News of Friends of Grasslands

Volume 1 Issue 5 29 September 1995

Grasslands face extinction, warns Kirkpatrick

Immediate halt to clearing required

On 24 September Professor Jamie Kirkpatrick, Head of the Department of Geography and Environmental Studies at of the University of Tasmania, warned at a geographers conference at Newcastle University that Australia risks losing its native grasses forever unless clearing is halted immediately.

'There are major Australian ecosystems, such as temperate grassland and white box woodlands, that have had more than 99 % of their area cleared, are still extremely poorly reserved and are still being cleared', said Professor Kirkpatrick.

Professor Kirkpatrick emphasised that native woodlands, grasslands, heaths and desert were at greater risk of extinction than Australian forests, and that laws akin to forest protection laws were urgently needed.

He called for an immediate stop to clearing of all vegetation types that have been reduced to less than 30 % of their original area.

Grassland reserves for ACT

100 hectares promised for this financial year

On 19 September ACT Chief Minister Kate Carnell announced in the 1995-96 ACT budget that—

- about 100 hectares of primary native grasslands (never cleared) will be added to the ACT's conservation reserves during 1995-96—the first substantial area of grasslands to be protected in this way in the ACT
- conservation areas will be established in Gungahlin for the endangered Striped Legless Lizard (*Delmar impar*), and research will be continued into its biology and habitat needs
- the ACT has several areas of lowland native grassland areas which are habitat for the lizard — including the Gungahlin Central Area, Majura Valley and the Jerrabomberra Valley. Establishment of conservation areas for the lizard will commence in 1995-96 in Gungahlin, and will be staged over a 10 year period.

The ACT has just under 800 hectares left of its original 10,000 hectares of lowland native grassland. The budget does not indicate how much of that will be reserved over the next 10 years, or whether non-lizard habitat will be included, but the promise of 100 hectares this year is a very welcome first step.

Gungahlin plans for comment

The ACT Planning Authority has released for public comment by 7 October a Draft Variation to the Territory Plan for the Gungahlin Town Centre and central area of Gungahlin (part of a greenfields urban development in Canberra's north), including proposed grassland conservation areas.

The following background documents are available free of charge from the ground floor shopfront at John Overall Offices, 220

Inside This Issue

Gungahlin comments due in 7 October

Northbourne Avenue, Braddon ACT (phone (06) 207 1923):

- *Draft Variation to the Territory Plan - District of Gungahlin: Gungahlin Town Centre and Central Area,* ACT Planning Authority 1995
- *Gungahlin Town Centre and Central Area - Background Papers,* ACT Planning Authority, August 1995
- *Land Planning and Environment Act 1991 - Preliminary Assessment : Gungahlin Town Centre and Central Area,* August 1995.

The last of these three documents explores options for conservation of grasslands in Gungahlin, and includes a June 1995 report by Dr David Williams, Dr Wil Osborne, Dr Arthur Georges and Simon Holloway (all of the University of Canberra's Applied Ecology Research Group) entitled *Principles and Strategic Options for the Conservation of Native Grasslands and their Threatened Fauna in Gungahlin, ACT.*

It also provides a detailed summary of grassland remnants in Gungahlin, plus the results of trapping for *Delma impar* (Striped Legless Lizard) in the Gungahlin Valley.

Golden Sun Moth loses out at The Poplars

Whether or not you wish to comment on the Draft Variation, this document provides a useful introduction to lowland native grassland ecosystems in Gungahlin, as well as some ACT nature conservation policy issues. It may be of interest to students and others wanting to increase their understanding of ACT region grasslands.

Submissions on the Draft Variation proposal must be lodged in writing by 7 October with:

The Chief Planner
Attention: Community Relations
ACT Planning Authority
John Overall Offices
PO Box 1908 Canberra ACT 2601

Gungahlin grasslands talk

Thanks to an initiative by Tamsin Salehian of FOG's Education Committee, FOG arranged for Dr David Shorthouse—Manager of the ACT Parks and Conservation Service's Wildlife Research Unit—to give a talk on 25 September outlining his Unit's grasslands work in Gungahlin, which provided a very useful background to the above developments.

NSW/ACT regional grasslands study - update on The Poplars

Queanbeyan City Council's 19 July decision on whether over 100ha of lowland native grasslands at The Poplars near Queanbeyan (NSW) should be rezoned for housing was a mixed bag.

The Golden Sun Moth (*Synemon plana*) population received no consideration and is effectively doomed — underlining the urgent need for statutory changes to get this species listed as endangered or at least vulnerable in NSW, the ACT and nationally.

Most of the Southern Lined Earless Dragon (*Tympanocryptis lineata pinguicolla*) habitat got a three year reprieve, pending a regional grassland study. If, in three years' time, the study is not completed or finds that The Poplars site is not significant for the dragon, then that land too can be rezoned for housing. In the meantime, drainage from likely development upslope from the dragon habitat is a concern.

The scope of the grasslands study, which Queanbeyan City Council has resolved to actively support, is as follows:

> A regional study into the distribution of native grassland communities which are found on The Poplars as well as the regional distribution of the Eastern Lined Earless Dragon [Southern Lined Earless Dragon] and the Golden Sun Moth. The study is to cover an area extending from Goulburn to Cooma and including Queanbeyan and the ACT.

