Liaison

NEWSLETTER

NATIVE PLANT REGENERATION STUDY GROUP
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Contents

Next Edition

Articles will be due in by the 1/7/98

For an August Newsletter

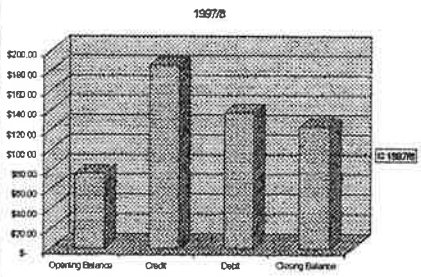
Financial Statement for 1997/98

As the financial year draws to a close it is that time of the year again where we have a look at what the money has been spent on and what saving we can make in the next financial year.

I have been invited to participate in a project that is being run by the Native Grass Resources Group of South Australia, looking at the germination of grasses, more about this latter in the newsletter.

The project looking at the quality assurance of the revegetation has been wound up not from a lack of interest in the study group just that the partners we had namely four Landcare groups were not lucky in receiving an NHT grant to carry out the project.

Below is a set of dot points that I have made on pertinent issues for the financial year



- Increase in cost by $17.00 for sending the newsletter to the printers
- Substantial increase in membership
- Three Newsletters instead of four (3 newsletters again in 1998/99)
- **Membership fees can be reduced to $6.50**. (If you have paid, your 1997/98 fees then deduct the correct amount from the next financial year's fees.

I will try to put out three newsletter equally spaced throughout the next financial year

Cheers

Matt Pearson

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Trees Help Limit Salinity Spread

By Nico Marcar & Debbie Crawford from Rural Research January 1998

Tree planting is one option to increase production on saline land but its success depends on choosing suitably salt and water logging tolerant species and adopting appropriate land preparation, planting and maintenance procedures.

More than 76 million hectares of land worldwide have become salt-affected due to human causes.

In Australia, more than 2Mha of dry land and irrigated agricultural land have become salt-affected due to rising groundwater over the past 30 years.

Over-irrigation in semi-arid climates and the clearing of deep-rooted native vegetation in dry land areas have resulted in secondary salinity.

Salt-affected soils have been adversely altered for the growth of most plants due to the presence of high concentrations of soluble salts and excess sodium, with many saline soils also having shallow water tables or periods of water logging which results in poorer soil structure.

In addition, a significant proportion of Australia's surface and ground waters are affected by salt.

Planting trees to manage salinity is gaining wider attention particularly in irrigated regions of Victoria and New South Wales and in dry land regions of Western Australia, South Australia and Victoria.

Managing salinity means stopping the rise of salt-laden water tables at the local, catchment and regional scale.

Research shows most effort should be put into revegetation of recharge locations to reduce the percolation of rainfall to groundwater. If the dual aims of providing marketable products and fostering land and water rehabilitation can be demonstrated, the economics of tree growing will be enhanced.

Tree growing systems include wide-spaced agroforestry such as alley farming, wood lots and plantations.

In irrigation areas of southern Australia, emphasis is being placed on the use of commercial species to assist with saline water table control to improve agricultural productivity, the use of pumped saline groundwater and reusing saline drainage water to reduce the transport of salts to streams and rivers. Reduced erosion, improved aesthetics and maintaining conservation principles are additional benefits of tree growing in dry land and irrigation locations.

For maximum production on saline land, it is vital to choose the correct tree species, land preparation, planting techniques and tree growing systems.

Species choice will depend on a range of soil and climate factors including the degree of soil salinity and water logging and which wood and non-wood products are desired.

While tree species attracting commercial plantation interest have at best only moderate salt tolerance, selection for salt-tolerance within a species can improve its performance on saline land.

Trees to manage salinity

In Australia's dry land areas, using commercial tree species in salinity management focuses on the 600-800 millimetre average annual rainfall zone where up to l00, 000ha of land are salt-affected.

It is usually recommended that up to 30 per cent of the catchment be revegetated, often in lower slope situations.

Commercial tree species such as Tasmanian blue gum (Eucalyptus globulus) can be grown successfully for pulp and timber in lower slope situations if salinity and water logging are low.

