

Australian Grasses Study Group

Association of Societies for Growing Australian Plants

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Commercial seed production of Danthonia

- Hodder & Tolley replies

by Ian Chivers

I read with great interest the article by Russell Starr in the Summer/Autumn 1990 issue of Australian Grasses Study Group regarding the commercial seed production of *Danthonia*. I feel there are a number of issues to which I should respond.

1. Indigenous types vs introduced types of wallaby grass

I am in complete agreement with Russell's point that a local, indigenous type is preferable to an introduced one. Any project which seeks the most sympathetic treatment of the restoration of a habitat would use locally collected seeds of whatever plants are to be used.

My concern is that in some areas the amount of seed which can be collected in the region of concern, or the manpower which is required to collect it, may be so limited that it could prejudice the completion of the whole project.

If the choice then is either to not complete the project or to use seed of a commercially grown variety, I am sure that any reasonable person would opt for the latter. Surely plants of a variety of wallaby grass (although not necessarily locally occurring) would be preferable to the existing options of ryegrass, *Phalaris* and the like.

2. Hybridization of commercial and local wallaby grass plants

The cross-pollination of our variety Hume with the local population is unlikely. There seems to be very little likelihood of successful cross-pollination with any of the local wallaby grass types, whether *Danthonia richardsonii* or not.

This species is an almost obligatory self-pollinator with a very tightly held inflorescence not permitting the escape or ingress of

pollen. In fact this is one of the characters which makes this species, and the variety Hume in particular, uniform in character and stable in the expression of that character.

3. Invasion of Hume into nearby grasslands

The experience to date with Hume is that it is not invasive into nearby areas. In one roadside trial near Canberra where Hume has been growing and setting seed for in excess of one year, it has not invaded plots to its side despite those plots having a far less than complete grass cover.

In other plots on more fertile soil the Hume wallaby grass plots have been overrun by other grasses. Thus it seems to me that the likelihood is not of Hume becoming an aggressive weed, but of Hume being overtaken on all except the least fertile of soils.

4. Likely future maintenance problems

The hypothesis of Russell Starr was that because *Danthonia* is responsive to summer thunderstorms but is basically dormant over this time, it would present a fire hazard over summer once the flush of growth has hayed off. This is, of course, one of the major problems of grasses such as Tall Fescue and *Phalaris*.

I would like to assure Russell and other readers of this newsletter that this is not the case with Hume wallaby grass. The variety Hume was selected with particular care to ensure that the foliage production would never be excessive, but would always be just enough to give a satisfactory grass cover.

One of the last things sought in the selection process was that of a grass which produced large volumes of green material. This would be against the desire of finding a grass which

requires very little maintenance by mowing or other cultural practices.

Experience so far with Hume is that it can provide an aesthetically pleasant environment with no fire hazard for all twelve months of the year without any need for cultural practices. If the desire of the land manager is to have a "more tidy" grassed area then annual or 6 monthly topping of seed heads would be sufficient. Certainly the need is not to reduce the amount of leafy material.

5. Use of other native grasses

We do not see Hume wallaby grass as the only grass to be used in all revegetation projects and our aim is not to have this grass sown from Hobart to Darwin, or from Byron Bay to Perth and all points in between. Clearly this would lead to it being used in inappropriate places and creating management problems, as well as a backlash against the use of natives in general.

We are hopeful that the coming years will see the large scale production of other native grasses and herbs which will give the land manager the capacity to choose a suitable mix that will most closely resemble the original flora of that environment. Hume wallaby grass may only be one component of these seed or grass mixes.

But all things have to take their turn, and at the moment large scale seed production is being developed for only one variety of one species. Who knows, the turn of the century may see us dealing with a wide range of commercially available varieties from a large number of species.

As far as the production of Hume is concerned we are still sticking to the target of having limited quantities available at the end of next year and full volumes commencing in mid to late 1992. The recent floods in New South Wales have not assisted our cause, with our multiplication farm (and hence our wallaby

grass plots) at Dubbo going under water. It was only 1.5 metres above the the 50 year flood line! Still I am pleased to report that the plants, although a little bit dirty, were not affected by the soaking.

The small harvests which we have had so far have produced high quality seeds which we have been able to clean successfully to eliminate the fluffy seed husk. This will make seeding far easier and more guaranteed than the results achieved by spreading the untreated chaff or hay.

I hope that I have answered Russell Starr's queries in this letter, but lastly I would want to reassure him that Hodder & Tolley is not a huge conglomerate intent on achieving nothing more than profit. We are sympathetic with what is best for our environment and through projects such as that with Hume wallaby grass will be helping to preserve our native landscape and genetic reserves.

Ian Chivers
Technical Co-ordinator
Hodder & Tolley P/L

Postscript

Further to my earlier letter, the question of weed control in plantings of Hume wallaby grass has been raised. The question arises because of the relatively low seedling vigour and low growth rate of Hume.

There are two parts to this question, firstly, how best to establish Hume so that weed competition is minimised and secondly, how to keep weeds out of Hume plantings.

Establishment of Hume wallaby grass is a relatively slow operation given the slow rate of seedling growth and problems could be experienced with weed invasion prior to the wallaby grass providing a full cover. We have suffered from this problem ourselves. I am of the opinion that the ideal soil is one which has a

low content of weed seeds and a low level of fertility.

Soils originating from good conditions, such as restoration over a cut area, will probably contain significant weed seeds and be reasonably fertile. These soils can create a problem for weed free establishment of Hume wallaby grass because the weed seedlings will compete strongly for light and water.

The use of pre-emergent herbicides is being investigated and, if suitable chemicals can be found, they will offer significant advantages.

On a related matter, work by Dr. Richard Groves and his team at CSIRO Canberra with the use of cereal rye planted together with Hume wallaby grass on a freshly cut batter (low fertility soil) has been of great relevance. The cereal rye has given good soil binding in the early stage and has not persisted beyond one year, by which time the wallaby grass is well established and capable of both holding the soil together and keeping the weeds out of the sward.

On the second point of weed control in a mature sward, little problem has been experienced with the normal range of chemicals for the control of both broadleaf weeds and some other grasses. It seems that Hume can be treated in much the same way as ryegrass or Tall Fescue as far as herbicides are concerned.

Generally, however, the nature of Hume on bare soils is such that it progressively fills the gaps between plants with new seedlings and within two years has developed a full grass cover which will provide little space for weed invasion.

Ian Chivers



Harvesting Native Grasses ... continued

Thanks for the copy of your SGAP Grasses Study Group Newsletter [No.7] which I found very interesting .. I regard the OSU grass seed stripper as fitting into the general category of beater harvesters, albeit with a somewhat different style of beater to those on harvesters of this type that are commonly used to harvest *buffel grass in northern Australia. The latter type of machine and the OSU stripper are both covered in the training course chapter I wrote on harvesting a couple of years ago.

The fact that the Woodward Flail-Vac was developed after the OSU stripper and seems to have been adopted commercially in the USA, in preference to the OSU machine, also suggests that it doesn't really have that much to offer in Australia. We already have well-developed technology for building and using beater-style harvesters, so I don't think we need another design for that type of machine.

Suction (vacuum) harvesters are used commercially to harvest some legume seeds in both southern and northern Australia., but they are not suitable for use with grass seeds especially the very light chaffy ones. Close contact with the soil is necessary to maintain the proper sucking action. In practice, this means a very even and level soil surface with all the vegetation cleared away. Effectively, the legume stand is destroyed and re-established again the next year. The soil must also be very dry or the seed can't be "lifted" properly.

