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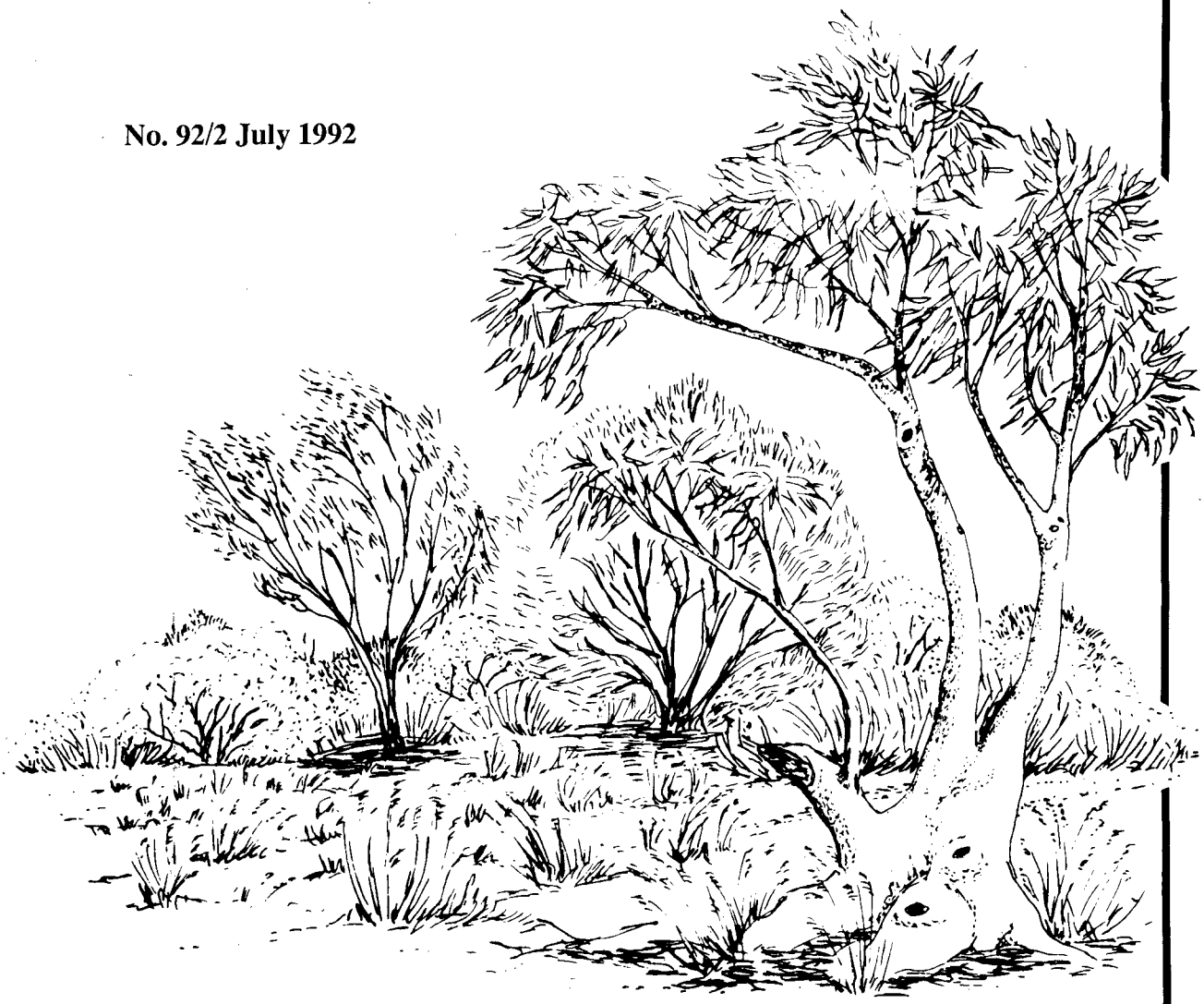

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FROM THE EDITOR

Gary Bastin, CSIRO, PO Box 2111, Alice Springs NT 0871

This issue has a healthy and diverse range of contributions - please keep them rolling in!

Greg Ford heads the Newsletter with another successful recipe for rangeland reclamation. It is always pleasing when persistence pays off; in this case, Greg describes how ponding banks and destocking during the initial stages of recovery have worked on a central Australian property with which he has been associated.

Fence design and construction appear to be topical issues at the moment. In the first of two articles on this subject, Peter Bird provides a progress report on the evaluation of electric fencing for dingo control. Linking with the last Newsletter, we have a contribution from David Robson describing his learning experiences in designing and erecting exclosures for research purposes. These exclosures are somewhat larger than those described by John Pickard in RMN 92/1.

Also carrying on from RMN 92/1, Edmund Wyndham provides a practical response to Mark Stafford Smith's call (in that issue) for information on stocking rate strategies in a variable climate.

The current Council has completed its first year in the NT and the usual reports associated with an AGM have been included in this issue as a supplement. In addition to news from Council, Bruce Strong, our Treasurer, asks some searching questions about how the Society might spend its money in the future. I would urge all members to read Bruce's article and to seriously consider responding with your views, either directly to Council or to the membership through the Newsletter.

We also have the latest progress report from the Organising Committee for the Cobar conference as well as information from other committees active in the rangelands. I wish you pleasant reading and ask you to send me your contribution. The deadline for RMN 92/3 is the end of October.

PASTURE REGENERATION SUCCESS CONTINUES IN CENTRAL AUSTRALIA

Greg Ford, Department of Primary Industry & Fisheries, PO Box 8760, Alice Springs NT 0871

Background

Numerous attempts have been made in the past on various stations in central Australia to re-establish pasture on degraded, or otherwise unproductive, country. Although some success has been achieved (e.g. Purvis 1986, 1988), many have shown limited success due to a combination of poor seasons and continued grazing pressure on treated areas. Murray Downs, about 170 km south east of Tennant Creek in the NT, is one such station.

During the early 1980s, large areas of unproductive country on Murray Downs were subject to various land reclamation techniques. These included pitting (with the Paech tyne pitter and opposed disc plough) and water ponding, sometimes with the introduction of buffel grass *(Cenchrus ciliaris)*.

Treatment focused on the floodplain and associated alluvial plain of a major creek draining adjacent hilly country. Slopes were less than 1% and overall relief less than 2 m. Soils ranged from neutral to slightly acid (pH = 6.5 - 7.0) red sandy loams to dark red sandy clays with surface crusting. Most work was done on the crusted sandy clays. Degradation probably occurred during droughts with grazing reducing pasture cover and resulting in wind and water erosion. Degradation was further compounded by the formation of a soil crust which decreased infiltration, germination and plant growth.

The station experienced drought conditions for a considerable part of the 1980s with an average annual rainfall from 1980 to 1988 of about 100 mm compared to 370 mm for the period 1966 to 1980. The long term average for the station is approximately 300 mm. This below average rainfall period coupled with continuous stocking, however light, resulted in negligible establishment of pasture through the techniques applied.

Elsewhere in the Alice Springs region, similar failures of pitting have indicated that pits are generally too small and temporary to effectively alter the soil surface and initiate re-vegetation on eroded country (Bastin 1991).

In 1989, the Department of Primary Industry and Fisheries, in cooperation with station management, erected a 10 sq km exclosure around an area of country which had been treated but had shown no positive response. Much of the fenced country was in an unproductive condition at the time and badly in need of further reclamation and spelling.

The aim of the project was to try a number of pasture re-establishment techniques, to determine which were the most

effective and to observe the effect of spelling on the establishment of pasture under these treatments.

Treatments

After exclosure, extensive earthworks were undertaken using a variety of machinery and methods. Some 50 ponding banks were constructed within and adjacent to the exclosure, using a small bulldozer initially, and later a hired Caterpillar 930 front-end loader (Fig. 1).

Banks were surveyed with a dumpy level and designed so that the spill from the lower end of each bank was caught by the next bank down slope. Bank height was 1 m with an average length of approximately 120 m, although individual bank length varied considerably. Area ponded was between 0.3 and 1.0 Ha, depending on the lay of the country behind the bank.

The ponded area up-slope, as well as country immediately down-slope of most banks was treated variously by ripping and pitting. The rear tines on the loader were used for ripping

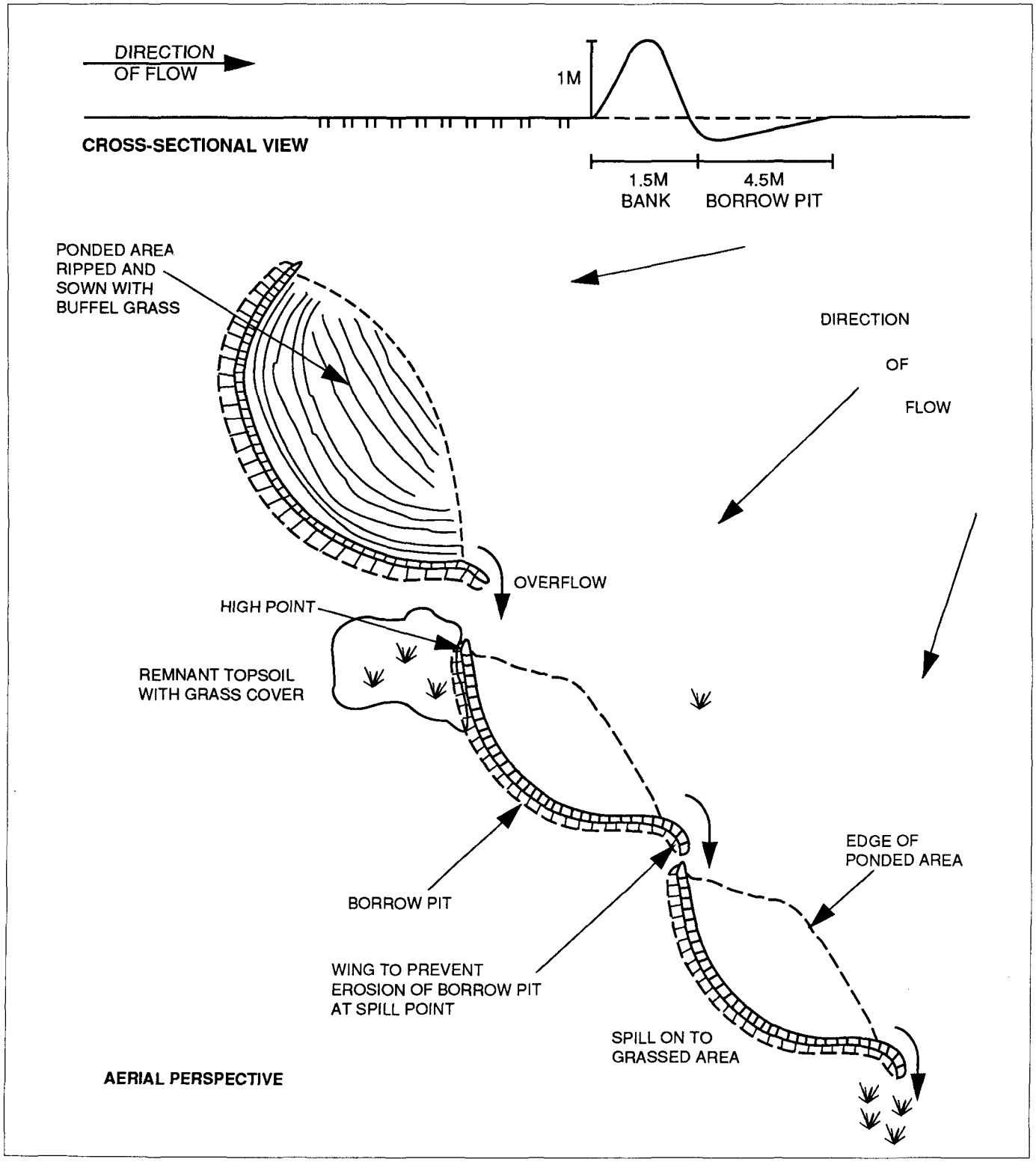

Figure One. Aerial perspective and cross-sectional design of ponding banks built at Murray Downs. Soil is pushed into the bank from down-slope while the ponded area is ripped and hand-seeded with buffel grass.

while pitting was done with an opposed disc plough on the three-point linkage of a wheeled tractor.

Extensive unponded areas were also treated by ripping and pitting in various patterns (checkerboard, parallel and spirals), and by scooping a series of small 'pits' with the loader bucket. The soil crust is sufficiently 'loose' that this can be done while the loader is travelling without requiring prior ripping. Most areas were sown to buffel grass either by hand broadcasting of seed or via a seedbox on the opposed disc plough.

Costs

Approximate costs are given for pushing an average (120 m long) bank, ripping and hand-seeding buffel into the bank and ponded area. These costs are for 1990.

