

News of Friends of Grasslands

supporting native grassy ecosystems

November - December 1999



FOG'S COMING EVENTS

SPRING-SUMMER 1999

Saturday 30 October, 8.20am – Northern Cemeteries tour Our first stop will be the Nanima travelling stock reserve which is 8kms along the road from Murrumbateman to Gundaroo. Either meet us at Northbourne Ave near the Yowani Country Club for a 8.20am departure, or meet us at the Nanima TSR at 9am. We'll stay there for about 45 minutes. Other stops will include Bowning Cemetery, Bookham Cemetery and Cavan Ck Woolshed TSR. (Ring Margaret for directions or a map.)

Saturday 13 November, 2pm – Mulligan's Flat for FOG's fifth birthday Join us for this special occasion and we'll compare Mulligan's Flat in November with what we saw there in winter 1998! Enjoy a celebratory glass of champagne and light refreshments afterwards. Please RSVP to Margaret to help with catering. Look forward to seeing lots of members for this occasion.

Tuesday 23 November, 6-10pm – Planning FOG's future – facilitated discussion Come and have your say. To be held at Mugga-Mugga, Narrabundah Lane, Symonston. Tea/coffee.

Saturday 27 November, 9am-noon – Majura Field Firing Range A rare opportunity to visit another quality local grassland. To get to the firing range, turn left (north) onto Majura Rd just before the airport, and travel 2kms (it's on the right after the airport fence finishes).

Saturday 4 and Sunday 5 December – Southern Tablelands Grassland Hotspots Once again this will be a two day activity but you are also welcome to join us for either of the days. Our leader, David Eddy, will decide on the sites closer to the time. We'll spend Saturday night at Geoff and Margaret's bush weekender, just north of Nimmitabel, so please BYO sleeping bag and pillow. All the other comforts of home are available – mattress, fridge, microwave, BBQ, and facilities. (Please ring Margaret in advance to book a mattress.)

On the Saturday morning, we'll meet at 8am on the Monaro Hwy just past the Johnson Dr turnoff at Tuggeranong – go over the bridge and up the hill a little. If you're joining us on the Sunday morning please be outside the

Nimmita Emporium (general store) in Nimmitabel for a 10am start.

January 2000 – Common grasses identification workshop To be held at Mugga-Mugga, Symonston.

Saturday and Sunday 5-6 February 2000 – Alpine grassland weekend and Y2K bug (Please forward any money owing to Margaret as soon as possible.)

Saturday 19 February – FOG's AGM To be held at Mugga-Mugga, Symonston.

Important notes on coming events:

- *Please put firm dates in your calendar.*
- *For outdoor activities, don't forget your hat, sunblock and drinking water.*
- *For insurance purposes, sign in/out at activities.*
- *For any information about activities (including times, venues and carpooling details), please contact Margaret Ning on 6241 4065 (home) or 6252 7374 (work).*
- *To make program suggestions, contact Margaret.*

ALSO OF INTEREST

Sunday 21 November, 1-5pm - St Mark's Grassland Open Day A great time of the year to visit this wonderful site. Activities will include: display and sale of paintings with a grassland theme; short talks on the history of grasslands, site management and ecotechnology; regular guided tours of the grasslands to identify species; sausage sizzle; and a variety of displays, including native reptiles. FOG will be helping with some of these activities, so come along to this interesting and entertaining event.

March 17, 2000 – Inaugural Australian Native Grass Conference To be held by Stipa Native Grasses Association Inc which works towards producing better pastures naturally. The conference will be in Dubbo and will cost \$45 (includes morning and afternoon teas, lunch and proceedings).

MEMBERSHIP RENEWAL

Please read this first as it is important.

FOG membership runs for a calendar year, and we are fast approaching the end of the 1999 membership year. **This will be the last newsletter for 1999 and a renewal/membership form for 2000 is enclosed.** The first newsletter for 2000 will be posted late December-early January.

We have kept our rates the same - \$20 for individual/family members, \$5 for concessions and \$50 for corporate members. Our rates are low because we believe it is important to publicise grassland issues. However, we welcome any addition donation. Please fill out your renewal forms and send them in as early as possible.

Our membership has been steadily rising. At present we have 120 memberships, of which 21 are families, 90 are singles and 9 are corporate. Counting families as two, we have 141 members. Excluding corporates, 80 memberships come from the ACT, 28 from NSW, 2 from Victoria and 1 from France. At the end of 1998 we had just over 100 members.

We attribute increasing membership to the newsletter, to our range of activities and our attempts to include as many members as possible in some part of our activities.

FOG aims to create an awareness of grassland issues, and develop skills in grassland plant identification and grassland management. It seeks to do this among members, and the wider urban and rural community, including those in leadership positions. Our means of doing this include the media, research, communication, education, networking, lobbying, learning and teaching.

(Please note that if you joined FOG in the last six months of 1999 your membership carries over to the end of 2000, and there is no renewal form enclosed.)

NEWS ROUNDUP

News Roundup reports on FOG activities, grassland activities by other groups (local or otherwise), and news of grassland and conservation issues. Please contact Margaret if you have an item you would like to include.

Workshops, Conferences, Workshops

The Friends of Grasslands workshop proceedings, *Development and Native Grasslands: Resolving Conflicts*, 26 May 1998 has been finalised and distributed. The forward is by Brendan Smyth, ACT Minister for Urban Services and Environment. The content and presentation are excellent. Congratulations to the editors: Art, Naarilla and Kim. The drawings by Michael Bedingfield are a bonus.

Another excellent set of conference proceedings is the *Down to the Grass Roots: Management of Grassy Ecosystems (9-10 July 1998)*. This is a wealth of information and insights.

Pasture Management for Production, Catchment and Biodiversity Workshop organised by Friends of Grasslands on 11 August 1999 was reported on in the last newsletter. Unfortunately, there are no plans to publish proceedings. A summary of the papers is presented in an article commencing on page 3. Some papers are available from Margaret.

There were several FOG members at the Bushcare Conference held in Clare on 19-21 August. A report appears on page 5.

FOG plans to present a paper, *Community Organisations Approaches to Threatened Species Preservation: FOG's Experience*, to the Australian Network for Plant Conservation Fourth National Conference, 25-29 November 1999 – see report in next newsletter.

