



The Australian Rangeland Society

RANGE MANAGEMENT NEWSLETTER

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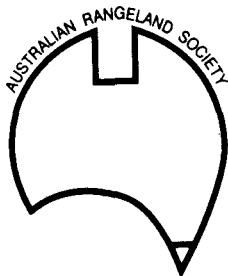
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FROM THE EDITOR

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Welcome to the final *Range Management Newsletter* for 2004.

As usual, this issue begins with two longer articles. The opening article reports on research carried out as part of the Heaslip Arid Zone Research Scholarship. This study, carried out by Dean Williams, looked at the impact of grazing and rainfall on seed head production in buffel grass at four sites around Alice Springs. We hope that the scholarship fostered Dean's interest in rangeland research and wish him well with his studies in environmental science at Adelaide University next year. Perhaps some of you may also meet him on the Larapinta trail where he is currently working as a tour guide.

The second major article describes the recently completed Connected Communities project. This 15 month study, carried out by a number of CSIRO Sustainable Ecosystems researchers, looked at the opportunities to use Information and Communication Technologies (ICT) in rural Australian communities to assist with sustainable development. This interesting paper highlights a number of the outcomes of the original study and also indicates the directions for future research.

There have been a number of developments for the Society which are outlined in this newsletter. These include a big change for *The Rangeland Journal* which will begin publication in an electronic form (as well as the traditional hardcopy form) from the beginning of 2005. This an exciting venture for the Society and one that will enhance the journal's profile as a high quality, international publication. Additionally, there have been several changes in the makeup of the ARS Council including the addition of two new members, Vanessa Bailey and Matt Bolam. Profiles of these two newcomers are included for your interest. This issue also includes information about the ARS Awards - the Travel Grant and Scholarship are available to members of the Society who wish to undertake studies related to the rangelands or attend a rangeland-related conference or other activity. Further details are available on page 15. Please note that the deadline for applications is 30 June 2005.

We would like to apologise for not including the 2004 financial report in this newsletter as previously indicated. Unfortunately, the accounts have been delayed due to unexpected and new auditing requirements being imposed. We confidently expect that the audited accounts will be received from the auditors in time for the next issue of the Newsletter.

Please note that the deadline for the next issue is late January 2005 but as usual I would appreciate receiving articles as early as possible.

I wish you all a happy and safe holiday season. I hope you will continue reading *RMN* in 2005.

THE EFFECTS OF GRAZING AND RAINFALL ON THE PRODUCTION OF BUFFEL GRASS (*CENCHRUS CILIARIS*) SEED

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[Note: Dean completed Year 12 in 2003 and was awarded the second Heaslip Arid Zone Research Scholarship. This scholarship, funded by Grant & Jan Heaslip of Bond Springs Station, allows a student to undertake a scientific research project prior to attending university. The scholarship is designed to expose students to all the skills required to take a project from concept stage through to final promotion: e.g. project management, scientific methods, fieldwork logistics, data analysis, report writing and oral presentation. Students are chosen on their interest and aptitude in natural resource science. The experience gives students a "head start" in their degrees and it is hoped that some of them might return to work in the rangelands one day.]

Abstract

The main objective of this project was to determine the influence of grazing and rainfall on the production of seed heads on buffel grass (*Cenchrus ciliaris*) at four sites in Central Australia. We found that the average number of seed heads produced by ungrazed plants was higher than that of grazed ones when conditions were dry or grazing was heavy. However, good rainfall following several weeks of rest from grazing allowed grazed plants to produce significantly more seed heads than ungrazed ones. These results have implications for both those managers wishing to increase seed production and those wishing to limit seed production.

Introduction

Buffel grass (*Cenchrus ciliaris*) was deliberately established in Central Australia in the early 1960's by CSIRO (Latz, 1991). The buffel sown in the late 1960's in the Alice Springs district didn't initially respond to the environment well, but over the past forty years it has come to adapt and thrive under the local conditions. Whilst buffel once responded only to summer rains, it can now also respond to winter rains, which is not an original trait of the grass (Grant Heaslip, pers. comm.).

Initially, buffel was purposely sown for soil reclamation work in areas such as the Alice Springs airport, but it is now widely appreciated by pastoralists. Buffel is popular with many pastoralists as it is drought hardy and once established, can withstand continuous grazing (White, 1996). However, the features that make it a very successful rehabilitation and pasture grass also tend to make it a nuisance in areas where it is unwanted. This dilemma has caused a great deal of division amongst various interest groups in Central Australia.

In areas where buffel is considered a nuisance, the most appropriate method of broad scale control would be biological, which requires a large source of funding. A biological control program is unlikely due to buffel's popularity amongst the pastoralist community (David Albrecht, pers. comm.). On a smaller scale, a combination of methods (e.g. spraying, burning and/or mowing/slashing) have proven effective in controlling buffel. Hot burning is required and is best in open country without trees or shrubs (David Albrecht, pers. comm.). Spraying before rains is important as the grass can resprout and recover quickly.