Loader hire	= $50/hour
Fuel	= 13.5 l/hour @ $0.70/l
	= $9.45/hour
Labour	= $10/hour
Buffel seed	= 2 kg @ $12/kg
	= $24
Effort/bank	= 2.3 hours
COST/BANK	= $183.74

This was the most expensive treatment on a per unit area basis, but proved the most successful in terms of pasture yield response. Detailed costings have not been determined for the other treatments, suffice to say, that on a per unit area basis, they would be lower (with some being considerably reduced).

Despite the lower initial cost of other treatments, returns in terms of increased pasture growth and carrying capacity are lower than those involving ponding banks. Cost recovery on these cheaper treatments would be expected to take considerably longer.

Grazing Pressure

Approximately 600 mixed age and sex cattle are run on the general area. These cattle have access to about 60 sq km, giving an average stocking rate of 10 per sq km. However, for much of the year, many cattle remain in coolibah floodout country close to the bore resulting in an effective stocking rate in the reclamation area of 5 to 6 per sq km.

Outcome

Thanks particularly to two above-average seasons (Table 1), there were outstanding pasture growth responses following reclamation and spelling. Pasture establishment and yield were much better than expected in the absence of grazing while the presence of cattle outside the exclosure continued to thwart success (Fig. 2). Response to the different treatments varied, with yields in 1991 ranging from 79 kg/ha to 4200 kg/ha.

Table 1. Rainfall recorded for various periods at Murray Downs Homestead.

Period	Amount (mm)
Average (1966-1980)	370
Average (1981-1988)	approx 100
Nov 88 - Mar 89	110.7
Nov 89 - Mar 90	186.4
Nov 90 - Mar 91	421.1

The November - March rainfall represents about 80% of the yearly average.

Briefly, the major observations were that:

- high yields in 1991 were due to excellent rainfall;
- lower establishment and yield occurred on treatments subject to grazing;
- the most successful treatment is to rip and seed the ponded area behind banks, and to allow an initial period of spelling.

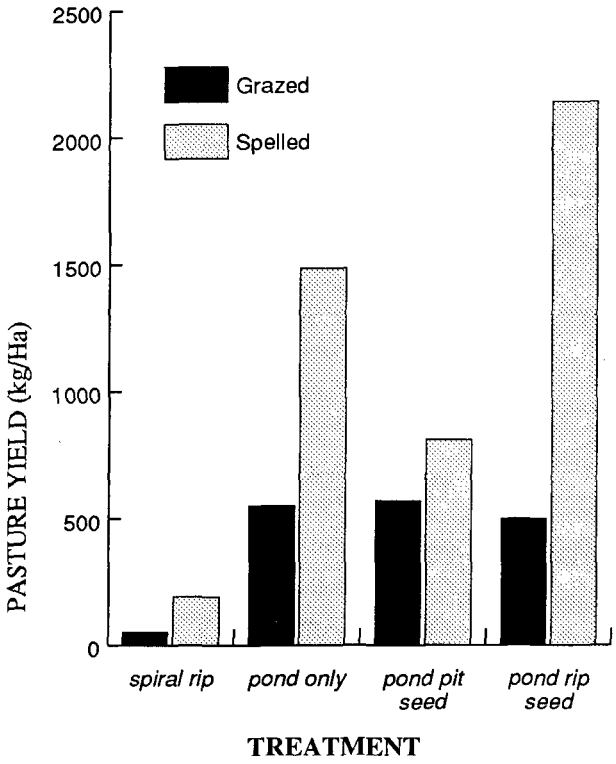

Figure Two. Pasture yield measured for four reclamation treatments on grazed and spelled areas following the 1990/91 wet season.

All grazed sites exhibited a much lower yield than similarly treated sites which were spelled (Fig. 2), thus clearly demonstrating the positive effect of spelling on pasture re-establishment. Where buffel grass was sown, grazing reduced

the actual proportion (% by composition) of buffel in the total pasture yield (Fig. 3). The proportion of native perennial grasses was very low across all sites, particularly those under grazing. This is probably due more to a depleted seed source than to grazing alone.

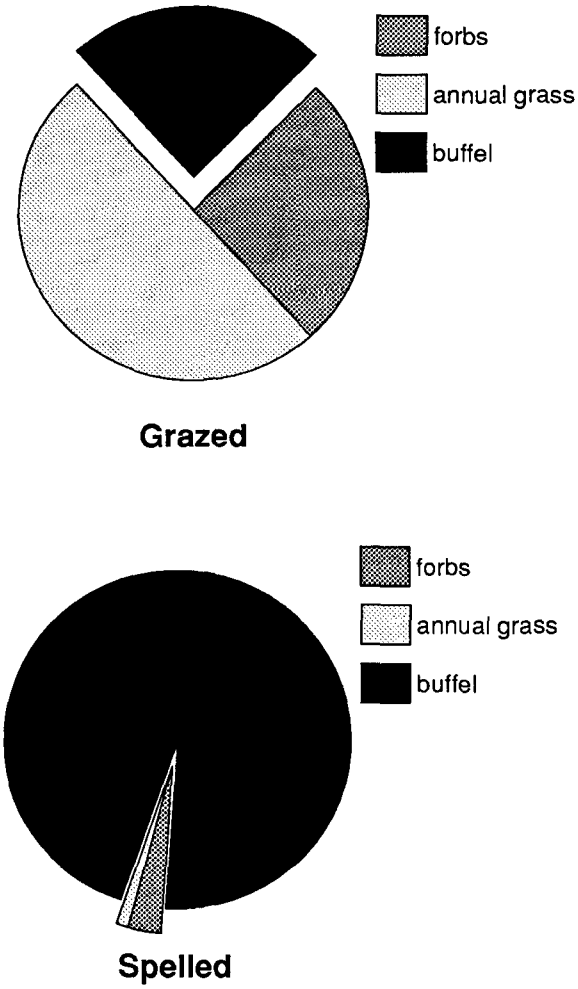

Figure Three. Pasture composition (by weight) on grazed and spelled ponding banks in 1991.

The success, or otherwise, of all treatments can be rated according to their yield response (Fig. 2) and composition. The most successful method was ripping and seeding behind ponding banks. This technique produced a high yield of pasture in most cases with a large proportion of buffel grass and small amounts of unpalatable species.

Not all treatments were quantitatively assessed. However, on a visual basis, some have shown promise as cheaper alternatives to the 'most successful' ripped ponding bank treatment described above. One such technique is the 'pit' formed by the bucket of the Cat 930 as it is driven along. The effect is to form a series of staggered scoops (or divets) in parallel lines across flatter areas. The mounds provide a good seedbed for hand broadcast buffel seed, while the scooped hole stores water for a much longer period than the staggered furrows of the similar opposed-disc plough treatment.

All areas thus far treated with the loader bucket have responded favourably with strong stands of buffel, along with good native grass and forb growth, on the mounds. Most of the pitting done at the same time has responded much less vigorously, even after the high rainfall of 1990-91.

The Future

This work has demonstrated that with a little effort, time and financial input, apparently 'useless' country can again become valuable grazing land. The outcome here indicates that greatest establishment and yield of buffel grass, and other useful pasture species, is achieved if the treated country is destocked for one to two favourable seasons after treatment.

The most effective method of pasture re-establishment is to build ponding banks, rip the ponded area and plant buffel grass. A less costly approach for flatter country, and similar to the original attempt at pitting, is to use a front-end loader to scoop a series of divets which are then seeded with buffel grass.

Station management has much enthusiasm for continuing with ponding banks and divets on other unproductive areas. Some of the country being treated is spelled while other areas continue to be grazed, but at low stocking rates. Future fencing in this area will allow both the coolibah country and areas undergoing reclamation to be periodically spelled.

The 10 sq km paddock erected to demonstrate the value of spelling will, in the future, be used to hold steers and other cattle from the general area that are intended for turn-off. These cattle will be accumulated in the paddock as mustering proceeds with numbers then being reduced as suitable sales are arranged. This should ensure that pasture recovery continues since the paddock will be effectively destocked during the wet season. Grazing pressure will then increase progressively as pastures mature and seed, with the paddock again being destocked by the next wet season.

Acknowledgements

I would like to extend my thanks to Sean, Lyn and Terry Leigh at Murray Downs for their generous hospitality and enthusiasm in this project over the last few years. Thanks also to my peers in the Rangeland Production Section, Dept. Primary Industry & Fisheries, for their encouragement and assistance in compiling this report.

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ELECTRIC FENCES FOR DINGOES - A HOWLING SUCCESS?

Peter Bird, Dingo Research Officer, Animal and Plant Control Commission, GPO Box 1671, Adelaide SA 5001

Dingoes continue to be a serious problem for pastoral livestock producers, especially those who run the woolly kind. Although dingoes were historically eradicated from most sheep zones, the struggle continues to exclude dingoes from these areas. The 5600 km tri-state dingo-proof fence enclosing the sheep zones of South Australia, NSW and Queensland is the single most important tool in the protection of Australia's rangeland sheep flocks. In recent years, however, as the costs of wire netting continue to outstrip the returns from wool, the 'Dog Fence' has become increasingly dog-eared. In South Australia, levies collected from wool growers across the state are barely adequate to pay for maintenance costs, let alone for replacement of a fence which in places is beyond its serviceable life. In flood years or when rabbit plagues have promoted a build-up in dingo numbers outside the fence, the chickens come home to roost with a vengeance. In 1990, some 400-odd dingoes penetrated the South Australian Dog Fence and killed an estimated 15,000 sheep, despite an absence of fence breaking rains. Given this situation, it is hardly surprising that fence-owners have looked to the electric fencing alternative. At around a quarter the cost of traditional wire netting fencing, the potential benefits are high. There is nothing novel about electric fencing for dingoes. Elliott Price, the grand old man from "Muloorina" station on Lake Eyre, attempted (unsuccessfully) to exclude dingoes with an engine-powered electric fence over 40 years ago. Today, the SA Dog Fence incorporates over 300 km of electric dingo fence, but debate as to its effectiveness continues.

Electric Fences Under Test

Just how good are these fences at excluding dingoes and, if unsatisfactory, can they be improved? The Animal and Plant Control Commission, in collaboration with the South Australian Dog Fence Board, has been conducting research to find out. With funding from the SA Dingo Control Fund and latterly from the Wool Research and Development Corporation, a series of trials have been conducted in northern South Australia to test various designs. The methodology has relied on the principle of erecting test fences around watering points and monitoring attempts by wild dingoes to negotiate them. Outcomes were observed from nearby hides with observation periods beginning in the early evening when dingo activity increased and continuing throughout the night with the aid of a nightscope and infra-red spotlight. Despite some limitations, this technique has the benefit of enabling immediate feedback on fence performance and identification of factors critical to sound fence design. Thus, variables such as wire configuration and spacings, and energiser characteristics could be readily manipulated to achieve optimal combinations. Power to the fence was cut at times to gauge reactions from naive or trained dingoes to unpowered fences. As well, a few dingoes were briefly trapped inside the exclosure to encourage fence challenges at speeds similar to those which might occur during prey chasing episodes or evasion from humans or other dingoes. Five short-term and two long-term trials involving 600 hours of observations have been conducted to assess the ability of different designs to exclude dingoes. Most sites had about 50 dingoes present and about 2000 dingo/fence interactions have been observed to date.

Results

Preliminary results indicate that even relatively unsophisticated electric fences successfully deter most dingoes most of the time. Dingoes always endeavoured to push through fences first rather than attempting to dig under them or to jump over. In doing so, they invariably received shocks and withdrew. Often though, this did not occur until they were part way through when broad contact was made with adjacent, oppositely charged wires. No dingoes ever attempted to jump fences even as low as 90 cm, despite obviously possessing the capability to do so easily.

A medium powered 4 J energiser with an output of 2 kV appeared more than adequate to deter all dingoes. Even a low-powered 0.3 J strip-grazer proved successful against most. When power to the fence was cut, some dingoes learnt to penetrate fences but usually only after witnessing concerted attempts by a few naive or especially resolute individuals; there was little evidence that they were responding to the interruption of warning cues such as electrostatic fields. When power was reinstated, these dingoes did not appear to detect or recognise these warning cues and inevitably sustained severe shocks as they attempted to penetrate the fence as usual. Attempts by dingoes to dig under fences were generally unfocused and were made by relatively few individuals. When power was cut, some dingoes learnt to exploit gaps left under fences and continued to pass under the bottom earth wire when power was reinstated. The addition of a barbed bottom wire did not appear to hinder these dingoes from successfully pushing under fences; dingoes often distended the sharp and tightly tensioned barb by up to 8 cm with no apparent discomfort. In one long-term trial, some dingoes eventually learnt to push under fences at slight washaways. Most running dingoes easily escaped through fences when briefly trapped inside the enclosure. Although closely spaced and tightly tensioned wires will reduce the success rate, these did not significantly impede most dingoes which forcibly blasted between the wires. Indications to date are that well maintained electric fences appear to be a cheap and effective way of excluding dingoes. The best designs will be those which present a significant barrier at the height at which most dingoes first tackle the fence. In response to this, a modified 8-wire design with 10 cm (4") wire spacings in the critical height zone has been devised (Fig. 1).

