

News of Friends of Grasslands

supporting native grassy ecosystems

July- August 2000



FOG'S COMING EVENTS

WINTER 2000

Saturday 8 July, 2pm – Slide afternoon, Alpine grassland flora The winter slide afternoon provides an opportunity to see wonderful grassland colours in the warmth of Mugga. This year will feature NSW and Victorian alpine grasslands with some other spectacular vegetation shots. This is also a very easy way to improve one's understanding of vegetation communities and plant identification skills. Presenters include David Eddy, Michael Treanor and guest alpine enthusiast, Ian Haynes. Ian is a bit of a specialist in unusual alpine landscape photos. Mugga-Mugga is on Narrabundah Lane, Symonston, opposite the Therapeutic Goods Administration. Tea and coffee will be provided and there will be ample time to chat. Definitely try to make this occasion.

Saturday 22 July, 9am - Radio Hill, Cooma, Briar removal (part VII) If you can join us for the next skirmish in this worthwhile campaign please contact Margaret.

Future Radio Hill weeding dates:

26 August, 9am - part VIII

30 September (??) - part IX

Thursday 7 September – Threatened Species Day Unveiling of grassland signs at Radio Hill. This will be a signing off of FOG's Monaro Golden Daisy Project at Radio Hill and will mark the finishing of fencing, major progress with weeding, a management plan, a brochure, and signage. Last year we managed to get a good turn out for this, and, as this will be a major FOG achievement, please put this date in your calendar.

Saturday 23 September, 2pm - Another Conder Wander Our visit to Conder in 1998 proved very fruitful and this year we'll explore one or more areas nearby. The Eaglemont site, Tuggeranong Hill or Mount Rob Roy Reserve will be chosen for an afternoon walk.

Saturday 7 October – White Box Woodlands at Cowra Dr Donna Windsor (Greening Australia) will take us to several Grassy Box Woodland remnants in central-western NSW. We plan to meet Donna in Cowra at 10am. Donna was a speaker at the recent Stipa conference and her topic was 'the Importance of grassy understorey: a conservation perspective'.

Saturday 28 October – Halloween northern grasslands tour Led by Rainer Rehwinkel

Saturdays 4 AND 18 November 2000 - FOG rail easement survey. Plans are under way for a rail easement survey of areas between Williamsdale and Cooma, to be conducted on 2 Saturdays in November 2000. The survey will be led by Rainer Rehwinkel, David Eddy, Sarah Sharp and Andrew Paget.

At the moment we are looking for expressions of interest from members who are willing to help us with this activity. Specifically, we are looking for help with identification, data recording, transportation, compilation of results, final report, and photography. So, please email or phone Margaret if you can help with any of the above.

Saturday 11 November – Mulligans Flat grassland Mulligans Flat contains large areas of open forest, grassy woodlands and grassland areas. We'll visit the grassland this year.

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 information about activities (including times, venues and carpooling details), please contact Margaret Ning on 6241 4065 (home) or 6252 7374 (work).

1-2 December – Workshop on conservation of grasslands outside reserves and Monaro grasslands visit. The workshop will be held at the Cooma Ex-services Club (Friday) and followed by visits to three spectacular grasslands (Saturday morning). The workshop will bring together key stakeholders in grassland conservation: NSW Farmers Association, NSW and ACT governments, land owners and community groups. Speakers will also share their Victorian, South Australian

and Riverina experience. The timing has been chosen to see Monaro grasslands at their most spectacular. For interstate visitors and those from other parts of NSW additional grassland visits can be arranged. Costs will be kept to a minimum. Please keep these dates free and encourage other organisations to avoid these dates in their programming.

ALSO OF INTEREST

21-24 August – 11th Australian Rangeland Conference: "Past Achievements, Future Challenges", Broken Hill (no contact details on hand though)

29-31 August - Northern Grassy Landscapes Conference, Katherine, NT

Following the success of the Bushcare Conference, 'Balancing Conservation and Production in Grassy Landscapes', held in South Australia last year, Bushcare is sponsoring a Northern Grassy Landscapes Conference to be held in Katherine, NT. This conference, which will be organised and hosted by the CRC for Tropical Savannas, will focus on the restoration and management of grassy landscapes in northern Australia. The conference will be of particular interest to private land managers, conservationists, researchers, local government, and the mining and tourism industries in Queensland, Western Australia and the Northern Territory.

Contact: Peter Jacklyn at the Tropical Savannas CRC, phone (08) 8948 6285, fax (08)89467107, email <peter.jacklyn@ntu.edu.au>, web-site <savanna.ntu.edu.au>.

1-30th September Earth Alive! Biodiversity Month Help to promote the conservation of Australia's species and ecosystems, and promote your community's conservation activities. For an Earth Alive information kit that includes an order form for free educational and community awareness materials, contact the Community Biodiversity Network on 02 93807629, email: earthalive@cbn.org.au or visit our website <http://www.cbn.org.au/projects/earthalive/2000.html>

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NEWS ROUNDUP**Congratulations Bess Sledge**

Bess is well known in conservation circles and in particular for leadership of the Cooleman Ridge Park Care Group. Bess is also a FOG member. This year Bess was declared the ACT Volunteer of the Year in the Conservation Section. Congratulations and thanks for your untiring efforts, leadership and support for FOG.

Congratulations Canberra Ornithologists

Our sound alike, COG, is to be congratulated for launching (on 14 June) the latest edition of *Birds of Canberra Gardens*. This is really an excellent publication on Canberra birds with almost all captured in superb photos. The main aim of the publication is to provide data on bird observations in Canberra which COG members have been recording for many years. The book is available at COG's monthly meetings (second Wednesday of the month at 8pm) at Forestry House, Yarralumla, at the members' price of \$25, or at most bookshops around town at RRP \$30. We shall have a more complete review in our next issue.

Also on 14 June, David Geering gave an excellent talk to COG on work to save the Regent Honeyeater. David is Regent Honeyeater Recovery Coordinator and his talk brought together extensive information on the findings of this woodland/forest bird and attempts to save it. This once common bird is now down to 1000-1500 birds in the wild due to their habitat disappearance. Favourite trees in the ACT, where small numbers visit, are Yellow Box which have good nectar flow during breeding time. Work to save this bird includes captured breeding at Taronga Park Zoo and extensive strategic planting of suitable trees. For more information e-mail: david.geering@npws.nsw.gov.au or write to PO Box 2111 Dubbo NSW 2830.

Grassy ecosystem grants announced

The WWF/NHT Devolved Grants for Grassy Ecosystems were announced on 26 May. The total value of grants was \$300,000. The one awarded in the ACT was for an information kit for land managers (\$22,000); this was organised by Sarah Sharp - congratulations. NSW obtained four grants, of which three were local – Restoration of Remnant Vegetation on Middlingbank Peninsular (\$9,000), Bega Valley Remnant Grassland Vegetation Management Plans (\$10,000) and Old Portion of Bombala Cemetery (\$3,000). Certainly FOG will want to look at progress on these four. The Riverina Grasslands Project (\$74,000) aims to target high-conservation sites in that area and should be very exciting. Thirteen projects were funded in Victoria and another eight in SA. An excellent write up of these grants can be found in *Grass Clippings*, June 2000 issue, which is an excellent source on grassland issues. For an e-mail copy, contact helenr@vnpa.org.au. Round two of these grants will open on 4 August with applications closing on 13 October. Geoff Robertson and Sarah Sharp are the ACT representatives on the panel but also have a strong interest in NSW – please contact them for details.