Cooma Survey

FOG was one of the sponsors of the successful Cooma Tip Survey for the Striped Legless Lizard and the Grassland Earless Dragon organised by the Cooma Monaro Council and led by James Dawson (NSW NPWS) on 4 September.

To the delight of twenty participants, fifteen dragons and four legless lizards were found. This was an opportunity to understand the grassland structure and habitat. For example, dragons were found all over the site and the legless lizards along the ridge.

The survey should mean that most of the site will be joined to Kuma Nature Reserve; only five acres are required for tip expansion and

that not for many years. This event received good coverage in the Cooma Monaro Express.

Radio Hill, Cooma

Threatened Species Day, 7 September, was an opportunity to focus on FOG's project at Radio Hill and to get some publicity. Approximately thirty persons turned up (including fifteen students from Snowy Mountains Grammar School), representing many local groups as well as FOG. Despite a lack of facilities, we managed to organise morning tea - improving our improvisation skills.

Geoff Robertson and David Eddy talked about FOG, the importance of the occasion and FOG's plans for the site. James Dawson (NSW NPWS) talked about the Grassland Earless Dragon and Striped Legless Lizard and plans to survey the site for both species. A guided walk followed. The Cooma Monaro Express gave excellent coverage of the activity, before and after the day.

ACT Weed Strategy

In FOG's July-August Newsletter, Anne I'Ons asked, *Where is the ACT Weed Strategy?* Geoff Butler provided many answers when he addressed an audience of thirteen (mainly FOG members) at the Environment Centre on 7 September. He comprehensively covered the ACT government's weed strategy, and indeed is confident the ACT government has on occasions led the way in this important policy area. See article by Naarilla on page 9.

Fisher Parkland

Coleman Ridge and Mount Taylor Parkcare Groups, and FOG organised a discovery and rehabilitation activity on 12 September. Approximately thirty people, including enthusiastic youngsters, turned out. Earlier in the day, Bess Sledge and her team had cut much of the grass, and FOG's role was to direct the afternoon work and lead a tour. Rehabilitation consisted of removing cut grass and brirs, and weeding. This certainly made the site look better and hopefully will help native grass and forb species. While we saw many plants, most were not in flower and *Grassland Flora* had to fill in the void with its fine photographs.

Conder in the Balance

Conder grassy woodland site (4a) has received widespread coverage over the last two months. Michael Bedingfield's article in *Panorama* (pages 9-10, Canberra Times, 4 September) provided an excellent account of his own per-

sonal experience of the site, the struggle to save the site, a wonderful colour photo and two of his drawings. This has stirred up much interest and activity by local residents and conservation groups, and local residents have organised a petition.

The FOG committee wrote to the Minister, Brendan Smyth, to correct some misconceptions about FOG's role in supporting efforts to save the site and to seek a reassessment of the site. The Minister's reply essentially restated the Government's position which was reported in the last newsletter.

The Office of the Commissioner for the Environment, in response to an objection over the road proposed for the site, called a hearing on 20 September. This was attended by representatives of the Conder Community Landcare Group, Conder Residents Action Group, Clean Up Australia, Society for Growing Australian Plants (Canberra Region), Canberra Ornithologists Group, Canberra Field Naturalists, the Conservation Council, and Kerry Tucker (Member, Legislative Assembly). FOG outlined in some detail the information it had on the site. All participants agreed with the conservation position taken in the agreed joint letter referred to in FOG's July-August newsletter. The Commissioner's report should be sent to the Minister shortly.

In the meantime, local residents are leading a campaign on a number of fronts and lobbying various members of the Legislative Assembly. There has been much press coverage in the Tuggeranong Chronicle and the Valley View.

There have been some concerns about FOG becoming involved in this issue. It is difficult in a controversial situation to keep a balance. FOG has sought to take a detached view, provide its best advice when asked, while keeping FOG members informed. It has encouraged parties to do likewise and attempted to avoid making the issue party political. It has urged respect for differing views.

Generally this approach has been accepted and FOG members who are actively involved have behaved well at all times. All other participants (of whatever view) have done likewise. We all realise that whatever happens in this case, we want to work with all parties to get the best outcomes for grassland conservation.

ACT Government Mowing Policy

In response to an article in the *Canberra Times* on mowing of public grassed areas in Canberra, the FOG committee wrote to the Minister for Urban Services, Brendan Smyth MLA, on 10 August 1999 asking for information on government policy on the issue. The Minister replied in a letter dated 26 August. Canberra Urban Parks and Places (CUPP) is responsible for management of open spaces within the urban area, which comprises about 4000 ha of dryland grass and 125 ha of irrigated grass. A March 1999 CUPP document "Native Grass Sites", a copy of which was enclosed with the Minister's letter, maps 33 sites classified as either native grass-

land or grassy woodland, and includes a table outlining the Department's mowing regime for each site. The presence of plant and animal species of conservation significance is also noted. Twelve of the sites are cross-referenced to the Government's Action Plan No. 1 on Natural Temperate Grassland.

Environment ACT has responsibility for grassed areas outside the urban limits. According to the Minister's letter, "mowing in



these areas is carried out for fire-hazard reduction only and this is generally done before the end of December each year".

Community Garden Grant

In our last newsletter, mention was made of FOG's support for a grant application by the University of Canberra for funds to build a native plant display garden at the University. We are pleased to report that the grant application was successful. This garden will be used to increase plant knowledge of landscape architecture students and be open to the public. We hope to report more on this in future.

PASTURE MANAGEMENT WORKSHOP

FOG's *Pasture Management for Production, Catchment and Biodiversity* workshop held on 11 August exceeded expectations in all directions. The following is a very brief summary of the papers - those marked with an asterisk are available from Margaret Ning. A background article on the workshop was published in the last issue.

Opening*

Harold Adams (ACT Rural Lessees Association), opening the workshop, commented on the "galaxy of impressive speakers" to follow and observed that the workshop would build on last year's. He believes the promoted image of Australia as a rugged and tough landscape should be replaced by one which is vulnerable and unpredictable where drought is probably the norm and good seasons a bonus. He pointed out that in 200 years we have created many problems but one advantage is that the problems are capable of national management - we don't need to rely on other countries. The Rural Lessees seek to balance economic and environment issues in a context of sustainable development.