Some people believe that aggressive hedging or burning increases seed production in buffel grass (Grant Heaslip, pers. comm.). Others believe that this is not so, as the plant biologically sacrifices reproduction in order to regrow (David Albrecht, pers. comm.). The debate as to whether grazing (or similar treatments) promote or reduce seed production was the cue for undertaking this study.

Methods

Study Sites

Four sites were selected around Alice Springs, Northern Territory (Figure 1). Sites were chosen so that there was a grazed and an ungrazed buffel population on either side of a fence. This was to ensure that any differences in environmental factors between the populations were kept to a minimum. Each site was photographed and marked by GPS (see Williams, 2004).

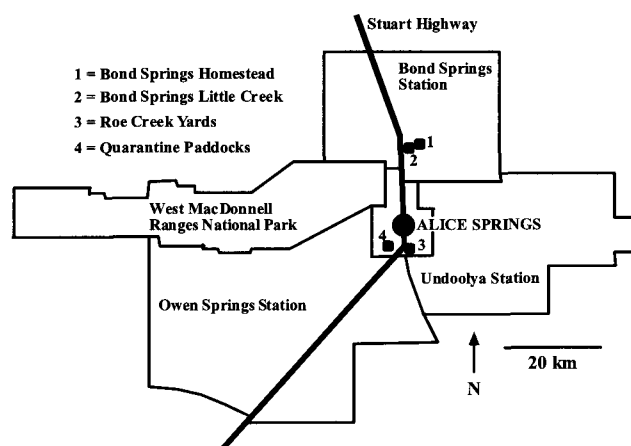


Figure 1. Locations of the study sites near Alice Springs, Northern Territory.

Data Collection

For each of the grazed and ungrazed populations, 20 buffel plants were randomly selected. This was done using a random number table. The number table gave double digit numbers, which were used such that the first digit would be the number of steps in one direction and then the second number the number of steps in a direction perpendicular to the previous. For example, if the number in the table was 26, then two steps forward (or backward)

would be taken and then six steps left (or right) from that position. The closest plant to the final position was selected for measurement. The original starting point for this action at each site began at the GPS marker.

The four study sites each had population quadrats of varying size, dependent on the density of the grass. Site 1 (Roe Creek Yards) was located along the western fence line of the Roe Creek Yards running parallel to the Stuart Highway. Both the grazed and ungrazed populations at this site were 1000m². Site 2 (Bond Springs Homestead) was located 50m south of the homestead on Bond Springs Station. The grazed population was 900m² in area and stock had been removed 6 weeks prior to the measurements being taken. The ungrazed population was 400m² in area due to the higher grass density. Site 3 (Bond Springs Little Creek) was also located on the station, along the perimeter fence of the homestead near the main grid entrance. Both the grazed and ungrazed populations were 400m² in area. Site 4 (Arid Zone Research Institute Quarantine Paddocks) was located 150 metres west of a water trough. The ungrazed area of 400m² was situated in a 10 metre wide double fenced strip of land that had never been grazed. The adjacent grazed section was 1600m².

The recent grazing history of the sites was provided by Grant Heaslip (Bond Springs Station), Herbie Neville (Elders Ltd) and Greg Crawford (Department of Business, Industry & Resource Development). Using photographic guides (see Appendix in Williams, 2004), relative grazing pressure was determined for each plant.

The heights and basal widths of each plant were recorded. The height of the plant was deemed to be the highest point to which any part of the grass grew. Heights and widths were measured to the nearest centimetre using a standard tape measure. Unfortunately, plants at the Roe Creek Yards site had their canopy width measured, rather than their basal width measured. In hindsight, all plants should have had their basal width measured. The number of seed heads was then counted on each plant. If one or more seeds remained attached to the tiller, the seed head was counted.

Results

Each site was under the effects of different rainfall and grazing conditions. Table 1 shows that the Roe Creek and Quarantine Paddocks had more actively growing plants due to higher rainfall. It also shows that Roe Creek had received the least degree of recent grazing whereas Bond Springs Little Creek and the Quarantine Paddocks had experienced the heaviest recent grazing.

Table 1: Summary of rainfall and grazing pressures on the study sites. Rainfall figures are from Alice Springs airport (Roe Creek and Quarantine sites) and Bond Springs homestead (Bond Springs sites).