Suction harvesting of grass seeds would create immense cleaning problems if an attempt were made to suck seed up from among the stubble because a lot of trash would be collected and mixed with only a small amount of seed. I saw just this situation in northeast Thailand late last year where a suction harvester was demonstrated by running it over stubble of *Brachiaria ruzizensis*. Although the grass seeds were comparatively large and dense, very little seed

was recovered and this was mixed with a large amount of old leaf, straw and soil.

Suction harvesting is an extremely slow and dirty job. This expense and inconvenience can only be justified where there is a large yield increase over that from more conventional methods ..

* introduced/exotic grass species

Don Loch
Principal Scientist
QDPI Gympie. Queensland

For further information about QDPI's brush harvesting work see AMLRDC (Aust. Meat and Live-stock Research and Development Corporation) North Australian Newsletter (Vol.1, No.1) and Power Farming (Vol.99, No.6) - Ed.

Video

Preserving native grasslands

15 minute video (1989)

Flora & Fauna Survey Unit (Dept. of Conservation, Forests and Lands. Victoria) (03) 412 4011

Shows kangaroo grass, spear grass and wallaby grass in flower and the three most common grass invaders of remnant grassland i.e. phalaris, furry-leaved fog grass and paspalum.

Indicates how to evaluate the conservation value of a particular patch of roadside vegetation.

Shows how to re-establish kangaroo grass and where such projects are occurring in western Victoria i.e. Organ Pipes National Park (Keith McDougall for the Dept. of Conservation, Forests & Lands), and at Murramong near Skipton (La Trobe University and the National Trust); how to map significant remnant native

vegetation; what councils can do if major realignment or a new road is needed in an area of significant native vegetation; how councils can organise routine maintenance jobs to lessen their impact on native remnants and how to best maintain native grassland areas.

Also makes the point that shelter belts on farms adjacent to remnant grassland communities help guard against soil drift in drought years.

References given at the end of the video:

Technical Report Series No.48 by John Stuwe
Available from the Roadside Conservation Committee, Dept. of Conservation, Forests & Lands. (03) 412 4011

Draft Guidelines for activities of farmers on road reserves
by the Ararat District Council of the Victorian Farmers Federation

Covenant information available from the Victorian Conservation Trust (03) 412 4661 or (03) 412 4710

N.B. A booklet is also available to help the layperson identify some 100 species of wild-flowers and native grasses.



Direct Seeding of Kangaroo Grass in the Adelaide Hills

by John Stafford



Reprinted with permission from Greening Australia Ltd. and taken from the Proceedings of the 'Sowing the Seeds' Direct Seeding and Natural Regeneration Conference. Adelaide, May 1990.

Why Plant Native Grasses?

A Substitute for weeds

In the East Torrens District where indigenous trees still provide cover to much of the land, it may seem odd that the East Torrens Animal & Plant Control Board should be so concerned about land degradation and so heavily committed to revegetation.

The abundance of trees gives little indication to the problems that lie beneath their canopies, where in many areas the complete understorey has been removed and the space now occupied by exotic weeds.

Any removal of the weeds simply invites a recycling of all the exotic species present until the status quo is re-established.

The trees that are currently living with an understorey ecosystem that is hostile to any tree regeneration, will eventually die and expose the depleted state of native vegetation.

What all this boils down to is that our bush, when devoid of its understorey, is no longer a dynamic system that is able to repel any onslaught from invading flora and fauna. Its very heart has been depleted and only with a heart transplant, that is by putting new life back into the understorey can the process of degradation be reversed.

But heart transplants are a delicate operation. The new organ must be inserted carefully yet quickly. A minimum of time should elapse

between the removal of the diseased heart and replacement with the new.

This is the role that native grasses have in revegetation programs currently being carried out in East Torrens. As undesirable weed growth is removed, grasses are established to quickly fill the void and provide a base for further growth and development of the native understorey.

Although the procedures involved are very much different to the Bradley system of bush regeneration, the same sound principle is observed in that every effort is made to minimize the time between weed removal and regeneration of native ground cover.

Characteristics of Grasses

Because they mature relatively quickly, grasses are able to establish within a season or two and occupy space that would otherwise be taken by weeds.

Their fibrous root system helps bind the soil on sites where weed removal has left the soil bare and vulnerable to erosion.

The dense foliage provides cover close to the ground for optimum suppression of weeds by shading.

Unlike most other plants, growth is not produced at the tips but at the base of the foliage, thus they generally respond favourably to slashing and burning.

Being monocotyledons, many selective herbicides that control the weed species (most often dicotyledons) do not harm the grasses.

They produce easily ignited fuel, which strategically placed close to the ground, is ideal for controlling weeds by fire.

In the natural order of plant succession, grasses are the base for further development of the plant community.

Why Kangaroo Grass?

Most of the grass propagation work done by the East Torrens Animal & Plant Control Board has been confined to kangaroo grass. This particular grass has a number of attributes that suit it to geographically and botanically broad weed control programs.

Kangaroo grass (*Themeda triandra* [previously *Themeda australis*]) is one of the most widely distributed plants in Australia, growing on a variety of soil types.

It can be found on most aspects of the Adelaide Hills except on very steep south facing slopes where tussock grass (*Poa sp.*) is more likely to be dominant.

Being a spring/summer growing plant it can be established at the opposite end of the season to any autumn germinating weeds, thus avoiding direct weed competition in its very early establishment.

Kangaroo grass is a vigorous perennial that produces excellent shade for weed suppression.

It can be burnt just prior to summer to provide an attractive fire resistant green sward during the high fire danger season.

Harvesting and Seeding Techniques

Learning to understand the role and value of grasses in the reconstruction of disturbed native vegetation is a slow evolutionary proc-

ess. So too has been the development of harvesting and seeding techniques for kangaroo grass. In the following three phases of the work at East Torrens, I have endeavoured to summarise twelve years of development in the direct seeding of this grass.

Phase 1. - Trial work in Cleland Conservation Park

In 1977 a slashing program was initiated to stem the invasion of woody weeds into disturbed areas of Cleland Conservation Park. Unexpectedly, additional Commonwealth funding became available late that same year and some thought was given to how it might be best spent.

The concept of replacing weeds with native grasses was discussed with Dr. Tim Fatchen, the then Scientific Officer with the National Parks & Wildlife Service. In support of a proposal to establish trial plots of kangaroo grass Dr. Fatchen wrote;

"Kangaroo grass (Themeda australis) originally formed the major understorey component of savannah woodlands in the Adelaide Hills. It was largely eliminated by domestic grazing in these areas, with the near Adelaide populations destroyed very early in the course of settlement. At the release of the Hills Face savannah areas from grazing in the mid-60's, almost no seed sources of Themeda remained, and the ungrazed pastures were rapidly colonised by a variety of pest plant species. Many of these latter species, being opportunistic pioneer plants, are susceptible (in varying degrees) to suppression by native species - of overshadowing competition - provided the natives can establish in the first place. The prime requirement for suppression appears to be a reasonably dense, stable stand of native species capable of overtopping pest plant seedlings. Themeda is proposed as the initial agent since (a) it was originally abundant in the most heavily infested area, (b) it is capable of quite luxuriant growth, capable of overtopping weeds and (c) some technology for its estab-

ishment already exists from the work of N.C.D.C. in Canberra. Although the program is aimed at establishing trials in parks, it may also have considerable value in the reclamation of roadside areas - the grass is elegant, a summer grower and can be mowed readily while growing; hence, it is capable of providing a low-fire risk, low maintenance road verge."