Council has undertaken to encourage support for the study and to look at ways to partly fund the study.

On 31 July Council called for suggestions regarding the design of the brief for the study. With the help of Penny Greenslade of FOG's Conservation Committee, FOG lodged a submission to Council on 28 August.

Grass identification course at last!

Thanks to the efforts of Alison Elvin and Dave Mallinson of FOG's Conservation Committee, an evening course on native grass identification techniques will be run by freelance botanist (and FOG member) Isobel Crawford through Stirling College in Canberra, beginning on Wednesday 8 November 1995.

Learn to identify the more common native grasses of the Canberra region — nothing to bring (except a hand lens if you have one) and no experience required.

The course is excellent value at only $45 and consists of—

- four Wednesday evening classes from 7 pm to 9 pm on 8, 15, 22 and 29 November at Stirling College in south west Canberra
- a Saturday morning field trip in late November or early December in the Canberra region (date and venue to be advised), to help you test in the wild the skills you have acquired.

Numbers are limited and bookings essential, so contact Jenny Whelan of the Stirling College Brain Gym without delay — phone (06) 292 1573, FAX (06) 205 6781 during business hours.

Or simply complete the enclosed Brain Gym Enrolment Form and mail or fax it with your payment. Enrolments close Wednesday 11 October. The course is open to anyone, not just FOG members.

Local plant identification course

Thanks to the Umbagong Landcare Group (Latham ACT), FOG has been offered five places in a plant identification course which they are running with funding from the National Landcare Program.

The course, presented by Alison Rowell, will cover a range of local plants but will focus particularly on grassland species.

The course consists of four Wednesday evening classes at Charwood (ACT) beginning on 18 October, plus two Sunday field trips in November including to local grassland and open woodland locations. See the enclosed flier for full details.

Unlike the Stirling College course which is exclusively grasses, the Charwood course covers herbs and other wildflowers as well as grasses. Like the Stirling course, it is aimed at beginners.

If you thought the Stirling course was good value at $45, the Charnwood course is astounding value at $5.

With only five places available to FOG, you must phone through your booking direct to FOG on (06) 257 8668 by 9 October. The first five bookings received will get the places. FOG members only, please.

Biodiversity law course 13 October—book now

The Australian Centre for Environmental Law at the Australian National University is offering a one day course on Friday 13 October 1995 at the ANU's University House in Canberra for $345 (including a book of seminar materials).

Designed for non-lawyers, the course provides an introduction to current legal regimes and policies for land-based biodiversity conservation, including—

- clearing controls—including SA and Victorian models
- endangered species legislation—ACT, NSW, Victoria and federal
- conservation agreements
- planning system approaches
- economic incentives.

While not focusing on grasslands specifically, this course could provide a good grounding for anyone interested in understanding what legal and policy mechanisms might be used to protect grasslands. Presenters are Professor David Farrier, Co-

Three great courses on offer

Director of the Centre for Natural Resources Law and Policy at the University of Wollongong, and Professor Neil Gunningham, Professor of Law and Director of the Centre for Environmental Law at ANU.

Bookings are closing now, so contact the Australian Centre for Environmental Law at ANU today if you are interested — phone (06) 249 3487, FAX (06) 249 4899.

Rainer Rehwinkel leading field course

Conservation values field course 21 October, Bungendore

Newly appointed Grasslands Project Officer with the NSW National Parks and Wildlife Service (and FOG member) Rainer Rehwinkel is leading a one day field training session exclusively for FOG members on Saturday 21 October, 9.30 am to 3.00 pm, in the Bungendore (NSW) area.

The training will provide an introduction to assessing the conservation value of lowland grassland sites, as well as an introduction to species identification. FOG member Jo Walker and others will help lead the training.

We will meet at 9.30 am at Bungendore Park (across the road from the Police Station on Gibraltar Street, Bungendore), and go from there to a series of grassland remnants in the Bungendore area, concluding at 3.00 pm.

We will break for a barbecue lunch (BYO food and drink or buy them in Bungendore), probably in Bungendore Park.

Numbers are limited (to ensure good 'teacher-student' ratios), so please book in advance with FOG (contact details back page). Please bring a hand lens if you have one, plus drinking water and sun protection.

Field trip program October-November

Dave Mallinson of FOG's Conservation Committee has organised a series of six lowland grassland field trips in the Canberra region from mid October to late November.

See grassland plants in flower — perhaps even Golden Sun Moths (*Synemon plana*) on the 25 November trip to York Park led by CSIRO entomologist (and FOG member) Dr Ted Edwards — and discover some of the ACT's remnant grasslands for yourself.

These field trips (which are exclusively for FOG members and their friends and family) are a great way to start building up your species identification skills — bring a hand lens if you have one. Or just relax and enjoy the grasslands landscape.

To avoid damage to the site, numbers are limited for most field trips. So please book with FOG (contact details back page). For more information about the program, phone Dave on (06) 250 9512 after hours.