Site	Rainfall 45 days Preceding Study	Time Since Grazed	Growth Activity	Relative Grazing Pressure			
				U	NR	G	HG
Roe Creek Yards Grazed	42.4 mm	8-10 weeks	All plants green	0	20	0	0
Roe Creek Yards Ungrazed	42.4 mm	Ungrazed	All plants green	20	0	0	0
Quarantine Paddock Grazed	42.4 mm	Continuous (regular)	All plants green	0	2	9	9
Quarantine Paddock Ungrazed	42.4 mm	Ungrazed	All plants green	20	0	0	0
Bond Springs Homestead Grazed	6 mm	Approx. 6 weeks	All plants dry	0	0	20	0
Bond Springs Homestead Ungrazed	6 mm	Ungrazed	All plants dry	20	0	0	0
Bond Springs Little Creek Grazed	6 mm	Continuous (intermittent)	45% plants dry, 55% plants green shoots	3	3	2	12
Bond Springs Little Creek Ungrazed	6 mm	Ungrazed	30% plants dry, 70% plants green shoots	20	0	0	0

Where U = ungrazed, NR = not recently grazed, G = grazed and HG = heavily grazed according to photographic standards.

Figure 2 shows that the heights of the ungrazed grasses were significantly greater than that of the grazed grasses, except at the Bond Springs Homestead site where the heights were not significantly different.

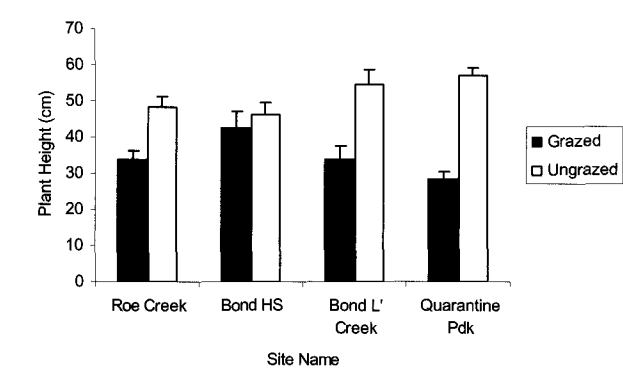


Figure 2: The average height of the grasses at the four study sites. Error bars represent standard errors.

Figure 3 shows the average widths of the grasses. The average width of ungrazed plants was significantly higher than grazed plants at both the Roe Creek and Bond Little Creek sites. The average width of grazed plants at the Bond Springs Homestead site was significantly greater than the ungrazed plants. There was no significant

difference in the average width of grazed and ungrazed plants at the Quarantine Paddock Site.

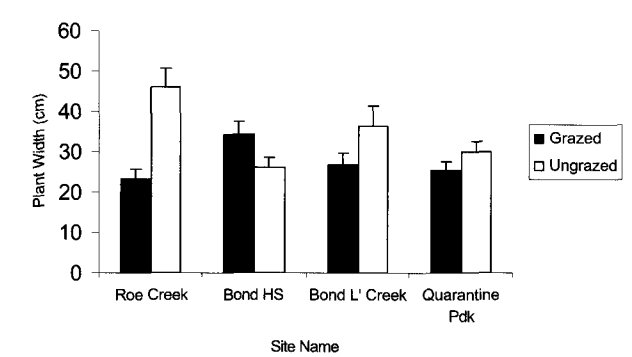


Figure 3: The average width of the grasses at the four study sites. Note that widths for the Roe Creek site cannot be directly compared to the other sites due to an error in methodology. Error bars represent standard errors.

Figure 4 shows that the average number of seed heads produced by grazed grasses was significantly less than that of the ungrazed grasses. However, this pattern was not true on all four sites (Figure 5). Whilst both Bond Springs sites and the Quarantine Paddock site all had significantly lower average seed head counts for the grazed populations, the opposite was true for the Roe Creek Yards site.

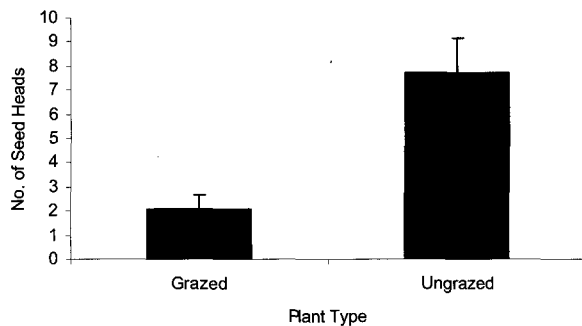


Figure 4: The average number of seed heads per plant for grazed and ungrazed populations. Error bars represent standard errors.

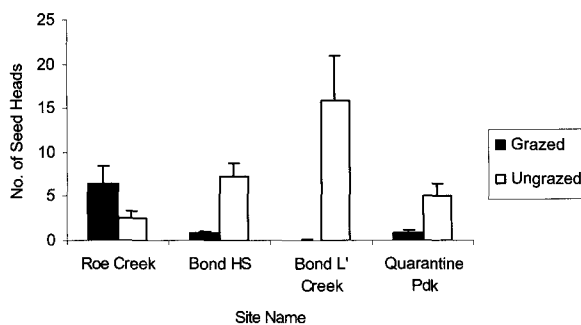


Figure 5: The average number of seed heads per plant for the four study sites. Error bars represent standard errors.