Seed sources in 1977 were quite rare and some work was done in mapping locations of kangaroo grass in the Mt. Lofty Ranges where it was generally confined to various reserves from which stock had been excluded.

With only small areas of seed to harvest, hand tools were adequate for this task, the sickle being the most useful.

A hand held panicle stripper was made to eliminate the need of handling such a bulk of material, but this particular piece of equipment was not very efficient. Also there was some thought at this stage that the culms may be contributing to post-harvesting ripening of the seed.

Efforts were made to thresh a sample of seed but this was found to be very time consuming and after extensive sieving the final product still contained 50% chaff.

With most areas needing revegetation unsuitable for cultivation, and not having any seeding equipment available, it was decided to simply harvest the complete culm with the seed in the panicle and lay it on the ground.

1977-78 Planting

1/2/78 Seed was harvested from late maturing sites well up in the Hills by cutting the complete culms with a sickle and tying into sheaves. The sheaves were immediately transported to the seeding site and the culms laid out as a close thatch over the ground on two 10m x 10m plots.

2/2/78 Some sheaves were put through

a chaff cutter to determine what function, if any, the awn has in locating the seed in the ground. Chaffed culms were bagged and then spread over another 10m x 10m plot located between the two previous plots.

20/6/78 An application of herbicide was used to kill off all standing weed growth on one half of all three plots.

19/12/78 No germination had occurred so a fire was put through half the chaffed culm plot and half an adjacent complete culm plot to transect both the herbicide and non-herbicide areas.

8/1/79 Germination of kangaroo grass was observed on the burnt section of the plot sown with complete culms. No germination resulted on the plot sown with chaffed culms.

14/8/79 Winter growth of salvation jane (*Echium lycopsis*) and oats (*Avena spp.*) had overshadowed the kangaroo grass which was now semi-dormant. The competing vegetation was cut back short with a lawn mower allowing the kangaroo grass to get an advantage over its competition in spring and to maintain a dominance thereafter.

16/3/83 The Ash Wednesday fire razed the site and very few of the original seeded plants survived.

Summary

Positive aspects

1. With the broadcast seeding technique even the simplest harvesting tools will suffice.
2. The seed does not have to be threshed or refined in any way, nor does it need to be stored.
3. No ground preparation is required as the hygroscopically activated seed awns

remove the seed from the panicle and locate it in the soil.

4. Burning the naturally cured grass in December was effective in triggering the germination of kangaroo grass seed. This site faced the south and was on heavy clay loam with good water retention capacity.

Negative aspects

1. Cutting the culms with a sickle is a slow and arduous method of harvesting, particularly when the crop is sparse, and is only suited to collecting low volumes of material.
2. Standing vegetation and straw laid on the ground prevented any germination of the kangaroo grass seed.
3. Chaffed awns apparently prevented seed from being properly located in the soil, with no germination as a result.
4. The winter and early spring growth of autumn germinating weeds can overrun kangaroo grass and smother it.
5. The high density planting did not have a good survival rate when exposed to a very hot fire.

Phase 2. - Pilot Projects on Council Reserves and Roadsides

Following successful trials at Cleland Conservation Park, pilot projects were established to demonstrate the potential of kangaroo grass as a tool in the management of Council reserves and road verges, where not only must weeds be controlled but ground fuel must also be kept to a minimum.

1985-86 Planting

5/12/85 Seed was harvested from early maturing naturally regenerating areas of

kangaroo grass on the Hills Face adjacent Adelaide. Sites were selected in order of seed maturity. The aim is to harvest the crop when the early maturing seeds are being shed.

A team of four men, two with brush cutters and two with pitch forks, was engaged in cutting and loading, then spreading an 8.5 cubic metre trailer load of culms per day. In all five such loads were harvested and spread over 7000 sq. metres of road verge adjacent Black Hill Conservation Park.

Culms were laid as a light lattice over the ground with the intent of establishing no more than ten plants per sq. metre.

The harvesting/seeding operation required 240 man hrs per 61 cubic metres of culms per ha.

30/9/86 A pre-germination spray of glyphosate at 3kg/ha and atrazine at 4.3kg/ha was applied to standing weed growth consisting in the main of salvation jane and wild oats.

2/10/86 Three weeks later when sufficiently cured, the above weed growth was burnt, exposing a soil very moist from rain which had fallen four days previous.

31/10/86 First kangaroo grass seedlings were observed just emerging.

4/2/87 Rabbits were heavily browsing kangaroo grass on a portion of the seeded area that was within their territory.

23/2/87 Rabbits poisoned with 1080 treated oats.

4/3/87 A pre-winter application of bromoxynil at 1.1kg/ha and butoxy MCPA at 1.1kg/ha was made to control salvation jane.

31/5/87 With salvation jane only checked and not killed by the above spray,

an application of chlorsulfuron (Glean[R]) at 19gm/ha was made to eliminate this competition.

9/7/87 Salvation jane under control.

Summary

Positive aspects

1. A brush cutter with a four point cutting blade is a good universal tool for harvesting almost any site having the ability to avoid obstacles and contaminating vegetation. Used with a scything action the culms are windrowed which greatly assists with the collection by pitch fork.
2. The pre-germination herbicide treatment allows burning to be carried out much earlier in the season when the soil moisture level is close to its maximum.
3. The use of 1080 provided in-season relief from the rabbits, however it is a much better policy to control them in the autumn prior to seed germination.
4. Chlorsulfuron gave good protection in this instance from competition by broadleaved weeds during the winter.

Negative aspects

1. Although kangaroo grass seed sources were more prevalent in 1985 than in 1978, they were still only small and generally very difficult to get at due to the grasses habit of regenerating on steep north facing slopes.
2. The high labour input of 240 man hrs per hectare not only makes a project very costly, but can also be difficult to organize due to shortage of manpower just prior to, and over holiday periods. The availability of labour limits the size of any project that might be undertaken.
3. The quantity of viable seed sown per

hectare is very difficult to assess when the product is measured by the trailer load of straw. One load resulted in almost no germination of kangaroo grass which was probably due to mistimed harvesting.

4. Rabbits are a regular problem if there are sufficient numbers adjacent the seeded site.

Phase 3. - Developing Broadscale Seed Production

By the 1988/89 harvesting season, some progress had been made in developing a mechanical harvester. This unit was originally based on the reel harvester developed by City Parks Administration in Canberra in 1979, where rotating wooden paddles knock the mature seeds out of the panicles into a trough. Very low yield was obtained with this unit and all sites sown with the seed were written off due to very poor germination.

The harvester was modified by replacing the wooden paddles with pivoted swing back paddles of tubular steel. Immediately below the reel, and in very close tolerance to it, was a contra-rotating roller of 2" diameter tube steel along which eight lengths of 1/8" diameter steel rod were welded. It was intended that as the reel gathered in the standing culms the panicles would be wedged between the paddles and roller, and be dislodged from the culms. A trial run at the beginning of the 1988/89 season showed that this system was not going to work either.