There is interest in growing commercial eucalypts and other species in moderately saline waterlogged areas in WA on properties where joint venture pulp production schemes are in progress but planting is hampered by the unavailability of suitably salt-tolerant genotypes. More salt-tolerant but less commercially valuable species including river red gum (E.camaldulensis), swamp yate (E.occidentalis) and casuarina are recommended for moderately to highly saline areas.

However, dry land salinity occurs mostly in the wheat growing and sheep grazing zones (400-600mm annual rainfall) of WA, SA and Victoria with increasing amounts in NSW and Queensland.

Rainfall limitations reduce the tree species options but there are many tree and shrub species, which can be grown mainly for firewood and on-farm timber.

These include most of the moderately to very highly salt-tolerant species adapted to drier climates.

Other options such as developing mallee eucalypti plantations for industrial and pharmaceutical oil production in the WA Wheatbelt and the use of acacias for fodder are being pursued.

Salt-tolerant trees, shrubs and grasses can be planted on or near discharge areas such as seeps and scalds.

Trees planted adjacent to saline seeps and scalds will have better survival, growth and water use than those planted on the seep due to the soil's physical and chemical conditions being more favorable and tree roots will usually be tapping into less saline ground water.

If the water table level drops and surface soil salinity is reduced, more trees, grasses or crops can be planted towards the centre of the area.

Planting trees in discharge locations can:

- Help lower locally high water tables if trees can directly access groundwater or reduce recharge.
- Help reduce soil erosion via root activity and litter breakdown.
- Provide shelter, shade and tree products including honey and oils.
- Provide wildlife habitats and maintain conservation values.
- Decrease stream and river salinity.
- Improve aesthetics and land.

Trees can be planted as compact wood lots and blocks at more than 500 trees per hectare or around saline seeps, scalds or scattered at less than 500 trees per hectare throughout the seep.

In wide-spaced agroforestry plantings, pastures should not be grazed until trees are well above grazing height as cattle in particular can damage well-established trees.

Recent attempts by WA farmers to use one or more rows of salt-tolerant trees such as river red gum, York gum (E.loxophleba), swamp yate, salt river mallet (E.sargentii and swamp mallet (E.spathulata) spaced 15-30 z metres apart, have lowered saline water tables u under the trees and the alleys between rows.

However, pasture growth in the alleys has often been poor due to tree root competition particularly in narrow alleys and on sites, which do not permit rapid downward growth of tree roots. There has also been interest in using alley-farming systems for managing dry land salinity in eastern Australia.

Irrigation areas

Irrigation salinity resulting from over-irrigation and poor drainage is often associated with high water tables.

The problem occurs within irrigation areas along the Murray-Darling River system in SA, Victoria, NSW and some areas in Queensland.

With suitable irrigation management to promote the leaching of salts, viable wood or pulp producing enterprises may be possible for soils of low to moderate salinity using river red gum, river oak (Casaurina cunninghamiana) and possibly Tasmanian blue gum and flooded gum (E. grandis).

The economics of tree growing on saline land will be improved if suitably salt-tolerant, fast growing commercial species can be identified.

Considerable interest has developed in planting commercial tree species for agroforestry and salinity control on non-saline as well as low to moderately saline land in irrigation areas of northern Victoria and southern NSW.

However, to date relatively little information is available for determining the relationships between species, salinity, growth and water use.

Preliminary results from some trials irrigated with pumped saline groundwater ranging in concentration from 2.5- 10 dS/m showed after two summers of irrigation only small growth reductions for several species including blue gum and flooded gum at moderate soil values were found.

Several trials are underway on lighter-textured soils in northern Victoria and SA.

In these trials, leaching fractions are high which accounts for the low reductions in growth and water use for species such as river red gum.

Tree planting in the form of wood lots, plantations, and borders of paddocks and along channels, within salt-affected or high water table areas can reduce saline water tables by controlling leakage from channels.

Trees also use saline groundwater, which would otherwise have flowed, to streams by subsurface seepage or deliberate drainage disposal. A longer-term problem with planting trees on saline land or above a saline water table is the possible accumulation of salts in or below the root-zone which may reduce tree growth and water use and eventually cause trees to die.