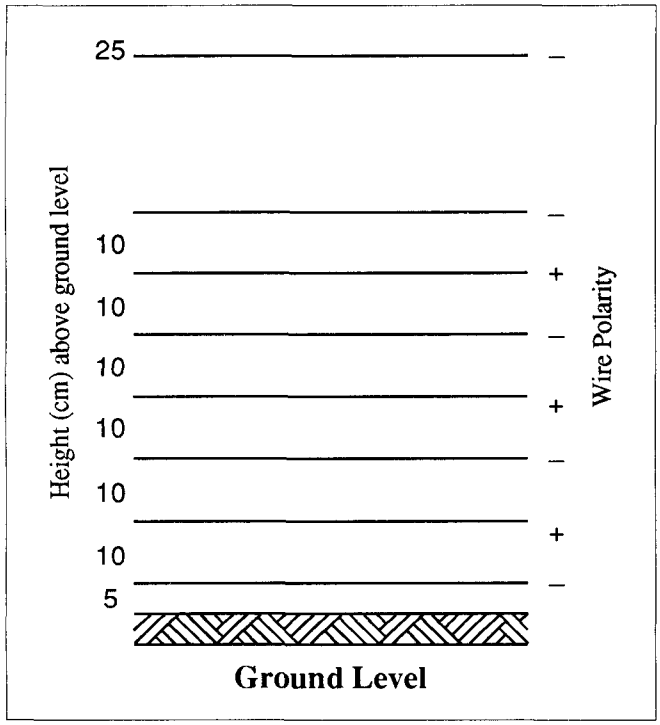


Figure One. Recommended electric fence design showing wire polarities and spacings above ground level in centimetres.

The two main inadequacies with electric fences remain that dingoes may dig underneath, particularly in areas of highly erodible substrates such as sandy soils or washaways, or that running dingoes will blast through them. Trial mesh/electric combination fences incorporating a netting apron for use in susceptible areas are proving especially promising. While these 'shandy' fences are obviously more expensive than electric fences, they are still far cheaper than conventional netting ones.While the second problem of running dingoes seems generally irreconcilable, it is unlikely to be a major problem except when extreme numbers of dingoes are allowed to build up on the fence. At these times and when fences are threatened by floods, it is important that buffer zone control of dingoes is adequate. This has not always been the case in the past and is the subject of further research in South Australia which will be reported on in future.

EXPERIENCES IN RANGELANDS RESEARCH: EXCLOSURE CONSTRUCTION REVISITED AND GENERAL PLANNING ISSUES

David Robson, Department of Conservation & Land Management, Bourke NSW 2840

In his recent note on fencing experimental sites, Pickard (1992) urged other researchers to describe their experiences and methods. It is a valuable exercise for researchers to share as much experience as possible. We sometimes feel alone and daunted by the challenges we set ourselves. Sharing experiences minimises trauma and can sometimes avert the unnecessary mistakes which may occur when one works in isolation.

I read Pickard's note with "kindred" interest because I too have recently constructed exclosures as part of an experiment within rangelands. However, unlike his project, my experiment is being carried out at a much larger scale. The cost differences aside, I have also encountered different logistical challenges.

This paper is divided into three main sections. The first describes the field layout of my project while the second outlines some of my fencing experiences and compares them with those of Pickard. Lastly, I deviate from purely fencing considerations and briefly examine a few of the recent, and more general, lessons I have learned about research planning and funding.

The Research Project

The project is set within degraded sandplain (red earth) country on "Bloodwood" Station, northwest of Bourke NSW. Dense shrub growth is a major form of land degradation in this land type.

The objective of the project is to sample key soil and vegetation attributes of the subject sandplain and then to monitor the change in these attributes following the imposition of six treatments (including control). The treatments incorporate blade ploughing, exclosure from grazing (all large herbivores) and seeding with *Cenchrus* spp. They are arranged factorially within an experimental block (Fig. 1). Three replicate blocks have been installed.

The overall aim is to increase our understanding of the physical and biological system so that the results of various rehabilitation measures can be put within the context of costs and benefits. Assuming that there is an economically feasible form of rehabilitation, the final output will be to formulate a sound land management plan for rehabilitation of similar systems.

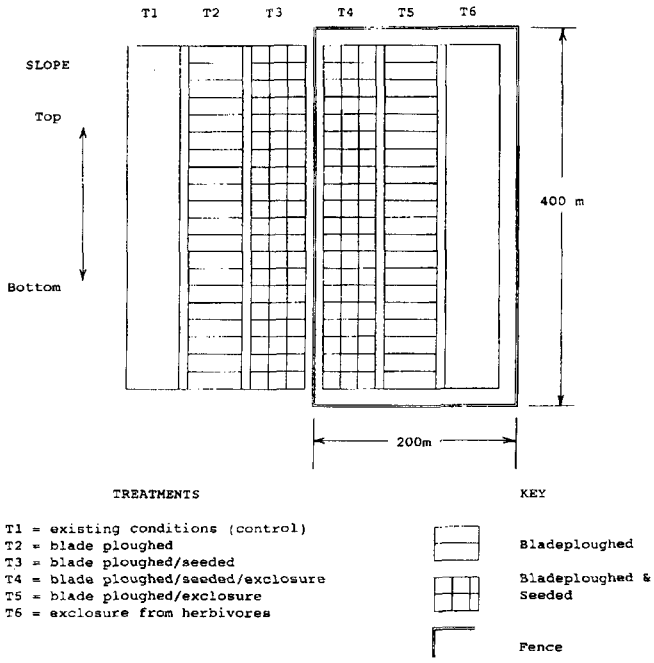


Figure One. Design of experimental block showing allocated control, blade plough and blade plough plus seeding treatments.

The Fencing Component

1. Design

Unlike Pickard, I am not investigating the relative impact of different herbivores. My exclosures were designed and built to exclude all larger herbivores. Figure 2 shows the design and dimensions of fencing panels adopted for my exclosures. As can be seen, my panels are very similar to Pickard's for total exclosure, except for two things:

- I used alternating tall and short steel posts instead of all tall posts and;

- I constructed a traditional end-assembly incorporating 60 mm dia. steel pipe strainer post and stays. Post and stays were all set into concrete in the ground. Pickard was able to use guys.

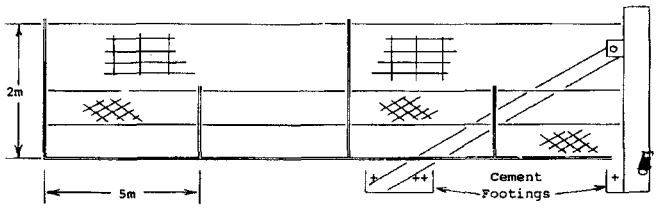


Figure Two. Fence design showing end-assembly construction.

These differences are explained mainly by the fact that I was straining my fence over a normal, long span which allows wire to be maintained at high tension. As Pickard explains, you can't maintain wire strain over the short distances of his exclosures.

Any fence must block animals and last a considerable time. A good fence (over a long distance) comprises robust end-assemblies and wire strained at high tension. Strong end-assemblies and tight wire had an additional benefit in my case; it was capable of supporting much of the weight of hingejoint used at the top of the fence. This reduced the number of tall posts required and saved money.

2. Materials and their costs

The total perimeter of my three replicate exclosures on "Bloodwood" is approximately 3.6 km. A breakdown of materials used and their costs are itemised in Table 1.

Table 1 - Materials used and costs for exclosures

Item	Quantity	Cost $
240 cm steel posts	360	1,962
165 cm steel posts	360	1,184
3.15 mm plain wire	24 rolls	1,400
105 x 4 x 1.4 netting	36 rolls	6,300
6 x 90 x 30 hingejoint	18 rolls	1,792
staple fasteners + applicator	8 boxes	100
pipe end-assemblies	12 posts, 24 stays	500
		Total $13,238
		(Approx. $3,700 per km)

The cost of end-assembly materials (pipe, welding rods and cement) is an educated guess. They were supplied by "Bloodwood" as a contribution to the research program.

I treat the issue of labour more fully later. However, it is relevant to deal with the cost here. The number of workers varied between 5 and 7, and it took three weeks to build the exclosures. Based on an average weekly wage of $500, this equates to a labour cost component of about $9,000.

Therefore, the total cost of fencing was in the vicinity of $22,238.

A lot of material (and money) has been allocated to this research - by anyone's standards. All material was purchased new. This contrasts with Pickard's valiant efforts at numerous property tips, which I commend in his case, because it is feasible and saves money. In my case, it was obviously not possible to sift through reject piles and amass the quantity of material required for our large scale exclosures.

3. Construction

(i) **Transport** - Don't overlook the seemingly obvious fact (as I almost did) that fencing material is heavy. The weight of material in my exclosures was approximately 13 tonnes - much too heavy to be simply thrown on the back of a 4WD and taken out in dribs and drabs during preparatory trips to the site. I ultimately took advantage of "Dusty the Postie" who does the "Bloodwood" run in a truck twice a week and who offered me

competitive rates because he was a mate of the property manager.

(ii) **Trenches for netting** - Whilst I quite enjoy physical labour, I'd rather go fishing than dig 3.6 km of trench for rabbit netting. Before we started actually erecting fences, we hired the next door neighbour and his grader to delve trenches to about 30 cm depth. It was expensive ($600) but we had little choice.

We learnt the hard way that it is very important to site a 400 m fenceline at short (30-50 m) intervals with readily visible marker pegs. Sighting the line from one end to the other offers the grader operator very little guidance as he battles to maintain the line and depth of his blade. Slight deviations will make the trench unusable necessitating much time and sweat with a shovel to straighten it.

(iii) **End-assemblies** - These were fabricated by the manager of "Bloodwood", Mr Tony Chalker, who is an accomplished welder with an eye for quality workmanship. Tony made all 12 strainer assemblies before fencing proper commenced.

Posts and stays consist of pipe onto which flanges have been welded. The components are then bolted together through holes drilled in the flanges. Welding and drilling was done at the property workshop and the parts assembled on site just prior to setting in concrete footings. Prefabrication as separate components greatly facilitated their transport and precise positioning during construction.

(iv) **Straining netting and hingejoint** - Two wooden batons were bolted together and used to clamp the hingejoint and netting. I then used the winch on our Service vehicle to strain from the batons. Netting and hingejoint can be pulled tight so long as it is suspended as it is strained. Loosely hang the netting (once every 5 or so panels) with tie wire from the wire which will serve as the top tie. Make sure that ties are in front of steel posts (in the direction of pull) so there is plenty of room for the tie to slip along the wire as the netting stretches. We found that with this method, a full roll (100 m) of netting could be strained with minimal distortion.

(v) **Fastening netting/hingejoint to wire** - This job is the most time consuming of all fencing tasks. Due to the size of our exclosures and the amount of netting/hingejoint involved, we used staples rather than tie wire. Tie wire forms a tighter (and in my opinion better) fastening than staples. However, we were working to a funding deadline and it would have taken too long to twitch tie wire.

(vi) **Access to exclosures** - I deliberately left gates out of my exclosures. Gates mean added expense and work. Far more importantly, gates can be left open. My experiment would be ruined if grazing were to occur within the exclosure and so I have eliminated this source of potential error. A stile or step ladder can be used in place of gates and I strongly recommend this option to anyone constructing experimental exclosures.

Construction procedure must cater for the fact that access will be prevented once all sides of the exclosure are strained up. I made sure that three of the netting trenches were back filled on the inside by the grader before the last (short) end was strained. This minimised the time required for manual backfilling of trenches.

4. Labour

Labour was about 41% of the total cost of fencing my exclosures. Most fencing contractors' "rule of thumb" estimate is that labour costs about the same as materials making my labour cost a little better than usual. Considering its cost, labour must be organised and productive.

I split the labour force into two, and sometimes three teams, each with two or three people but no more. Each team had its own specific task although tasks changed as construction progressed. Not all people have the same skills and it is important to assess individual ability at an early stage so that maximum productivity is gained from each person.

5. Landholder Co-operation

I can only reiterate Pickard's statement on landholder cooperation - "if you don't have it, don't start". Without the expertise, interest, willingness and good cheer shown by Tony and his wife Marion, we wouldn't have got there!