ACT prison developments

Newsletter readers will be aware that FOG has been particularly interested in the prison site and may have influenced the choice of the proposed Callam Brae site. In 1999, FOG made a submission to the Legislative Standing Committee on Justice and Community Safety on the siting of the prison and gave verbal evidence. It argued that the location of a prison at the site was not inconsistent with grassland and threatened species conservation and, if the prison siting and development was handled correctly, there may be a positive spin-off for conservation. However, it will be particularly important that the detail be got right. In our last newsletter we mentioned further enquiries FOG had made about conservation issues at the site.

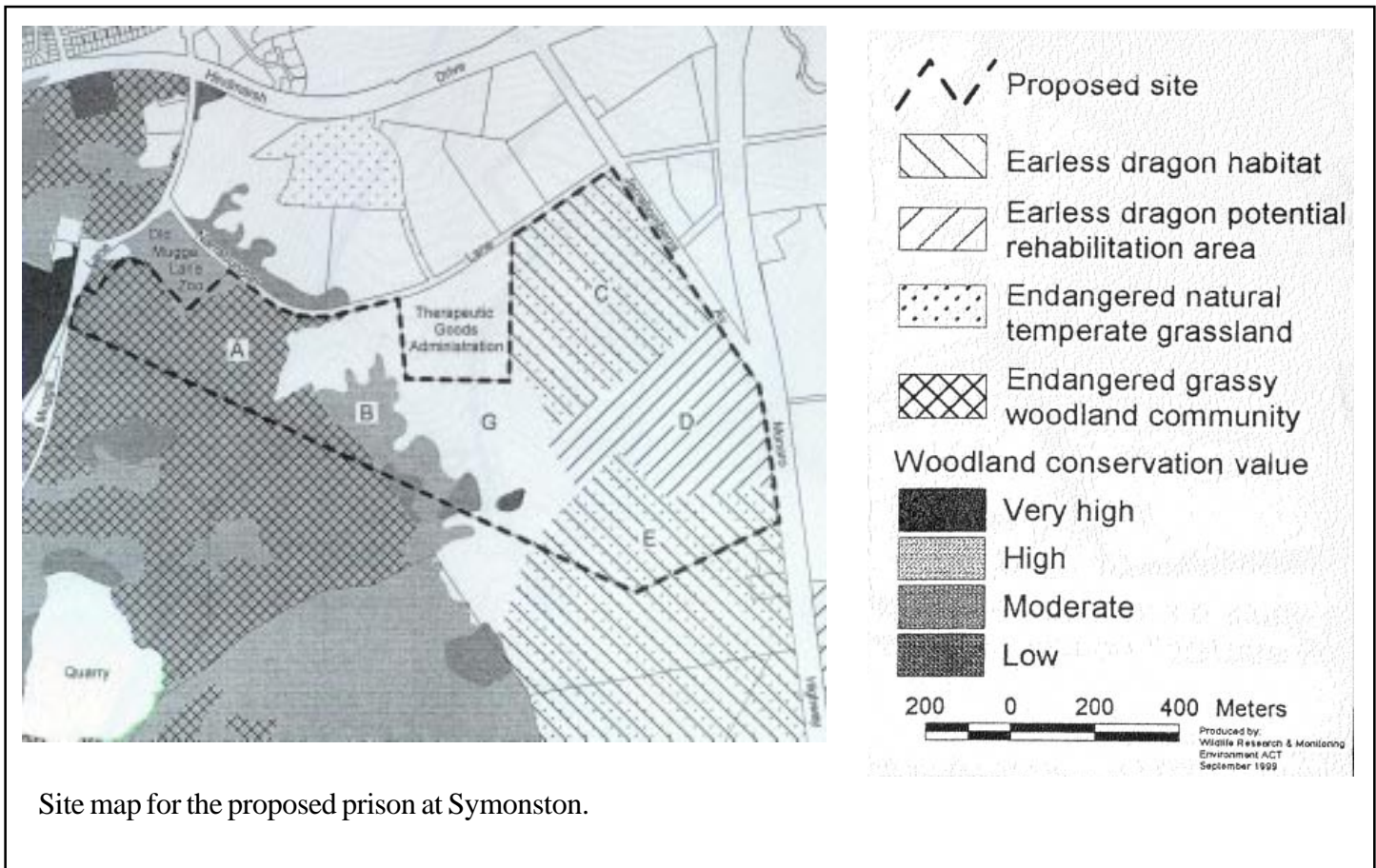
FOG President, Geoff Robertson, was asked to be on the recently established ACT Prison Community Panel to represent conservation group interests in the prison establishment. Geoff accepted because he can see this is an opportunity to combine conservation with many other community endeavours, and considers that he is familiar with many social, welfare, mental illness, and Indigenous issues through his professional and personal

experience. So far he has been part of three prison visits, a weekend workshop, attended a number of panel discussions, and prepared one paper on community participation.

He provided the following information about the conservation issues at the site. So far the exact location of the prison has not been decided – there is also a (remote) possibility it may be located elsewhere. To understand the location of and issues at the site, the reader should look at the map (this is taken from the Government Response on the Siting (Report No. 3 of the Standing Committee Inquiry)). Many readers will be familiar with the location of the proposed prison site, as its northern boundary is Narrabundah Lane – and Mugga-Mugga Education Centre, a site for many FOG activities, is on the northern side of Narrabundah Lane.

The map shows that the site on the western side contains areas of moderate conservation value grassy woodland (A), areas of no value (G) and endangered grassland and Grassland Earless Dragon habitat (C and E). Area A contains Yellow Box and Red Gum and the grassy understorey is substantially native. It is also part of the sequence of areas from Mt Mugga to East O'Malley. Area B is described as 'not of the endangered type' – it contains Yellow Box, Red Gum and Apple Box but the understorey is largely exotic. Again it is part of a linked set of vegetation remnants. Area G is highly modified but contains some native grasses. Areas C and E are described as native grasslands of low botanic significance, dominated by native grasses (largely Spear Grass) and with low native forb (wildflowers) content. D is described as a native pasture. C and E contain the Dragon and D is a potential site for them. D is north of and borders a much richer grassland community. The latter has high botanical significance and contains several uncommon plant species. It is a prime Dragon site and contains populations of threatened species Golden Sun Moth, Perunga Grasshopper and Pink-tailed Worm Lizard.

Recently the Grassland Earless Dragon was declared a separate species. It is given the highest level of legislative protection but that could change given that it has now been found in several areas around Cooma, some of which have been reported in this newsletter. However, early research on the two populations is indicating they may be different sub-species.



Site map for the proposed prison at Symonston.

The Callam Brae homestead is a good example of a modest house from the soldier settlement period build between 1920 and 1925. The house and related buildings are well documented and photographed in the Government's Response (referred to earlier). These buildings are to be found on the southern border of the site south of the Therapeutic Goods Administration Building. An old brickworks and orchard are also to be found at the site. Nothing of Aboriginal significance has been found, but two areas with potential for Aboriginal sites have been located south west of the Therapeutic Goods Administration Building.