Field studies in Victoria and WA are evaluating salt accumulation in tree root-zones.

One flooded gum plantation near Kyabram, Victoria, shows a significant accumulation of salts in or just below the zone of actively growing tree roots. It also appears to be seasonal probably.

This is due to water table fluctuations though growth rates remain acceptable with no direct evidence of tree dieback.

It is possible that suitable site management for irrigation and drainage, coupled with sufficient and timely rainfall, may alleviate salt accumulation especially for lighter soils and where water tables are deep.

How trees respond to salt

Growth is significantly reduced at relatively low salt concentrations. In most cases the roots try to limit, how much salt enters the plant with most salts being diverted to old leaves. If saline soils are also waterlogged for long periods they will be less able to restrict salt uptake due to lower soil oxygen supply and will show more signs of leaf damage and reduced growth.

Halophytic trees and shrubs tend to show growth stimulation at low levels of salt and growth reduction at higher salt concentrations. While they also exclude salts at the roots, these plants are better at dealing with salt accumulation in their leaves. Halophytes can also be affected by the interaction of salinity and water logging.

On sodic soils, root growth is impeded due to poor aeration, high soil strength, and stickiness when wet, cracking soil surfaces and nutritional imbalances may occur if soil pH is raised.

For more information contact: Nico Marcar at CSIRO Forestry and Forest Products on telephone (02) 6281 8211, fax (02) 6281 8312. CSIRO

Lagoon Creek Restoration and Regeneration Project

Background

Lagoon Creek catchment lies north and northwest of the town of Caboolture, 42km north of Brisbane. Much of the urban area of Caboolture is within the catchment. Lagoon Creek flows from the southeast with its headwaters in the D'Aguilar Range. At Caboolture, it turns northeast about 3km upstream from a junction with King John Creek. It then continues in a southeasterly direction after this junction, across the floodplain of the Caboolture River, and joins the river in its tidal reaches.

The remnant vegetation is indicative of the situation before recent settlement. Aboriginal burning practices probably resulted in an understorey of grasses on the ridges, kangaroo grass in the drier areas and blade grass on the slopes where the canopy provided more shade. Areas burned at less frequent intervals carried more undergrowth, largely wattles, but also a wide range of shrubs and grasses.

Table 1 outlines the growth of Conospermum species on three tissue culture media supplemented with cytokinins. Conospermum floribundum and C. incurvum were less prolific than C. triplinervum and C. stoechadis, and appear to have less variability in shoot morphology. Aeration of culture vessels may depress shoot proliferation slightly but the benefits gained from reduced hyperhydricity easily offset this effect.

TABLE 1

Empirical in vitro growth performance of Conospermum species (media variation by approximate multiplication rate/month)

Species	*Medim : PGR (M)*	*Multiplication rate / month*
C. floribundum	1 / 2 MS	X 1 - 2
	1 / 2 MS:K (2.5) + BAP (0.25)	X3
	1 / 2 MS: K(5) + GA (3)	X3
C. incurvum	1 / 2 MS	X 1 - 2
	1 / 2 MS:K (2.5) + BAP (0.25)	X2 - 3
	1 / 2 MS: K(5) + GA (3)	X2 - 3
C. triplinervum	1 / 2 MS	X 1 - 2
	1 / 2 MS:K (2.5) + BAP (0.25)	X 4
	1 / 2 MS: K(5) + GA (3)	X 4
C. stoechadis	1 / 2 MS	X 1 - 2
	1 / 2 MS:K (2.5) + BAP (0.25)	X 3
	1 / 2 MS: K(5) + GA (3)	X 5

MS = Murashige & Skoog (1962) medium, K= kinetin, BAP= 6-benzylaminopurine, GA = gibberellic acid, PGR = plant growth regulators

Shoot cultures have been established and multiplied using similar techniques as described above for four species of Conospermum: C. floribundum, C. incurvum, C. triplinervum and C. stoechadis. Roots have been produced in culture for shoots of three of the four species so far and rooted shoots of these have been established in potting mix. Potted plants of Conospermum floribundum, C. incurvum and C. triplinervum have grown on in potting mix with good survival rates. Some care needs to be taken to avoid pests particularly aphids which appears to like the young softer leaves, especially of Conospermum triplinervum in our experience, however pest problems are likely to vary considerably with different circumstances.