In a desperate attempt to salvage the investment already made in the harvester the reel was raised slightly and 400 short lengths of fencing wire were threaded through holes drilled in the 1/8" rod and twisted to form a "V" shape flail. Rotating at 1600 rpm the flails effectively run along the culm stripping off the panicles and throwing them into the trough.

By harvesting a more accurately measured

product i.e. wheat sacks of panicles, it was observed that;

(a) The yield of naturally regenerating sites was diminishing.

(b) Sown sites can give much better yields at a more convenient location and reduce harvesting costs by more than 50%.

It was therefore decided to forego any further revegetation work for the time [being] and use all available seed to establish a seed plantation on the Council Depot where the ground was a good grade and water was available for irrigation.

1988-89 Planting

16/12/88 (to 4/1/89) Seed was harvested from some previously sown and naturally regenerating sites on the Hills Face and inner Hills areas.

The seed stripper front mounted on a Fendt 380 GTA (four wheel drive) Tool Carrier and powered by the tractor's remote hydraulics, was used to harvest 50 wheat sacks of panicles. With one operator up to 14 bags could be harvested in a 12hr. day.

Land previously used for vegetable growing was prepared for seeding by mowing all standing grass and weed growth to provide more convenient access.

The panicles of kangaroo grass were scattered evenly over the site at the rate of one bag per 150 sq.m which was estimated to be equivalent to the sowing rate previously used for the culms.

The harvesting/seeding operation required 85 man hrs per 67 bags of panicles per ha. Harvesting accounted for 63 man hrs, and seeding 22 man hrs.

6/10/89 A pre-germination spray of glyphosate at 3.8kg/ha and atrazine at

5.3kg/ha was applied to standing weed growth consisting mostly of perennial grasses and some broadleaf weeds.

30/10/89 After a period of 24 days, when the weed growth was sufficiently cured, it was burnt. Some of the very lightly grasses areas failed to carry the fire.

23/10/89 Assessed kangaroo grass germination as very poor.

23/1/90 (to 6/4/90) Three irrigations with a mobile sprinkler.

1/2/90 (and 6/2/90) An application of trichlopyr at 1.4kg/ha, dicamba at 0.5kg/ha and atrazine at 2.7kg/ha was made to control summer growing weeds of blackberry (*Rubus spp.*), dock (*Rumex sp.*) and cruciferous weeds (*Brassica spp.*).

Summary

Positive aspects

1. Using the Fendt tractor, the seed stripper and other ancillary equipment, the whole project was completed by one operator during periods when labour would have been difficult to obtain.
2. With the harvested product (seed panicles) packed in wheat sacks, the volume of seed harvested and sown was better quantified.
3. Irrigation through summer and autumn helped avert what would otherwise have been very poor results.
4. The second application of atrazine (with other knock-down herbicides) completely eliminated all weed competition during the summer and autumn growing periods.

Negative aspects

1. The manual bagging and hand spreading of panicles accounts for approximately 30% of the operator's time in harvesting and seeding.
2. Two factors appear to have contributed to the poor germination;
 - (a) The heavy growth of grass was mown prior to seeding forming a dense mulch on the ground through which the seed could not penetrate.
 - (b) Some sparse growth of grass when cured by spraying did not carry the fire needed to trigger the germination of kangaroo grass seed.
3. The soil used for market gardening over many years had obviously lost much of its organic structure with the result that it quickly baked hard and gave poor growth during the summer months.

Conclusion

Weed infestations cleared and sown with kangaroo grass are stabilized as the native perennial grass exerts dominance over herbaceous weeds.

When the grass sward is sufficiently developed it is burnt every two to three years to further strengthen the sward and to eliminate any invading woody weeds.

As the reservoir of weed seed is depleted, efforts are then made to encourage the regeneration of the next succession of indigenous plants.

Experience in weed control has taught me that there is no quick-fix solution for degraded vegetation. Unless we can restore viability to our native plant communities then the results of our work will only be short lived.

Request for Assistance

Re: Grass Seeds for PhD Research

I am writing to request assistance with obtaining a supply of seed of grasses (especially native species) for germination research I am undertaking as part of my PhD in Botany at Monash University. I would appreciate your assistance in any of the following ways:

1. Passing on this request to people you know may be able to help.
2. Providing seed of additional species I do not have [see below] for me to grow and plant out for collection of seed this summer. I would appreciate these seeds as soon as possible, and require enough to grow about 20-30 plants of each species.
3. Collecting fresh seed from the wild for me from December 20th to December 25th 1990, and posting it to me within two weeks so that it can be processed and counted for sowing on January 27th. Seed of any species I do not already have would be appreciated, and a minimum of 2 000 filled seeds of each species is required for each species to be used in germination trials.
4. Providing seeds of any of the following three wallaby grasses from as many source locations as possible, for me to test for variations within each species on germination characteristics:

Danthonia caespitosa

Danthonia racemosa

Danthonia setacea

[Either fresh seed, collected between December 20-25th 1990, or older seed. If older seed, then enough seed to grow 20-30 plants, from which I will collect fresh seed next summer for germination trials.]

5. Large quantities of seed of *Stipa* species for detailed germination studies, as to date many



species have exhibited poor germination, and a variety of seed treatments will be assessed to improve their germination. Seed fill rates are often also very low, so large quantities are required of each species (preferably those which are known not to germinate well) to ensure an adequate supply. We envisage that 2-3 kg of dried seedheads of each species will suffice. Seed can be collected whenever it is ripe, as long as we have a collection date to accurately age the seed.

If you can assist in any of these ways I would appreciate it. Please do not hesitate to contact me for further information if required.

I would be happy to reimburse you for any postage costs associated with sending these seeds to me.

Andrew Paget
14 Seascope Close
Ferntree Gully
Victoria 3156

Species not required

Agrostis aemula
Agrostis avenacea
Aira spp.
Amphibromus archeri
Amphibromus neesii
Anthoxanthum odoratum
Avena barbata
Avena fatua
Bothriochloa macra
Briza maxima
Briza minor
Bromus arenarius
Bromus catharticus
Bromus hordaceus ssp. hord.
Chinochloa pallida
Chloris truncata
Cynosorus echinatus
Dactylis glomerata
Danthonia duttoniana
Danthonia geniculata
Danthonia linkii
Danthonia penicillata

Deyeuxia quadriseta
Dichanthium sericeum
Dichelachne crinita
Dichelachne micrantha
Dichelachne sieberana
Digitaria sanguinalis
Echinochloa crus-galii
Echinopogon ovatus
Ehrharta erecta
Ehrharta longiflora
Elymus scabra
Enneapogon nigricans
Eragrostis brownii
Eulalia aurea
Festuca arundinacea
Festuca hookerana
Holcus lanatus
Lolium perenne
Microlaena stipoides
Nasella trichotoma
Paspalum dilatatum
Paspalum distichum
Paspalum quadrifidum
Phalaris aquatica
Phragmites australis
Poa annua
Poa ensiformis
Poa hiemata
Poa labillardieri
Poa morrisii
Poa poiformis
Poa sieberana
Polypogon monspeliensis
Setaria gracilis
Setaria verticillata
Sorghum halapensis
Sporobolus indicus var africanus
Stipa blackii
Stipa elegantissima
Stipa mollis
Stipa neesiana
Stipa scabra ssp. falcata
Stipa semibarbata
Themeda arguensis
Themeda triandra
Tripogon loliiformis
Vulpia spp.