Six field trips

Date	Time	Site	Meet at
Thursday 12 October	5.00 pm	Barton	St Marks Library carpark in Blackall Street Barton
Saturday 14 October	10.30 am	Dunlop	Townson Crescent in Charnwood, opposite Cory Place
Tuesday 24 October	5.00 pm	Kambah Pool	The first car park (first left through the gates)
Wednesday 1 November	6.00 pm	Mount Taylor	Entrance to nature reserve off Colquohoun St Kambah
Thursday 16 November	5.00pm	Caswell Drive	End of Rani Road, Acton (SW part of Black Mountain Area
Saturday 25 November	11.00am	York Park	Across the road from Macquarie Private Hotel in National Circuit, Barton (between Bourke Street and Sydney Avenue)

Monaro and Southern Tablelands Remnant Native Grasslands Project

Rainer Rehwinkel has been appointed as Grasslands Project Officer with the Queanbeyan District Office of the NSW National Parks and Wildlife Service, and took up duty in late August.

Rainer's appointment is for a six month term, funded by the Australian Nature Conservation Agency's Landscape Conservation Unit.

The project's main aim

The main aim of the project is to work with and assist landholders and land managers in the management of remnant lowland grasslands in the Monaro and Southern Tablelands of NSW, to ensure their *continued* conservation.

The grasslands of this region are typical of Australia's 'sweeping plains', and very extensive areas of unimproved native pasture still remain.

A number of significant grassland sites of high conservation value have previously been identified in the region. The project will ensure that the management regimes that have enabled these sites to retain their nature conservation values are continued.

Other significant sites, and their management regimes, will be identified—not only in the Monaro but more widely in the Southern Tablelands.

Documenting sites

Rainer will document lowland grassland sites in the Monaro which have been previously surveyed by the Royal Botanic Gardens' John Benson and consultant, Alison Rowell.

This will include several significant sites in cemeteries, travelling stock routes (TSRs), roadsides and rail reserves, and on private property, and will include some secondary grasslands as well as primary grasslands.

When visiting sites, Rainer will be looking for -

- species richness, including whether the species recorded in previous surveys are still present
- the nature and extent of threats, including whether threats are increasing or decreasing compared to previous surveys. Such threats include weed invasion, overgrazing, and soil disturbance from grading or roadworks
- potential habitat for endangered flora and fauna, including *Tympanocryptis lineata pinguicolla* (Southern Lined Earless Dragon), *Synemon plana* (Golden Sun Moth), *Keyacris scurra* (Wingless Grasshopper), *Swainsona recta* (Small Purple Pea), various orchids, and *Dodonaea procumbens* (which in the Monaro is near the northern end of its Australian range).

Rainer will look for other potential Monaro sites which have not been previously surveyed, possibly extending to some other areas beyond the Monaro region.

Field days to be held

Awareness raising

Another important part of the project will be to lift the profile of lowland native grasslands in the community.

Rainer is keen to work with a wide range of stakeholders, including the NSW Department of Conservation and Land Management, schools, farmers, managers of cemeteries and TSRs, local government Councillors and employees, Landcare groups and catchment management groups.

One aim is to hold field days at selected sites as a means of disseminating information on the conservation value of grasslands.

Leaflet planned for landholders

Rainer will help with the production of a leaflet for landholders and managers, to highlight the uniqueness and values of lowland grassland ecosystems and their conservation management.

About Rainer

Rainer was born in Cooma, spent his first four years in Nimmitabel, and now lives in Bungendore. He worked in horticulture for many years, gaining propagation expertise and an interest in native plants—including grassland species which were not commercially available.

He completed a degree in Applied Science at the University of Canberra, graduating in 1994 with Honours (after a thesis on the effects of isolated Eucalyptus melliodora trees on native pastures in the NSW southern tablelands).

Since then Rainer has carried out survey work with the University of Canberra on projects associated with ACT Agriculture and Landcare, lectured and tutored university students in ecology, and worked with the ACT Parks and Conservation Service's Wildlife Research Unit on surveys of lowland native grasslands.

Rainer can be contacted during business hours on (06) 298 0303 (Fax (06) 297 8408) or by mail at PO Box 1189 Queanbeyan NSW 2620.

Spring burn for ACT grasslands

Under the direction of Grasslands Officer, Sarah Sharp (of the ACT Parks and Conservation Service's Wildlife Research Unit) and Kevin Green of ACT City Parks' Technical Services Unit, a 15 m x 30 m section of roadside grassland in Dudley Street Yarralumla (ACT), was burnt on 18 September by City Parks as part of Sarah's experimental grasslands management work.

Research objectives

The aim of the burn was not hazard reduction, but research into how grasslands can be helped to survive and prosper.

Sections of five other urban ACT grasslands— at Yarramundi Reach, Wybalena Grove (Cook), the University of Canberra, Evatt (off William Slim Drive) and Campbell Park—will also be burnt this month, weather conditions permitting.

At each of those six locations, Sarah has three plots under study. At each location the aim to is burn one plot in Spring, burn one in Autumn, and leave one plot unburnt as a control.

Sarah is particularly interested to see the effect on weeds, especially exotic annual weeds. Annual weeds present in the Dudley Street grasslands include *Briza maxima*, *Briza minor*, and *Vulpia*, *Aira* and *Bromus* species.

Will the Spring burn deter such weeds ? Sarah will be monitoring this and other changes over the coming months.

As for the effect on perennial weeds like *Hypochoeris radicata* and *Plantago lanceolata*, the burn may not deter them but it may make them more visible and thus easier to target for eradication. The six locations have all been mown in recent years, but at different frequencies. For instance Dudley Street has been mown approximately annually, whereas Yarramundi Reach has been mown once every 3-5 years.