The protocol for tissue culture of these species requires further refinement and development for commercial applications, but serves the purpose for Kings Park and Botanic Garden to establish a basic technique which can be modified to suit rare and endangered species of Conospermum and possibly other related Australian Proteaceae.

There are many books and other publications that detail the tissue culture process for a variety of plant species. A small book entitled "Plant Tissue Culture general principles and commercial applications' by R. Drew, M. Smith J. Moisander and J. James, published by the Queensland DPI, gives a good account of general principles and applications of tissue culture. (This article is the result of correspondence with Frank Hartley, and Eric Bunn added some specific details when requested, in case some of our members might be interested. Editor)

MT LOFTY TRESS MAKING A COMEBACK

Trees are making a comeback in the northeast Mt Lofty Ranges in South Australia. In fact, according to Phil Barron of Primary Industries SA, there are now more live trees in the Tungkillo area than there were in 1979.

Barron has been working with the Tungkillo, Rockleigh, Harrogate and Spring Valley Landcare groups and has just finished a major study in the Ranges which included counting the number of native trees on properties in the Tungkillo and Angaston areas from aerial photos taken 15 years apart. He says the results had major implications for the environmental health of the Ranges and should give people confidence that a reversal of tree decline was possible.
"There has been widespread concern throughout the Ranges about tree dieback and the effect this can have on land productivity, biodiversity and the general appeal of the Ranges," Barron says."The sample sites comprised 1,000 hectares of farm lands near Tungkillo and also near Angaston.

"Trees around houses and in windbreaks, those thought to be exotic and those on roadsides were not included in the count," he says."The aerial photos showed that not only has tree decline stopped in the Tungkillo area, it has been reversed since 1979 with about 600 more trees in the study area.

"Tree decline has also stopped in the study area near Angaston although the recovery has not been as marked as at Tungkillo.

"These results are particularly encouraging as an earlier study showed significant tree decline from 1950 to 1979."

Barron, whose studies were funded by Bushcare (formerly the Save The Bush program) attributed the turn around to:

1. Regeneration following the wet year of 1974;
2. Introduction of clearance controls in 1983; and
3. Changes to land management, conservation and revegetation efforts by landholders especially near Tungkillo, which have reduced the tree death rate and fostered new trees.

"While the results showed a positive trend, the counts revealed an average of fewer than two trees per hectare on both sites," Barron says.

"It is questionable whether this number of trees can adequately maintain local water tables, halt salinity and contribute as effective stock shelter - so revegetation efforts will have to continue. Further, there is very little plant species or age diversity of the flora at the two sites."

Barron says that apart from the Tungkillo and Angaston research he had also studied tree dieback throughout the northeast Mt Lofty Ranges.
This had revealed that extensive pre-1983 clearing had caused water tables to rise in many areas, the primary cause of tree deaths. "There are not enough trees in the right places to stop water tables from rising and to control salinity and many of the remaining trees are too old or stressed to be effective," he says.

"We also found that excessive mistletoe or attack by insects such as lerps were not a direct cause of die-back. They are a symptom or indicator of other issues.

"It was also obvious that pink gums seemed to be more sensitive to stress than red and blue gums, mal-lee and peppermint box trees and so pink gums can be indicators of a rising water table and/or increasing salinity."

Barron says that if tree health was to be enhanced in the Ranges more trees of the right species would have to be established along with understorey species and they would need to be grown where they would be most effective in countering rising water tables and salinity. This is exactly what the local Landcare groups in the region are setting out to do. Rockleigh landowner and chairman of the Rockleigh Landcare Group, Brian Pym, is one of many SA farmers doing their utmost to ensure that native vegetation remains as a part of the landscape in the Mount Lofty Ranges.Concerned about tree dieback on his grain and livestock property, Pym is putting in place a range of options to both protect the remaining remnant vegetation and revegetate essential areas of his property.