Discussion

As expected, when comparing the effects of grazing on grazed and ungrazed grasses, the ungrazed plants tended to be significantly taller. The Quarantine Paddock and Bond Little Creek sites had received the heaviest recent grazing pressure and subsequently showed the greatest difference in average height between the grazed and ungrazed populations on their respective sites.

The average widths of grazed and ungrazed plants were quite variable. Grazed plants at the Bond Springs Homestead were significantly wider than the ungrazed plants. This pattern was reversed at the Roe Creek and Bond Little Creek sites. These variations tend to suggest that grazing pressure did not have a consistent influence on the width of the grasses in this study.

During dry conditions, such as those received at both of the Bond Springs sites, ungrazed buffel grass produced more seed than grazed plants. Bond Springs Station received only 6mm of rain in the 45 days prior to the experiment and the growth activity of grazed and ungrazed plants at the Bond Springs sites was low. This suggests that if adequate rain doesn't occur during the resting period, grazed plants will not produce much seed.

The grazed population at the Roe Creek Yards was well rested from grazing, with the last grazing occurring eight weeks prior to the beginning of the experiment (Herbie

Neville, pers. comm.). The area had also received 42.4mm of rain in the 45 days leading up to the data collection. This rest from grazing and good rainfall had evidently provided the right conditions for the grasses to flourish and the grazed population produced significantly more seed heads than the ungrazed population. Nearby, the Quarantine Paddock site had received similar rainfall, but the grazing pressure was continuous and quite heavy (as the site was located 150 metres from a trough). Although there was some seed production within the heavily grazed grasses, the ungrazed Quarantine Paddock population produced a significantly higher number of seed heads. Thus it appears that good rainfall, followed by (or in conjunction with) rest from grazing, may produce more seed than if grazing is heavy and/or continuous.

The results of this study have implications for the managers of buffel grass. For those wishing to increase seed production, rest from grazing pressure (or intermittent rather than continuous grazing) should be employed during times of good rainfall.

For those attempting to minimise seed production, this study would suggest that any grazing, or mechanical intervention that mimics it (such as mowing), should be heavy and continuous during dry periods. During times of good rainfall the reduction techniques should be heavy and employed immediately before rapid growth and reproduction occurs.

As this was a short-term project, there are many more questions that require investigation in terms of buffel seed set, grazing and rainfall. It would be interesting to study this interaction over an entire year to see how seed set interacts with the various pressures. Would the patterns observed hold true over the course of a year? Another avenue of investigation would be to determine whether grazed or ungrazed grasses produce more seeds per tiller, as opposed to seed heads per plant.

Conclusion

The average seed head production of ungrazed buffel grass was higher than that of grazed buffel in dry conditions. However, good rainfall following several weeks of rest from grazing allowed grazed plants to produce more seed heads than their ungrazed counterparts.

Acknowledgements

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COMMUNITIES: INFORMATION AND COMMUNICATIONS TECHNOLOGIES FOR REGIONAL, RURAL AND REMOTE AUSTRALIA

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The Connected Communities project has been exploring the opportunities for regional, rural and remote communities to use information and communications technologies (ICT) for facilitating sustainable development. The study was undertaken between February 2003 and June 2004 and included communities in central Australia, New South Wales and Queensland.

The main tasks were:

1. **Gaining an understanding of the context.** Identify the strategies and implementation options for regional, rural and remote communities.
2. **Gaining an understanding of the aspirations.** Identify who the players are, what they have done to date, can we value add to what these groups are doing, and do these groups see we have a role to play.
3. **Undertake a workshop** with community, industry and government to:

- (i) discuss options for one or more projects and select preferred directions
- (ii) secure support and in principle commitment to a project.

To gain an understanding of the context (Task 1), we used web-based searching, literature, discussion groups and networking, which then formed a resource base for subsequent tasks. Existing ICT infrastructure was one area of focus for the database because we felt that we needed to know what capacity already existed in regional, rural and remote areas. Other categories in the database included key government websites with information on ICT issues, examples of learning strategies and communities, local government, libraries, community technology centres, remote community issues and conferences.

Due to space limitations we include here only a few examples of the resources compiled for the project:

1. The Rural Industries Research Development Corporation (RIRDC) has undertaken a number of studies on issues related to the sustainability of regional communities as well as the impact of ICT on communities (URL www.rirdc.gov.au)
2. The 'Telecommunications Action Plan for Remote Indigenous Communities (TAPRIC)' covers the challenges involved in delivering and sustaining ICT services in Indigenous communities (URL www.dcita.gov.au)
3. A Canadian first nations' experience of harnessing ICTs (URL smart.knet.ca)
4. A portal for spatial and other information on NSW available to the community (URL canri.nsw.gov.au/about.html)
5. An example of community engagement on a specific land management issue (URL www.kimberley-fire-project.com/).