The need to take account of all these issues and their implications such as drainage and the building of fences without creating perches for raptors makes the task a challenge. These issues, says Geoff, can be easily pushed to one side when the other enormous issues are placed on the table.

The ACT Government's objective is to have a facility which will house up to 300 prisoners (currently about 140 are located outside the ACT) and remandees (the numbers here range from 40 to 70). All security levels and both sexes will be catered for. Government and Panel members are keen to give inmates

the best opportunity to rehabilitate. However, this will be a very tall order and Geoff says that the issues are mind-bogglingly complex. The Government is employing consultants to get the tender specifications right and things should progress quickly in the next twelve months. The Government is actively pursuing its preferred option for a private prison.

The Panel also includes representatives from local Symonston residents, ACT Crime Prevention Committee, ACT Parole Board, Mental Health Foundation, Women's Consultative Council, Alcohol and Drug Foundation of the ACT, Australian Federal Police, ACT Aboriginal Justice Advisory Committee, ACT Council of Social Service, the Official Visitor, ACT Churches Council, ACT Bar Association, Prisoners Aid ACT, Women's Legal Centre, Canberra Institute of Technology, the ACT Trades and Labour Council and the ACT Chamber of Commerce. There are no prisoner, victims or prison staff representatives. Geoff would be happy to discuss any matters about the prison as he is meant to be a conduit for conservation interests.



Radio Hill-Part 4

On a sunny Saturday 29 April twelve (9 FOG members and 3 from the World Wide Fund for Nature Sydney office) took part in a working bee at Radio Hill. The group enthusiastically attacked the Hawthorn in a coordinated assault that made great progress in ridding the site of this woody weed. We have a long way to go, as one member pointed out that we had really only advanced by 2 telegraph poles. Nevertheless, FOG is beginning to make a sizeable hole in the numbers of this particular weed on the hillside. Our particular thanks go to the WWF people who made a great contribution to the success of the day. The next working bees are on **Saturdays 24 July and 26 August**, and help would be most welcome.

Souths Travelling Stock Reserve (TSR)

Alan Ford

Nine members, lead by Isobel Crawford, visited this TSR and Halfway TSR south of Goulburn on the weekend of 13-14 May. We were not deterred by the clouds scudding across the sky, obscuring the sun for most of the weekend, or the small rain squalls (not more than 30 minutes in total however) that

had to be endured while looking for the next elusive plant. However, we were considerably cheered by the number of Yellow-tailed Black Cockatoos that flew over the site from time to time. One flock was at least 40 strong. The visit to Souths included a spot-lighting expedition which yielded some possums, and we also examined the brilliance of the night sky, the constellation Scorpio being a feature. Souths is approximately 30 hectares in size and Halfway 8 hectares. Souths is a real grassy woodland gem, although it will face a difficult time as part of the surrounding areas are subdivided.

In our wanders around Souths we accumulated somewhere in the vicinity of 95 plant species. While that includes some exotics the vast majority were natives. These included, naturally, representatives of a number of major genera, Eucalyptus, Acacia, the daisy family, the pea family, to say nothing of the grasses. We also had lectures on the mysteries of *Wahlenbergia* and Mistletoe - thanks Isobel. Naturally enough, the most prominent flowering plant was early wattle, *Acacia genistifolia*. Such are the vagaries of identifying vegetation at this time of year that it took a while for us (in Isobel's absence, at that stage) to realise that our first question mark had been *Calotis anthemoides*. Even little rosettes of greenhood orchids were visible through the ground cover. We even managed to add a few species to the list for the TSR.

We went to Halfway TSR on the Sunday morning. This was different and was really open forest rather than the grassy woodland that was prevalent at Souths. It has a little creek running through it and we were on the lookout for Tiger snakes as we crossed and re-crossed it. It may have been too cold for them! This TSR yielded in the vicinity of 50 species, and my highlight was definitely trying to sort out the *Poa* species on the site and the difficulties of doing same. (Talk about the trials of FOG.) A little *Persoonia* and the *Laxmannia gracilis* were definitely among the goodies. It was interesting that both TSRs had half-a-dozen or so Eucalypts - the difficulty of sorting them out is obvious. It is something you tend to forget while trying to sort out the Peas and the *Austroanthonia*. Particular thanks to Isobel Crawford, Geoff Robertson and Margaret Ning for organising the visit. FOG is indebted to Isobel Crawford, Nikki Taws and Rainer Rehwinkel for providing background information for the visit.

ACT grassland sites tour

Alan Ford

Nine FOG members set out on a wonderful sunny winter's day (17 June) to look at grassland sites in Action Plan 1 plus some other interesting remnants. We started with Site 25, adjacent to CSIRO HQ in Limestone Avenue, which is a rather more extensive site than is obvious at first glance. It curves around the corner towards Mt Ainslie, and contains Kangaroo Grass (*Themeda triandra*) and Common Everlasting (*Chrysocephalum apiculatum*) with a host of other woodland and grassland species also hanging on. These two plants set a pattern for the day. However, there is a twist to this simple tale. We saw 3 forms of *Chrysocephalum apiculatum* during the tour - an intriguing mystery. The highlight was definitely the discovery of *Microseris lanceolata* (Yam Daisy) at the site.

Site 26, on Constitution Avenue, is a relict *Austroanthonia* oasis in a sea of invading Chilean Needle Grass. The site is also home to the Golden Sun Moth. Campbell Park offices, Site 27, is a vital site with a range of threatened species to establish its credentials as a significant remnant. The sun was out and we carefully avoided standing on the little Button Wrinklewort (*Rutidosia leptorhynchoides*).

Canberra Urban Parks and Places (CUPP) plays a role in managing areas of interest to FOG, and we visited a remnant CUPP grassy woodland site in Campbell at the bottom of Vasey Crescent. From there to another CUPP site on Savige Street, Campbell Hill, which has a *Themeda* base with *Chrysocephalum semipapposum* and a *Cassinia*. It is badly infested with Hawthorn. Sarah Sharp then took us to another remnant *Rutidosia* gem in Kingston. FOG would like to thank Sarah for providing information on these sites and for the discussions on the management of grassland sites as the day proceeded. The day concluded with a brief stop opposite the proposed ACT prison site to examine the general parameters of the proposal.

Conder 9 submission

Michael Bedingfield

Conder 9 Estate is an area of land zoned for housing adjacent to Tuggeranong Hill and the foothills of Mt Rob Roy. Last year as a result of submissions in response to Action Plan 10 (on the Yellow Box/Red Gum Grassy Woodland), a section in the northern end of Conder 9 was set aside for inclusion in

Canberra Nature Park. We call this section the Eaglemont site because it is near Eaglemont Retreat in Conder. The remainder of Conder 9 will be developed and a consultation process has gone on in recent months.

The southern boundary of the new reserve was set as a creek line, but the actual boundary of the quality grassy woodland is a dilapidated fence a further 50 metres or so south of the creek. The development proposal had houses going right up to this fence and an emergency vehicle track between the houses and the creek, through to native grasses.