With help from Barron and funding from Bushcare, Pym has begun a series of trials on his property. The trials will assist the Rockleigh Land-care Group to develop and refine native vegetation management techniques to suit a number of properties within their region.In one area, Pym has fenced off an area of remnant vegetation to pre-vent stock from grazing in it. With the pressure from grazing removed, a wide range of native trees and shrubs became established through natural regeneration.
In a heavily grazed area of bush where natural regeneration was not, occurring Pym has used direct seeding of both local tree and understorey species. In these wide, reseeded bands, there are thousands of new plants emerging. Pym hopes that these new areas of native vegetation will also assist the survival of local native plants and animals over the long term.

Pym hopes that the trials on his property, together with the assistance of Bushcare and agencies such as Primary Industries SA, will assist other property owners in the region to be able to put the right type of native vegetation, in the right place on their properties, for the best long term outcomes.For further information about Bushcare in SA contact the SA Bushcare Coordinators, Fiona Chambers or Andrew West, phone (08) 8204 8752.

From *The Bush* January 1998 a publication by the Rural Press Group

THE PROBLEMS OF GARDEN-COLLECTED SEED AND THEN THE PROBLEMS OF OVER COLLECTING IN THE WILD

JUDY BARKER

For many years the members of the Australian Daisy Study Group thought that if they were able to collect daisy seed from the bush, germinate it, grow the seedlings. Then collect seed from garden-grown plants, the Group would become self sufficient in that species. These activities would then mean that no further seed of that particular species would need to be collected from the wild. Like many simple notions, this belief has some substance but the situation is much more complicated than we had thought.

Hybridization

Some years after the Study Group was formed, members began to report that they were germinating *Brachyscome* seedlings that differed from other species in their gardens. After some initial hesitation, we recognized these seedlings as hybrids even if we could not always trace their parentage. At first, these hybrids were greeted with pleasure and excitement, emotions, which later turned to irritation.

From the point of view of a seed collector, this propensity to cross is a nuisance, although plant breeders would regard it as a handy attribute. As we progressed in our study of this promiscuous genus, we found there were few species upon which we could rely to come true. The problem was that we could supply little seed collected from our gardens without finding hybrids among the resulting progeny. The unsuspecting public we wished to supply could not be expected to know which seedlings were ring-ins, and this situation would lead to erroneous identification and misinformation.

Other genera became suspect when reports began to come in from members who thought that certain *Bracteantha* species might be crossing, for example *Bracteantha bracteata* + *Bracteantha viscosa, B.bracteata* + *B.papillora*, *B.bracteata* + *B.subundulata*. Another member recorded success in the cross-fertilization of some species in the genus *Leucochrysum*. There is an advantage in having this kind of information. It is indicative of which species are closely related because they are those which cross most readily.

Members were making other observations that certain *Ozothamnus spp*. might have crossed with *Cassinia spp*. in our gardens and in the wild. It is one thing for species within a genus to cross-fertilize but there should be barriers to cross-fertilization between species in different genera. To explain this anomaly Paul Wilson, Senior-Botanist at the Herbarium of Western Australia drew our attention to two articles by Breitweiser, and by Breitweiser and Ward. These authors suggested that the Australian species of *Ozothamnus* are more closely related to *Cassinia* than they are to New Zealand species of *Ozothamnus*. If this is so, a future revision may see Australian species of *Ozothamnus* included in *Cassinia*.

Since the Study Group depends on seed sales for extra income, this state of affairs was most unwelcome. We turned out attention to species that did not seem to cross, such as *Hyalosperma*, *Lawrencella*, *Leptorhynchos*, *Podolepis* and *Schoenia*. One member reported a possible cross between two species of *Rhodanthe* and Paul Wilson recorded a possible natural hybridization between *Rhodanthe polygalifolia* and *Rhodanthe oppositifolia* in the Gawler Ranges. Paul added that it was the only place where the two species grow in the same area, and the only place where plants are found that are intermediate between the two species.

Both species have the same chromosome number ($n = 11$), and are similar in their morphology. We knew that at least one plant breeder had not been able to cross-fertilize certain species of *Rhodanthe*, and so we decided to include *Rhodanthe* in the 'reliable' group until cross-fertilization was proved possible. As we grow more of these so-called reliable species in our gardens in large numbers, we may find that they too are promiscuous.