Research - Planning And Funding

My research project came about subsequent to a blade ploughing demonstration. I recognised an opportunity to gain much needed information and was dissatisfied that no suitably rigourous plan had been prepared to investigate the long term impact and feasibility of blade ploughing.

Research sites had to be installed as demonstrations progressed. Planning should have been a stepwise progression from concept through to execution whereas it turned out to be somewhat of a scramble with decisions being made "on the run".

Considering the importance and scarcity of research funding and the fact that more and more of it now comes from external sources, it is essential that projects be well planned before application is made for funding.

Every worthwhile textbook dealing with research stresses the importance of clearly defining the project's objectives. Objectives lead to questions in the form of hypotheses to be tested. These in turn lead to experimental design and the practical procedures required to fulfil the objectives. To be of any use, the product of this planning process must be written down, in detail, on paper.

Sounds simple and logical! However, I have found this process the most difficult part of my research program so far, particularly as I had to do it as work progressed. Albeit difficult, planning has since proven to be well worth the trouble because:

- It serves as a set of rules upon which I can focus if, and (not uncommonly) when, I get confused,

- It will allow continuity by giving my successor a manual of

instructions (this is particularly important in the rangelands where research is often conducted over many years),

- It has served as a project description for my colleagues when I have sought advice from them, and,

- It has been a foundation for funding submissions and will ultimately be the basis for published scientific papers.

I don't believe everything that I read, but in this case I have found that the wise men and women who write good textbooks are indeed right.

One last point: taxpayers and industry funding sources expect us to spend their money efficiently and to best advantage. Ultimately, they will withdraw their funds if money is wasted through want of good planning.

The Trade-off Between Research Quality And Cost

Experience has taught me that the success of obtaining funds is directly linked to the quantity and quality of research undertaken. This can particularly determine the number of replicate sites and variables which can be measured. It also largely dictates the duration of a project and the rigour with which conclusions can be drawn.

I have been fortunate. My experimental blocks (and hence exclosures) are unusually large compared to those of Pickard, and rangeland research projects generally. Yet I still had to make many conscious decisions between which data were required, how definitive the data had to be and the cost of collecting such data.

I know of no sufficiently comprehensive recipe that will completely guide the researcher. The quality of research is highly dependent on the researcher's judgement and his knowledge of the population being investigated. Even the appropriateness of the questions being asked is a matter of judgement, before we start on the myriad options of experimental design.

Perhaps the first and most important decision a researcher must make is whether a project is worth conducting given the constrained funding levels often applying. If a proposal's worth is established, then I think that the researcher must develop resolve and get on with the job. Progress can be made in the belief that gaining even limited knowledge, particularly when it treads new ground, is much better than adopting the attitude of "it's all too inadequate" and doing nothing.

References

Pickard, J. (1992). Constructing exclosures for rangelands research: some lessons learned the hard way. *Range Manage. Newsl.* **92/1.**

BOOK REVIEW - WILL IT RAIN?

Denzil Mills, 'Ennisclare', Gore QLD 4352

Apart from the price, which at $17.50 posted seems a bit much for less than 50 pages, I found the book a very welcome addition to the information available on El Nino and the Southern Oscillation Index (SOI).

Chapter One on the weather is complex and rereading will be necessary for those not involved in climatology.

Chapter Two describes the El Nino and SOI using good diagrams. It also explains how these phenomena are useful in predicting various weather patterns, such as when the wet season will arrive in northern Australia.

Chapter Three looks at how the SOI has influenced Queensland's climate over the last 100 years and then explains how the SOI can influence the weather in future seasons. This chapter includes an analysis of the SOI and recent drought and flood occurrences, as well as summer isohyets across Queensland under positive and negative SOI's.

The remaining chapters examine relationships between SOI and plant growth and the use of these relationships for better decision making. The examples include sorghum and wheat, as well as spring pasture growth at Gayndah and summer pasture at Emerald.

The book will be of value to pastoralists who are interested in learning more about El Nino and the SOI. Geographically, it will be most relevant to those located in Queensland and northern NSW, as this is the area from which the examples are drawn.

INTERNATIONAL CONFERENCE ON DESERT DEVELOPMENT

The Fourth International Conference On Desert Development will be held in Mexico City on 25-30 July 1993. Topics will range from soil and water conservation and watershed management through alternative energy sources to ecology and socio-economic aspects of the arid zone. Abstracts of papers and posters are invited until September 1st 1992 with final manuscripts required by April 25 1993. Further information can be obtained from:

Dr. Manuel Anaya Garduno
Executive Secretary Scientific Committee IV ICDD
Colegio de Postgraduados
Montecillo, Edo. de Mexico. 56230, Mexico

COPING WITH DROUGHT - THE NEW ENGLAND TABLELANDS

Edmund Wyndham, Karuah, Wollomombi NSW 2350 and Department of Microbiology, Biochemistry and Nutrition, University of New England, Armidale NSW 2350

In response to the article by Mark Stafford Smith (*Range Management Newsletter* 92/1), I present a drought strategy for the New England Tablelands. The environment, which is high rainfall (905 mm p.a.), differs markedly from the arid regions that Mark has in mind, but some principles should be common to both regions.

The overall strategy, in a good year or a drought, consists of matching grazing intensity and feed availability. During my last 12 years on a commercial property, I have experienced two official droughts and a number of dry spells. In the first of these droughts (1979-81), and some of the dry spells, I hand-fed extensively. The development of this strategy has allowed me to survive dry spells in recent years with little loss of production. During the last drought (spring 1991), I did not hand feed. Having tried the feed and no-feed alternatives, and having weighed up the pros and cons of each, I favour the no-feed option.

The Environment

Pasture growth is generally controlled by temperature. In most years, maximum growth occurs through the warm summer months with minimal growth during winter. On average, rainfall occurs throughout the year. Dry spells, and even droughts, may occur at any time of the year, but soil moisture deficits are more likely in autumn and spring (Smith and Stephens 1976). These are critical times because a dry autumn means there is no build-up of pasture reserves for winter; if there is a dry spring, there is no spring flush at the end of winter.

Thus, the livestock manager has to utilise the high summer production, allow growth of fodder reserves in autumn, minimise stock numbers in winter, and respond quickly to dry spells, particularly in autumn or spring.

The strategy

The strategy combines Mark Stafford Smith's "**Low-stock**" and "**Trader**" options. I have two main enterprises: a cow herd that produces 20 month old prime steers and heifers, and a trading herd where I buy and fatten yearling steers. The cow herd is run throughout the year and the numbers are kept relatively constant, while the trading herd are run only in the warm months and numbers fluctuate from year to year, depending on seasonal conditions.

During autumn, stock numbers are reduced by sale of all the trading herd, and yearling steers and non-breeding females from the cow herd. In autumn, continuous assessments are made of the build-up of pasture reserves for the coming winter. The aim is to have sufficient feed at the start of winter to carry the cattle through to mid-October i.e. I assume a late start to the spring. If the autumn is dry, numbers in the cow herd are progressively reduced by sale of weaner stock and older cows.

During winter the cattle comprise pregnant cows and their weaner offspring from the previous year. Because of light stocking relative to feed supplies, the pregnant cows lay down fat reserves in autumn and early winter. The cows calve down in August and September.

In spring, the cow herd comprises breeding cows, the new drop of calves and yearling stock from the previous year. If it is dry at the start of spring, the following tactics are, with some overlap, sequentially implemented:

(a) use up pasture reserves;

(b) use up fat reserves, i.e. the cows "milk off their backs";

(c) sell cows that are not raising calves;

(d) sell cows that will not be rejoined, and their calves;

(e) sell yearling stock, and

(f) progressively sell older cows and their calves.

Trade steers are bought in when the season breaks after winter. In a good year this occurs in spring. If there is a dry spring, it is delayed until early summer. If dry conditions continue into the summer, few or no trade steers are bought. Throughout the warm months, the numbers of trade steers are adjusted to meet existing and predicted pasture production. With the onset of a dry spell, the first option considered is the sale of trade steers.

Hand-feeding

I now regard hand feeding during a drought as a stop-gap measure which is used to maintain stock while the tactics (a) to (f) outlined above are progressively implemented. Decades ago, there were large differences between stock prices during and after a drought. This meant that considerable amounts could be invested in cattle by hand feeding them and then recouping this through rising livestock prices at the end of the drought. Nowadays, stock prices may still drop during drought and rise at the break, but because of feedlots and improved transport, the difference is not as great as it was in the past. Under present circumstances, it must be a doubtful proposition to invest in extensive hand feeding through a drought.

If stock are hand fed for an extended period, they will put heavy grazing pressure on moisture stressed pasture. This may lead to plant mortality and, when the drought breaks, loss of topsoil. If such pasture and soil degradation occurs, there will be lowered productivity for some years after the drought - a potential "hidden" cost that should be included in any cost/benefit analysis of hand feeding.

Reference

Smith, R.C.G. and Stephens, M.J. 1976. Importance of soil moisture and temperature on the growth of improved pasture on the Northern Tablelands of New South Wales. *Aust. J. Agric. Res.* **27**, 63-70.

OPTIMUM STOCKING RATES

Bood Hickson, Melinda Station, Cloncurry QLD 4824

The most disappointing aspect of Landcare's impact on the rangelands to date has been our failure to make any real headway on the issue of optimum stocking rates. Stocking rate is the key Landcare issue for the pastoral zone of Queensland.

It is evident that the majority of 'grazing-induced erosion' is generated over short periods of time when pastures are grazed beyond their various 'break points'. These 'break points' signify the minimum condition (height, body and density) at which the primary pasture species need to be destocked to have the best chance of full rejuvenation.

These break points are often exceeded by graziers for one or more of the following reasons:

- they do not know the break points for their pastures;

- they graze their stock beyond the break point in anticipation of relieving rains or better market prices;

- they are unaware of the medium and long term effects of continued grazing pressure, namely increased soil erosion and detrimental changes in pasture composition.

Two further issues exacerbate the problem:

- graziers are inclined to study the condition of their stock, in preference to the pastures supporting them. As there is a delay between the improvement or deterioration of pastures and stock, less time and fewer options are available to those who only monitor their livestock;

- graziers have little control over native and feral animals which frequently have a major impact on pastures, especially during the critical dry times.

Landcare should be promoting an integrated ecosystems approach to land management. In my opinion, Landcare should never attempt to dictate stocking rates. Instead, constructive initiatives need to be developed to realise the benefits offered by optimum stocking rates. These include:

- encouraging graziers to regularly quantify their observations (seasonal, pasture and livestock) so that they can better understand and predict the consequences of their management policies and actions;

- incorporating native and feral animal numbers (particularly kangaroos, wallabies and rabbits) into stocking regimes. The grazier should be financially compensated for pasture utilisation foregone and rehabilitation necessitated by these unwanted, but allowed for, animals;

- establishing regional case studies to demonstrate that optimum stocking rates are profitable in both the short and longer term;

- better understanding and utilising the 'El Nino' Southern Oscillation Index to assist graziers in short term planning.

Pastoral Landcare groups may wish to discuss these propositions and develop joint strategies aimed at achieving a more profitable and sustainable industry. I would appreciate any comments, suggestions or proposals that anyone may have on this key issue. Please write to me at the above address or phone (077) 425983.

INTEGRATING NATURE CONSERVATION AND ECOLOGICAL SUSTAINABILITY OF PASTORAL LAND USE IN WESTERN AUSTRALIA

Hugh Pringle, WA Dept. of Agriculture, Baron-Hay Court, South Perth WA 6151

Introduction

In Western Australia, there is increasing community interest in how the land is used. We have the interim Decade of Landcare Plan, the draft State Strategy for Nature Conservation and the recently released Final Report of the Select Committee into Land Conservation. Common themes running through them relate to the adequacy of our nature conservation efforts and the sustainability of our land use practices. They express expectations of Government bureaucracies that are not, in all cases, being met. This brief article mentions a few of the areas in which there is some scope for Government and land users to manage our State's rangelands better through cooperation. Some recommendations are made. These should be seen as secondary to the issues of nature conservation and ecosystem monitoring for ecologically-sustainable resource use. There are always numerous ways of addressing perceived deficiencies. Hopefully, this article will stimulate discussion of these two important issues.

Ecological sustainability of land uses

There has been some confusion over the general concept of ecological sustainability, partly as a result of successive authors feeling dissatisfied with previous definitions and then adding to the confusion. The concept of sustainability is fairly straightforward. It would appear that the confusion arises when "ecological" attributes are defined.