We were particularly keen to find references involving contextualisation and found that there were several examples where extension services (especially by universities and TAFEs) have been contextualised for the community to which they are addressed (e.g. cultural contextualisation of distance education through interactive multi-media for Aboriginal and Torres Strait Islanders). However there were few examples of addressing the issues involved in contextualising communication in the opposite direction which is a requirement for place-based planning, where the aspirations of communities need to assist and drive policy making, service provision and technology introduction.

It was apparent in our three regions that there were a large number of organisations interested and involved in sustainability outcomes. In **gaining an understanding of community aspirations (Task 2)**, we built a composite picture through semi-structured discussions with interviewees from government, NGOs and private organisations in two regions, central Australia and the

Illawarra region. In central Australia, we concentrated on community aspirations in relation to natural resource management (NRM).

Five themes emerged for the central Australian region from a synthesis of ideas common to more than one interview. These themes are on the potential of ICT for:

1. Regional NRM planning
2. Networking NRM agencies
3. Accessible and dynamic information production
4. Coordinated & customised information delivery, and
5. Capacity building and participation

There is some overlap between themes, e.g. themes 1 and 2 where the NRM agencies are involved in the regional planning process.

ICT for regional NRM planning

Regional NRM planning in the Northern Territory was frequently raised during the interviews as a context for potential use of improved ICT. Unlike other more populous states, the Northern Territory is being considered as one region, albeit with sub-regions, for the purposes of NRM planning. The Federal Government demands that the planning process is community driven. It also has stringent accreditation requirements for funding. Sparse population density and remoteness of communities make physically coordinating the planning process a challenge. ICT has significant potential to facilitate the regional planning process.

ICT for networking

There is an informal email network of officers in organisations concerned with NRM. Despite the encouraging efforts by some, the network is not perceived to be effective. Possible causes proposed by interviewees include the current competitive funding environment and a reduction in priority for networking activities. However, many emphasised the importance of reinvigorating the network for various purposes such as facilitating the regional planning process, exchanging updates on each others' work and promoting inter-organisation cooperation. While commitment by members was noted as essential for active networking, the use of improved ICT perhaps in a more structured connection could help strengthen the network.

ICT for accessible and dynamic information production

To improve accessibility on the internet, datasets need to be convertible into compatible formats like pdf and html. Moreover the current state of access to static data bases has to change to a dynamic one. This would allow web browsing to pick up the latest information, for example, updates on rare plants.

ICT for coordinated and customised information delivery

The agencies interviewed for this scoping study deliver NRM-related information for an overlapping client base. Improved information delivery could result if ICT was used to facilitate a coordinated service involving several different agencies. Coordination could help to:

- reach beyond traditional client groups (e.g. Bushfires Council could distribute fire information to Aboriginal landholders as well as pastoralists)
- engage clients' interest by delivering different but relevant information as an ongoing activity rather than being event-driven
- promote cooperation of agencies and officers at different levels, and
- Value-add to existing ICT and infrastructure found in different organisations

ICT for capacity building and participation

Another suggestion was to use ICT to improve the capacity of local governments, private agencies and communities to participate in NRM. This capacity building involves strengthening communication networks using existing infrastructure, training on how to use ICT facilities, and developing information communication strategies and tools that enhance community participation. Some projects are now using children's computer literacy and language skills to translate local traditional knowledge into knowledge that can be made available to a wider audience. It is also suggested that increasing computer literacy of young people may be a mechanism for improving the bleak outlook in many indigenous communities.

Visual and interactive communication media are suggested for improved community participation in NRM. Examples that encourage community participation in natural and cultural resource management include NT Department of Infrastructure, Planning & Environment's graphic packages to "drape" features on air photos for making environments more readily recognised, and the Ara Winki installation in the Alice Springs Town Council Library. Here the aim is to use ICT to promote participatory management of natural and cultural resources. Moreover, participatory methods could be used to create more client-driven ICT tools and products. An example is a project by University of SA, Whyalla, which is investigating possibilities for multiplexing to build more communication capacity. If successful, programming will determine whether voice or TV has priority, based on "end rules" derived from patterns of community use.

Barriers, enablers and other key issues

Barriers

Interview participants identified institutional and technology-related barriers and constraints. The key institutional barrier that could limit the potential use of

ICT is weak inter-agency relations. The barriers between and within agencies are:

- A culture of less cooperation and coordination among agencies though it is changing
- The high cost of buying certain technologies such as video-conferencing units, updating GIS software, and creating and maintaining effective websites
- High turnover of ICT skilled personnel and subsequent training requirements
- Resistance to using new technology and electronic database systems
- Low quality communication infrastructure in remote areas, and
- Slow e-mail and internet access in some areas of government.