Inbreeding

We hoped that we could produce sufficient seed for our requirements by growing as many plants in close proximity as possible, rubbing their heads together, and gathering seed in due course. This method works. The seed thus produced is usually easier and faster to germinate. The seedlings that germinated will be more robust. Second and possibly even third generations seed collected by this method produce good results. It is after this that another problem may arise; percentage germination may decrease, the resultant seedlings may be weaker and the flowers smaller. It is thought that a population must be of a certain size to prevent inbreeding. This means chat if the population is below the crucial size fresh seed should be introduced from time to time in order to add variety to the gene pool.

Solutions

So one problem is that many species hybridize. We can overcome that problem by propagating vegetatively (if the species is relatively easy to strike). This is all very well for shrubs and perennials but annuals comprise a large proportion of the species that the Group is studying, and annuals are most easily propagated from seed. Another method is to isolate plants and hand pollinate them, but this is time-consuming and does not produce much seed.

Seed companies in Australia are sowing large areas in popular lines of annuals, and are harvesting the seed. Such volumes of seed present little possibility of hybridization because the populations are so big. Seed companies restrict their harvesting operations to a relatively small number of species. It would be desirable to persuade them to extend their activities to other species with potential in horticulture, but they would have to be convinced of the economic feasibility of such an extension of their activities. If it proves useful to increase the range o E seed species available to specialist gardeners, this Group might supply small quantities of seed of uncommon species by the methods described.

The other problem of inbreeding, which arises from seed collection from too small a population, may be overcome by including fresh seed every couple of years. In some cases, this could mean that the genetic purity of the species would not be retained, but that compromise may have to be made to restrain excessive-collecting of wild seed. These comments apply only to Asteraceae. I do not have sufficient experience with other families to include them in this article.

References:

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Breitweiser, Ilse and **Ward**, J.M. (1993). Systematics of New Zealand Inulae (Compositae - Asteraceae) - 3. Numerical phenetic analysis of leaf anatomy and flavonoids. *New Zealand. J. of Bot.*, 31:43-58

A LIVING GALLERY

I was recently out taking some photographs of native grasses in January along a roadside. When a man came up to me and asked me what was I doing. I told him that I was taking some photographs of native grasses. As I looked up and saw, his face which expressed disbelief. He kindly informed me that I must be mistaken for those plants are all weeds. I asked him what made him think that. His reply was for they are growing along the road and they are not in a conservation park where the natives are found. As he stood, beside me watching while I was taking a photograph. He made his final remark before he left me which was we do not have any native grasses in Australia.

How can we overcome some of the misconceptions on native grasses out in the community?

Just as if we have art galleries in Australia, we need to have a collection of grassy plants to show and educate people the difference between the weeds and the natives. The ideal form that this should be in would be a living collection. For a living collection would act in way as a source for botanical artists to draw from. This can also be transported to various events and places for educational functions and displaying the virtues of native grasses and sedges.