Some of the confusion may be eliminated if one distinguishes between objectives for nature conservation and objectives for legitimate land uses. The main objectives of nature conservation relate to the maintenance of biodiversity at species, ecosystem and ecoregion scales. Special instances such as the preservation of rare or endangered species (perhaps against the evolutionary forces of Nature) may require compromising biodiversity but the general drift of nature conservation is to allow nature to do its work on large enough and adequately replicated examples

of types of ecosystems in ecoregions. This is generally not possible in areas occupied by people, particularly non-traditional Aboriginal people. Such areas have generally been substantially modified as Nature's assets have become a resource.

The land user (e.g. pastoralist) aims for the highest level of production that the land can conceivably sustain into the foreseeable future. Biodiversity is not of particular concern to a wheat farmer. He is more concerned with whether his fertiliser requirements are escalating to maintain his wheat production per hectare. Similarly, pastoralists are primarily concerned with whether their stocking rates or strategies are damaging the land or whether their current management can be supported into the foreseeable future.

Integrating nature conservation and pastoralism

It is not realistic under the current politico-economic environment to expect the Government to acquire adequate areas of the rangelands to meet all the perceived nature conservation objectives through a greatly expanded system of nature reserves. The first stumbling block to pursuing this option would be finding funds to compensate existing land users for their land.

Given that pastoral leases cannot aim for "pristine" standards, it is appropriate at an ecoregional level that pastoralism and nature conservation are integrated and balanced. The setting aside of areas of pastoral land may present one initiative that will have positive results for both nature conservation and ecologically sustainable pastoralism.

The setting aside of areas of representative land types/ ecosystems will provide benchmark information against which the sustainability of grazing practices in pastoral areas can be evaluated. In the first instance, reference areas can be studied to identify key ecosystem processes. With an understanding of these processes, the attributes sensitive to them can be decided upon and monitored in the rangelands.

These indicator attributes may be of a highly technical and complicated nature; they may involve thresholds after which ecosystem processes are severely disrupted and stability is achieved only at a lower productive level. They could conceivably involve soil nutrient status and ephemeral change in soil fauna and the plants which would require investigation by ecologists on an on-going basis.

The value of reference areas in the future will be their use in determining how ecosystems have changed at grazed sites in relation to changes monitored in the ungrazed sites. This could involve tracking ecosystem change over time which, when related to ungrazed areas, could identify processes that have been, or are about to be, severely disrupted. Thus, the setting aside of reference/nature reserves in the rangelands should be viewed as one initiative toward integrated "pastoral resource" and "nature" conservation.

What about WARMS?

The Western Australian Rangeland Monitoring System (WARMS) has long been recognised as the best of its kind in Australia's rangelands. Some rangeland scientists believe that the system is capable of monitoring whether or not current land management practices are adversely altering fundamental ecosystem processes to the extent that future production is jeopardised. I would argue that WARMS addresses some of the criteria characteristic of ecosystem health. The major deficiency to it being a "deeper ecological tool", as described previously, is that it is primarily concerned with only one facet of complex ecosystems (i.e. perennial vegetation). It also has limited spatial relevance and sites are not necessarily strategically located to monitor broad landscape changes.

That an acceptable suite of perennial species exists, including perhaps desirable population structures, confers upon those doing the monitoring neither an understanding of ecosystem processes, nor any assurance that this situation will necessarily prevail. Only an ecosystem approach can truly reveal whether management is sustaining future productive potential. Certainly, Curry and Hacker's (1990) paper on pastoral achievement of conservation objectives would suggest that carefully monitored conservative grazing practices can maintain fundamental ecosystem processes, but this alone does not warrant neglecting "deeper" monitoring.

At a catchment level, WARMS does not address sediment and nutrient budgets or hydrological change. These are examples of important ecosystem attributes that are beyond the scope of WARMS - but should they be ignored? The fact that management areas generally cross catchment boundaries, rather than fall within them, has perhaps facilitated the neglect of landscape monitoring at this important level.

This account of WARMS' deficiencies as a monitoring tool needs to be seen in perspective. These deficiencies relate to the monitoring of the health of fundamental ecosystem processes, often at scales much greater or smaller than this site-based system. However, as a pastoral management tool to guide stocking rate decisions, it is particularly powerful. To modify WARMS in an attempt to address "deeper" ecological monitoring on a site by site basis, would jeopardise its future as a vital pastoral management aid. Meanwhile, the inability to address the full suite of attributes that require monitoring to ensure that pastoral land use is sustainable at a variety of scales would remain.

Beyond WARMS

A new system may be required if Government agencies responsible for monitoring ecological sustainability in the rangelands take the "deeper" ecological issue seriously. Again, WARMS must not be jeopardised by trying to make it everything to everybody. The new system may need to be considerably more complex in nature, a reflection of the complex manner of interactive ecosystem processes operating at a variety of spatial and temporal scales. It may require specialists skills not currently held within Government

departments active in the rangelands; certainly it will require a new, higher level of interdepartmental cooperation.

Given that WARMS is becoming increasingly sought after by pastoralists in Western Australia, the standard of pastoral management is likely to improve and a monitoring ethic is becoming established. Perhaps other states that either have less effective monitoring systems or give less extension effort to the value of monitoring are in a worse position. Changing pastoral management by developing a monitoring ethos is likely to reinforce nature conservation as pastoralists scrutinise the impacts of their management more closely.

As a final point, management oriented monitoring may deserve more attention. Given community-endorsed objectives relating to such issues as station management planning and adoption of monitoring sites, both of which depend to some extent on the availability of resource information, perhaps the performance of land managers and land administrators requires monitoring. This would imply greater accountability on those participating in the use and administration of the rangelands, beyond, for example, the number and size of saltbushes and bluebushes at monitoring sites.

The extent of coverage of rangeland survey, level of adoption of station management plans, and performance of WARMS are examples of human activity which could be formally monitored and reported on by pastoralists or Land Conservation Districts.

Further reading

Conacher, A.J. (1986). Environmental Conservation in: Jeans, D.N. (ed) Australia, a Geography. Vol. 1. : The Natural Environment. 2nd edition. Sydney University Press, Sydney.

Curry, P.J. and Hacker, R.B. (1990). Can pastoral grazing management satisfy endorsed conservation objectives in arid Western Australia. *J. Environ. Manage.* **30**, 295-320.

SEVENTH BIENNIAL RANGELAND CONFERENCE COBAR - OCTOBER 1992

Tony Grice, NSW Agriculture, PO Box 286, Cobar, NSW 2835

The Conference

How are our rangelands changing? How can management of rangelands be altered to better maintain their resources and sustain or improve animal production? How are the rangelands, and those who live in and depend on them, being influenced by changing community attitudes? What of changing perceptions in relation to the role of rangelands in conservation and the impact of the Landcare movement? What are the effects of changing economic circumstances?

These and other important questions will be tackled in our next Biennial Conference under its theme "**Australian Rangelands in a Changing Environment**". The big event will be held in Cobar, NSW, on 5-8 October 1992. This is immediately following the International Soil Conservation Conference in Sydney and a bus trip is being organised to connect the two conferences.

The response to the call for papers and posters has been excellent. An interesting array of papers has been selected and allocated to sessions which focus on:

- climate change;

- landscape change and the potential for restoration;

- developments at the interface of pastoralism and farming;

- changing perceptions of conservation;

- the financial and administrative environment and

- changing community attitudes.

Keynote speakers will also address each of these topics.

Among the highlights will be keynote addresses by Dr Steve Archer (Texas A&M University, USA) on "Changing Landscapes" and Prof. Jock Danckwerts (University of Fort Hare, South Africa) on "Changing Grazing Management". Their international experience in rangeland management should contribute greatly to our Conference.

In addition to keynote and volunteered papers, there will be three guided poster sessions that promise to deliver further interesting material on the conference theme. Authors of posters will also have the opportunity to make a brief verbal presentation.

A further session will involve open discussion of topics of importance to the Society. Topics that have been proposed so far include:

1. Society membership and how to make the Society more relevant;

2. The importance and maintenance of long-term monitoring sites in rangelands and the potential for the Society to play an important role;

3. The Society's corporate opinion. Should the Society develop "position papers" on subjects of importance to government and society at large? What are appropriate mechanisms for developing position papers? In conjunction with the ARS Council, Conference Organisers hope to make brief sample position papers available for this session.

Cobar

What of Cobar? Cobar is located on the Barrier Highway, 300 km west of Dubbo and 450 km east of Broken Hill. It is about 700 km or 9 hours driving time from Sydney and is accessible by aeroplane.

Discovery of copper led to the establishment of Cobar in the 1870s and '80s and production of copper, lead, zinc and gold remain important to the region's economy. The area has also been involved in pastoralism since the 1860s. Wool production is the main focus of this industry with cattle also being prominent.

At almost 32°S, Cobar has neither summer or winter dominant rainfall, though winter rainfalls tend to be more effective. Average annual rainfall is 352 mm. Winter growing annuals are often the most prominent component of pastures, though perennials are significant. Other pasture components for which Cobar is well known are its "woody weeds"; indigenous shrubs (*Dodonaea, Eremophila, Cassia* etc), that have proliferated since European settlement. In fact, should it so desire, Cobar could legitimately lay claim to the title of "Woody Weed Capital of the Southern Hemisphere".

The NSW Soil Conservation Service, NSW Agriculture, Western Lands Commission, National Parks and Wildlife Service and the CSIRO all have officers based in Cobar. A planned mid-Conference tour will enable conference participants to see something of the region, visit local properties and historic sites, and see and discuss research being undertaken by CSIRO, NSW Agriculture and the Soil Conservation Service.

Finally, if you haven't already done so, don't forget to register. Cobar's mean monthly maximum temperature in October is 28°C, so the promise is of an undeniably pleasant environment for an interesting conference.

Enquiries can be directed to the Conference Secretary, Russel Harland, PO Box 211, Cobar NSW 2835; Ph (068) 366632 and Fax (068) 362988.

As a footnote, Hazelton's Airlines are offering a 15% discount to those delegates using this airline to fly to the conference.

SOME HARD QUESTIONS FROM OUR TREASURER

Bruce Strong, Honorary Treasurer, PO Box 596, Alice Springs NT 0871

(Ed. Bruce presented this submission to the 97th Council meeting in April. Many of the questions raised warrant much wider debate amongst the membership. Accordingly, Bruce's submission is printed here to stimulate your response. Please consider these questions seriously and let Council know what you think - either directly by mail or at the Cobar conference.)

The ARS is a non-profit organisation. Our objectives are clearly set out in our Memorandum of Association. I have been concerned for some time at how we spend our money; perhaps it is time for a major review of how the Society is meeting its objectives through the use of its capital funds.

To date, the Society has established a Travelling Fellowship (1985) and an Overseas Conference Scholarship (1987) to help meet our objectives. We also have the Journal and Newsletter.

In recent times, we have had a poor response to calls for applications to use the travel funds. Does this mean that we are no longer meeting the needs of the membership? Do members see these funds as increasingly less useful? My perception is that non-members see them, particularly the Fellowship, as another source of funds - from a body in which they may have little interest, and which they have to join for only a year or so before fading from the scene. Perhaps this is unimportant if the funds are used wisely and meet the Society's objectives.

A further, somewhat cynical perception is that the funds are being almost exclusively used for jaunts to conferences. Is this perception correct, and if so, is it an appropriate use of members' funds? Council must ask itself if this is meeting the needs of "the other half" of our membership. Do you, the members, see the Fellowship and Scholarship as irrelevant to your sphere of interest? Have the circumstances under which both were set up changed to make them now increasingly less relevant?

Like it or not, we have distinct blocks within our membership, e.g. pastoralists, administrators, scientists, the odd(?) historian or two, etc. What about off-shore members? Are we catering for all of these groups? Can we?

We should also be looking to potential future members: students, pastoralists' sons and daughters, etc - the next generation. I would submit that at present we are doing nothing for this group. (Maybe we shouldn't - it could be argued that it is someone else's problem.)

Council should also ask the membership if they still see the Newsletter and/or Journal as useful and appropriate. The two consume the largest share of our income - honoraria should be included in this cost however well deserved they may be. Are we getting the best return from these publications?

Should we be making funds directly available for research? Should we provide an education scholarship at a college or university that provides a course related to rangelands? Or provide teaching aids for high schools? Should we dissolve the present Scholarship and Fellowship and redirect the funds? Should we produce some other education material e.g. booklet, pamphlet, video?

What other things can the Society do? More conferences? Field days by new and re-activated Branches? How better can we serve the users of rangelands? Funding for small scale rehabilitation works or other practical applications? Once again, is that some other groups' responsibility?

As a long time member of the Society, and as a non-scientist and non-academic, I have seen the Society shift increasingly from the non-academic to the academic (= elitist?). This is purely my perception and I cite the recent change in the Journal (which I admit was necessary) and the current proposal before Council to create the title of "Fellow". I believe that there is probably a large block of members with similar perceptions.