Putting up with a little smoke

Getting permission to burn urban grasslands in the ACT is not easy, because of possible air pollution from the smoke. Canberra experiences inversion layers which can delay dispersion of smoke and this, combined with the large number of wood burning heaters already contributing to smoke levels, means that authorities can be reluctant to grant permission.

Yet other methods of management such as mowing (slashing) may not be as effective as burning. Mowing involves vehicles going onto the grassland— risking soil compaction and spread of exotic weeds from tyres—and can result in build up of a thatch of dead grass, which can inhibit the germination and growth of inter-tussock herbs and other grassland species. The administrative costs of burning are the same as slashing, but burning may be better for the grasslands, particularly now that the mammal herbivores which once cropped grasslands are absent.

The Dudley Street burn was of moderate rather than intense heat, and was achieved by firing the perimeter and allowing the fire to spread of its own accord over the whole site.

On this occasion diesel/petrol burners were used to ignite the fire. However in future gas burners will be used wherever possible for grassland fires in the ACT, since depositing petroleum based fuel on grasslands could harm the species.

Our thanks to Sarah for inviting FOG to observe the burn. We await the results of her research with interest, and hope that the authorities will give the strongest possible weight to the needs of grassland ecosystems when assessing requests to burn.

Having pushed lowland grasslands to the brink, we humans can certainly put up with a little smoke now and then if fire can assist the long term health of our grasslands.

Grasslands and the rural sector

Sandy Kay

Conservation of native grasses and grasslands/grassy woodlands on farms, both commercial and hobby, is just as important and achievable as conservation of urban patches.

Some farms still have quite good patches of grassland on them, others still have native grasses as understorey.

Urbanisation often more destructive than farming

The Poplars at Queanbeyan and the new Canberra suburb of Dunlop are good examples of how farming practices can be much less harmful than subsequent urban subdivision and its attendant building, concreting and general destruction to 'improve' a grassland into a 'desirable place to live' as the real estate blurb for Dunlop says.

The issue of native grasses and grassland within the rural sector is really an issue of management practices.

Some management practices destroy native vegetation, some reduce the diversity of species (both flora and fauna).

Cropping and continuous high stocking rates, superphosphating and introduction of 'improved' exotic grasses are extremely hazardous management practices. Light occasional grazing by hard hoofed animals causes some damage to the soils and the grasses, and weeds are introduced in the droppings.

Role of Aboriginal fire mosaics

Aboriginal vs European methods

Archaeological evidence supports the theory that one of the reasons that so much of Australia was grassland, as recorded in the diaries and reports of the first European explorers, settlers and botanists, was the management practices of the original inhabitants of the continent.

Aboriginal firestick hunting was a farming methodology. The fire mosaics discouraged regrowth of difficult vegetation for hunting, and encouraged grazing animals onto the regrowth.

This does not mean that burning is necessarily the right thing to do today.

Settlement patterns today are completely different and the information base of Aboriginal management decisions to burn was probably far superior to the current Western based information/decision making base.

Research by Sarah Sharp (see page 7) and others will shed light on the role of fire in modern grassland management, but for now we must proceed cautiously.

Unfortunately our continent has responded extremely poorly to the agricultural methods that have been imposed on it for the last two hundred and eight years. Salinity and soil erosion are the more obvious signs of the land's sickness.

European farming practices might well have been suited to Europe but Australia is an older continent with poorer soils and completely different weather patterns of drought and flood.

The ecosystems in 1788 were a response to, and an integral part of, the continent and, as I said earlier, the lengthy human management system of Aboriginal habitation.

Even more unfortunately the technofix approach of scientific research in the past has often exacerbated problems by encouraging overstocking, with introduction of exotic grasses and fertilisers, irrigation, depletion of soils through overcropping and farming in marginal areas.

The study of ecology has not always been seen as relevant to farming.

I personally think that, although the two seem to be diametrically opposed, they both need to be used for our species' long term survival.

Our varied, nutritious (and not so nutritious treats) diet is dependent on efficient agriculture. Those demands for plentiful meat, bread, fruit, vegetables etc are economic messages for farmers to produce more from their land.

If there is no incentive for farmers to protect native flora and fauna, then the land they manage—its ecosystems having already been disrupted—is going to continue to degrade.

We, the concerned members of FOG, can be instrumental here by lobbying governments and providing educational support outside the city areas.

Introduced grasses have not always been the 'improved' pasture that research promised. The latest research is rediscovering that native grasses can and do outperform the introduced ones.

In times of drought *Themeda*, stipas, danthonias and other natives are the ones that the stock survive on and that stop the soil eroding and salination being so severe. On steep hilltops exotics don't seem to be able to survive at all.

Community Grasses Project

One interesting research project is the Murray Darling Basin Commission's Community Grasses Project.

It is investigating farmer-driven research, where government funded research stations respond to farmers' concerns (e.g. about steep hills) rather than imposing research upon farmers.

Although they are seriously looking at reintroduction of native grasses, they are just short of acknowledging ecological concerns by studying what they call deep rooted persistent perennials for these steep hilltops.

I attended a conference in Albury-Wodonga conducted by the Community Grasses Project, thanks to Clive Thomas, the Chairman of this group, contacting FOG.