Aims of pasture management*

Peter Simpson (NSW Agriculture) spoke on the aims of pasture management. He observed that different land managers, including urban communities, eco-conservationists, tourist organisations, and a variety of farmers (commercial, part-time farming mixed with off-farm income, and hobby) share some common man-

agement goals but there are also differences.

Peter listed five pasture development options. First, high-input-high-output-replacement management systems based largely on introduced pastures, and intensive fertiliser and livestock management. Second, degraded sown pastures using low fertiliser application and stock management inputs. Third, low input systems maintaining native perennial grasses and introduced legumes and limited fertiliser application. Fourth, pasture of native perennial grasses with no fertiliser or legume input. Fifth, commercial native grass seed (when available) to modify or redevelop pastures. These different approaches often reflect different land classes and historical outcomes. Concluding, Peter said that while farmers favour sustainable economic development, low incomes and short-term cash flows greatly hamper this.

Grassland structure

Warren King (CRC for Weeds) described grassland structures as complex eco-systems dominated by grass species. Grasslands may be based on natural or introduced species, contain a certain degree of weediness, and be sustained or maintained by grazing and/or environmental limitations.

Grassland structures depend on the relationship in the biophysical environment, such as soil fertility and grazing intensity. It is also important to examine the relationships of species in a pasture. Another phenomenon is that

the higher the number of plant numbers the lower the number of species.

Problems confronting pastures and grasslands

Peter Dowling (NSW Agriculture) said that the terms 'grassland' and 'pasture' were interchangeable, although the term pasture is used when referring to production. A certain degree of biodiversity was required for good productivity but once a certain level was reached biodiversity was not relevant for good production outcomes.

Peter drew some excellent diagrams showing the interrelationships between climate, pasture ecosystems, management, vegetation, soil and annual production. He pointed out that a pasture cannot live forever - a perennial pasture may last ten years and therefore needs ten per cent recruitment of plants each year. He illustrated a time cycle showing a productivity increase in the earlier years followed by decline as stresses and disturbances set in. Therefore cyclical management is required.

Disturbances can include inadequate or excessive fertilisation, inappropriate plant species, droughts and grazing. Consequences of disturbance are decreases in desirable plant species, greater erosion and instability. He concluded that we can do better - it required better understanding of our systems: knowledge of people on

the land is an important ingredient.

Pasture management envelope*

David Kemp (Orange Agriculture College) introduced the *minimum threshold concept* which places stress on pasture rather than the animal performance and condition. A related concept is the *pasture management envelope*, which emphasises managing green herbage mass and key species within lower and upper ranges – an envelope. These objectives are achieved by grazing tactics and appropriate stocking rates. While the upper range is important, managing minimum herbage mass and key species are more so.

Five grazing benchmarks have been developed. First, graze to keep a high proportion of perennial grasses - moderate grazing is important here. Second, keep grazing in a linear growth phase – if biomass remains above a minimum level, growth rates are greater. Third, keep animal intake optimal – keeping up green feed enhances animal growth rates. Fourth, maintain ground cover – this will minimise soil erosion. Fifth, maintain minor species and biodiversity – minor species play important roles as indicators and weed limiters. Overgrazing seems to eradicate them. Sixth, maintain green leaf cover over summer – avoid over and under grazing. This is important for water (and salinity), soil, and root growth.

Benchmarks for dry season (drought) grazing are to reduce grazing pressure, reduce stock numbers and minimise expensive hand feeding. Interestingly, these strategies will have a positive effect on retained animals.

Some judgement is required in determining suitable herbage mass (t DM per hectares) which varies according to species – lowest for *Danthonia* species and highest for *Phalaris*; these rates should be applied to desirable species and not weeds such as *Serrated Tussock*. Not all species can be continuously grazed and need to be allowed to flower. During the afternoon tea break a walk on the oval provided an opportunity to assess herbage coverage.

Practical application

Col Langford (NSW Agriculture) said good pasture management leads to good animal production and hence survival. However, one must recognise we are dealing with competing goals and complex systems. Principles to be adopted are KISS and cost neutrality. He considered that many mistakes had been made in the past – clearing, ploughing and herbicides had caused more problems than grazing alone. The attitude that “replacement was always better” was not being reversed.

We need to understand land class, aspect, topography, slope, pasture type and soil acidity, and manage accordingly. Generally land is classified as class one and two in valley floors, three and four for mid slopes and five for hill-tops – this is often related to steepness. He suggested that it would help if Government agencies had a standard land class classification. Aspect is recognised as important, especially as the northern slopes, preferred by grazing animals, are often degraded. Grazing systems may be set stocking or rotational – often both are used by farmers.

The application of management principles means setting realistic goals for the property and the paddock and working out how to achieve them. It is important to manage land classes according to their capability – hills could be treated as rangelands, slopes conservatively stocked while valleys with introduced pastures could be pushed hard. Approaches needed to be treated with flexibility, not as recipes. Biodiversity should be achieved over the whole farm – different species respond to different conditions. There is a good message in PROGRAZE – green growth drives the system.

Practical skills

Col spoke of the plant, animal and planning skills required for pasture assessment and management. Plant skills include knowing what you have: annual and perennial, quality and quantity, percentage legumes, nutrition and ground cover. Animal skills include understanding live weight (kg) and fatness score (fat score), and management and handling skills. Planning requires setting goals for farm and paddock, pasture and animals, marketing and monitoring, matching production targets and land capability.

Managing weeds is important, but wearing sunglasses (ignoring them) can sometimes be an important strategy – how invasive are they, how long have they been there, how much damage do they do? Australian native grasses are sometimes considered weeds (eg *Microlaena* seeds in wool). Control may be achieved through alternatives to herbicide (eg using goats). Col's view was that weed strategy depended on goals – get rid of weeds if you want but don't waste money.

New enterprises are an option, although there were some anomalies – it was necessary to get licences for alpacas but not for some of the worst pests (such as horses).

Catchment issues*

Joe Walker (CSIRO Land and Water Division) stated that the desired end points for catchment management are to optimise carrying capacity, conserve biodiversity, improve productivity and maintain perennial grasses. The outcome would be a sustainable system, less ground water recharge, less soil loss and less soil acidification.