Yes, we have limited funds, but we still seem to be accumulating them at a reasonably healthy rate. I request that Council, through its membership, consider undertaking a review of how the Society is using those limited funds. Discussion should, I submit, be a relatively long-term process. It could start at the AGM and continue via the Newsletter to the Cobar Conference. Ultimately, it may require a questionnaire to the membership. This process will probably extend beyond the life of the present Council, but I do not think that this should be seen as an obstacle to the process. To summarise the foregoing, I put:

Questions to you - the Membership

Are the Scholarship and Fellowship still relevant?

Are they the most appropriate use of member's funds?

Are they achieving worthwhile results?

If so, do we continue to allocate surplus funds to them?

If not appropriate, do we redirect those funds (or some of them)?

If so, how? Where to?

What about potential and non-members? Why aren't they joining the Society? Do they know about us? How do we get at them?

Why has membership declined? Is the Society still relevant? Have former members simply lost interest?

We are approaching the end of the second decade of our existence (commenced 1975); I consider that a review is timely. To finish with a further question, is Council (and the membership) content with the status quo? Are we stuck in a comfortable cycle?

LANDCARE INFORMATION TECHNOLOGY TASKFORCE

Bood Hickson, Melinda Station, Cloncurry QLD 4824

The Landcare Information Technology Taskforce (LITT) was formed in 1991. This taskforce evolved through the recognition by hundreds of people that sustainable land management requires interactive dialogue and decision-making between landholders, government and advisory bodies. In the past, this has not always been possible because of the severe limitations imposed by our vast geography. With modern communications technology, this can and should be rectified.

LITT will coordinate the development of a functional communications network, linking its participants via LandcareNet to distributed information and knowledge bases. By providing the Landcare movement with access to a balance of perspectives - managerial, technical, administrative and research - greater cooperation and understanding will inevitably result.

Such an ambitious initiative must be grounded in action, not words. So to date we have pursued these goals through the genuine commitment of individuals. In this manner, we hope to draw people and existing projects together, rather than fracture the limited time and resources available to this critical assignment.

Thanks to the support of many, including Landcare Australia, Telecom and the National Soil Conservation Program, the Prime Minister officially launched LandcareNet in late March. LandcareNet (LCN) will provide community based Landcare groups with electronic mail and a common forum. Participants will be able to raise and discuss issues with each other and a panel of agricultural professionals. The expert panel will be able to initiate topics or announce conferences. LandcareNet will also provide access to Telecom's AgriNet, additional Pegasus conferences, and has gateways to other networks (e.g. AARNet).

Three other LITT projects are being developed, their purpose to make LandcareNet easier and more rewarding to use.

One initiative is to develop Landcare Information Resource Centres. If the Decade of Landcare is to provide tangible results for future generations, we will need to record our successes and failures in a location and manner that is readily accessible. It is crucial that landholders be the custodians of this information and knowledge to ensure that it will continue to be utilised and refined. Landcare Information Resource Centres (LIRC) will develop as nodes on the network, providing historical data and knowledge on Landcare efforts.

Other projects form interrelated components of an innovative rural communications system. The Landcare Information Technology Taskforce will coordinate these efforts.

The success of this taskforce and the charter it has undertaken will depend primarily on the participation of its members. If you wish to add your support, please contact me at the above address.

LETTER TO THE EDITOR

Tony O'Brien, Senior Consultant (International), PO Box 171, Kempsey NSW 2440

Last year there were rumours of discussions to amalgamate the Rangeland Journal and Tropical Grasslands Journal, for purposes of cost efficiency in developing an international standard journal. As a society member, I would like to suggest we explore this matter further, with a considerable increase in the scope of the proposal.

I believe it is time we examined the amalgamation of all societies involved with forage resources management and development in Australasia. This amalgamated society would cover all aspects of forage resources production including:

1. Native and naturalised pastures management.

2. Reinforcing native-naturalised pastures, oversowing.

3. Replacement pastures.

4. Forage and fodder crops.

5. Other feed stocks for feed mixtures and processed feeds.

6. Weed management; annual, perennial, grass, herb, shrub, tree.

7. Natural browse, forage, shrubs, fodder trees, agroforestry and sylvo forestry of forage-fodder species.

8. Savannah systems, multi-layered production systems, sylvo-pastoral systems, plantation systems, catchment management.

9. Shelter belts, shade trees, windbreaks for pastures.

10. Species for reclamation, erosion control; scalds, salting, wind and water erosion.

11. Soil conservation, land development, land reclamation, soil-land improvement, soil-land management.

12. Problem soil management and improvement; saline soils, acid soils, acid sulphate soils, solodic-podsolic duplex soils.

13. Water harvesting, water spreading, drainage.

14. Plant nutrition, inorganic and organic fertilisers, soil ameliorants, soil nitrogen accumulation and utilization.

15. Geoclimatic, bioclimatic and local climatic variation affecting species distribution.

16. Ecological-physiographic land systems classification and land capability classification affecting species distribution, management and economics.

17. Land use production systems, integrated land systems (subunits) use.

18. Seasonal drought reserves, long term drought refuges and reserves.

19. Seeding rests, recovery rests, set stocking, rotation systems, variable management systems, post drought recovery; intensification of management practices to offset increased stocking rates; soil moisture conservation, water harvesting, seeding rests, change of species and structure of pastures, species habit.

20. Seed production, guaranteed availability of seed reserves, long term storage of commercial seed.

There is need for a range of technologies to be utilised in any production area. We need to understand the basis of soil-land variation, to understand management options for improving or stabilising production. We need to understand factors of soil-land and climate limiting the distribution of use of species within their geographic range, to understand management options for both native-naturalised and improved pastures.

The artificial barriers between "range" and "pastures" have no meaning in the real world of animal production. These barriers should have no place in societies aiming to help producers manage and improve their forage resources production and utilisation.

In high rainfall areas, there is a need to learn more about native-naturalised pasture management as well as oversowing and replacement technologies. In low rainfall areas, there are few parts of the world where animal production is undertaken that technical improvements to the forage production system cannot be applied; including selected species for water harvesting, reclamation, browse improvement and drought refuges. In semi-arid and sub-humid areas, replacement pastures have been developed in other parts of the world and should be technically possible in Australasia.

The economics of change is the problem of improvement in production systems and economic survival, whether in arid or humid systems. But we have come to realise that economics is not an overriding criterion where sociological and/or ecological pressures are severe, with a degrading production base. Necessity produces innovation and different systems of costing.

An Australasian society would allow greater scope for the formation of a strong society with sufficient size to attract sponsorship for the promotion of its objectives and membership drives, journal and newsletters, travel and study scholarships. A good branch structure would cater for the perceived needs of local producers and the perceived potentials of research and extension personnel.

Branches should be regional, each with a common climatic, or geographic community, of interest rather than being based on political boundaries. Branches could form groupings or sections within the society with their own common interest newsletter, in addition to a sizeable society newsletter with practical production papers and discussion papers.

One of the limitations of present societies is the lack of branches. A larger society base should encourage the formation of a closer network of branches in Australia and New Zealand. An Australasian society would allow for expansion into the S.W. Pacific and S.E. Asia, possibly by Australian and New Zealand branches sponsoring the formation of new branches in regions or countries.

I would urge members to debate this proposition vigorously and take it to other forage resources societies in Australasia for debate.

DESERT ROSE POSTSCRIPT

Gary Bastin, CSIRO, PO Box 2111, Alice Springs NT 0871

In RMN 91/1 (March 1991), I wrote an article with Lynne Peterkin, Executive Officer of the Alice Springs Regional Tourist Association, on that group's efforts to revitalise the local tourism industry after the disastrous effects of the 1989 pilots' strike. One of their strategies was the 'Desert Rose' concept, a theme categorising and promoting local tourist destinations. One result of that strategy was the launching of the Central Australian Desert Rose Destination Map in late April this year.

Desert Rose Inn proprietor, Mr Jim Thomas, conceived the idea and has invested considerable money into the design and printing of the map.

One side of the stylized map depicts five road loops through the district. With its accompanying text, the map is designed to tempt the tourist into staying in the Centre a little longer. The reverse side describes things to do in and around Alice Springs. Both sides are extensively illustrated with examples of the scenery awaiting visitors at their destination. Other drawings illustrate the types of wildlife and fauna likely to be encountered on the way. The map's margins are annotated with concise descriptive notes on the features of each loop. These notes, written by local historian Dick Kimber, also provide a brief history of Alice Springs.

As a tangible example of the local tourism industry's desire to be compatible with nature and the environment, 50 cents from every map sale is being donated to the World Wide Fund for Nature. The WWF is an independent, non-profit organisation which aims to support research into endangered species and their habitats. Over the past 10 years, WWF has provided $180,000 to support projects in central Australia on the endangered mala and bilby. This work has been conducted by the Conservation Commission of the NT. It is pleasing to see the local community contributing through WWF to the research effort necessary to ensure the persistence of native biota in the rangelands.

RABBIT RESEARCH FUND

(Information extracted from "Outback", April 1992 - a Newsletter published by SA Department of Environment and Planning)

In RMN 91/2 (July 1991), we published a poem from Keith Greenfield of Billa Kalina Station, near Woomera, titled "Ode from the Outback". This poem drew attention to the rabbit as a pest. Keith has been influential in establishing a rabbit research fund which was launched in Adelaide on February 21 this year.

The director of the Adelaide Zoo, Mr Ed McAlister, is the chairperson of an organising committee which has been formed to raise money for rabbit control research. Other members include representatives of the pastoral and mining industries, Conservation Council, a research institution and a former politician. This group met in early April and decided to recommend that:

- the foundation be called the Anti-Rabbit Research Foundation of Australia;

- there be a conference involving all those involved in rabbit research;

- it accept donations, even though the foundation was yet to be formally established. Significant amounts had already been donated. Donations should be sent to The Adelaide Zoo, Frome Road, Adelaide SA 5000.

- membership of the foundation be encouraged at a small membership fee.

More information on the fund and foundation can be obtained from Mr Peter Day, United Farmers and Stockowners, 126 South Terrace, Adelaide SA 5000; Mr David Moyle, Nature Conservation Society, 120 Wakefield St, Adelaide; or Mr Nicholas Newland, Dept. of Environment and Planning, GPO Box 667, Adelaide SA 5001.

PASTORAL PROPERTY MANAGEMENT COURSE

Geoff Creek, Principal, Murrumbidgee College of Agriculture, Yanco NSW 2703

After lengthy consultation with members of the pastoral industry and other interested groups, the Murrumbidgee College of Agriculture introduced an Advanced Certificate course in Pastoral Property Management in 1991. The course has been very successful and we have now produced a promotional video to arouse further interest.

The course provides students with practical tuition in subjects ranging from welding, butchering and book-keeping to basic range management. Extensive training is provided in the Western Division of NSW and other pastoral areas of Australia.

Copies of the video can be obtained from the College.

TRAVELLING FELLOWSHIP RECIPIENTS

Greg Campbell, Honorary Secretary, PO Box 596, Alice Springs NT 0871

Following the additional call for 1992 Travelling Fellowship applications announced in the last Newsletter, Council received four responses by the 30 April closing date. After discussing the merits of each application, we decided to apportion the $2,000 award amongst the four.

Guy Richmond, a PhD student at the Curtin (WA) University School of Environmental Biology, was awarded $600 to assist with his travel costs to the Cobar Conference. Guy will present a poster on rangeland rehabilitation using poverty bush.

Judy Smith is a PhD student at the Graduate School of Environment, Macquarie University. She has been granted $600 to assist with travel costs involved in researching the habitat and water requirements of arid zone birds.

Two post graduate students at the Department of Environmental Science and Rangeland Management at the Roseworthy Campus of Adelaide University have been granted $400 to attend the Cobar Conference. Bill Hannaford is an Honours student who is researching the value of resting in the management of chenopod shrublands. Ali Valamanesh precised his PhD study involving rangeland reference areas and their value for monitoring in RMN 92/1.

We look forward to reports from these recipients in a future issue of the Newsletter. Applications for the 1993 Travelling Fellowship and Overseas Conference Scholarship will close on 30 November 1992.

AGM GUEST SPEAKER

Gary Bastin, CSIRO, PO Box 2111, Alice Springs NT 0871

Dr Joel Brown of the US Soil Conservation Service, California, has spent the last year with the CSIRO Division of Tropical Crops and Pastures in Townsville. Federal Council of the Australian Rangeland Society sponsored Joel's travel to Alice Springs as guest speaker following the AGM on 29 May 1992.

Approximately 50 people heard Joel speak on the topic of a natural resource-based approach to land management and land use allocation. Joel illustrated how range sites (equivalent to a small scale version of our pasture types) had given misleading information in the interpretation of landscape behaviour. In central California and elsewhere, paddock stocking rates are set on the basis of forage production measured at range sites. However, animal grazing preferences have meant that the cumulative figure for the paddock has placed excessive pressure on some parts of the landscape.