Other Projects ...



Australian Native Grasses Trial Plots Cobbler Creek Recreation Park, South Australia

by Joan Gibbs [S.A. College of Advanced Education, Salisbury Campus. (08) 259 2111] and Jim Earl [National Parks and Wildlife Service, Lofty District. (08) 281 4022]. June 6, 1990

The Purpose of these trial plots is to test the success of methods of establishing several species of Australian native grasses in different habitats of the hills face at Salisbury East, north of Adelaide. This paper explains the rationale for selection of species, sites and methods of planting.

Species Selection

Grass species to be tested were chosen to demonstrate:

1. [the] establishment of summer and winter-green grasses on several aspects (north, south, east and west-facing slopes).
2. [the] competitive ability of Australian grasses with existing introduced plants, and
3. the low productivity of the selected species [and thus their potential] for reducing maintenance and fire hazard in the park.

The winter-growing grasses [to be] tested in these plots are *Microlaena stipoides* and *Poa spp.* (moist and dry-site species). The summer-green species are *Danthonia spp.*, *Chloris truncata*, *Enneapogon spp.* and others of low growth form, if available.

All species were chosen for their low productivity and low growth form, to create a landscape that requires little management by grazing or fire. Since these species are all

perennials, they [will] hopefully replace the exotic and prolific annual grasses.

Performance of the native perennials in competition with the aggressive annuals will be monitored in the trial plots. The early stages of establishment are the crucial ones when most seedlings fail. Stock will be excluded from the test areas.

Site selection

Study sites are located on each of the four aspects (N, S, E, and W-facing), near the Cobbler Creek ravine. Sites were chosen to be representative, or typical, of each aspect while still being accessible by vehicle.

Each site has a fenced trial plot 5 metres x 5 metres, with sheep-proof fencing. Variability between sites may be a source of error but this will be kept to a minimum under the constraints of this study.

Site differences, such as soil composition, moisture and drainage will be recorded when analyses are completed.

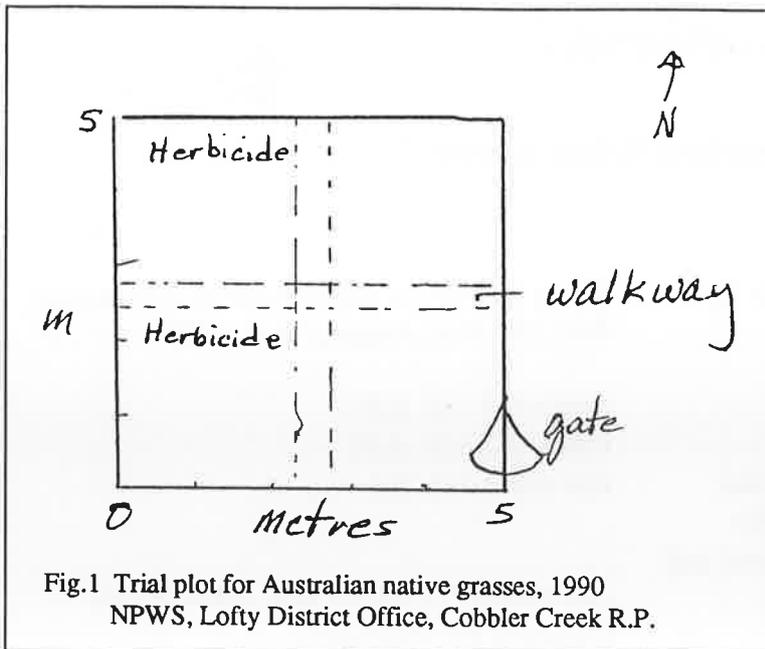
The four fenced sites may be characterised as follows:

South-facing slope - Coolest, wettest site; lowest solar radiation

North-facing slope - Driest; most exposed to full, mid-day sun

East-facing slope - Milder site; exposed to morning sun when air is cooler and moister

West-facing slope - Drier site; near NPWS HQ for quick reference



measured by comparing cover and/or individuals in sections with and without herbicide (see Fig.1). Successful competition will be judged by no difference between the two sections.

Productivity of the grasses [will] be measured by measurements of height and annual above ground biomass accumulation of sample areas.

[Data recorded on formatted data sheets].

Acknowledgements of assistance are given to the following persons:

Methods and Techniques

Methods of establishment for the native grasses will be by transplanting, direct seeding or tubestock. Transplanting will involve taking plant parts such as rhizomes, plugs or crowns from nearby locations and placing them in the prepared plots. This will be done first for the winter-growing grasses, *Microlaena* and *Poa*, mainly in the south-facing plot.

Direct seeding will be tried in all plots, usually in microniches where seedbed [will be] prepared in small localised microsites. Microniches [will be] prepared by scraping away two cm of soil in 20 cm diameter circles to remove weed seeds or herbicide, and adding mulch and spray paint to prevent loss of seed.

Success of seeding will be measured by comparing numbers of seed sown to established plants at a later stage, say two or three years later. A record of germination and seedling mortality may provide insight into the performance of particular seed under prevailing weather conditions, but seedlings may not be visible or identifiable for two years. Results of this method may not be immediately obvious, but they will be worth waiting for.

Competition of these [native] grasses with other plants at the site will be observed and

- Gerry Giebel, NPWS
- Bob Gooch, NPWS
- John Stafford, East Torrens Council
- Angela Renfrey, Botany Dept., University of Adelaide
- Dermott Kelly, SGAP Aust. Grasses Study Group

References:

- Jessop, J.P. and Toelken, H.R. (eds.) 1986 *Flora of South Australia*, Vol.4 (S.A. Govt. Printer, Adelaide)
- Aust. Societies for Growing Australian Plants (SGAP)
- Australian Grasses Study Group, Newsletter No.7, Summer/Autumn 1990.



Other Projects ... continued



Perennial Native Grasses for Rangeland Rehabilitation Port Augusta, South Australia

[The following was submitted as a very short summary of the proposal - Ed.]

Objectives

1. Approximately 40 species of perennial grasses which are potentially suitable for rangeland rehabilitation will be compared and ranked against pre-determined criteria.
2. Three perennial grass species suitable for rehabilitation of severely degraded areas will be compared and ranked against pre-determined criteria.
3. Five perennial grass species suitable for introduction into grazed pastures will be compared and ranked against pre-determined criteria.
4. Information resulting from the assessments will be incorporated into an extension programme which will be conducted throughout the rangelands area of South Australia.

Methodology

The project can be divided into four phases which have the following headings:

1. Selection of perennial grass species
2. Establishment of demonstration sites
3. Data collection
4. Extension campaign

Current status: The project has been put to the N.S.C.P. [National Soil Conservation Programme] for consideration for funding.

Contact person

David Powell, Rangeland Management Officer

South Australian Department of Agriculture
Box 357, Port Augusta S.A. 5700

(086) 423 722 B/H

(086) 422 608 A/H

Fax (086) 426 256

Alternative Native and Introduced Grasses for Pastures

Wagga Wagga, New South Wales

by W.H. Johnston

Soil Conservation Service of NSW
Wagga Wagga Research Service Centre
P.O. Box 4146, South Wagga Wagga 2650

[The following extract, taken from the above paper, appears in the proceedings of the 31st annual conference (June 1990) of the Grassland Society of Victoria, *Sow What, Where? Pasture species for particular purposes.* - Ed.]