The conference was an intensive day of talks from a combination of government researchers and farmers involved with field trials of these grasses.

Ecological concerns were addressed by several speakers and one farmer, Owen Whittaker, talked about ecologically sustainable farming. Unlike most farming practices, he allows regrowth of native vegetation and uses it to really improve his farm e.g. natural windbreaks and wildlife corridors in contrast to the often seen neat planted rows of exotics.

Another interesting aspect of the conference was the drive to Albury with FOG member Geoff Butler who pointed out the extreme level of destruction of the understorey and the resultant die-back.

Ecologically sustainable farming

FOG's role

Truly Australia is in need of groups like FOG who can provide information, education, identification and lobbying to tip the balance of farming practices into a more ecologically aware way of thinking and behaving, to protect still existing grassland and grassy woodland remnants.

If you are interested in rural issues and would like to be involved in this aspect of FOG's work, please contact Sandy Kay on (06) 253 3320 during evenings or contact FOG (see back page for contact details.)

Pygmy Bluetongue found in SA grasslands

FOG member, Dierk von Behrens, very kindly provided FOG with a 1994 article by M N Hutchinson, T Milne and T Croft (*Redescription and Ecological Notes on the Pygmy Bluetongue, Tiliqua adelaidensis (Squamata: Scincidae)*, which is summarised below.

The Pygmy Bluetongue, a moderate sized skink, had been regarded as one of the most seriously endangered of Australia's reptile species, if not actually extinct.

Spider holes used for shelter

However a population has recently been discovered near Burra, about 160 km north of Adelaide in South Australia.

Here the animals are diurnal inhabitants of open tussock grasslands, and use spider holes for shelter (as do the Southern Lined Earless Dragons which live on The Poplars in Queanbeyan, NSW). They eat a wide variety of invertebrate animals but also leaves, flowers and other plant material.

The article describes how the animals were caught, including pitfall traps, hand collection and 'fishing' for them with grasshoppers tied to a piece of cotton thread at the end of a three metre bamboo pole held outside the entrance to the lizard's burrow.

'Fishing' with grasshoppers as bait

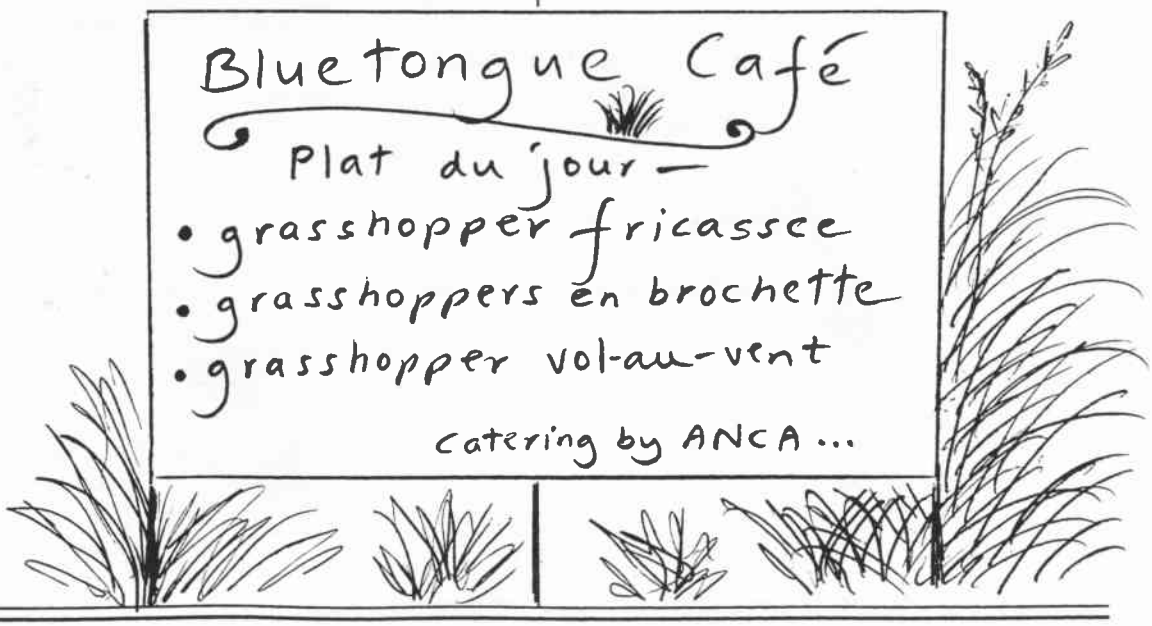
Initially some lizards were fitted with radiotracking devices attached to their shoulder, but this was discontinued after a lizard died.

Although the site where the lizards were found is treeless, it is unclear whether the grassland is primary (original grassland) or secondary (as a result of tree clearing by Europeans). Grasses present include *Stipa* (probably *Stipa eremophila*, and also *Stipa nodosa*), plus *Danthonia* species and *Aristida behriana*.

The authors concluded that the precise composition of the understorey may be less important for the bluetongues' survival than the tussocky structure which provides ground cover throughout the year.

On reasons for its decline, the authors conclude that pasture improvement and cropping are to blame. Ploughing permanently alters the vegetation and ground cover and destroys the burrows — leaving the bluetongues without shelter and at the mercy of predators—as well as killing the animals directly.