FOG put in a submission to PALM on the proposal. Our main suggestions were that: (1) a new suitable fence be erected where the current old fence is, (2) the houses be moved slightly to the south to create a narrow buffer zone, with the fire trail in the buffer zone, and (3) during the construction phase all vehicles be kept off the native grassy area.

PALM has agreed to these suggestions and amended the development plan.

There was a trade off, however, as another several hectares to the east will be lost. This is of poorer quality, a dry slope with fewer species where significant species are very scarce.

Our success at achieving our major goals begs the question as to whether we should have asked for more. In this case I think we have done the right thing because to save the other area would have required a major change to the development. It would also have required a substantial lobbying effort on our part, with little hope of success. And our resources are rather stretched (we are still pushing strongly to save Conder 4A, a site of far greater quality).

So overall I am pleased with the result, as the government has recognised some of the requirements for adequate protection of these remnants, and we have effectively saved several extra hectares of grassy woodland at Eaglemont.

Action on other grassland sites

Due to the vigilance of FOG members it was ascertained that two of the sites listed in Action Plan 1 had either been demolished or construction work was taking place in the vicinity. Site 4, which has been demolished, was a small site in Gungahlin and Site 10 is to the north of Mitchell. Two letters were

written to the Department of Urban Services concerning the sites, seeking advice on management issues regarding the sites. We are reliably informed that our concerns are receiving serious attention.

Conder 4A update

In our last newsletter, it was mentioned that the report by the Commissioner for the Environment on the Conder 4a site was expected by the end of May. That was delayed but we understand the report has now gone to the ACT Government for comment. FOG has not seen a copy of it so far. In the meantime, we understand that Conder 4a has received interim listing under the ACT Heritage list following an application put in by Michael Bedingfield and Treanor some months ago. Michael B also reports that the species list for Conder 4A has stretched out to 162, and over 150 of these have been photographed on site. A good number of these plants are considered very uncommon in Yellow Box/Red Gum Grassy Woodland, including *Diuris dendrobioides*, *Caesia calliantha*, *Calotis anthemoides*, *Lotus australis*, *Polygala japonica*, and *Scutellaria humilis*.

WGWG

The Woodland and Grassland Working Group (WGWG) continues to meet monthly and many FOG members take an active interest. In May, Rainer Rehwinkel gave a talk to the group on his work on assessing grassland sites. For those who attended, this helped focus FOG's plans for survey work later this year.

Is A Fence Enough?

Bill Semple

Over 100 farmers, extension officers and woodland/grassland ecologists exchanged ideas on managing grassy woodlands at this Grassy Woodland Management Workshop in Cumnock on 24 March. The Question/Answer session and field trip highlighted the need to do more than just put a fence around a woodland remnant. For example, native understorey plants need to produce seed but they also need gaps in which to germinate and establish. This means that vegetative litter levels need to be reduced at regular intervals. Both burning and grazing can do this but there was no general agreement about which was best. Speakers at the workshop emphasised that natural "patchiness" in woodland remnants needs to be maintained - particularly for the survival of small animals.

Try not to burn or graze the whole area at any one time.

The workshop was introduced by presentations of past, present and future scenarios. Local landholder and session chairman, Geoff Tonkin, put forward a view of future homogenised, globalised, "mcdonaldised" landscapes where the same plant species - mostly weeds - occur everywhere. Dr Kevin Theile then took the audience into the past with a selection of slides which showed what the grassy woodlands once looked like - spring wildflower shows to rival those of WA. Areas with such characteristics are now very rare. Dr David Goldney brought the discussion back to the present by outlining what is happening to the health and distribution of woodlands in the Central West of NSW. Many are doomed unless positive action is taken now. Drs Ian Lunt and Donna Windsor introduced strategies for managing woodlands in "good" and "poor" condition. These strategies were subsequently taken up and expanded in the innovative Question/Answer session (where the whole audience acted as an expert panel for questions submitted earlier in the day) and the field trip.

Continuous grazing - even at low stocking rates - was considered inappropriate for woodland management as uncommon plants are likely to be selectively grazed. Short periods of high intensity grazing can be used for controlling weeds as well as for incorporating litter. However, grazing was not recommended for pristine sites with a history of nil or very infrequent grazing. Most importantly, keep records - even if only photographs - of what management regime was applied. We still have a lot to learn about managing grassy woodlands.

The overall message was there's no one "right" way to manage these areas. If encouraging native birds is your aim, then planting shrubs may be appropriate even if they weren't part of the original woodland. Ideally, such plantings would be restricted to a "buffer area" around or on one side of the woodland. Similarly, excessive tree regeneration in a remnant could be controlled if your aim was to mimic the original woodland. But when viewed from the perspective of a relatively treeless landscape, such trees would probably be retained for their potential benefits as habitat and for controlling groundwater.

For most landholders the first step in conserving woodlands will be to fence them so that they can be managed separately from surrounding land. Financial assistance for

doing this is available from the sponsors of the workshop: Greening Australia, Bushcare, Community Solutions "Taking Action Now" project, National Parks & Wildlife Service's "Grassy Box Woodlands Conservation Management Network" and the Department of Land and Water Conservation. Bill's address is DLWC, PO Box 53, Orange 2800.

A VIEW ON SALINITY

Geoff McFarlane

(The following was presented at the Dubbo Salinity Summit in March 2000 by Geoff McFarlane (a FOG member) from the Yass district, and one of many landcare reps at the summit, many of whom gave short presentations on an aspect of salinity.)

As a farmer from the Yass district, I represent a region with big problems with dryland salinity, which is a major contributor of salt to downstream water users. Salinity is a huge problem - too big for any one organisation, one government or one set of solutions. But it can be broken into bite-size chunks, some of which we already know how best to handle. The one I wish to concentrate on today is groundwater recharge in marginal grazing country.

There is agreement that we need to help farmers select and manage vegetation so that it uses more of the water, drying out the root-zone sponge so that subsequent rainfall will not leak through it into groundwater. In relatively good grazing country, appropriate pasture selection and pasture and grazing management is the way to go. In poorer grazing country, revegetation of selected sites with trees is the best way of reducing recharge. There is also recent evidence in our area that single small areas (say 4ha) of strategically placed trees will reduce groundwater levels by a minimum of half a metre over an area up to 100ha (i.e. up to 500 metres out from the treed area). Often these marginal sites are also steeper and shed a lot of water in heavy rain. This runoff often doesn't make it to the creek but instead goes into groundwater once it hits the break of slope. Planting trees will reduce this runoff.

So, we have a good grasp of the problem and the solution but how do we get it to happen? Firstly we need to give farmers an incentive to learn and apply the best grazing and pasture management techniques to maximise production and water use. Secondly, this is a community-wide problem and the work that we can do to reduce dryland salinity has social, economic and

environmental benefits in and beyond our own backyards. Let's make sure that all the beneficiaries share the burden. But we want maximum effect for each dollar spent. That means pouring money into trees and pastures, not fencing materials, not research, not administration. The plan is a simple one and much of it is not new.

- Set up a scheme - give it a name like Salt Stopper - publicise it and administer it through local DLWC or Dept. of Agriculture offices.
- Fund the scheme from many sources - e.g. State and Federal budget allocations, an irrigation water levy, sponsorship by business - we all benefit, we all pay.
- In each sub-catchment, have someone act as a part-time agent for the scheme to liaise with farmers on all aspects of dryland salinity.
- Pay farmers an upfront amount (say \$125 per ha) to compensate them for loss of grazing land for say 5 years while trees are getting established.
- Get a contractor to direct seed suitable trees and shrubs - about \$500 per hectare.