Joe examined the effects of grazing on catchment processes. Grazing can alter vegetation and soil characteristics which impact on the catchment processes in the storage and transfer of energy, water and nutrients. These effects may be pronounced around watering points and other sites where livestock concentrate. Joe examined how grazing can result in nutrient and organic matter loss, chemical residues, salinisation, acidification, waterlogging, soil structure decline and loss.

To sustain high input and intensive stocking regimes, nutrient cycles need to be closed (except for produce leaving the farm or catchment). Greater understanding is required to achieve this. Animal industries are beginning to see the value of ISO 9000 type Quality Assurance and Australia could gain a competitive advantage if it was able to demonstrate (to consumers) that it achieved this standard.

Managing weeds

David Kemp stated that weeds in crops and pastures need different approaches. In crops there is one harvest period and a critical competition period. Pastures can be seen as a continual harvest and therefore weeds present continual competition. While demand for pasture is constant throughout the year, pasture supply is seasonal. Poor management of pasture therefore provides opportunities for weeds – it is important to reduce chances for nasties to get established. Effects of weeds on animals need separate consideration.

Weed management requires good plant identification skills. Conspicuous species are often over estimated in casual observation. Some species may need to be tolerated – trying to eliminate *Vulpia* through use of herbicide is pouring money down the drain. A weed strategy should identify desirable and undesirable plant species, reduce grazing pressures generally, and combine strategic grazing with other control measures. Some alternatives to herbi-

cides are slashing, competing pasture species, reducing seed production, allowing higher litter, and burning (all at appropriate times).

Conserving communities

Sarah Sharp (Environment ACT) addressed preserving high-conservation-value grassland communities. For this purpose it is necessary to define (native) grasslands, (native) grassy woodlands, native pastures, and exotic pastures. The distinction between grassland and pasture centred on the presence of forbs (non-grass herbs). The strategies for preserving high value areas include: retaining ground cover; encouraging diversity of plants, animals and structure; minimising soil degradation; controlling weeds; and having clean water. The advantage of such strategies is to provide a balanced diet for a diverse fauna. She expressed surprise that more work was not done on the value of forbs in grazing. Native seed from such areas is also an economic resource.

Loss of grassland has occurred most in land classes one and two, three has also diminished, with classes four and five less so. Conservation is not at odds with grazing, especially as conservation requires removal of biomass. In fact, good grassland eco-communities have been maintained under some grazing regimes – so if it works why change it? What is required is adaptive management (survey, research, application of research, review and adaptation). Keeping photos and records of (grazing) management are essential.

Conserving species*

Josh Dorrugh (ANU) addressed some of the principles of fauna and flora species conser-

vation. In the case of fauna, habitat complexity is essential to ensure a diverse range of niches. Habitat may include rocks, shrubs, trees, logs, wet and dry areas, plant species and biomass and plant structure composition. For larger species, diversity may take place between paddocks (roadsides, etc.), while for smaller species within paddock structure is important. Maximising habitat may not be compatible with optimal pasture production (eg dead tussock material may provide important habitat).

To conserve individual plant species, it is necessary to understand how stocking intensity may directly affect growth, reproduction and germination. Therefore, conservation of individual species may require strategies (eg periods of no or light grazing) to allow each of these critical phases to occur.

Genetic diversity

Andrew Young (CSIRO) reported on his recent research on genetic diversity with the Button Wrinklewort (*Rutidosis leptorhynchoides*) and the Small Purple Pea (*Swainsona recta*). As populations become small they suffer from genetic erosion and with little genetic diversity, their long-term survival is bleak. His work has shown that small populations are unable to breed or offspring show poor root, herbage, and seed development.

Andrew's work suggests that a plant population of 200 is quite reasonable to avoid these problems. When populations are below such a size, it may be possible to go further afield to find suitable seed for breeding, although there

may be incompatibilities.

Discussion periods

The discussion period before lunch, led by Denys Garden (NSW Agriculture), and before the close, led by Leon Horsnell (Convenor), were lively and added to the plethora of information and its interpretation. It is not possible to repeat it here. However, some themes did emerge.

Among agriculturalists, there was recognition that replacement of native species with high input non-native pastures had run its course and there was a place for the two approaches to cohabit. Production and conservation strategies overlap in many areas. Knowledge of species and structures was important for good conservation and production management, as were well-considered and implemented management plans. Farmers played an important role as stewards, whose practical knowledge was an important input to good management. Global, economic and market pressures which hindered adequate returns worked to the detriment of good management and conservation practices.

The diverse audience listened attentively and participated actively – showing that seeking a common understanding and sharing experiences are values we all share. However, much credit must go to each of the presenters, the discussion leaders and chairpersons who showed tremendous leadership, experience, knowledge and communication skills.

BUSHCARE CONFERENCE, CLARE

Geoff Robertson

The Bushcare Conference in Clare on 19-21 August was titled *Balancing Conservation and Production in Grassy Landscapes*. While the theme was very similar to the FOG organised workshop described earlier, the approach was much more conservation focused. There were a number of familiar faces – including David Kemp and Peter Simpson (who were both contributors to the FOG workshop and the Clare Conference). Nine FOG members were present. Everything ran smoothly despite the capacity audience and crowded program.

Each of the presentations had something new to offer. The organisers are optimistic that conference proceedings will be ready by Christ-

mas, so I will not attempt in any way to summarise the conference. Rather, I would simply like to make a few personal observations.

Margaret and I travelled to Clare by car, stopping to look at national parks, reserves and roadside vegetation fairly frequently. We saw many interesting sites but were left with the impression of a countryside largely devoid of remnant vegetation and smothered by weeds. It makes one appreciate the importance of remnants. We were thrilled to see two South Australian grassland sites. At one I hopped a fence to frolic in the Kangaroo Grass and Grass Trees, and the other was Mount Cone, a recently acquired Lomandra grassland (known

as Iron Grass in SA), which we visited as part of the conference.

I have since enjoyed reading two books on SA. This first is *The Temperate Grasslands of South Australia: Their Composition and Conservation Status* by Michael Hyde (WWF) and the second, *Weed Management in Temperate Native Grasslands and Box Grassy Woodlands in South Australia* by Richard Davies (Black Hill Flora Centre and Botanic Gardens of Adelaide). These make good reading, and contain documentation and descriptions of SA grasslands. Richard (Rick) was also one of the speakers at the confer-

ence and he gave a good summary of the SA situation.