The authors' work was made possible by grant support from the Australian Nature Conservation Agency's Endangered Species Program. The article appears in *Transactions of the Royal Society of S. Aust.* (1994), 118(4), 217-226.



Victorian grass harvester

Our thanks to Craig Bray of The Organ Pipes National Park in the Western Plains area of Victoria for sending us the following information on a native grass harvester being developed by the Park jointly with—

- Friends of Organ Pipes
- Friends of Legless Lizard
- Sunbury Landcare
- Truganina Landcare.

The Western Plains grasslands

When Europeans settled Victoria over 160 years ago, it was the abundant native pastures of the Western Plains that attracted them.

Stretching westwards from the Yarra River to the South Australian border, some 21,000 square kilometres of native grasslands were quickly occupied and altered.

Today less than 0.03 % of Victoria's original native grasslands still exist.

The introduction of exotic pastures and clovers, ploughing, and the use of fertilisers have led to the replacement of native grasslands with exotic pasture.

In an attempt to prevent the extinction of the Western Plains grasslands, surviving remnants on Crown land, and private land where possible, are being protected by fencing, sign-posting, and weed control works.

Besides protecting remnant stands of native grasslands, conservation measures are aimed towards restoring lower quality remnants and sometimes re-establishing native grasslands from scratch.

Role of the harvester

The harvester is being developed to help restore lower quality existing remnants of native grassland by replacing weeds with native species. This is done by harvesting native seed and sowing it into a degraded area following weed control works.

Kangaroo Grass (*Themeda triandra*) is generally the dominant species in Western Plains grasslands. Because it is relatively abundant, and readily establishes itself if certain requirements are met, Kangaroo Grass is the species most widely used for native grasslands restoration and restoring weed infested areas.

The process of harvesting Kangaroo Grass is labour intensive. Briefly the process is as follows:

- the Kangaroo Grass is monitored closely after flowering to determine when the seeds are ripe. In the Western Plains region, this usually occurs around the Christmas-New Year period.

- upon the seeds ripening they must be harvested quickly before the seeds drop from the plant. This may be a matter of days.

- currently a tractor mounted sickle-bar mower is used to cut the Kangaroo Grass. Following mowing, the grass is raked up manually and then put into wool bales by hand for transportation . The sites where the Kangaroo Grass is harvested are usually rocky. (In most cases it is only the rockiness of the site that has prevented ploughing and 'pasture improvement' in the past.) The rocks make it impractical to use standard agricultural harvesters, making the task both onerous and labour intensive.

The relatively gentle cutting action of the mower retains the seeds in the awn of the Kangaroo Grass.

The filled bales are then transported to the vegetation restoration site, where the straw and seed heads are spread across the site so that an even mat of hay results.

In the following spring, after the seeds have worked their way into the soil, the site is burned to remove the slash. In November-December the seeds germinate.

0.03% of Victorian grasslands left

One-pass harvesting means less damage

New harvester designed

In an attempt to make harvesting cheaper and easier, rangers at the Organ Pipes National Park, in conjunction with the above groups, have now designed a grass harvester that will greatly simplify the process.

Their Native Grass Seed Harvester consists of a forward control 4 X 4 wheel drive diesel tray truck of around 2 tonne payload, fitted with a header comb, delivery auger and storage bale facility.

The truck is fitted with a modified and adapted Massey Fergusson 12 ft header comb reduced to 8 ft width and mounted to the front of the truck.

The comb is hydraulically height adjustable, driven by a hydraulic power pack located on the tray and controlled from the cabin.

Harvested material is handled by means of a 150 mm diameter auger which transports the material from the comb front to the rear of the tray, where it delivers the material directly into a wool pack suspended in a frame.

The designers find the unit to be mobile, self contained, simple and relatively inexpensive to operate, and to offer a highly effective use of time and labour.

It delivers a high seed/material ratio, because only a minimum amount of the plant is harvested, plus minimum seed damage due to its gentle handling characteristics. Another advantage is that its one-pass harvesting method means that there is less damage to plant material than if the material were double-handled.