Draw up a management agreement between the farmer and the scheme so that the farmer manages the selected site appropriately. In the management agreement, allow the farmer to, in the second year and at his own expense, plant up to say 200 stems per ha of native trees amongst the direct-seeded ones. These would be managed and later cut for milling, posts or firewood so that there is a growing asset value and potential cash flow over and above that which will be derived from the careful grazing that would be undertaken after 5 years. This simple scheme is salt effective. These are prime recharge areas. The very cheap solution of direct seeding of trees and shrubs is also the most effective in this lighter country.

The scheme is cost effective. In targeting marginal grazing country at a time when returns are poor, the compensation costs are low. Each hectare revegetated would cost \$625 (\$125 for the farmer, \$500 to get the trees in) - all in the first year then shut the gate - no further outlays at that site. This amounts to an all-up cost of less than 50 cents per established tree and less than \$25 per hectare of groundwater reduction - a bargain by any comparison. If we had \$10 million per year for 5 years, we could revegetate 80,000 hectares and reduce groundwater levels for 2 million hectares.

The scheme is farmer friendly and at a time when farmers are being urged to be economic rationalists it will pass the test. No longer

can we just rely on the good intentions and long-term environmental benevolence of only a subset of farmers. We need to have wide appeal so that we can be assured that money and time is applied where the effect will be greatest.

The scheme also meets the criterion of being "multiple benefit". Apart from reducing salt, the revegetation of marginal country brings the environmental benefit of reducing land degradation and increasing tree and shrub cover for the benefit of native plants and animals. It also provides a wind break to shelter stock and to benefit adjacent pastures by reducing evaporation.

In conclusion: Much of the dryland salinity problem is well enough understood for us to not have to wait for more research, wait for carbon trading, wait for salt credit trading, wait for the problem to get bad enough for the public to demand action. Let's not wait - let's just roll up our sleeves and get stuck into it! It's no longer too hard.

GRASSLAND REDISCOVERY

The following article was first published in Natural Heritage, The Journal of the Natural Heritage Trust, No.6, Summer 2000

A South Australian farmer has played an important role in rediscovering a native daisy previously thought to be extinct after learning about the importance of native grasses through his landcare group.

Paul Slattery, a sheep-wheat farmer from



South Australia's Clare Valley, had seen the unusual plant, known as the Spiny Daisy, his whole life but had not realised its significance in Australia's biodiversity.

Mr Slattery's membership of the Natural Heritage Trust-funded revegetation program,

Caltowie Corridors of Green, had assisted his understanding of the importance of native grasses for soil health and as a vital source of nutrition for important pollinators in the ecosystem, such as native birds and insects.

He had been revegetating two hectares on a stony hill and had been expecting a visit from a grassland expert connected with the Caltowie Corridors of Green Bushcare project.

"Because I knew (she was) coming, I picked a few plants that were growing along the roadside merely to identify them," Mr Slattery said.

Advice was ultimately sought from a daisy expert in Canberra, Dr Randy Bayer, principal research scientist in the plant industry division of CSIRO. Dr Bayer confirmed that the daisy was indeed a species thought to be extinct.

The plant, commonly known as the "Spiny Daisy" (*Acanthocladium dockeri*), has been listed as extinct since the last identification had taken place in 1910. Members of the Burke & Wills expedition explorers' party found the daisy growing in sandhills along the Darling River near Menindee in far western NSW in October 1860.

Found by Dr Hans Beckler, a botanist and medical officer on the expedition, it was named in honour of the Reverend J. Docker who sponsored and helped promote the efforts of the explorers' party. Botanists believe the Spiny Daisy may provide considerable genetic information that relates modern species to ancient species of daisy - a sort of missing link in the daisy family.

Dr Bayer said his DNA analysis of the daisy confirmed it could be the nearest plant one could find to the ancestor of hundreds of daisy species in the Australian flora.

Federal Environment and Heritage Minister Robert Hill said "this is a tremendous example of how the Natural Heritage Trust is helping not only to fund on-ground conservation works, but it's also generating a greater sense of awareness and understanding of Australia's rare and unique biodiversity."



ECOLOGICAL INVESTIGATIONS OF MAISIE FAWCETT

The following was first published in Cultural Heritage of the Australian Alps, Proceedings of the symposium held at Jindabyne, New South Wales, 16-18 October 1991. Our FOG visit to Bright in March this year included a visit to one of Maisie Fawcett's experimental exclosures, which were designed to measure the effects of cattle grazing on the alpine grasslands. The following article gave us the answers to most of our questions arising from the visit.

By the middle of the twentieth century dramatic changes had occurred in the botanical sciences and in human expectations and perceptions of Victoria's alps. Plant ecology had developed from the sturdy roots of phytogeography but the suitability of ecological theories and practices for Australian ecosystems had still to be determined. Meanwhile, economic possibilities other than beef production were under consideration for Victoria's alps. As the Hume Reservoir was filling and the Kiewa Hydroelectric Scheme was being translated from drawing board to landscape, the water catchment capacity of the alps was recognised as a crucial consideration. The flora was no longer novel, but the ecological relationships of the vegetation and soils were unstudied and unknown. The mechanisms by which the soils and their mosaic of protective vegetation - mossy bogs, grasslands, heathlands and forests - maintained the catchment capacity of the alps remained arcane.

The threat of soil erosion

In the 1940s, nearly a century after Mueller set his botanical sights, and pastoralists their summer stock, on Victoria's alps, botanical investigations were established to address particular pragmatic concerns. Expensive irrigation and power-generation schemes must not be put at risk from siltation due to soil erosion. Fear of the economic consequences of siltation on these schemes, provoked the initiation of ecological investigations into the effects of stock on the vegetation and soils of the catchments of the Hume Reservoir and the Kiewa River.

The possibility of soil erosion highlighted a possible conflict of interest in the exploitation of Victoria's mountain ecosystems. While free annual alpine summer grazing made economic sense for the lucky pastoralist, the economic consequences of their heavy, hard-hooved stock on the water-absorbing capacity of the alps were not so obviously positive. The conversion of mossy streams into barren gravel beds and the denudation of peaks and saddles in some of the more exposed alpine areas provided a stark incentive to investigate the ecology of the region.

Thus by the middle of this century, growing concern about the effect of stock on the capacity of mountain soils and their protective vegetation to absorb and gradually release precious irrigation and power-generating water provoked ecological research on the Bogong high plains which was aimed at understanding the causes and control of soil erosion. Across the New South Wales border the Snowy Mountains Scheme also required protection from siltation, and soil erosion on the Monaro tablelands was under investigation. In both states the investigations were under the auspices of the state soil conservation authority. They reflected an increased awareness of the problems of soil erosion which followed the environmental disasters of the 1930s.

In the 1930s Victoria suffered devastating dust storms and then the horrific wild fires of January 1939. In the patchily burnt alps, the prolific regeneration of grasses and shrubs attracted cattle, which exacerbated the post-fire soil erosion in Victoria's high country. The government was spurred into action. In 1940 it passed the Soil Conservation Act, under which Victoria's Soil Conservation Board (SCB) was established to address the problem of soil erosion in the state.