“Two new research programs have commenced with the objective of focusing attention on alternative species for pastures in southern New South Wales and north eastern Victoria. They are:

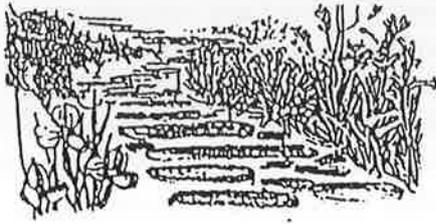
*A comparison under grazing of lovegrass, phalaris and annual ryegrass pastures oversown with subterranean clover ..

*A selection programme to develop agriculturally useful cultivars of native grasses for use in pastures to reduce rates of groundwater recharge.

This project is being conducted in collaboration with Ms. M. Mitchell from Rutherglen Research Institute and is being sponsored by the Victorian Salinity Bureau and the Soil Conservation Service of NSW.

It has involved a number of collection trips through western NSW and northern Victoria to collect live plants of 29 target species which will be established in plant nurseries at Wagga Wagga and Rutherglen.

So far about 340 accessions have been collected, and it is anticipated that upwards of 1 000 will eventually be screened. The target group of species exclude those which injure stock, and includes those most likely to have a



Display Gardens

Tasmania:

The Grasslands Gully/Domain Native Flora Garden, on Upper Domain Road, Hobart

Victoria:

Bushland Flora nursery "indigenous display garden", Ferntree Gully.

The Botany System Garden at Monash University, includes native grasses. A System Garden is a collection of growing plants chosen and arranged for a particular educational purpose - the teaching of plant taxonomy. Care has been taken that there is easy access to any plant.

Castlemaine - Ian Higgins is establishing a display garden of the Castlemaine region's indigenous plants (includes grasses). His address is 54 Hunter St., Castlemaine. 3450. Ph: (054) 72 3093

Royal Botanic Gardens, South Yarra, is in the process of establishing display beds of "interesting" native grasses. Contact Josie Dujmovic, c/- Dr. R. Spencer (Horticultural Botanist), Royal Botanic Gardens, Birdwood Avenue, South Yarra. 3141.

place in agriculture and which exhibit summer activity.

Initial selection work will concentrate on growth performance, seed production and retention characteristics, fertility responses, palatability, response to low pH, and water use efficiency. Secondary evaluations will examine some of these issues in more detail as well as field performance."

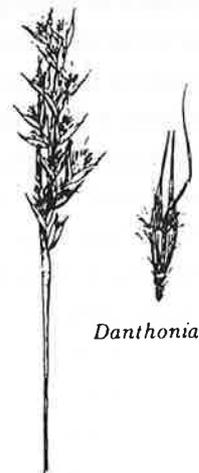
VCAH Burnley Campus. For further information, contact Greg Moore there.

South Australia:

Black Hill Flora Centre, Athelstone - grass display beds.

New South Wales:

Native grasses lawn - Handle St., Armidale (front lawns and median strip) and in the grounds of the University of New England (University cricket and hockey oval). For further information, contact Dr. R.D.B. Whalley at the Botany Dept.





Publications

Native and natural pastures on the Northern Slopes and Tablelands of New South Wales
by G.M. Lodge and R.D.B. Whalley
Technical Bulletin 35 (NSW Agriculture & Fisheries 1989)

[the following extract is taken from the above - Ed.]

“Summary: This resource document is presented in two sections.

Firstly, the physical characteristics and the native and natural pastures of the Northern Slopes and Tablelands of New South Wales are described. The topography, geology, soils and climate of the region are briefly outlined. Then the development and characteristics of the native and natural pastures and the important native and naturalised grasses are discussed in detail. These species are classified into warm-season perennials, yearlong green perennials, cool-season perennials, warm-season annuals and cool-season annuals. The native warm-season perennials are the largest group of species present in the region and so those grasses characterise the structure and productivity of the native and natural pastures. Information drawn from a wide range of sources is used to indicate the grazing value of the predominant species of each of these groups. A schematic outline is presented showing the interrelationships between the original and present-day pastures and an extensive literature review examines the probable effects of grazing, fertiliser application and fire on pasture composition.

Essential to pasture management is the manipulation of the pasture composition to obtain and maintain desirable species assem-

blages. Hence pasture management objectives need to be clearly defined and desirable species identified before these pastures can be managed effectively. The development and implementation of grazing management systems based on plant ecology and physiology is outlined together with research investigating the potential for domesticating and sowing the better quality, adapted, native perennial grasses.

The second section comprises an annotated bibliography of either refereed scientific journals, bulletins and review papers, or theses and book chapters, published since 1970 and relevant to native and natural pasture research on the Northern Slopes and Tablelands of New South Wales. Over 50 scientific articles are included, together with 25 theses and five book chapters.

The general philosophy and principles of native pasture improvement and management are discussed and the future direction for research is outlined.”

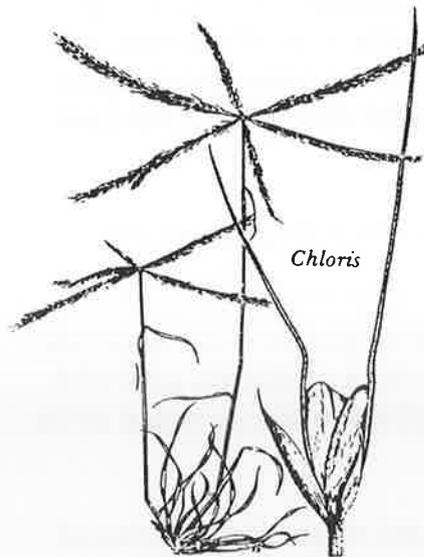
Native Plants of the Sydney District: An Identification Guide

by Alan Fairley and Philip Moore
(Kangaroo Press in association with SGAP-NSW Ltd. 1989)

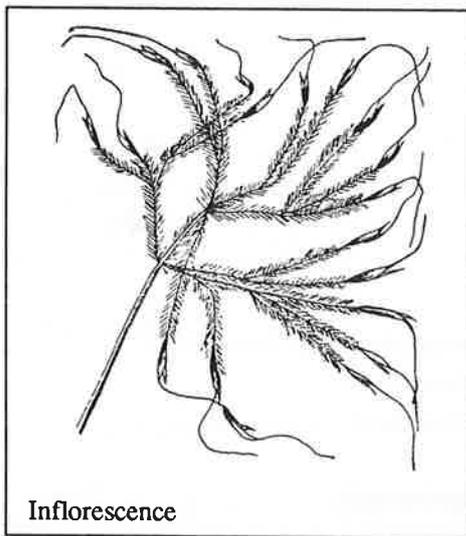
An identification guide to the native plants of the Greater Sydney district, an area which extends from Newcastle to Nowra and west to the Great Dividing Range. It contains colour photographs and descriptions of some of the common native grasses, and some of the striking native species as well.

Native pastures in Queensland: The resources and their management
(Queensland Dept. of Primary Industries, 1990)

“The book describes Queensland’s many native pastures. It also discusses their management and .. the problems caused by woody weeds and land degradation. Useful appendices on plant identification and soil sampling are included and the bibliography contains more than 500 references. This work provides an important base reference for students, researchers, advisory officers and others concerned with the maintenance and management of Queensland’s native pastures ..”



