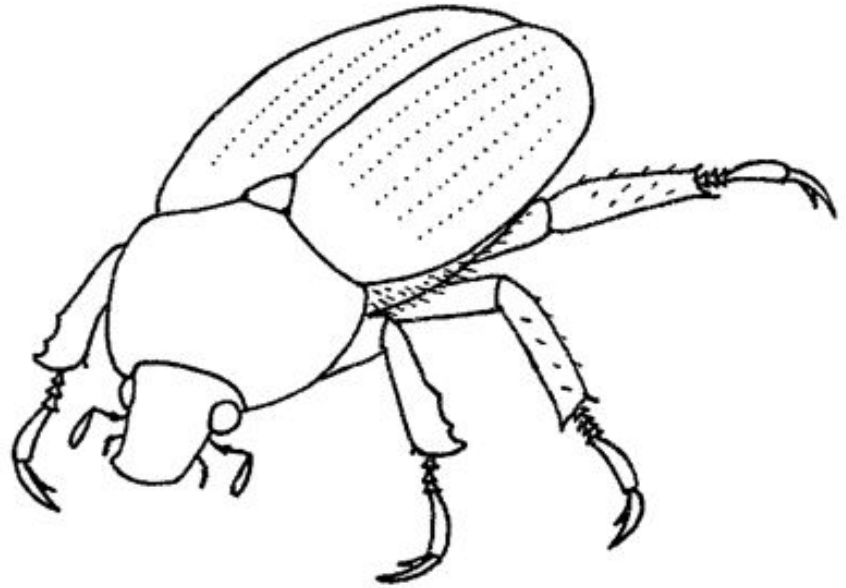
My thanks to group members for your work over the past year: John Fitz Gerald, Sarah Sharp, Tony Lawson, Jamie Pittock, Barbara Payne and Evelyn Chia. Also to Richard Bomford who puts our submissions on the website so promptly. Without your help, advocacy couldn't achieve what it does.

Christmas Beetle, Anoplognathus species, an Australian Christmas Treat

Michael Bedingfield

When I was a boy growing up in the small country town of Bombala in the 1950s, we didn't have the luxury of fly-screens on our windows. So on hot summer nights, often around Christmas, very large, golden-brown beetles would fly in through the open kitchen window. They would make a loud hum as they zoomed around the room, bumping into things, and trying unsuccessfully to get near the overhead light. Eventually they would crash, and end up on the kitchen table or lino floor, upside down and unable to right themselves on the smooth surface. If an outstretched finger reached to touch them, they would cling to it with very strong legs, but be totally harmless. Since the brightly coloured insects arrived at such a special time for children, and had the name of Christmas Beetles, they were a magical creature indeed.

These insects are of the genus *Anoplognathus* (family *Scarabaeidae*), which has about 35 species, all but one endemic to Australia. Tropical Queensland species can be dark green, violet and opal/mauve. But the local ones are glossy golden-brown or burnished gold, the colour changing with reflected light, and you can see patches of bright iridescent green. Underneath, they are shiny black or dark iridescent green, with a covering of short hairs. They normally grow to 2–3 cm long, and have small, clubbed antennae just in front of their eyes. They have spikes or bristles on their legs, and strong grasping hooks instead of feet. The larvae are 'C' shaped, and are called curl grubs or scarab grubs.



Their natural habitat is grassy woodland and forest, but they also occur in native and non-native pastures and suburban gardens. Most species are found in the higher rainfall areas of southern and eastern Australia. Their life cycle begins when adult beetles lay eggs in the soil. The adults die soon after. The eggs hatch later and the larvae spend a year or two underground, eating organic matter, especially grass roots. When mature, they pupate and later emerge as adult beetles in summer, and then feed predominantly on eucalypt leaves, but they also eat other tree leaves. They congregate in large numbers to mate. When doing so, they will often choose a particular tree and eat a large proportion of the leaves on the tree. With their voracious appetites they can cause serious defoliation. This can lead to partial dieback of the tree, and maybe even death if the treatment is repeated. This can be a significant problem on farmland, where there are fewer trees. The insects are strong flyers, and can travel several kilometres, usually in the early evening, and they are attracted to lights.