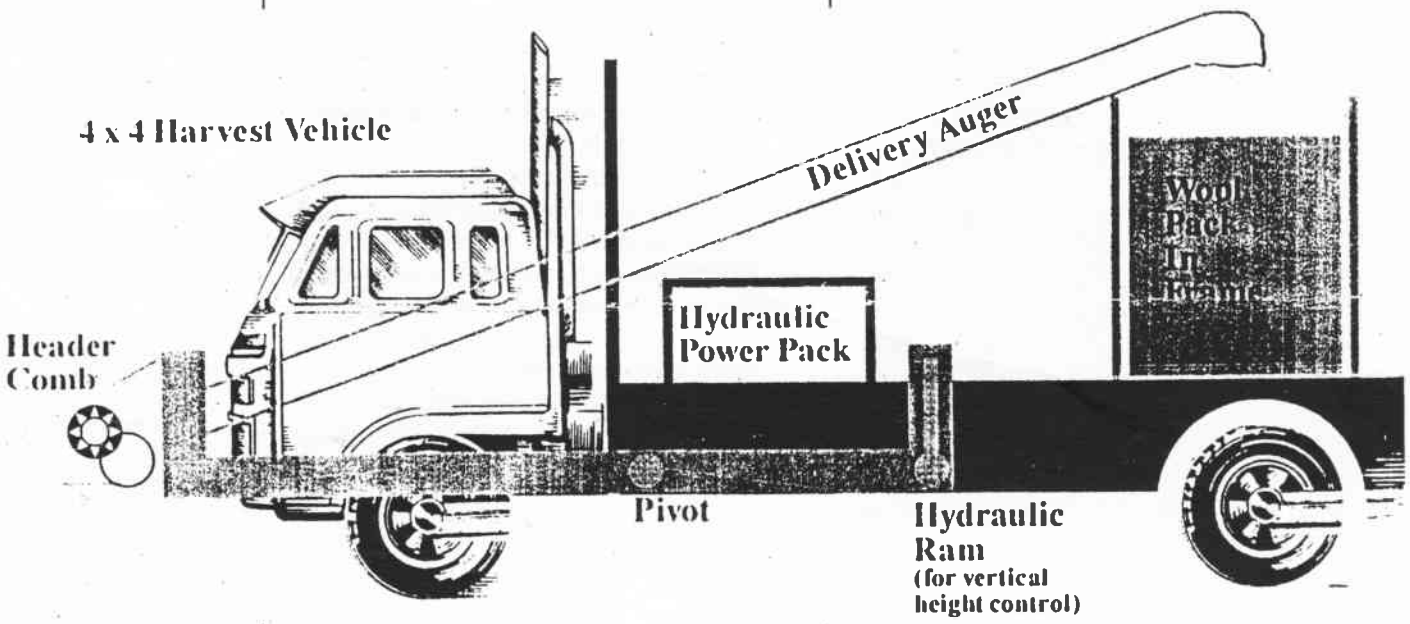
Because the truck does not exceed maximum vehicle widths for conventional roads, it can be driven quickly between sites and there is no set-up time between sites (unlike a tractor).

The equipment is not permanently fitted to the truck —it can be easily removed and transfered to similar vehicles with only minor adaptations.

To find out more

If you would like to know more about the harvester, Craig Bray can be contacted on (03) 9390 1082 or by mail at :

Organ Pipes National Park
c/o Post Office
DIGGERS REST VIC 3427



Yarramundi Reach walks

The National Museum of Australia is leading four walks through theYarramundi Reach grasslands on the north-western shores of Lake Burley Griffin in Canberra on Friday 29 September, Saturday 30 September, Friday 6 October and Saturday 7 October.

The walks start at 10.30 am at the Museum's Yarramundi Visitor's Centre on Lady Denman Drive. They are aimed at family groups with no prior knowledge of grasslands, and take around 1½ hours to complete.

The walks will provide an introduction to the Aboriginal and European history of the site, as well as its geology and flora. FOG will play a modest role in helping lead the tours.

Phone the Museum on (06) 242 2107 to book for the walks.

Cook/Aranda walks

On Sunday 15 October Friends of Mount Painter, Friends of Aranda Bushland and other groups are hosting a day of nature walks and Landcare activities in the Cook/Aranda (ACT) area, including the Wybalena Grove grasslands. FOG will be playing a small role, at the invitation of the host groups.

If you would like to know more about the day's events, phone Edwina on (06) 257 8668.

Endangered species law —ANPC talks 4 November

The Australian Network for Plant Conservation has invited FOG members to join ANPC to hear guest speakers outline ACT and NSW laws governing endangered species and communities.

Final details are still being worked out, but the talks are set down for the morning of Saturday 4 November in the Australian National Botanic Gardens' Theatrette in Canberra.

There is no limit on numbers, but please phone FOG (see back page for contact details) in early October to establish what time the talks start.

1993 conference proceedings available

In September 1993 a workshop and public seminar entitled *Management of relict lowland grasslands* was held in Canberra, organised by the Wildlife Research Unit, ACT Parks and Conservation Service.

The proceedings of this event have now been published, and can be purchased by sending a cheque for $15 (made payable to ACT Parks and Conservation Service) to:

Sarah Sharp, Wildlife Research Unit
ACT Parks and Conservation Service
PO Box 1119 TUGGERANONG ACT 2901.

The proceedings will be mailed to you (postage is included in the price).

Melbourne Zoo to breed Golden Sun Moth

Melbourne Zoo's Cheryl Deane hopes to breed the Golden Sun Moth (*Synemon plana*) in captivity in the zoo's Butterfly House, for reintroduction into the wild.

She plans to dig up Danthonia plants, roots and all, in the hope that the moth's larvae are on the roots.

FOG has supplied the zoo with a small quantity of the *Danthonia carphoides* (Short Wallaby Grass) seed which FOG members collected in December at the Belconnen Naval Radio Station, to help the zoo grow extra plants on which the moth can feed during the captive breeding program.

The zoo's aim is to reintroduce the moth onto sites which, because of isolation from existing moth populations, it cannot repopulate of its own accord.

As FOG members will recall from FOG's December 1994 newsletter, which featured an article by Ted Edwards, the wings of the female moth are reduced in size so that, al-

FOG helps out zoo with Danthonia seed

though they can fly, they rarely do so unless frightened and even then they only fly for short distances.

If you would like more information on this project, or if you have any information that might assist Cheryl, you can contact her on (03) 944 7818.