Enablers

Potential enablers discussed in the interviews include:

- Established interpersonal relationships among officers involved in NRM activities in different agencies
- Different agencies with complementary resources (skills, ICT facilities etc) and mandates to serve different communities
- Existing communication infrastructures and networks such as School of the Air that make value adding possible, and
- Improvement on communication infrastructure can be expected if a proposed high speed service is built between Adelaide and Darwin.

Other key issues

Participants raised various other issues that may need to be considered in the development of a project. The key issues are related to:

- Priority given to NRM
- Community aspiration and technology choice
- Marketing information,
- Impact of the use of ICT on social interaction, and
- Changing NRM practice.

A **Workshop (Task 3)** to “Advance community priorities and projects for enhancing Natural Resource Management (NRM) outcomes using ICT” was conducted during May 2004 in Alice Springs. Participants heard presentations on “Learning communities” (Bob Smyth, CSIRO); “NRM regional planning process” (Michelle Rodrigo, NRM Coordinator, NT DIPE); “Overview of planned infrastructure in the NT Government” (Rachel Macrae, NTLIS); and “Issues on remote communities” (Laurence Wilson, Centre for Appropriate Technology).

The workshop identified a list of potential project areas, and participants agreed that the first priority should be to tackle the issue of over consultation of communities followed by issues such as coordinated information delivery and improved use of infrastructure. A working group was established and potential project areas were identified for follow-up.

A *short term goal* is to develop a central Australian prototype which will work towards an information hub. The bridging project will have the following tasks:

1. Develop a prototype database of current research projects conducted by a range of organisations which includes details on the communities being consulted and
2. Develop project proposals from the areas identified during the workshop which were:
 - Coordinated delivery of information to community– doing things better
 - Information sharing at a technological/ professional level
 - Information sharing with the community
 - Information sharing within the community, and
 - Effective use of infrastructure.

A *long term goal* is to improve sustainability outcomes by developing an information hub for Connected Communities, which will be built on the central Australian case study. Outcomes will include:(1) identification of the spread of organisations currently involved in community consultation projects will help the group to find synergies and add value to resources already committed to projects; (2) more efficient use of travel and existing infrastructure; (3) the potential to combine resources for future projects so that new infrastructure can be used for multiple purposes.

The Desert Knowledge CRC has offered to allocate \$10,000 for coordination of the initial prototype database as an add-on to an existing project which is providing the CRC with a review of desert enterprises. The CRC has also volunteered to house the initial prototype database on the CRC website. We are currently seeking top-up funding to support the preparation of proposals for new initiatives with the working group established during the Alice Springs workshop.

Additional information on all Tasks is available from the authors.

REPORT FROM COUNCIL

Merri Tohill, Temporary Communications Officer ARS, Communications and Media Studies Program, School of Journalism, University of South Australia SA 5001. Email: merrit@iprimus.com.au

Changes in Council Membership

You may be wondering why there is a temporary Communications Officer for ARS, so I will explain this first and follow with an update from the last three Council meetings, including the AGM held in September.

Some may recall from this year's March newsletter, Lachlan Pegler informed us that major changes had occurred in his life, including going into business and moving to Toowoomba. He added that he hoped to maintain his involvement with the Society. Well the good news is, Lachlan is still a member, the bad is he has resigned from Council and his role as Communications Officer. Thanks Lachlan for your talented efforts in fulfilling the vital role of keeping members up to date with Council's decisions and activities.

Whilst we are waiting to fill Lachlan's position, I have volunteered to write the Council column for this edition, hence the temporary title.

Council has also received and accepted the resignation of Neil MacLeod who has been swamped by extra work commitments. Note we have lost two Queenslanders in one fell swoop! Thanks also to Neil for his deep thought and ideas on maintaining and attracting new members.

The picture is not one of doom and gloom though, as we have attracted some very bright and energetic new members; Vanessa Bailey from Queensland (phew) who will take on the role of Membership Officer and Matt Bolam from Northern Territory (more information about these two is given in the following article).

We are still looking, however, to fill one more position (that vacated by Robyn Cowley), so we look forward to hearing from any other ARS members who would like to join this dynamic team.

Elections to Council are called every second year at the AGM, no elections were called this year. They will be due next year in 2005.

News from Council Meetings

Since Lachlan's report in the last newsletter, Council has conducted a few meetings, including the AGM and a General Members Meeting at the conference in July.

Publications Committee and Electronic Publishing

Council has made a significant investment for the future with its decision to support the Publications Committee in electronic publication of *The Rangeland Journal* (see David Wilcox's article in this issue of *RMN*). The

committee has put considerable effort in researching this and presenting the Council with a number of options. The journal will be available in both electronic and hard copy for at least three years, after which the Society can re-negotiate.

Congratulations to Leigh Hunt and his team, especially Ken Hodgkinson for their mammoth effort. Leigh has since resigned as Chair of the committee and has been replaced by Ken. Thanks Leigh for all your years of dedication and determination.