Another conference delight was a talk by Sylvia Clarke on the Pygmy Bluetongue Lizard accompanied by a lively specimen of the species. Our newsletter has featured two articles on the Pygmy Bluetongue which, apart from being small, does not have a blue tongue. Also on fauna conservation, there were excellent presentations on bats, the Plains Wanderer, and the (female) Sun Moth – the vanishing Amazon Clone of grasslands.

Another highlight was seeing slides of other grasslands. One in Tasmania particularly whetted my appetite to venture from the mainland. Closer to home, Charlie Litchfield showed the Monaro in all its glory. He provided a good geographic and historical perspective. Owen Whittaker outlined what Greening Australia is doing in this neck of the wood(land)s. A lot of interesting material on Victoria was also provided.

The session on managing native pasture featured both Peter Simpson and David Kemp with somewhat different material to what they presented to FOG in Queanbeyan – I am looking forward to reading more on this in the proceedings later in the year. Bill Johnston made some insightful observations about grasslands around Wagga. The most amazing talk was by Christine Jones on direct sowing of crops into native pastures to conserve biodiversity – my mind is still boggling.

Many speakers threw out new challenges: farm management (Jim Crosthwaite), marketing strategies (Geoff Watson), getting the rich to invest in conservation (Carl Binning) and biodiversity management (Denis Saunders and David Freudenger). There was a lot of interest in a session on community perceptions – involving rating photos of landscapes (Kath Williams). The vision for the future (Andrew Campbell) is, I suspect, beyond my lifetime – I am still not sure if much of it was tongue in cheek.

In some ways conservation is returning to the past. Adrian Stanley spoke on an Indigenous land management perspective which fired us all. While rightly there was some criticism of fire use (it is not always appropriate and we need to understand it better), Adrian took us through what Indigenous Australians considered were good open landscapes and scrubby closed ones – the difference being fire.



FLORABANK

FloraBank aims to improve the availability and quality of native seed for revegetation and conservation purposes in Australia. The project has been funded under the Natural Heritage Trust but its funding is about to run out. FloraBank is preparing a series of best practice guidelines on collecting, storing and using native seed. Those already published are:

- 1: Native seed storage for regeneration
- 2: Basic methods for drying, extracting and cleaning native plant seed
- 3: Improving on basic native seed storage
- 4: Keeping records on native seed

Still to come are:

- 5: Woody plant seed collection strategy for local regeneration
- 6: Native seed collection methods
- 7: Native seed production areas
- 8: Basic native seed viability and germination tests for revegetation

Articles on these guidelines will be in later newsletters.

FloraBank has also produced a Model Code of Practice for community-based collectors and suppliers of native plant seed. This document discusses to whom the Code should apply, why it should be adopted, and outcomes in committing to the Code. Practices recommended include:

- Keeping thorough records of seed collection, storage and distribution;
- Not sourcing native seed from outside Australia;
- Obtaining appropriate permits and permissions before collecting seed;
- Taking precautions to minimise the spread of weeds and pathogens (eg. dieback fungus);
- Maximising genetic quality by collecting seed from at least 10 widely spaced, healthy plants that are representative of the larger population. The plants should be separated from one another by at least twice the plant's height to reduce sampling related plants;
- Removing no more seed or plant material than required, and no more than 20% of the fruit of any one plant; and
- Not trampling understorey plants or damaging vegetation unnecessarily.

FloraBank is undertaking a national survey of demand and supply of native seed and seedlings among people actually undertaking revegetation. Some preliminary results from the survey indicate that the use of seeds and seed-

lings is increasing. Almost all respondents consider the use of local indigenous seed and seedlings to be important. Some respondents say that there is inadequate seed in the bush to meet revegetation needs in their region.

If you would like further information, copies of FloraBank publications, or to support an additional year's funding for FloraBank, contact Warren Mortlock, FloraBank Coordinator, PO Box 74, Yarralumla ACT 2600, phone 02-6281 8585, email greenaus@ozemail.com.au, or look at their web site at www.florabank.org.au.

NEWSLETTERS RECEIVED

Sustainable Times

Sustainable Times has an article about a recent conference and publication "Greenprint for Sydney". The Conservation Council is interested in hosting a similar conference for Canberra. The concept revolves around an "ecological footprint"; the total area of productive land and water needed to produce all the resources consumed and to assimilate all the wastes produced by a person or population. The Sydney conference included presentation of action plans for the basic issues involved in a sustainable Sydney: energy, transport, waste, water, chemicals and biodiversity. If you're interested in becoming involved in the Canberra conference, contact Loraine on 6247 7808.

Eastern Gas Pipeline Community newsletter

This newsletter has an article on protection of the environment as the pipeline is constructed. The pipeline will run from Horsely Park, South Sydney through Wollongong, Nowra, then just east of the ACT border to Cooma, Bombala, Orbost, Bairnsdale, ending at Longford near Sale. Where possible, existing easements are being used to minimise use of undisturbed land. Where land is disturbed, it will be revegetated. The project is also undertaking measures to promote weed control.

Other newsletters received and available if members would like a look are *Danthonia* and *Life Lines* (which includes reports on the National Reserves System and on environmental aspects of the Commonwealth budget).

GRASSES POSTERS

One of the nicest bits of FOG mail I've opened all year contained four posters from the Australian Biological Resources Study. The posters have been produced as a supplement to the grass volumes of the "Flora of Australia" and are:

- Grasses - northern Australia
- Grasses - a closer look
- Grasses - coasts and wetlands
- Grasses - southern Australia

Each has a large picture or drawing illustrating a grass, and a number of small photos, accompanied by some text. On the back of each poster is a standard piece of text *Taking a closer look at native grasses*, which describes grasses and their uses in more detail, accompanied by a glossary of terms. Copies of the posters (which I thought were lovely) are available free from Environment Australia at the Community Information Unit, GPO Box 787, Canberra ACT 2601, or

phone 1800 065 823 (freecall), or email ciu@ea.gov.au.