ACT and Sub-region Planning Strategy

How does greenhouse affect grasslands

On 4 September FOG lodged a submission commenting on the *Draft ACT and Sub-region Planning Strategy* which had been released in May by the ACT and Sub-region Planning Committee for public comment.

Although welcoming the strategy's acknowledgement of the importance of lowland native grasslands and grassy woodlands, FOG's submission strongly criticised its failure to address land clearing and human population growth in the region.

List of ACT grassland sites

Do you know of grassland sites?

Sarah Sharp (Grasslands Officer, ACT Wildlife Research Unit), has kindly allowed us to include with this newsletter a draft list (and map) of lowland grassland sites in the ACT, which Sarah has prepared.

The list is a work in progress, and Sarah is keen to know of any further sites which FOG members may be aware of.

If you know of any such sites, please enter details on the blank list and map enclosed and forward it to FOG (see back page for address). We will collate details of all sites received and forward to Sarah.

Please mark the site's location as accurately as you can, including map grid references if possible, or at least mark clearly on a street directory or other detailed map.

Sites in NSW are also welcome - we will forward copies of those to Rainer Rehwinkel, newly appointed Grasslands Project Officer with the NSW National Parks and Wildlife Service.

Greenhouse gas effects

On 10 August *The Age* newspaper in Melbourne (page 7) reported that research by Dr Ian Woodrow's botany research team at the University of Melbourne has found that high carbon dioxide levels from rising greenhouse gases reduces nutrients and increases toxins in eucalypt leaves, with serious implications for native animals which consume the leaves.

Dr Woodrow predicts that by the year 2030 some leaf-eating insects and other native animals may have to eat 30 % more leaves to meet their nutritional needs, and may therefore require much larger and richer habitat areas than before. He expects the insect population to suffer the greatest damage.

If anyone is aware of similar research being done on the effect of greenhouse gases on native grasses or grassland species, please let FOG know (contact details back page).

Since lowland grasslands are already reduced to 0.5 % of their former range in south-east Australia, and since insects play a crucial role in grasslands as herbivores and nutrient recyclers, any such effect in grassland ecosystems could be devastating.

FOG Education Committee meets 3 October

The next meeting of FOG's Education Committee will be at 5.30 pm Tuesday 3 October at the Canberra and SE Region Environment Center in Kingsley Street, Canberra City. Any FOG member interested in FOG's education role is welcome to come along and join the committee.

The committee is exploring concepts for a poster promoting grasslands conservation, as well as looking at the broader issue of how FOG can best get its message across to key sectors of the community.

If you can't make the meeting but have a suggestion about how FOG can be most effective on the educational front, feel free to give any of the Education Committee members a call - see back page for contact details.

Floriade leaflet promotes grasslands

Grassland conservation messages crop up in some unexpected places these days.

Full marks to Floriade Manager, Evonne Robinson, for agreeing to include information about Canberra's lowland native grassland ecosystems in the ACT Government's leaflet on the Australian Native Garden at this year's Advance Bank Floriade.

Over 10,000 copies of the leaflet will be given away to local, interstate and overseas visitors to Floriade.

Can you help ?

Although a large number of FOG members have generously volunteered to be on FOG committees - see page 16 - we still desperately need to fill the following positions :

- Coordinator (Edwina is just filling in and leaves in the New Year)
- Deputy Coordinator
- Treasurer
- Secretary
- Membership Officer
- Newsletter Editor.

FOG's long term viability depends on us filling these positions. If you can help, even just for 12 months, FOG will be eternally grateful. Please phone FOG on (06) 257 8668.

We need your help!

Committee members' contact details

	Committees
Edwina Barton (as for FOG - see below)	**Exe, CI**
Meg Bishop 67 Bonython St DOWNER ACT 2602 phone (06) 257 7438 h	**Edu**
Sunni Boulton 76 Dooring St DICKSON ACT 2602 phone (06) 249 6332 h	**Con**
Alison Elvin 13 Frankland St HOLDER ACT 2611 phone (06) 288 6001 h	**Con, Edu**
Graeme Evans GPO Box 2443 CANBERRA CITY ACT 2601 phone (06) 251 1294 h	**CI**
Graeme Gibson 67 Bonython St DOWNER ACT 2602 phone (06) 257 7438	**Edu**
Jan Gough-Watson RMB 1025 Joe Rocks Rd BUNGENDORE NSW 2621 phone (06) 238 1654 h	**Exe, Lan**
Penny Greenslade 80 Springvale Dr HAWKER ACT 2614 phone (06) 254 4704 h	**Con**
Janette Hannan 111 Florey Dr McGREGOR ACT 2615 phone (06) 254 3060 h	**Edu**

Key to Committee names
Exe = Executive; Con = Conservation; Edu = Education; Lan = Landscaping & Horticulture; CI = Constitutional and Incorporation

	Committees
Mary Anne Highfield 3 Savery St GARRAN ACT 2605	**Con**
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Sandy Kay 26 Templeton St COOK ACT 2614 phone (06) 253 3320	**Exe, Edu, Lan**
Dave Mallinson 76 Bacchus Cct KAMBAH ACT 2902 phone (06) 231 4327 h	**Exe, Con, Lan**
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FOG membership now totals 178

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