Electronic publication has also significant implications for Malcolm Howes' workload. Malcolm has tirelessly co-ordinated the printing of both the journal and newsletter for many years. The Council plans to appropriately recognise Malcolm's many years of service, however Malcolm will continue to publish the newsletter.

Finances

This is not an official financial report but just to inform members that Council has wisely invested a considerable part of our funds into a high interest bearing, 24 hour, on call account. The money is still readily available to Council for use if required.

At the AGM the ARS auditor was changed and Lee Green of Kent Town, South Australia was appointed.

ARS Awards

The Council is reviewing the effectiveness of both the scholarship and travel grants. It has decided to retain the awards in their current form for the following year (see information about these awards towards the back of this newsletter). The Council will extend promotion of the awards into relevant rangeland and university/student publications in an effort to diversify and increase the number of applications and indirectly, Society membership.

Hopefully Council will have a permanent Communications Officer and another new member by next edition of the newsletter – watch this space!

NEW ARS COUNCIL MEMBERS

Two new people were recently appointed to the Council of the Australian Rangeland Society – Vanessa Bailey and Matt Bolam. Some background information for each is given below:

Vanessa Bailey

Vanessa works with the Queensland Environmental Protection Agency in Longreach as an Environmental Planner, and has lived and worked in western Queensland for 11 years. She has been a member of the ARS since 1991. Her professional background includes working

closely with the rural community in the Lake Eyre Basin on a range of issues from planning to research and extension in freshwater ecology, vegetation and different animals and plants within our region.



Vanessa's work links to the catchment committees and she has been involved since their formation. She has a keen interest in seeing them continue to provide leadership in natural resource management. Currently, she is the Queensland Project leader for the ARIDFLO project, which is researching river flows and biological responses, and more recently contributed to the Lake Eyre Basin Rivers Assessment Project (2004).

Before working with EPA, Vanessa worked with Department of Natural Resources & Mines, in Longreach, and coordinated 2 NHT community projects: - Surface Water Quality Monitoring Project (Lake Eyre Basin Rivers & Warrego/Paroo Rivers), and a Wetland, Fish and Habitat Survey in the Lake Eyre Basin in Queensland. She received a State NRM award for reporting of stream health in western rivers.

Locally she is involved with the Longreach Town Common Group who are developing from the ground up ways to cope with sharing and multiple uses of the areas around the town.

Vanessa has a Science Degree (Botany and Zoology) and a Post-Graduate Diploma in Agricultural Studies both from University of Queensland.

Vanessa's contact details are:

Vanessa Bailey
Principal Biodiversity Planning Officer
EPA
PO Box 202
LONGREACH QLD 4730
Ph: 07 4652 7310
Fax: 07 4658 1778
Email: vanessa.bailey@epa.qld.gov.au

Matt Bolam

I think that a few readers might recognise my face as I have been working around the northern half of the Territory and Kimberley region as a cattle veterinarian since 1988. Having taken on this new landcare role, I often get asked what a vet is doing as a landcare coordinator? I will try to explain!



I have experienced a steady, albeit slow, increase in work as a pastoral industry consultant and training deliverer in the NT and northern WA in the last few years. This has seen me focusing more on sustainable grazing and natural resource management (NRM) and human resource issues.

I believe that the key issues for a sustainable future in the rangelands are those of NRM and human resource management. The landcare movement is all about people and NRM and that's why I see this move as simply a natural progression for me.

In my new role as the National Landcare Program (NLP) State Landcare Coordinator for the Northern Territory, I will be assisting primary producers and landcare groups to undertake sustainable natural resource management activities across the rangelands of the NT. This will mean that I will be working closely with the Australian Government NRM facilitators as well as regional and local landcare facilitators (funded through the Natural Heritage Trust).

The plan is to assist the landcare movement where I can to continue to build on its significant achievements by encouraging greater community and industry involvement in landcare activities. This can be achieved through identification of the needs of the landcare movement and local communities; providing information and support to landcare groups; helping the movement plan strategically; and widely promoting the efforts and achievements of volunteers and facilitators to industry and the broader community.

Thanks to the Northern Territory Cattleman's Association (NTCA), I have an office in Darwin and the support of an organisation that represents the majority of cattle producers in the NT.

My contact details are listed below:

Matt Bolam
NLP State Landcare Coordinator NT
Northern Territory Cattlemans Association
1 Buffalo Ct (PO Box 4845)
DARWIN NT 0800
Ph: 08 8981 5976 Mob: 0428 330 131
Fax: 08 8981 9527
Email: mattbolam@bigpond.com

ELECTRONIC PUBLICATION OF THE JOURNAL

David Wilcox, President, Australian Rangeland Society,
54 Broome Street, Cottesloe WA 6011.
Email: dgwilcox@cygnus.uwa.edu.au

The Publications Committee put a closely argued case to the Council recommending the change from a solely hard copy production of *The Rangeland Journal* to a mix of electronic and hard copy forms.