Feature Plant



Stipa elegantissima, elegant/feather spear-grass, is rhizomatous and has wiry, decumbent stems to 2 m long¹. Winter-growing perennial, 50-100 cm high, sometimes forming tussocks to 30 cm diameter². Stems are stiff, slender, cane-like and often-branched. Leaves dark green/silvery grey, narrow and rough to the touch. The inflorescence is a very loose open panicle, 15-25 cm long, and expanded widely (8-15 cm wide) giving a soft, wispy, feathery plume. Pinkish colour, eventually turning white. Flowers mainly Sept.-Nov.¹ Responds to summer showers.²

Occurs in W.A., S.A., NSW and Victoria.¹

In western NSW “grows predominantly in the south and east of the region, less common in the west. Often on clay soils, usually seen growing through and above shrubs such as dillon bush (*Nitraria billardieri*), lignum (*Muehlenbeckia cunninghamii*) and cotton bush (*Maireana aphylla*); may also be locally common in mallee communities on red earth soils and occasionally in bimble box [*Eucalyptus populnea*] and white cypress pine [*Callitris columellaris*] stands.”²

In the foothills north of Adelaide, Martin O’Malley found the grass on a west-facing slope under the shelter of peppermint gum, *Eucalyptus odorata*, and I have seen it along the roadside, on the plain, at the base of mallee trees; also near Blanchetown, in the Murray Mallee, growing through and above medium sized shrubs - very attractive when it flowers in this situation as it just caps the bush like a fall of snow.

The species has ornamental **potential** around buildings and within courtyards but of limited use in open areas.³ Palatable but of limited value as a forage species.²

Peak harvesting period is November and seed shatters quickly.³ Cut off the heads with secateurs and put into a brown paper bag to catch the loose seed when it falls. Not a prolific seeder.

Dormancy or after-ripening period: 5-6 months.³

Germination: Seed planted in late September (Adelaide), in nursery conditions, gave 94% germination (32/34) and was up within 14-19 days.

Sow in autumn and ensure the site is free of winter-growing weeds. Prefers an open, sunny position; drought and frost resistant.⁴ Can also propagate by division.⁴



Seed Bank Report

The following grasses are in stock:

- Agropyron scabrum
- Chloris truncata (Windmill Grass)
- ✓ Cymbopogon ambiguus (Jeant Grass)
- ✓ C. obtectus (Jockey Heads)
- C. sp.
- Danthonia caespitosa
- D. duttoniana
- D. geniculata
- D. linkii
- D. linkii var. fulva
- D. pilosa
- ✓ D. racemosa (Wallaby Grass)
- D. setacea
- D. tenuior
- ✓ Dichanthium sericeum (Old. Blue Grass)
- Dichelachne longiseta
- ✓ Enneapogon avenaceus (Bottle-washers)
- ✓ E. nigricans (Niggerheads)

References

1. Jessop, J.P. and Toelken, H.R. (eds.) 1986
Flora of South Australia 4
(S.A. Govt. Printing Division, Adelaide)
2. Cunningham, G.M. et al. 1981
Plants of Western New South Wales
(Soil Conservation Service of NSW & NSW Govt. Printing Office)
3. O'Malley, Martin 1988
Revegetating with native grasses
(S.A. CAE Salisbury Campus, Adelaide)
4. *Encyclopaedia Botanica* 1986
Compiled and illustrated by Frances Bodkin (Angus & Robertson)

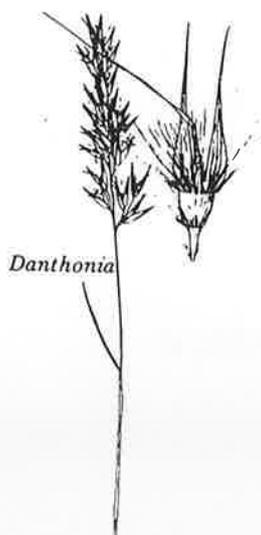
- ✓ Microlaena stipoides (Meadow Pigweed)
- Plectrachne sp.
- ✓ Poa labillardieri (Jussack Grass)
- Stipa drummondii
- S. elegantissima
- S. eremophila
- S. mollis
- S. nitida
- S. nodosa
- S. setacea (Corkscrew Grass)
- ✓ Themeda triandra (Kangaroo Grass)
- ✓ Triodia irritans (Porcupine Grass)
- Triodia sp.

Any of the summer-growing grasses, for example, *Chloris*, *Cymbopogon*, *Dichanthium*, *Stipa* and *Themeda* can be planted now as can *Microlaena* and some of the *Danthonias*. Seed is available to members by sending a SAE (55c postage, 60c

interstate). Remember that as with other banks, you will get the most interest out of our seed bank if you make deposits!

To seed donors: please keep seed lots separate i.e. seed of the same species but collected in different seasons/years and/or from different sites. Add a pinch or two of Derris dust to kill any insects and please remember to label your seed, including the date and place of collection, aspect, type of vegetation and any other useful information.

Thanks to donors Helen Bizzai and Bev. Courtney.



Native Grasses for Pasture

[From the Grassland Society of Victoria newsletter, June 1990]

Danthonia (wallaby grass or whitetop) and *Microlaena* (weeping grass) are two native species which appear to have value in some environments. At a field day held by the Southern Tablelands branch of the GSNSW [Grassland Society of NSW] last November, data was presented on the yield and herbage quality of *Microlaena* and *Danthonia* compared to perennial ryegrass.

Mean results for 1989 are shown in Table 1. and confirm the value of the two native species in this environment.

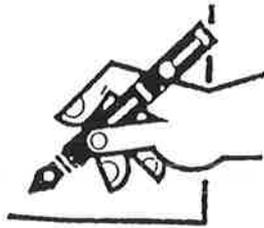
There were some seasonal effects:

- a) herbage quality was generally higher in autumn and winter for all species
- b) *Microlaena* had the highest growth rate in summer but the lowest in winter and spring, and
- c) ryegrass had the highest protein levels in autumn and winter but lowest in spring and summer ..

For further information contact Alan Andrews, Faculty of Agriculture, University of Western Sydney - Hawkesbury, Richmond. NSW 2753

Table 1. Comparison of native grasses with ryegrass

Species	Energy MJ/kg	Protein %	Yield t/ha/yr
ryegrass	9.4	15.1	6.8
<i>Microlaena</i>	9.2	14.8	8.3
<i>Danthonia</i>	9.4	14.2	8.3



Correspondence

Grasses Course

May 27, 1990

"I am a grass specialist and run courses on them each summer. Geoff is a consultant botanist and director of Ecological Horticulture P/L. Geoff's [address] is 69 Spensley St., Clifton Hill. Vic. 3068 .."

(Dr.) Graeme S. Lorimer
42 Gratten Rd., Montrose. 3765

July 29, 1990

"Thank you for your welcome to the Aust. Grasses Study Group .. I'd prefer not to distribute copies of the course notes for my grasses courses until copyright is established, which I hope will occur this summer when they're published (with luck) .."

Native grasses at the Expo in Japan

June 22, 1990

"We have done no work on grasses I am afraid, but our President, Laurie Smith, used *Pennisetum alopecuroides* [not a native] and *Triodia irritans* in the Australian garden at the Garden and Greenery Expo in Osaka (Japan) this year. I think we may have used a bit of *Themeda triandra* too. These were the only ones that were available to us commercially."