An ecological survey of the Hume catchment

The new SCB recognised the possible threat of soil erosion to the irrigation potential of the Hume Reservoir and sought help from the University of Melbourne. The Professor of Botany, John Turner, arranged a research grant for a scientist to investigate the causes and control of soil erosion in the Hume catchment. From 1941 a Melbourne University botany graduate, Stella Grace Maisie Fawcett, MSc, was stationed in Omeo to undertake an extensive ecological survey of the Hume catchment for the SCB.

As part of her pasture regeneration studies, Maisie Fawcett had large areas fenced to exclude stock on the steep eroded slopes of Mt Mesley and Mt Livingstone. In these exclosures she recorded vegetation changes and also stream flow and siltation rates. Nearer Omeo she challenged the local wisdom by

trialing introduced pasture plants. In 1943 her work was selected for Victoria's first demonstration area of soil conservation practices. It showed the value of contour furrows in reducing run-off and soil loss, and in arresting severe gully erosion. Her investigations of gully erosion or 'washaways' earned Maisie Fawcett the title of 'Washaway Woman' and sometimes 'Erosion Girl' (Thompson 1981:26).

In order to study the effects of grazing on the vegetation she learned to ride a horse and travelled widely across the alps. Gradually she gained the friendship and support of local cattlemen, and after persistent requests, was eventually permitted to ride up onto the high plains with them at mustering time. From her extensive observations of the vegetation and the cattlemen and their cattle, Maisie Fawcett developed an intimate knowledge of the history and current practices of Victoria's alpine grazing industry (Carr 1989; Johnson 1974:86; Turner 1960).

Her massive ecological report on the Hume catchment interpreted the term 'ecological' in its widest sense. Fawcett (1955) sought historical as well as geographical information to provide firm foundations for her ecological interpretations of the area. Records of early exploration and settlement provided glimpses of a century's grazing and fires on the vegetation and soils of the Hume catchment. By 1951 she had recorded and analysed a decade's observations of the vegetation in a fenced exclosure, and was piecing together the ecological intricacies of the Hume catchment. She listened to her grazier friends, but was convinced that vegetation degeneration and soil erosion were due to over-grazing, with fire a contributory factor.

Bogong high plains exclosures

While in Omeo Maisie Fawcett developed a special interest in the Bogong high plains. She went as often as she could arrange a trip, sometimes staying in the Scout hut or with the Trimbles in the SEC cottage. A visit there in the autumn of 1943 convinced her that, although it was not as obvious as on

lower slopes, soil erosion was a problem on the high plains (Fawcett to Turner, 20 Apr. 1943). Local SEC engineers shared her concern. Part of the Bogong high plains was in the Kiewa catchment, where it was essential to maintain stream flow for the SEC's hydroelectric scheme, which was then under construction.

The SEC asked the young SCB to prepare a report on land use in the Kiewa catchment. Maisie Fawcett assisted the SCB subcommittee which inspected the Bogong high plains in March 1944 (Thompson 1981:39). In her report to the SCB, Fawcett noted that severe erosion was continuing on steep wooded slopes which had been burnt in the 1939 and possibly earlier fires, on steep slopes on which snow drifts lie late (snow patches), and on the tops of mountains above the tree line. Sheet erosion was common on these areas, and gullying was associated with badly eroded snow patches and damaged moss beds. The most serious but least obvious problem existed in the extensive grasslands. Degenerative changes over large areas of snowgrass indicated the early stages of accelerated erosion (Carr & Turner 1959:15).

The SCB reported its concerns to the SEC. Convinced of the threat to the precious alpine soils of over-grazing, the SCB (1945:8) recommended controls on both the number of stock and the length of their summer sojourn on the Bogong high plains. In January 1945, the SCB arranged a conference for representatives of the SCB, SEC and other Victorian government authorities. The conference approved the SCB's recommendations, and further recommended that the Department of Lands and Survey and the Forests Commission should confer about the best methods for controlling grazing, and, after consultation with cattlemen, should

submit a plan for the control of summer grazing in the Kiewa catchment. The SCB (1945:8) believed that the experience of controlled grazing on the Kiewa catchment could be used as a guide for the management of all highland grazing country in the north-east.

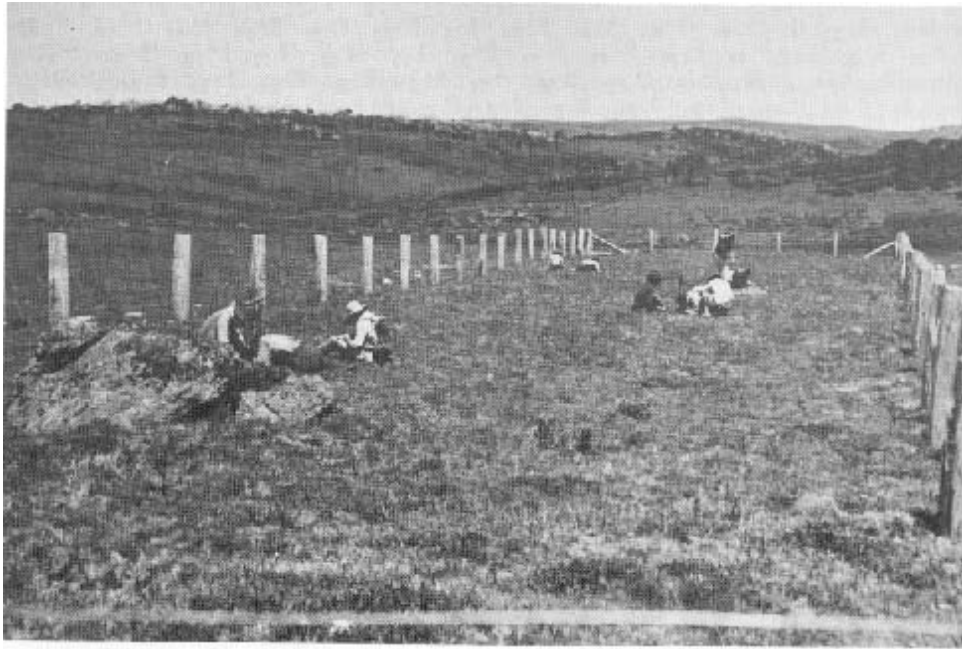
Following her appointment in 1944 to the SCB as its first research officer, Maisie Fawcett initiated an ecological experiment on the Bogong high plains to investigate the problem of soil erosion in the Kiewa catchment. She used methods which she had already shown

the ecological effects of cattle on high plains ecosystems could be studied more objectively than previously.

In January 1945 Professor Turner arranged for three recent botany graduates from his department to assist the 'Erosion Girl' to initiate her study of the high plains vegetation - Gwenyth Wykes, Honor Hebbard and Jean Mathieson (Scout Hut Log Book, January 1945). Together these 'high plains plant hounds' collected plants widely and converted the Rover Scout hut

into a botanical holding-house for specimens in transit to the University of Melbourne.