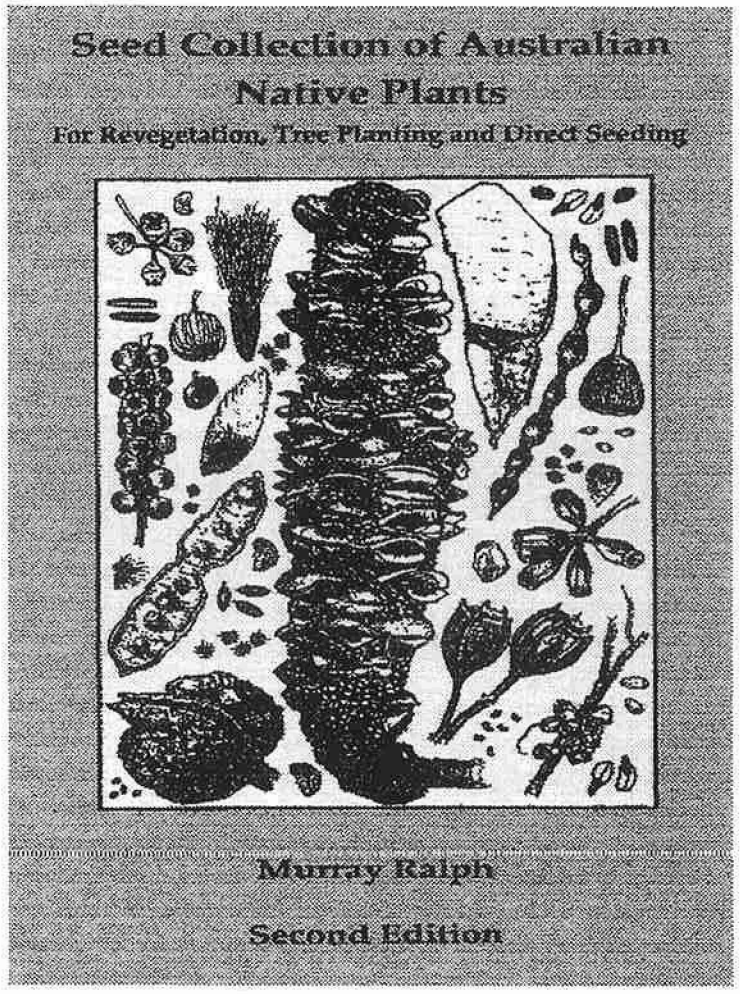
The Native Plant Regeneration Study Group in conjunction with the Native Grass Resource Group is in the proceeds of creating a living collection of grasses. The living collection will be used for displays and educational sessions with groups and field days, workshops.

The collection will contain those plants that are grassy in nature. By creating a living collection of grassy plants that will aid the two groups in having a greater understanding on the germination of grasses.

The living collection will also be used for putting together information for a S.A handbook on Grasses. It is anticipated that the living collection will provide illustrations to go towards the handbook.

Both the Native Plant Regeneration Study Group & the Native Grass Resource Group are looking for volunteers for the aiding us in the growing and collecting seed for the living collection.

It is hoped the project will be extend further by including other native species from around Australia in this project it will be provide vital information that is missing on growing native grasses. This type of work has not been done with sedges, reeds, and rushes either and I hope that as a study group we able to provide some the information in this particular field.



'Seed Collection of Australian Native Plants for Revegetation, Tree Planting and Direct Seeding' has been produced to overcome the distinct lack of information that currently exists on seed collection of native plants. The second edition has been expanded to cover native seed collection in all areas of temperate Australia.

Topics covered in the book include :

1. Why Collect Seed Locally and Where to Collect Seed

2. Guidelines for Seed Collection
   - Permits
   - Care of Natural Vegetation
   - Genetic Considerations
   - Labelling and Plant Identification

3. What and When To Collect
   - Seed and Fruit Development
   - Types of Fruits and Seeds
   - Timing of Seed Collection

4. How To Collect Seed
   - Tall Medium Trees
   - Small Trees, Medium Shrubs
   - Medium Small Shrubs
   - Groundflora Species
   - Native Grasses

5. Seed Handling and Storage

Specific collection details are given for over 300 different native plant genera and collection times for over 950 species are outlined.

Murray Ralph has been involved in collecting seed for revegetation for over 10 years and has undertaken seed collection for CSIRO, Greening Australia and the National Trust.

'This excellent book is by a highly experienced practitioner of the subject.' Rodger Elliot (author of the 'Encyclopedia of Australian Plants') - The Age.

Opinions!!!

Just a quick question and answer section on what I can do more for the study group. Just tick the boxes and write what ever comment, you feel are necessary

- ❑ Scientific Articles
- ❑ Landcare articles
- ❑ Weed management articles
- ❑ Revegetation techniques
- ❑ Conservation
- ❑ More of you local area which is _____

Do you know of any other publication that may have relevant information that can be used by the group? Alternatively, any relevant project that we may take on?

If so list them below.

What area in plant regeneration should the study group concentrate on or what theme should we have

- ❑ Agro-forestry
- ❑ Bush regeneration
- ❑ Weed management
- ❑ Revegetation techniques
- ❑ Protection of native species
- ❑ Do your self projects
- ❑ Park management