Jan Sked (Pine Rivers SGAP)
P.O. Box 41, Lawnton. 4501

In the Murray Mallee ...

May 16, 1990

"As the owner of a block of land in the Murray Mallee, I have an interest in the propagation, and collection, of grasses of the arid regions. Any back copies of newsletters will help toward building a relevant library on this subject."

Michael Hyde
P.O. Box 1396, Murray Bridge. 5253

June 20, 1990

"Thank you very much for enclosing the latest grass newsletter. This is the type of practical information I am seeking .. I have not had time yet (or the skill!) to identify grasses on the property, but intend doing so, and adding specimens to the herbarium I am forming, from now on, as the rain has started and growth will no doubt follow shortly! I would anticipate having a reasonably comprehensive list available by early next year."

Does the grass study group hold meetings, or organise outings, related to grasses? If these activities are organised on an informal basis, I would be pleased to be included."

Michael Hyde



National Trust (NSW)

April 25, 1990

"I am with the National Trust in Sydney, and I work with Judie Rawling in the Bushland Management Program. Thank you for the newsletter that you kindly sent us, and I have read it with great interest."

John E. Neff
27 Woodberry Road
Winston Hills. 2153

May 17, 1990

"Our Site Management Officer John Neff has passed your letter onto me so that I can send out some information about our Bush Management Program.

I enclose our standard Information Sheet and a copy of our last two News Sheets. There is also a Bush Regeneration Works Manual which retails for \$20.00 from our shop, in case anyone in S.A. is interested .. We are looking forward to getting our News Sheet. "

Judith Rawling
Bush Management Officer
The National Trust of Australia (NSW)
GPO Box 518, Sydney. 2001

Grassland management in eastern Victoria

May 8, 1990

" .. it was only after reading an article in IFFA [Indigenous Flora and Fauna Association] newsletter that I became aware of this group (I must read SGAP newsletters more carefully!). I am also a botanist, employed as Flora and Fauna Guarantee Officer for the Dept. of Conservation and Environment, Bairnsdale. Grassland management is just one of the issues to be dealt with in this region, particularly on the Sale plains where a combination of historical events including alienation of land by tree

and shrub clearance have created an ongoing problem for many species, not only grasses.

I am not sure how the study group operates, but presume it provides a forum for information exchange, and in this area I would find much benefit for my own work .. "

Gill Earl
P.O. Box 910, Bairnsdale. 3875

From Warrnambool, Victoria

April 3, 1990

" .. I am growing the following:
Themeda triandra (kangaroo grass) - grown from clump divisions collected locally; have about 7-8 clumps beneath other shrubs or filling in spaces.
Dichanthium sericeum (Queensland blue grass) - good sized clump (about three years old); has not self-seeded; I prune yearly almost to the ground.
Danthonia (sericea?)? Silver wallaby grass - grown from SGAP seed; has self-seeded vigorously; easily controlled.
Pennisetum alopecuroides [not a native] - sensational as a clump; growing in scoria; [has] not self-seeded.

I also grow 3-4 different tussocks [namely]: Restios [rushes] (not really good for me [because] they die back), several spectacular NZ grasses [and] *Poa australis* (in a large container).

I have my eye on some locally growing *Chionochoa* but [have] not had the time to collect it. Would like to get *Eragrostis brownii*, *Microlaena stipoides*, *Stipas*, other *Poas* [and] *Cymbopogon ambiguus* .. Would love to grow more .. "

Cherree Densley
Princes Hwy, Killarney. 3283



May 17, 1990

“ .. regarding my experience in growing native grasses - I do have a number of different species in my garden as I find them fairly easy to grow under trees and they also add variety to the garden. But apart from this I know very little about them. They are not easy to obtain, which is a pity as the clumping sort would enhance most gardens .. “

Joan Henderson
“Carrakoorte” RSD
Warrnambool. Vic.

and from elsewhere in Victoria

April 9, 1990

“Feeling very guilty for not sending this seed earlier, but better late than never, I suppose! The three local *Danthonias* were keyed out by me and a botanist friend, using a combination of *Grasses of NSW* and Willis' *Handbook to Plants in Victoria*. We are not sure of *D. procera* as Willis is a bit out of date with his grasses now, but I will get myself into gear next spring and send seed and pressings to the Herbarium.

They looked great in the garden this spring and I collected a lot of seed for broadcasting into my nature strip, which is going to be all indigenous plants.

After a couple of inches of February rain here, *Dichanthium sericeum* (silky blue grass) has appeared everywhere, confirming that its dormancy period is virtually non-existent. It could easily become a weed here, so I have decided to keep it, and all other non-local species, down to just one or two plants, for show only. The local species can do as they please!

This season I added *Microlaena* and two *Stipas* to my local collection, and of course the *Themeda* is still doing well. I have a good method of collecting seed from this - it is

planted beside a paved patio area and the mature seeds fall onto the patio where they can be easily swept up. Its germination rate is still very low - I can sow a whole tray and only get a few plants - very depressing, as it is very popular with people buying grasses.

I recently took part in an Environment Week, run by a nearby Shire Council, where I had a display and was selling local plants. Just for interest I took along a box of tubes of the three local *Danthonias* and to my surprise they were all gone in the first hour. Apparently Don Burke had featured grasses on his show the night before, so I mentally thanked him for helping to boost my sales! It's good to see the growing interest in grasses, although disturbing to see how many species on roadsides and reserves are introduced.”

Bev. Courtney
3 Burswood Close
Frankston. 3199

July 18, 1990

“ .. As a Flora & Fauna Planner with DCE [Dept. of Conservation and Environment], I am involved in the preservation and revegetation of native grasslands. I am particularly interested in methods of revegetation with indigenous species, and management of remnant grasslands (including non-grasses) on road and railway reserves.”

Jodie A. Yoey

April 20, 1990

“ .. I have long been interested in the cultivation of native plants. More recently I have directed my interest to the amenity value of native grasses for reclamation of degraded land and the use of native grasses generally in the landscape. I am presently studying for a degree in horticulture. At this stage, due to my study work load, I wish to be a passive member.”

Roslyn Kilgour
8 Lorne Road, East Hawthorn. 3123

Native pasture grasses in northern S.A.

July 29, 1990

“ .. I have included a very short summary of my proposed Native Grass project for the Northern areas [of South Australia] .. Should the project get funded, 40% of my time will be spent on native grasses, so I am keen to get as much information as possible.

A pastoralist, David Brooks from Cordillo Downs in the far north east of the state asked me about what grasses to plant in his environment. I naturally said seed availability is the main problem .. As you can see, part of the project is to try and establish seed nursery areas, so hopefully I will be able to supply seed to pastoralists and to the [study group] seed bank if the project gets funded. I hope to be notified about the funding of the project by November, so fingers crossed until then.”

David Powell
Rangeland Management Officer
Northern Region, Dept. of Agriculture
P.O. Box 357, Port Augusta S.A. 5700



**Australian Grasses Study Group (ASGAP)
Statement of Income and Expenditure
for the year ended June 30, 1990**

Income

Membership subscriptions	118.00
Donations	<u>5.00</u>
	123.00

Expenditure

Envelopes	8.89
Postage	76.65
Photocopy	<u>10.63</u>
	96.17

Income less expenses **26.83**

plus the 88/89 deficit (144.70) (117.87)

I've been able to photocopy the last couple of issues for free hence a much reduced photocopy bill this year, however this may not always be so.