At an administrative level, one goal has been to improve water quality by maintaining minimum vegetation cover levels over whole catchments. However, selective grazing has meant that particularly vulnerable areas within paddocks (e.g. warmer south-facing slopes and greener riparian vegetation) are being grazed beyond the safe grazing levels for these range sites. Resultant increased runoff and erosion mean that planned water quality objectives are not being met. Stocking rate decisions, which were previously made at the paddock scale, must be made for the whole catchment while information additional to that previously collected for individual range sites is also required. A further problem is that what is desirable vegetation for livestock production is not necessarily the best for other goals, e.g. wildlife habitat or watershed management. Joel presented a framework within which such broader decision making processes might occur.

Joel has kindly provided me with a transcript of his talk and I will include an abridged version of it in the next Newsletter.

HONORARY MEMBER OR FELLOW?

Bill Low, Federal President, PO Box 596, Alice Springs NT 0871

Council recently received a request to consider replacing the membership category of Honorary Member with one of Fellow. Vice President, David Liddle, has obtained background information so that we can make an informed recommendation to you, the ordinary members, if a constitutional amendment is required. His information suggests that a broader view is required. The title of Fellow may be awarded in recognition of competence in a professional society which sets standards for professionalism, or it may be an honorary position bestowed on a person who has contributed great service to the Society.

Our Society is intentionally directed at people of a diverse background. Educational qualifications range from little to much, and experience can likewise vary between novice and skilled practicioner of rangeland management in areas including administration, research and applied management.

Is there a need for, or general acceptance of, the professional classification?

Does the change from Honorary Member to Honorary Fellow signify greater service?

Council would appreciate your comments. We intend to spend a little time on this topic during the "Society Business" session at the Cobar Conference in October. Can you please consider your position on this issue and either write to Council or inform us of your view at the conference.

ARID LAND ADMINISTRATORS CONFERENCE

Brenden Lay, Department of Environment and Planning, GPO Box 667, Adelaide SA 5001

This conference was held at Roxby Downs, near Woomera, on the 7-8 April 1992. Representatives of land administration and advisory agencies from all rangeland states attended.

The aim of the conference was to share and exchange views on issues of common concern to arid land administration agencies. Sessions were structured to facilitate the achievement of a common approach to management of arid areas on a national scale.

Resolutions

An outcome of the workshop sessions was the drafting of resolutions on two principal issues. These issues concerned the need for a national management strategy for rangelands and the promotion of commercial kangaroo harvesting. The conference recommended that the resolutions be passed to the SA Minister for Lands for transmission by appropriate channels to the Federal government.

1st Resolution

Arid and semi-arid rangelands occupy over 70% of the continental land area of Australia, and contribute substantially to the national economy and cultural heritage. Many features of the ecology, management and administration of these lands are common throughout the mainland states. In the light of recent Commonwealth initiatives to develop national strategies for ecologically sustainable development, and community concern for the maintenance of biodiversity, this group recommends for the preparation of a National Rangelands Strategy for Australia. It proposes the establishment of a Working Party to develop such a strategy, and to report back within two years.

2nd Resolution

Preamble

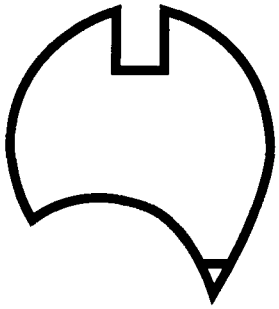
The group recognises the need for effective management of grazing pressure as a requirement for rangeland conservation and preservation of biological diversity. The group also recognises that in significant areas of the rangelands (particularly inside the dingo-proof fence), kangaroo populations have increased significantly above natural levels.

Parallel management of numbers of livestock is required together with other introduced and native grazing animals. There are recognised mechanisms for management of livestock and most feral animals. However management of kangaroo grazing pressure is handicapped by faulty public perception of the status of the large kangaroo species. This has impeded cost-effective harvesting programs tied to the marketing of kangaroo products, nationally and internationally.

Resolution

This group supports the need for community education activities to promote commercial kangaroo harvesting, including the harvesting of kangaroo products.

In addition, a number of possible common objectives amongst the various state-based agencies were discussed at the conference. These ranged from land tenure and rental through land assessment and monitoring to public access and alternative land use.



The Australian Rangeland Society

A.C.N. 008 784 414

REPORT OF THE ANNUAL GENERAL MEETING OF THE AUSTRALIAN RANGELAND SOCIETY

Held at CSIRO, Heath Road, Alice Springs 1.30pm on Friday 29th May 1992

CONTENTS

PRESIDENT'S REPORT

Bill Low, PO Box 596, Alice Springs NT 0871

I welcome you all to the successful conclusion of our first year in office. This has been a year of consolidating our grasp of administrative and financial matters as well as making several momentous decisions. I would like to recap some of the events of the year for you.

Early in the year, we approved the payment of honoraria of $1000 to our editors as recommended by the Publications Committee. Good editors are an important part of the communications system that the Society has developed and the payment is small enough reward for the very time consuming task that our editors perform. Following on from the momentous change to the Journal last year organised by the Publications Committee, we look forward to achieving the international standards we need if the Journal is to be listed by Bio-Abstracts.

Long term care of land is essential if we are to have sustainable productivity. We are not anti-development, but we need to integrate the information we do have and obtain the data we still need if we are to achieve our goals of sustainable productivity, and indeed life. The Society has an important role to play in forming public opinion on the best way to achieve sustained use of rangelands. Submissions by Steve Morton to the Biodiversity Strategy and Ken Hodgkinson, our representative to FASTS, on the role we should take in developing school and university curicula in areas such as physics, are important and worthwhile efforts. Former President, Denzil Mills, has voiced a general concern about the western rivers of Queensland and has presented a specific submission on the Lower Balonne River. Cropping development along these rivers could potentially remove water through irrigation which would otherwise be used to flood pastures grazed by sheep. What are the ramifications for social, economic and ecological productivity, or indeed survival, of this area? We don't know and it is necessary to find out before development of this, and other, rivers proceeds much further.

The 1995 International Rangeland Congress will now be held in the USA instead of East Africa. A result is that we are putting together a case to host the VIth IRC in 1999 in either Perth or Townsville. Support from both locations is very encouraging. We need to win the 1999 international congress from strong competition in South Africa and other possible contenders. Whichever city is the host, we will need support from all rangelanders in Australia to assist with the enormous organisational and financial responsibilities required to make the Congress a success. Do you have strong feelings about which city we should be proposing and good reasons to back it up? We need more input from the membership.

Promotion of the Society and interaction with other Societies within and outside of Australia is an important concern. We have agreed to assist in sponsoring the International Grasslands Congress in 1993. In exchange, we can expect assistance for the International Rangelands Congress in 1999. In addition, the Society will be allocated space for promotional material at the Grasslands Congress.

We are presently considering our options for longer term control of financial matters. Our Treasurer, Bruce Strong, required about eight months of diligent work to get the books under control with the last change in office. Bruce has also raised several questions (which appear in the July 1992 Newsletter) that should encourage members to think about where the Society is going and whether we are still in touch with the "grass roots" membership.

Recent Federal legislation now means that we come under the control of the Australian Securities Commission instead of the West Australian Registrar of Companies. This has important ramifications in that Executive members are now Directors and we must report regularly to the Commission. This has required tighter management of the Society.

The Society's finances are in good shape thanks to Bruce's efforts and he will cover these in his report. The main worry is the slow payment of subscriptions with almost half of the membership list currently in arrears. Membership continues to be an important concern. Subscription Secretary, Ashley Sparrow, will cover this in detail in his report.

The Travelling Fellowship and Overseas Conference Scholarship received very little attention this year until we extended the deadline and appealed for applicants. We are particularly concerned that pastoral members do not seem keen to apply for assistance to attend conferences despite past efforts to target this group as one of the main recipients for the awards. Do we need to change our strategy of handing out the awards?

Secretary Greg Campbell surveyed Branches and branch activity and found that only the South Australian and West Gascoyne Branches were still meeting regularly. The West Gascoyne Branch has now amalgamated with Perth. The Broken Hill Branch has been inactive for a couple of years and recently formally closed down, contributing over $700 to the Society. These funds will of course be available to assist other Branches in establishing or expanding. The group organising the Biennial Conference in Cobar in September are an effective branch and will hopefully continue activities after the Conference. These branches form an important link in relaying information between the membership and Executive in areas such as travelling fellowships and Society submissions to government.

The conference in Cobar in September will provide a platform for members to have input into Society affairs. A separate session has been organised to encourage interaction. I congratulate the organisers on their efforts in organising the conference and with everything running smoothly at this stage, the conference is an assured success. In 1994 we, the Alice Springs members, feel that a conference in the NT would be appropriate. Katherine could provide a good venue as a leadup to a subtropical rangelands Congress in 1999.

In May last year, the Executive commenced its term in the NT with Greg Campbell as Secretary, Bruce Strong as Treasurer, Ashley Sparrow as Subscription Secretary, Dave Liddle (in

Darwin) as Vice-President and myself as President. Martin Andrew from Adelaide moved into the position of Past President, and only a few months ago, Alec Holm from Perth became Vice-President for the State which is to host the Executive next year. Gary Bastin, our Newsletter Editor, became a proxy for Martin and has contributed considerably to the meetings. Having Marg. Friedel here as chair of the Publications Committee has allowed for more immediate decision making in matters pertaining to Publications. For those who are unaware, the Executive "moves" from State to State every two years. We have now finished our first year and have one year in which to promote local issues which are of national concern. I would like to take this opportunity to thank the present Executive for their considerable input and positive attitude to making the organisation work efficiently. The chairperson of the Publications Committee, Margaret Friedel, Editors Gary Bastin and Allan Wilson and all the Associate Editors and publishers have put tremendous effort into keeping the membership informed and communication flowing. They deserve a large vote of thanks and I look forward to working with them in the coming year.

TREASURER'S REPORT

Bruce Strong, PO Box 596, Alice Springs NT 0871

I am pleased to present the Audit Report and Annual Financial Statements for the year ended 31 December 1991. The Society is in a sound financial position despite a substantial drop in subscription income for the year as compared to the previous twelve months. This decline may be due to the hard times experienced by most of us during this time of recession but I believe Council should investigate any other likely cause or causes.

A paragraph in the Audit Report requires some explanation. That paragraph reads:

There were no statutory records on hand. This is a violation of section 242 of the Corporations Law. Accordingly we have been unable to satisfy ourselves that all legal requirements have been complied with.

In 1991, the Society came under the umbrella of the Australian Securities Commission (ASC). This has led to the need for the Society to meet certain requirements. One of these is the need to maintain a Register within which should be kept, amongst other things:

(i) A copy of the Society's 'Articles and Memorandum of Association';

(ii) Reports of AGM's;

(iii) A register of all names of all members, the Executive and Directors, and

(iv) Resignations and acceptances of appointment of members of Council and Directorships.

Now that the Society is liable to close scrutiny by the ASC, I believe that there is a need for future Treasurers of the Society to be conscientious in their bookkeeping and to be constantly aware of the state of the Society's finances.

The rationalisation of bank accounts, reported at the 1991 AGM, has continued with three 'inactive' accounts being closed. During the year (1991), rather than maintain a large current account balance earning a relatively low interest rate, Council placed excess monies in Unsecured Notes available at 24 hours notice. This allowed the Society to take advantage of higher interest rates while still having funds available for items such as Journal and Newsletter publication.

Council has ensured that funding of the Travelling Fellowship and the Overseas Scholarship has been maintained or increased. Ray Perry and David Wilcox have agreed to continue as Trustees of the Scholarship.

There still appears to be little interest from members in the Fellowship and Scholarship as also reported at the 1990 AGM. As a result of this, and a concern that perhaps the use of the Society's capital funds may be being misdirected, I was prompted to make a submission to the last meeting of Council in which I proposed a review of the affairs of the Society. It will soon be twenty years since the inception of the Society and perhaps a review is timely.

The coming year (1992) will see substantially reduced interest rates on our investments and thus a lessening of income from these sources. Hopefully, subscription income will not go the same way. Nevertheless, I am confident that this Council will be able to report a similar sound financial position in twelve months time before handing over to the next executive. Mr President, I move that the Audit Report and Annual Financial Statements for 1991 be accepted.

THE AUSTRALIAN RANGELAND SOCIETY
AUDIT REPORT
FOR THE YEAR ENDED 31 DECEMBER 1991

Wolstencroft & Co, Chartered Accountants, PO Box 1970, Alice Springs NT 0871

We have audited the accounts of The Australian Rangeland Society for the year ended 31 December 1991. The members of the governing body are responsible for the preparation and presentation of the financial report and the information contained therein. We have conducted an independent audit of the financial report in order to express an opinion on it to the members.