BETTER PASTURES, NATURALLY

Andrew Briggs

(Andrew is the Native Grasses Officer, Department of Land and Water Conservation, Wellington N.S.W. Andrew may be contacted about the program, or equipment developed and used by the Program, (02) 6845 2488.)

In an attempt to stem the decline in Australian native grasslands, and due to the increasing interest from the community of the role of native grasses in a healthy pasture mix, the Department of Land and Water Conservation has instigated a Native Grasses Innovation and Development Program. This program aims to promote, and to provide information to the public, on the role which native grasses have in a modern agricultural landscape. The main emphasis of the program however, is centred around the development of technology that will enable efficient, economically viable harvesting and sowing of native grass seed.

Other areas in which this program hopes to have an impact are revegetation/habitat restoration and urban applications such as low water use on native lawns and gardens. Increasing the percentage of native perennial grasses also has huge benefits for dryland and urban salinity. Increasing both the water use potential of pasture and reducing the water requirements of urban gardens means that less water will enter the groundwater table, thus reducing the amount of salts which will be brought near the surface.

From an agricultural perspective native grass pastures have other benefits aside from dryland

salinity control. Native pastures (communities) are persistent, drought resistant and require low inputs to achieve a sustainable balance. As the price of agricultural inputs such as fertiliser and lime rises, many landholders are now looking for an alternative to introduced pasture species which requires these items to

have been written on such species as phalaris and lucerne. Countless dollars have been spent in the development of these species, *for Australian conditions*, and still these species will not persist in most areas, without constant applications of expensive inputs to try and change the soil balance to match the plants. And as

they die out through drought or poor soils, what comes back? Native grasses. Native grasses are underrated, and their use is going to be essential in a modern, and sustainable, agricultural Australia.

Enter the Native Grasses Innovation and Development Program. If native grasses are to become re-established in the Australian land-

scape as the dominant pasture type, the development of technology to harvest and sow them is essential. For the majority of native grasses, existing harvesters and seeders simply cannot cope with the unusual shapes, sizes and "aero-dynamics" of their seeds. Technological advancement in these two fields has been excellent during the lifespan of the project, with native grass harvesting now being carried out with a very high degree of success. The self propelled "Scorpion" harvester is shown in Figure 1, and a trailer type Brush



Figure 1: The self propelled *Scorpion* Harvester

persist. In many cases landholders have simply stopped using these inputs. The result has been that, in many instances, native grasses have re-entered the system. Many landholders are now beginning to ask "what are these grasses, and where did they come from?" The answer of course, is native grasses, and they have always been there.

Since early this century, native grasses have been scorned as unproductive, and high-input introduced pastures have been the focus for agriculture in Australia. Knowledge of native pastures is limited, and yet volumes

Harvester, the “Grasshopper” shown in Figure 2. Marked developments in seeding technology have also been made, with a purpose built air seeder, dubbed the “Germinator” (Figure 3), however the sowing of some seeds still poses many problems.

A number of items need to be considered in relation to the sowing of native seed. For example, what is the desired end result of the seeding activity, ie pasture, erosion control or habitat restoration? Which species? Where should the seed be sourced from? And to what degree does seed need to be cleaned to maximise seeding success; it is suspected that the various attachments to grass seeds, eg. awns, may have a vital role to play in the germination of many native species. The challenge, therefore, is to sow grass seed in a “straight from the paddock” state.

Another reason for this is because native grasses form complex communities, much as a successful introduced pasture will consist of a variety of different plants. Thus, to attempt to reintroduce native grasses as monocultures or as severely modified communities for pasture production is self defeating; it is simply going down the same road as that which was travelled when pasture plants were first introduced from other countries. What we are now aiming to achieve is to harvest a healthy community, and sow the exact seed mix in an effort to re-establish that same community. Naturally, there are many various problems with this practice, not the least of which is weed seed contamination.

Another problem we have encountered is erratic germination of seeds. Differential seed germination rates are another survival characteristic of native grasses. As anyone who is

unravelling.

This leads onto another important facet of the program: expanding awareness and acceptance of native grasses in the agricultural sector. When a landowner sows a particular crop or pasture, they (and their bank manager) expect immediate results for the time and money which they have invested; the success of the project needs to be immediately obvious. For the above reasons, the establishment of native grass pasture through mechanical means rarely exhibits such an immediate success. Indeed it may take a number of years before one can really accurately gauge the success of the sowing.

The interest in native grasses as sustainable, low-input pastures is growing, as indeed it must. There are still many unanswered questions as yet, however ultimately we *will* unravel the secrets of native grasslands and the result will be sustainable grazing on better pastures, naturally!

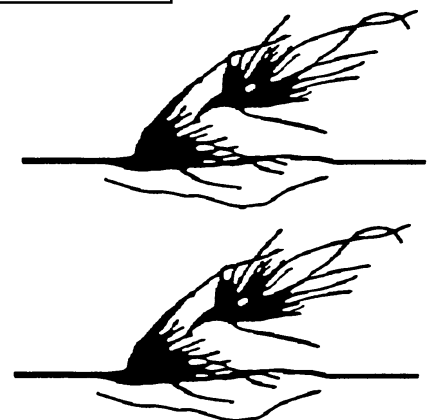


Figure 2: The *Grasshopper* trailer type Brush Harvester



Figure 3: The *Germinator* air seeder

in touch with the land in Australia knows, no season can be guaranteed. Therefore, if 100% of the seed shed in any one generation germinated, and was then lost due to a drought, all of that seed would be lost. To counter this, native grass seed germinates bit by bit, often with long delays and dormancy periods. Often it needs to be stimulated to germinate by such agents as smoke or water,- these are some of the many critical details which we are still



ACT GOVERNMENT'S WEED POLICY

Naarilla Hirsch

Those FOG members attending Geoff Butler's talk on weeds found it interesting and informative. Geoff, who is the weeds officer for the Conservation Council, gave us some background and history of the ACT government's policy on weeds, where it's all at now, and future issues.

Background

Weeds are now recognised as one of the major land and water degradation problems into the future. The Berry/Mulvaney report on environmental weeds in the ACT (commissioned by the Conservation Council in 1995) focused on just how widespread weeds were, and that there were far more environmental weeds than generally realised. In 1996 the government released the ACT Weeds Strategy. While this document is succinct, an earlier draft was much larger and contained a lot of material on the history of weeds in the ACT that is interesting reading. This was followed by a specific strategy for willows (a cross-regional effort).