The sources for this article are australianmuseum.net.au/Christmas-Beetle/, csiro.au/Outcomes/Food-and-Agriculture/ChristmasBeetles.aspx, csironewsblog.com/2012/12/13/christmas-beetles-the-season-is-the-reason/ (by FOG committee member Kim Pullen), and en.wikipedia.org/wiki/Christmas_beetle. Several reported anecdotal evidence of a decline in the number of these insects around Sydney, due to the clearing of woodland.

The beetles I observed last summer were browsing heavily on several Blakely's Red Gum *Eucalyptus blakelyi* near Tharwa, on different trees at different times. My drawing is larger than life size, showing detail not always obvious in photographs. Christmas Beetles are a favourite with many people, and let's hope they continue to thrive.

FOG groups and projects

General inquiries

Contact info@fog.org.au, Sarah Sharp (0402 576 412) or Janet Russell (02 6251 8949).

Activities organises FOG field trips, talks, workshops, on-ground works, support to other groups, property visits, and the FOG calendar. Inquiries: activities@fog.org.au.

Advocacy prepares submissions and advocates for grassy ecosystem issues. It holds occasional meetings and workshops. Inquiries: advocacy@fog.org.au.

Committee & correspondence The Committee organises, coordinates and monitors FOG activities. Members are Sarah Sharp (Pres.), John Fitz Gerald (Vice-Pres.) Kris Nash (Sec.), Stephen Horn (Treas.), John Buckley, Evelyn Chia, Isobel Crawford, Naarilla Hirsch, Tony Lawson, Katherina Ng, Margaret Ning, Kim Pullen, Rainer Rehwinkel and Andrew Zelnik. Andy Russell is public officer. Inquiries/ correspondence: committee2@fog.org.au.

Postal address: FOG, P.O. Box 440, Jamison Centre ACT 2614.

Communication produces *News of Friends of Grasslands* and *FOG e-Bulletin*. Inquiries: newsletter@fog.org.au or ebulletin@fog.org.au.

Financial matters, excluding membership, contact stephen.horn@fog.org.au.

FOG ANU Fenner School, with the National Capital Authority, holds regular working bees at Yarramundi Reach (grasslands) and Stirling Ridge (woodlands). Inquiries: jamie.pittock@fog.org.au.

Grassland Flora FOG is responsible for sales of *Grassland Flora*. Inquiries: booksales@fog.org.au.

Grassland monitoring, Scottsdale holds monitoring days at the Bush Heritage property at Scottsdale. Inquiries: linda.spinaze@fog.org.au.

Hall Cemetery, with ACT Government, holds regular working bees to protect the leek orchid and generally restore the site. Inquiries: john.fitzgerald@fog.org.au.

Media spokesperson Sarah Sharp (0402 576 412).

Membership and newsletter despatch. Newsletter despatch is the fourth Tuesday of Feb, Apr, June, Aug, Oct and Dec. To help, contact membership@fog.org.au.

Old Cooma Common (OCC) with Cooma Monaro Shire Council manages the OCC Grassland Reserve. Working bees are held twice yearly. Inquiries: margaret.ning@fog.org.au or david.eddy@fog.org.au.

Southern Tablelands Ecosystems Park (STEP) FOG helped to establish STEP, a regional botanic gardens and recovery centre at Canberra's International Arboretum. It showcases local ecosystems, especially native grasses and forbs. Inquiries: limestone@grapevine.com.au.

Woodland Flora *Woodland Flora*, the sequel to the popular *Grassland Flora*, is now at advanced production stage. Inquiries: sarah.sharp@fog.org.au.

Website www.fog.org.au is full of FOG information, back issues of *News of Friends of Grasslands*, and program details. Inquiries: webmanager@fog.org.au.

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