Having adapted the Levy point method to the mountainous terrain and vegetation in the Hume catchment, Fawcett chose to continue using this method to analyse vegetation cover on the Bogong high plains. This was a very labour-intensive method: the species of every leaf touched by each long thin needle lowered vertically through the vegetation at hundreds of sites had to be recorded each summer. To facilitate a detailed long-term ecological



Levy point analysis of grassland in the Pretty Valley enclosure.
Photo courtesy of the Department of Conservation and Environment

to be suitable for her Hume catchment studies - the Levy point method for the analysis of vegetation inside and outside fenced enclosures which excluded stock.

In the summer of 1944/45 Fawcett selected a site for a large enclosure - a 19-acre area on the edge of the Rocky Valley catchment. The SCB was given permissive occupancy of the area which in 1945 was fenced by the SEC to exclude stock. It was a complete mini-catchment area which included a mosaic of vegetation types such as *Sphagnum* moss beds (mossy bogs), snowgrass tussocks, heath and fire-scarred scrub. In each of the main vegetation types within the fenced enclosure, Fawcett marked out a plot, and for each of them she selected a control plot on a similar slope outside the enclosure. The unfenced control plots were still subjected to grazing. These Rocky Valley plots allowed a record to be kept for each type of vegetation inside and outside the fenced enclosure, so that any effects of the removal of cattle could be followed over successive summers. Now

study, Professor Turner agreed to supply the large numbers of botanical recorders required each summer. As well as providing university research assistance and vehicle, Turner also liaised with the SCB, SEC and Rover Scouts. The Rover Scout hut log book for the late 1940s and early 1950s records the university group's thanks to the Rover Scouts for accommodation and to the SEC for transport, food and fencing.

In contrast with Mueller's botanical surveys a century earlier, these ecological surveys were not epic, solitary, or single performances. They were repeated annually, were labour-intensive, social events, and involved authorities responsible for tertiary education, electricity generation, soil conservation and scouting.

The annual summer excursions were convivial and enjoyable experiences for members of the Botany School and their colleagues and friends. For a decade these

excursions provided an important cohesive force for research students and staff in Turner's department. Despite some personal tensions, people worked very hard and were pleased to be included in the high plains party. The backbreaking tedium of vegetation analysis was shared by all members of the university team and opportunities were provided for visiting other parts of the alps.

In January 1946 Professor Turner brought the first large university group to help Maisie Fawcett on the Bogong high plains. Included were members of his department - Reuben Patton, Ethel McLennan, Sophie Ducker, Gwenyth Wykes, Jean Mathieson and Vera Hanly - as well as Lilian White from zoology, and Geoffrey Leeper, Nancy Millis and B.V. (Bunny) Fennessy from agriculture, and members of the SCB. That summer 15 assorted botanists, zoologists, geologists and soil experts were fed and transported by the SEC from Bogong township in the jocularly named 'prison van' (or sometimes 'black maria') to the track above the Scout hut (Scout Hut Log Book, January 1946).

Sophie Ducker, Dr McLennan's assistant, was in charge of the High Plains Herbarium. With Jim Willis, from Melbourne's National Herbarium, she combed the high plains for new species.

Towards the end of the excursion, as part of the SCB's field day, SCB members conferred with cattlemen inside Fawcett's Rocky Valley enclosure. This meeting had important repercussions - the realisation of recommendations of the SCB conference the previous January. In an endeavour to prevent erosion in order to ensure continuous stream flow for the Kiewa Hydroelectric Scheme, an advisory committee and a cattlemen's committee were appointed to determine the permissible numbers of cattle and the length of their annual summer stay on the Bogong high plains (SCB 1946:4; Scout Hut Log Book).

Highly valued by cattlemen are the extensive subalpine (below the treeline) tussock

grasslands of the Bogong high plains, which are dominated by species of the native snowgrass *Poa*. Essential for the protection of these precious grasslands, was a study to establish the nature, origin and development of the grasslands on the high plains. Since one particular type of grassland was not included in Fawcett's Rocky Valley enclosure, Fawcett and Turner established another enclosure. On a gentle saddle at the edge of the Pretty Valley catchment north-west of Cope hut, they selected a regularly grazed uniform area of grassland for a fenced



The enclosure plots as they are today as seen on the recent FOG field trip. Photo Michael Treanor

enclosure and its adjacent unfenced control plot (Carr & Turner 1959:39). These are the Pretty Valley plots. Late in 1946, at the request of the SCB (1947:7), the SEC again did the fencing. Now there were two fenced enclosures with their associated unfenced control plots requiring annual Levy point analysis.

During the university's annual visit in 1949, the SCB held another field day in the Rocky Valley enclosure. About 50 people attended, including members of the SCB's Advisory Committee, the Cattlemen's Committee, cattlemen from Omeo, Bright and Tawonga, and the university group. As in previous summers, both Maisie Fawcett and John Turner addressed the gathering and answered questions (Scout Hut Log Book; SCB 1949:7). The university party included David Ashton and also David Goodall who was testing the suitability of the Levy point method of vegetation analysis for the tussock grasslands of the Bogong high plains.

Wit as well as vegetation analysis blossomed on the high plains each January. In 1947 and 1949 Dorothy Ellwood, nee Caine, devised botanical keys to distinguish each of the participants. Included were *Profus levimaniacus*, *Fawcettia urbophobia*, *Willisia migrantissima*, *Ashtonia saxifraga* and *Goodallium omnivorante*. Other artistic endeavours were also inspired by the annual excursions. Suzanne Duigan and John Turner produced poetry, while Iona MacLennan, John Turner and David Ashton produced illustrations and paintings. The

botanical artist, Margaret Stones, *Stonessya depictana* var *minutissima* was initiated into the world of field botany on the high plains. While convalescing from tuberculosis she joined the summer excursion of January 1948. The following two summers she returned with the university team to develop her botanical artistic skills in the field.

Although unhappy to leave Omeo, in 1949 Maisie Fawcett accepted a lectureship in Melbourne University's botany department where she gave lectures in plant taxonomy and ecology to science and agriculture students. But the high plains research continued. University academic and technical staff and senior and research students, continued to look forward to the summer ecological pilgrimages to the Bogong high plains to monitor vegetation changes in the Rocky Valley and Pretty Valley plots. Although statistician Goodall reckoned that records once every four years would be adequate, the excursion remained an annual event.

THIS FASCINATING STORY IS TO BE CONTINUED NEXT NEWSLETTER...



ACTION PLANS FOR ENDANGERED AND VULNERABLE SPECIES

Naarilla Hirsch

Action plan for the Button Wrinklewort

The Button Wrinklewort is a slender perennial forb, with yellow button flowers from December to April. It occurs on the margins of open stands of Yellow Box/Red Gum Grassy woodland with a ground cover of various native grasses and other forbs, and extends into natural temperate grassland.

It was declared endangered in the ACT because it is

- recognised as endangered on international and national listings;
- at risk of premature extinction in the ACT in the near future due to
 - current severe and continuing decline in population or distribution (as evidenced by direct observation and by severe decline in quality and quantity of habitat),
 - imminent risk of severe decline in population and distribution, and
 - seriously fragmented distribution for a species currently occurring over a moderately small range or having a moderately small area of occupancy within its range

The conservation objective is to maintain viable populations of the Button Wrinklewort in functional native grasslands and grassy woodlands in the known sites of the species in the ACT, including maintenance of the species' potential for evolutionary development in the wild. An important aim is to maintain as diverse a gene pool as possible, as we are discovering a tendency for inbreeding and subsequent sterility arising in very small populations, especially in Victoria.