Weeds have become significant both nationally and regionally. Forty per cent of the ACT's plant species are weeds. At the national level, a weeds strategy was released in 1997 and revised this year. No longer do we see just a concentration on noxious weeds, but now there is an equal focus on environmental weeds, including horticultural escapees.

An environmental weeds brochure was prepared (with 10,000 copies produced), and it's now at the point where it needs reprinting. Except for one, nursery responses to this brochure were very positive. Most nurseries appear happy in principle to remove weed species completely from sale, but may be reluctant to do so if other nurseries still stock the species. A Weeds Of National Significance (WONS) list was released in June 1999, and there is a Garden Escapees Weeds Strategy. An ACT Pest Plants list was also gazetted in June 1999, and there is now a Weeds Hit Team as a result of government and community recognition of the need for such a group.

Current activity

In the ACT, there is a Weed Management program (or Priority Weeds program), which is concentrating on broom and willows this year. Activities include organisation of Weedbusters

Week, during which the African Love Grass Strategy in the Murrumbidgee River Corridor will be launched. The ACT Weeds Working Group is preparing action plans as a result of regional plans for significant weed species.

Discussions are being undertaken at present with plant purchasing managers of regional supermarkets and hardware stores, to try and remove environmental weeds from sale at these outlets. Another source of introduction of weeds to Australia that I wasn't aware of is the sale of mixed seed packets from overseas.

Geoff is providing information sessions on weeds to community groups and organisations. A regular article or fact sheet on weeds is being included in the Horticultural Society's newsletter. PaLM was recently contacted about all this weed information, including new listings. Geoff is also working with local government (especially Yarrowlumla and Yass Shires) on weeds issues.

The future

Geoff spoke about concerns expressed about some species (eg. the Cootamundra wattle) appearing on the weed lists, and about other serious weeds (eg. pyracantha and cotoneaster) not being on the declared plants list. With some environmental weeds, location of the plant determines whether or not it is a serious problem. For example, poplars are a problem near waterways but not in the middle of a dry open space. There was discussion of the negative effects of the Cootamundra wattle in the bush, e.g. hybridisation with local species, and the heavier shade it produces encouraging growth of exotic grasses.

Mapping is a crucial component of any weed management strategy but is sadly lacking (except for a few species) at present. The loss of frenock has affected management of some weeds, and trial work with glyphosate is being conducted by other States. Weeds in the understorey of the pine forests in the ACT is a significant problem. Education about weeds is a very positive action, but will not totally resolve the problem and should be only a part of a weed strategy. Sponsorship from the nursery industry for the next weeds brochure is being sought. The ACT Weeds Working Group is giving consideration to warning labels on invasive plant species being sold, although there are some cost issues associated with this.

My thanks to Geoff for his notes, which really helped in preparing this article.

Australia's Twenty Most Unwanted

Australia now has an official listing of the country's 20 'most unwanted' weeds. The Commonwealth Ministers for Forestry and Conservation, Wilson Tuckey, Agriculture, Fisheries and Forestry, Mark Vaile, and the Environment, Senator Robert Hill jointly released the list after extensive consultation with the States and Territories.

"Weeds have been selected according to their invasiveness, economic, environmental and social impacts, current distribution, potential for spread and effect in reducing the growth of desirable plants," Mr Tuckey said.

Weeds of National Significance:

- alligator weed (*Alternanthera philoxeroides*)
- athel pine (*Tamarix aphylla*)
- bitou bush / boneseed (*Chrysanthemoides monilifera*)
- blackberry (*Rubus fruticosus* agg.)
- bridal creeper (*Asparagus asparagoides*)
- cabomba (*Cabomba caroliniana*)
- Chilean needle grass (*Nassella neesiana*)
- gorse (*Ulex europaeus*)
- hymenachne (*Hymenachne amplexicaulis*)
- lantana (*Lantana camara*)
- mesquite (*Prosopis* spp.)
- mimosa (*Mimosa pigra*)
- Parkinsonia (*Parkinsonia aculeata*)
- parthenium weed (*Parthenium hysterophorus*)
- pond apple (*Annona glabra*)
- prickly acacia (*Acacia nilotica* ssp. *indica*)
- rubber vine (*Cryptostegia grandiflora*)
- salvinia (*Salvinia molesta*)
- serrated tussock (*Nassella trichotoma*)
- Willows except weeping willows, pussy willow and sterile pussy willow (*Salix* spp. except *S. babylonica*, *S. X calodendron* and *S. X reichardtiji*)

Further information on the list is available from: John R Thorp, Project Manager, National Weeds Strategy 16 Flowers Court, Launceston Tasmania 7250 Phone: (03) 6344 9657 Mobile: 041932 3400 Fax: (03) 6343 1877 e-mail jthorp@weeds.org.au

WHY DO THEY CALL IT LOVE GRASS?

Geoff Robertson

In our May-June 1999 newsletter the question was posed “Why did they call it Love Grass?”