Our audit has been conducted in accordance with Australian Auditing Standards to provide reasonable assurance as to whether the accounts are free of material mis-statement. Our procedures included examination, on a test basis, of evidence supporting the amounts and other disclosures in the accounts, and the evaluation of accounting policies and significant accounting estimates. These procedures have been undertaken to form an opinion as to whether, in all material respects, the accounts are presented fairly in accordance with Australian accounting concepts and standards and statutory requirements so as to present a view of the society which is consistent with our understanding of its financial position and the results of its operations.

The audit opinion expressed in this report has been formed on the above basis.

It was not practicable to establish control over income, other than interest, prior to its initial entry into the accounting records. Our audit of this income was therefore limited to the amounts recorded.

There were no statutory records on hand. This is a violation of Section 242 of the Corporations Law. Accordingly we have been unable to satisfy ourselves that all legal requirements have been complied with.

Subject to the above, in our opinion, the accounts of The Australian Rangeland Society present a true and fair view of the Society's financial position at 31 December 1991 and of its operations for the year then ended and have been prepared in accordance with Statements of Accounting Concepts and applicable Accounting Standards.

WOLSTENCROFT & CO
Chartered Accountants

J WOLSTENCROFT
Register Company Auditor

May 1992

THE AUSTRALIAN RANGELAND SOCIETY

BALANCE SHEET AS AT 31 DECEMBER 1991

	1991	1990
	$	$
CURRENT ASSETS		
Cash at Bank	7,321	9,991
Receivables (interest)	1,310	600
Investment Deposits	111,253	96,792
	119,884	107,383
CURRENT LIABILITIES		
Creditors & Borrowings	5,091	900
NET ASSETS	114,793	106,483
SHAREHOLDERS EQUITY		
Retained Profits	114,793	106,483

Cash at Bank comprises $6,847 in the General Account, $302 in the Publication Account and $172 in the Newsletter Account.

Creditors and Borrowings comprise $1,650 for Audit and Accounting Accrual, and $3,441 as Subscriptions in Advance.

THE AUSTRALIAN RANGELAND SOCIETY
INCOME & EXPENDITURE STATEMENT
FOR THE YEAR ENDED 31 DECEMBER 1991

	1991 $	1990 $
INCOME		
Conference Fees	7,001	-
Subscriptions	16,723	22,814
Reprint Sales	388	1,058
Interest	11,519	13,793
Other Income	25	10
	35,656	37,675
LESS EXPENSES		
Accounting	560	400
Audit Fee	930	500
Bank Charges	470	143
Conference Expenses	1,000	-
Freight & Postage	1,514	-
Honoraria - Production Manager	2,500	2,500
Honoraria - Others	5,750	-
Production of Journal	5,807	10,421
Production of Newsletter	4,201	7,660
Production of Brochures	-	200
Publications Committee	15	2,613
Subscriptions	399	302
Sundry Expenses	-	404
Travel	730	150
Scholarships & Grants	900	8,031
SA Secretary & Accountant	205	784
Stationary	1,128	-
Petty Cash	350	
Reimbursements	387	
	26,846	34,108
SURPLUS FOR YEAR	$8,810	$3,567

SECRETARY'S REPORT

Greg Campbell, PO Box 596, Alice Springs NT 0871

This has been my first involvement with a national body and a diversity of subjects and issues have been raised during the year.

Regulations over the Society as a company have changed dramatically during the year. Our previous company registration under the WA Companies Act has been revoked and automatically transferred to the new national register of the Australian Securities Commission. Dealing with this new corporate watch-dog has certainly raised my sympathy for small businesses who have to navigate government red tape. Requirements now are annual financial audits and the lodgement of company returns. Letterheads will need to be changed to incorporate our Australian Company Number and we have had to get a new company seal. Good accounts and records of activity must be kept and future Councils need to be very aware of the stringent deadlines and hefty fines for lack of compliance.

This also raises the issue of directorship of the company. The currently listed directors are David Wilcox, Malcolm Howes and Alan Payne, all foundation directors. These people are not involved in the immediate management of the Society but as directors, have considerable responsibility for its management. With their long experience of rangeland and Society matters, they do serve as a reliable source of advice for Council and there is merit in retaining directors for this reason. David Wilcox's home has been the permanent registered business address of the Society and his presence as a director is desirable. Malcolm Howes is also the Journal's production manager.

The President, Treasurer and Secretary of the Society can also be considered directors and in terms of company responsibility, the Society now has six directors. The current practice is to keep the non-council directors informed of Society business activity by posting the minutes of monthly Council meetings.

It is worth reminding everyone that one of our long serving members, Ray Perry, received an Order of Australia Medal in 1991 for his long and dedicated service to rangelands within Australia and internationally. The Society congratulates him on this achievement and is appreciative of his continuing efforts in this area.

A significant activity has been the preparation of an Australian bid to host the 1999 International Rangelands Congress. Australia hosted the 1984 IRC in Adelaide and given the current intensity and variety of activity under the land care banner, it seemed a good idea to again bid for a major forum to present results. This would also provide significant international promotion of the Society and its publications and is a potential source of revenue. Good government, university and industry support has been promised for the two venues proposed, Townsville in the tropics or Perth in a Mediterranean environment. Should this bid be successful, there will be plenty of opportunity for members to work on committees. These challenges should be taken, particularly by more junior members of the Society, as a means of fostering overseas contacts and learning more about the international rangeland movement. Things become more interesting when you are involved.

Another opportunity for Society promotion is through sponsorship of the 17th International Grasslands Congress to be split between New Zealand and Queensland. The Society is on track to be a minor sponsor of the Rockhampton venue. This sponsorship will be in the order of $1,000 with a further $500 or so to cover display preparation. Our display will outline Society activity, promote membership and the Society's publications. It will be staffed during breaks to answer enquiries and provide further information to the large number of international attendees. Society members attending the Congress who could assist with this staffing should step forward.

The Australian Wool Research and Development Corporation funded one woolgrower member of the Society to attend the 6th Australian Agronomy Conference in Armidale and the subsequent workshop on pasture research and development. With little time to nominate a member, we circulated details to both active and non-active branches. Due to the February timing, many woolgrower members were caught in a prevailing drought and so nominations were few. Council selected Mr Bob Symmonds from Boologooroo station north of Carnarvon and Bob will report soon through the Newsletter.

The Society has received several requests to act as promoter and subscription agent for journals and publications in the science/conservation/resource management areas. These requests have been declined but a potential source of revenue may exist and a further investigation of this activity could be warranted in the future.

Postal charges have risen and under the Print Post arrangements for circulating the Newsletter and Journal, some rise in membership fees will probably be necessary for 1993.

SUBSCRIPTION SECRETARY'S REPORT

Ashley Sparrow, PO Box 596, Alice Springs NT 0871

As at 27 May 1992, the membership of the Society stood at 567. This figure includes five Honorary Life Members, four Society Officers, the Auditor, three statutory library deposits of publications and 554 ordinary members. The ordinary membership may be broken down by whether they are individuals, companies or libraries and by their subscription type as follows:

MEMBER TYPE	SUBSCRIPTION TYPE			
	Journal and Newsletter	Journal Only	Newsletter Only	Total
Individual	406	-	36	442
Company	12	6	4	22
Library	44	41	5	90
Total	462	47	45	554

Distribution by state reflects population size and extent of rangelands and/or rangelands research interests:

STATE	MEMBERS
ACT	24
NSW	141
NT	52
QLD	104
SA	85
TAS	2
VIC	16
WA	84
Overseas	46
Total	554

There have been 46 new members join the Society in the 12 months from June 1991 to May 1992. However, the current number of Society members reflects a significant continuation of the decline in membership which began in early 1990 (when membership stood at 630). Despite a reminder notice sent out in April last year, 110 members did not renew their 1990 subscriptions into 1991. Almost all of these were individual members; there were only two companies and three libraries. Very few resigned formally; most simply became unfinancial and lapsed. Furthermore, a scan through their mailing addresses indicates that approximately 60% are pastoralists, which suggests that the cause may lie, at least in part, with the economic recession.

On the other hand, there is a general reluctance amongst the membership to pay dues without specific prompting. Despite full-page subscription renewal notices in the **Range Management Newsletters** in November 1991 and March 1992, and the offer of a discount if paid before 31 March, there were 331 unfinancial members as at 16 April 1992 when individual reminder letters were mailed. There has been a large response, but there are still 169 members who have not renewed their 1991 subscriptions into 1992: 136 individuals, nine companies and 24 libraries. In future, it will be policy to send subscription renewal reminder notices to all members in January of each year.

Membership dues were not increased in 1992.

PUBLICATIONS COMMITTEE REPORT

Margaret Friedel, CSIRO, PO Box 2111, Alice Springs, NT 0871

In the year since our last report, the Committee has been active on a number of fronts. Our foremost responsibility has been the publication of the Journal and the Newsletter.

The Journal was redesigned, after canvassing of opinions from a number of members. Significantly, the title was changed to *The Rangelands Journal* in order to emphasise that our interests were not restricted to Australian topics. The community of contributors within Australia is limited and so, to ensure a healthy level of contribution and subscription, the Committee recommended a change. The format and production quality was also improved.

The policy of the Journal, approved by the previous Council, is to publish material of scientific merit relevant to all aspects of the ecology, use, management and conservation of rangelands, both within Australia and internationally. The criterion for publication is that submitted papers present sound science, that is, that conclusions can be soundly drawn from the data. Our editorial process has ensured that this standard has been maintained.

As foreshadowed in last year's report, the first of our 'theme' issues is to be published in December. Steve Morton is guest Editor and he has gathered fifteen invited contributions to the topic "Wildlife and Conservation in Rangelands". The intention of the theme issues is to address topics that have not received extensive coverage in the past, in order to attract a wider audience.

Expanding the ranks of our contributors and subscribers has been an important goal of the Committee. We are presently working on several fronts. As well as the title change and theme issues for the Journal, display material is being developed by Council to promote the Society and its publications. The

first major venue for the display will be the International Grassland Congress in February. Advertising in equivalent journals is under consideration, too.

In addition, we have initiated contact with other societies to explore the possibilities of amalgamated publication. The Committee believes that no amalgamation should occur for two to five years, if it occurs at all, so that our other initiatives have time to be effective. This will also allow time for the general Society membership to develop and voice its opinions.

The outcome of this exploratory contact has been an exchange of referees' names between the Grassland Society of Southern Africa and ourselves, and the potential for others. Exchanges such as this will familiarise the organisations with one another's work, to the benefit of all.

The Society has good reason to be satisfied with both the Journal and the Newsletter. Their content is of good quality, they appear on time and their presentation is good. This is entirely due to the efforts of the Editors, Allan Wilson and his team of Associate Editors (for the Journal), Gary Bastin (Newsletter) and Production Manager Malcolm Howes (Journal). Their work is greatly appreciated.

Andrew Ash of CSIRO Tropical Crops and Pastures has agreed to take on Ian Beale's former role as an Associate Editor. We thank Ian for his contribution and welcome Andrew to the Journal.

I am pleased to report that Council approved our request for honoraria for the two Editors and for a one-off honorarium for the two retiring Editors, all of whom devote (or devoted) large amounts of their private time to furthering the Society's interests. Council also upgraded the honorarium of the Production Manager. We are convinced that the honoraria are a worthwhile investment for the Society - fully commercial publication of the same quality is beyond our reach.

The Journal is no longer printed in-house, with the new format, and so costs have increased by about 10%. Costs have also increased for the Newsletter. It is published three, rather than four, times a year and is thus no longer eligible for the cheapest postal rates. Instead it qualifies for Print Post, provided there is a minimum posting of 500 per issue, but it is somewhat more expensive. The printing costs of the Newsletter are kept within bounds by limiting page numbers. However, the fact that Gary has so much material that there are times when he cannot publish it all is a good sign.

The number of papers in the June issue of the Journal will be modest, but the December theme issue will be unusually large. The June 1993 issue promises to be substantial too, because it will include all the invited papers from the Society's Biennial Conference, to be held in Cobar in October this year.

The Publications Committee has not met in the last year, but maintains a healthy correspondence. All members take the time to write at length or telephone, when called upon to voice their opinions, and I believe they serve the Society well. My thanks go to them all. We will take the opportunity to meet together in October, during the Biennial Conference.

I have already acknowledged the contributions of the editorial and production team and, just now, the efforts of the Committee. In addition, I am particularly grateful to the present Council, which has been very supportive of our activities, and ensured that the Committee is fully informed of all decisions by including me in Council meetings. Last but not least, thanks go to all those who provided material for publication. Well done everyone!