Button Wrinklewort sites will be monitored for seedling establishment and inspected for damage. An appropriate management regime will be developed for each site, with specific management issues being woody and herbaceous weed control, regeneration of native trees and shrubs, understorey competition, off-site (horticultural) conservation of the species, and

documentation of plantings. Environment ACT will participate in the National Recovery Team, with activities such as compilation and distribution of management guidelines and conservation information, and coordination of protection and management activities with Commonwealth, NSW and Victorian members of the Team.

At the time of preparing the action plan, two sites were already in nature reserves and one in urban open space. Memoranda of Understanding were to be negotiated with the Commonwealth and St. Marks to protect a further five sites. Future planning issues that could affect conservation of Button Wrinklewort include the Very Fast Train (Majura and Jerrabomberra valleys), a future industrial complex associated with the airport (Majura valley) and a future site for the Prime Minister's residence (Stirling Ridge).

Source: ACT Government, 1998. *Button Wrinklewort* (*Rutidosia leptorhynchoides*): *An endangered species*. Action Plan No. 8. Environment ACT, Canberra.

Action plan for the Small Purple Pea

The Small Purple Pea (*Swainsona recta*) is a slender erect perennial plant, with purple or bluish flowers in spring. It occurs in open woodland dominated by one or more of a number of *Callitris* or Eucalypt species, with a grassy understorey dominated by Kangaroo Grass or *Poa* species.

It was declared endangered in the ACT because it is

- recognised as endangered on international and national listings;
- at risk of premature extinction in the ACT in the near future due to
 - current severe decline in population or distribution (as evidenced by direct observation), and
 - seriously fragmented distribution for a species currently occurring over a moderately small range or having a moderately small area of occupancy within its range

Conservation objectives are to maintain and increase (if possible) the size of the Mt Taylor and Kambah populations, and to apply research and monitoring findings to develop and update management plans for sites of the Small Purple Pea in the ACT.

Apart from the Mt Taylor plants, the local populations are in very small or narrow areas of suitable habitat, surrounded by other land uses. This makes them very vulnerable to detrimental influences from surrounding areas, such as weed invasion, accidental grazing or trampling, fertiliser run-on, herbicide drift, shading, and slug and snail attack.

Intended management actions include surveys of other potential habitat for the species, monitoring of sites and their buffer zones, installation and maintenance of protective fences/barriers and information signs, and development of a management plan for each ACT site. Specific management activities include burning sites every 3-5 years (to prevent suppression of the pea by grass competition), rehabilitation of buffer zones, woody weed removal, and advising Parkcare groups and adjacent land managers on the presence, status and protection measures of the small purple pea. The action plan states that no further planting or removal of previously planted Small Purple Pea should be undertaken until the National Recovery Team has assessed the results of current genetic studies.

Source: ACT Government, 1998. *Small Purple Pea* (*Swainsona recta*): *An endangered species*. Action Plan No. 9. Environment ACT, Canberra.

FLORA BANK

The first FloraBank guideline is *Native seed storage for regeneration*. FloraBank considers it more important to dry seed well and store it in an airtight container then to store it at a low temperature. Many Australian plants, particularly those with hard-coated seeds (eg acacias), store visualise at room temperature for years, whereas many rainforest species with soft or fleshy seeds must be stored in a fridge. When storing seed, plan a storage time limit suitable for your work. Also plan a low-cost storage area that is as dry and cool as you can manage, and in which you can easily work.

For room temperature storage, FloraBank recommends drying all seed and sealing it in airtight resealable press seal plastic bags as the best low-cost option. The filled plastic bags should be stored in strong containers for protection and to maximise storage space. Regular basic insect and pest control measures should be included in your seed cleaning and storage. Monitor the humidity



Margaret Ning, Alan Ford, Geoff Robertson and Whin examine Maisie Fawcett's plots in the Victorian Alps. Photo Michael Treanor

in your storage area (or fridge) with a single electronic humidity meter.

Depending on where you live or the type of seed you are storing, you may need to use an air-conditioner to maintain constant temperature or storing your seed in air-conditioned premises. Air-conditioners dehumidify (dry the air) at different rates, so get one that achieves the best relative humidity compared to outside air. Because of the high humidity, you must store seed in airtight containers in a fridge.

To tell if you've got it right, FloraBank recommends you do a simple cut test on all seed collected, a germination test on all seed as it goes into storage, and another germination test as it comes out of storage.

For a copy of this guideline, contact the FloraBank coordinator, Warren Mortlock, on 02-62818585 or email greenaus@ozemail.com.au.

NEWSLETTERS RECEIVED

Naarilla Hirsch

The latest issue of *Life Lines* (Community Biodiversity Network) has an article on *Firewood and woodland protection* which is somewhat depressing. It points out that Canberra's diminishing firewood supplies are sourced from woodlands as much as 500kms away in NSW; that in the Armidale district of NSW, firewood supplies are predicted to run out in little over a decade at current rate of use; and that the bulk of the Victorian supply is cut from the small remaining fragments of once extensive box-ironbark, red gum and other temperate woodland types (very few

of which are protected in nature conservation reserves). Repeated and extensive cutting for firewood and other minor forest products leads to the loss of trees and tree hollows, standing dead trees, fallen timber and tree debris, and in soil compaction. The result is loss of resources (e.g. nectar), nesting sites and habitat for a range of species, including arboreal species (e.g. swift parrot, regent honeyeater, powerful owl, squirrel glider), ground feeders (e.g. bush-stone curlew, common dunnart) and burrowing animals (e.g. pink-tailed worm-lizard, bandy bandy). While plantation products supply a significant proportion of Australia's sawn timber, wood panels and veneers, and wood used in pulp production, this is not the case for firewood. The article says there is an urgent need to establish a large, profitable, plantation-based firewood industry. There will be a National Firewood Conference on 8-9 June in Bendigo.

Life Lines also has an article about a project to monitor biodiversity in rangelands across Australia (about 75% of the continent, covering a range of habitats including grasslands). The first part of the project will review trends and threats to biodiversity in the rangelands, existing rangelands monitoring programs, biodiversity monitoring programs overseas, and the theory and statistics of monitoring programs. Further information can be obtained from Don Franklin on 08-8946 8574 or don.franklin@ntu.edu.au.

Don't forget that you can contact Margaret if you want to have a look at any of the newsletters discussed in this column.

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7-9pm on 3 Thursdays from 5 October, plus field trips 9-11am on 2 Saturdays 7 and 21 October.

\$115

Learn to enjoy and recognise the diversity of plants in Canberra. The field trips will include visits to the Australian National Botanic Gardens.

Grass identification

7-9pm on 3 Thursdays from 9 November, plus field trips 9-11am on 2 Saturdays 11 and 25 November.

\$115

This course is for those who already have a basic knowledge of plant identification. Learn to recognise local grasses in the field, and to distinguish them from sedges and rushes, and in the laboratory learn to use microscopes and botanical keys.



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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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