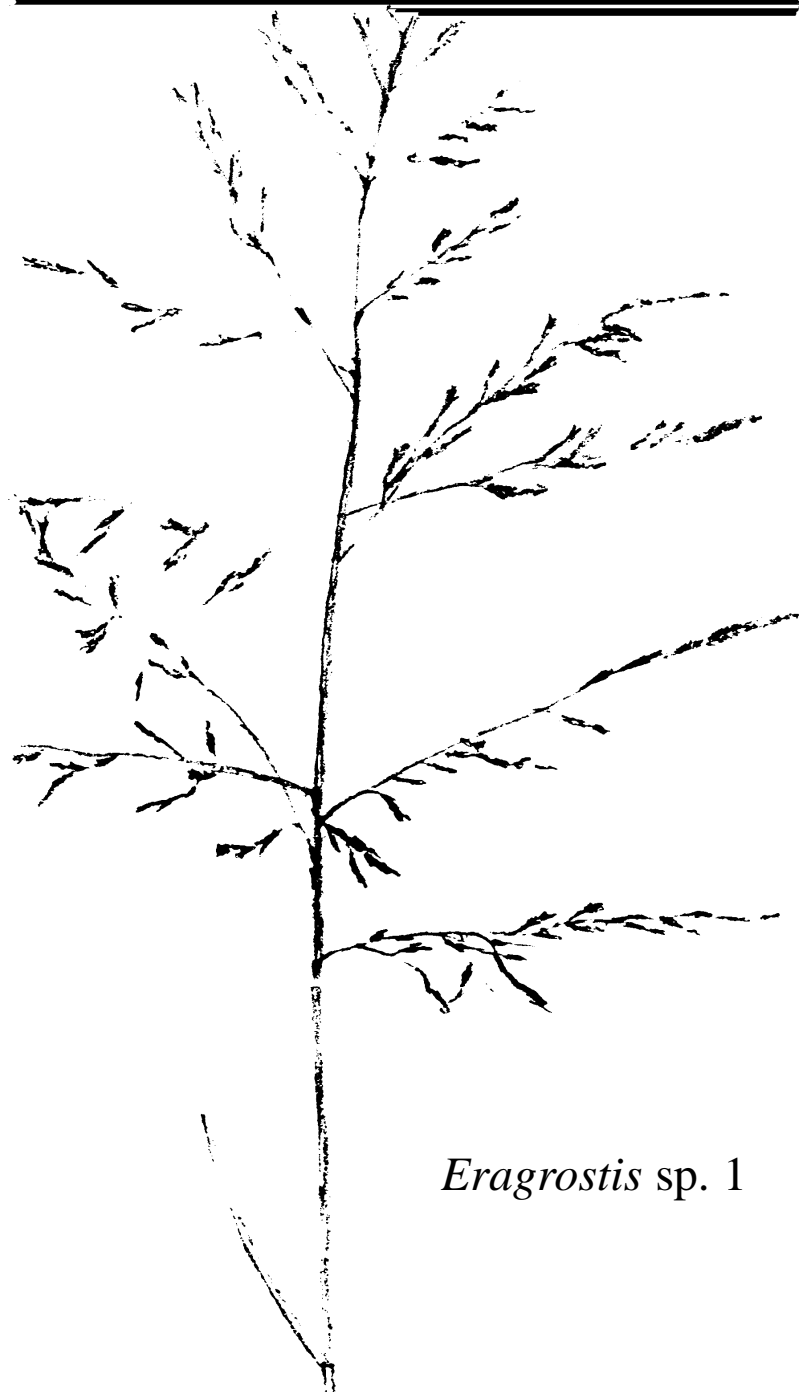
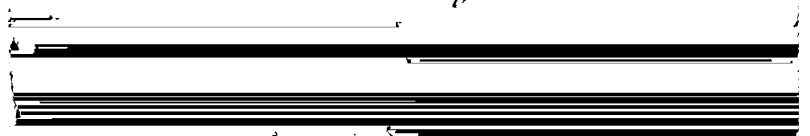
Philippe (a FOG member in France) wrote and told us that Love Grass comes from its botanic name *Eragrostis* from the Greek, Era = love and Grostis = grass. Philippe observed that the Greek name reflects its lovely appeal.

Wheeler, Jacobs and Norton, ‘Grasses of New South Wales’ tells us that there are about 300 species worldwide occurring mainly in the tropics and subtropics and that many species are valuable for pasture. Love grasses occur in all Australian States and there are 55+ species in Australia, 13 of which are introduced. There are 34 species in NSW.

Unfortunately, one introduced species, African Love Grass (*Eragrostis afro horribilis* – aka *curvula*) has become widespread and an environmental weed in this region. It is probably the most recognisable Love Grass by FOGGERS especially those familiar with attempting its eradication.

Love grasses are generally an open-paniced grass with quite dark fruits. We agree with Philippe that it is lovely.

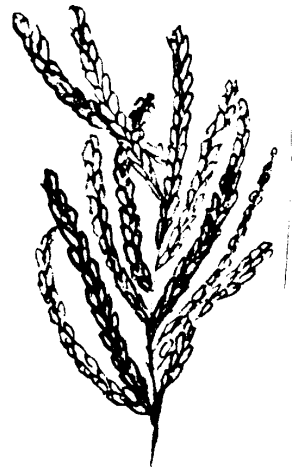
The drawings are of love grass specimens collected by Margaret on her recent outback trip. Each shows the inflorescence and the the spikelet.



Eragrostis sp. 1



Eragrostis sp 2



Eragrostis sp 3

FRIENDS OF GRASSLANDS INC

Supporting native grassy ecosystems

Address: PO Box 987, Civic Square ACT 2608

Web address: <http://www.geocities.com/Rainforest/Vines/7769/index.html>

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Membership enquiries: Please contact Margaret Ning whose details appear above.

FRIENDS OF GRASSLANDS NEWSLETTER

You have read this far, so we must have kept your interest. If you are not a member of Friends of Grasslands why not subscribe to the newsletter? It comes out six times a year and contains a lot of information on native grassland issues.

You can get the newsletter by joining Friends of Grasslands. You do not need to be an active member - some who join often have many commitments and only wish to receive the newsletter.

However, if you own or lease a property, are a member of a landcare group, or actively interested in grassland conservation or revegetation, we hope we have something to offer you. We may assist by visiting sites

and identifying native species and harmful weeds. We can suggest conservation and revegetation goals as well as management options, help document the site, and sometimes support applications for assistance, etc.

Of course you may wish to increase your own understanding of grasslands, plant identification, etc. and so take a more active interest in our activities. Most activities are free and we also try to arrange transport (or car pool) to activities.

If you are already a member, you might encourage friends to join, or even make a gift of membership to someone else. We will also send one complimentary newsletter to anyone who wants to know more about us.

HOW TO JOIN FRIENDS OF GRASSLANDS

Send us details of your name, address, telephone, fax, and e-mail, etc. You might also indicate your interests in grassland issues. Membership is \$20 for an individual or family; \$5 for students, unemployed or pensioners; and \$50 for corporations or organisations - the latter can request two newsletters be sent. Please make cheques payable to Friends of Grasslands Inc.

If you would like any further information about membership please contact Margaret Ning, or if you would like to discuss FOG issues contact Geoff Robertson. Contact details are given in the box above.

We look forward to hearing from you.

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