The reasons advanced for the change are as follows:

1. Almost all high quality and high profile journals are now published in hard copy and electronic form. From the point of view of readers, access to the Journal in electronic form is extremely quick and, added to this; articles of interest can be immediately downloaded to one's computer files. Interlibrary loans, if a journal is electronic, are a thing of the past. Our Journal is high quality and has a high profile here and overseas. It is listed by all the major abstracting journals. We need to be part of the trend if *The Rangeland Journal* is to continue to attract authors.
2. Libraries are now increasingly subscribing to journals which are published in electronic format in preference to those in hard copy. As the electronic publisher usually sells the journals in its stable as part of a package *The Rangeland Journal* would gradually lose favour worldwide.
3. Since more journals taking papers in the field we occupy are being published electronically, authors are favouring those being published in that format. If we were to stay with the hard copy form we would gradually lose authors and, more importantly, diminish in status and in our potential to be a publication of significance in the public domain. Council is determined that the Society should remain relevant in the rangelands debate in Australia. After all, it is the one Society whose members are able to comment evenhandedly upon matters of importance in rangelands. It would be most unfortunate if we lost this capacity.

Council decided to enter into an arrangement with CSIRO Publishing for three years beginning in 2005. During this time the Society will continue to accept papers for publications having them refereed as usual and will be responsible for their high standard. The Editor will be the key person of the Society whose task it will be to receive, review and accept papers for publication. The Society also remains as the Owner of the Journal. The copyright will remain with the authors for the electronic version and with the Society in respect of the hard copy version.

In turn, CSIRO Publishing in association with the Society will determine future directions for the Journal. In discussions with us the Publishers have revealed that they see an excellent opportunity to make the Journal an international publication. There is, quite simply, no other

which deals with the diversity of topics that we now cover in the rangeland area and could cover in related rangeland fields of tenure, legislation, conservation, sustainability and biodiversity. To this end we have altered the general notice to contributors to state "*The Rangeland Journal publishes papers of merit for a readership of scientists, educators, managers and users of rangelands within Australia and internationally. Contributions may be on any aspect of the ecology, use, management or conservation of rangelands, including wider rangeland issues such as land tenure and tourism*". Council feels that this statement of intent will reflect the widening of the interests of the Society as it develops through time and as shown in our recent conference in Alice Springs.

Members of the Society will receive electronic access to the Journal from CSIRO Publishing and a single hard copy of each issue that will be published during the term of the agreement. Information about electronic access will be supplied along with the hard copy of the next issue. CSIRO Publishing will be developing links on our respective web sites which will facilitate movement from one to the other.

Now, the cost. Until now we have been extremely fortunate that, in Malcolm Howes, our Production Manager, we have had a jewel. He has produced the hard copy version at an incredibly low cost per run. The cost of electronic publishing will be higher and for the three years of the agreement Council may have to use some of our reserve funds to make up the deficiency between overall income and expenses. In the past, profits from conferences have been responsible for the continued viability of the Society. Council hopes that this will continue and that the reserves, which can be used for other purposes, will remain intact. Equally, Council is convinced that without the change described here we will continue to lose membership and will eventually fall into irreversible decline.

Council is looking forward with great interest to this change which will begin with the first issue in 2005, the papers for which are well advanced for publication with Wal Whalley, the Editor. We hope that you will enjoy the experience promised by this new venture.

NEW AND REJOINING MEMBERS

Dr Leonard M Bahnisch
School of Agriculture and Horticulture
University of Queensland, Gatton College
GATTON QLD 4343

David A Blood
Conservation and Land Management
Box 72
GERALDTON WA 6530

Michael Joseph Barritt
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ALICE SPRINGS NT 0870

John Squires
PO Box 111
WATERVALE SA 5452

Department for Environment and Heritage
60 Elder Terrace
HAWKER SA 5434

Julia Chalmers
PO Box 1661
KATHERINE NT 0851

Anthony Freebairn
PO Box 78
PORT AUGUSTA SA 5700

Stephan Heidenreich
75 Hunter Street
GUNNDAH NSW 2380

Adam Maskew
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CARNARVON WA 6701

Peter Smith
Department of Agriculture
PO Box 1618
KARRATHA WA 6714

Richard Watkins
PO Box 1618
KARRATHA WA 6714

Damien Pearce
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COROMANDEL EAST SA 5157

Alex Kutt
EPA/Tropical Savannas CRC
PO Box 5391
TOWNSVILLE QLD 4810

Jeff Foulkes
GPO Box 1047
ADELAIDE SA 5001

Mark Alchin
PO Box 290
MEEKATHARRA WA 6642

Deakin University Library
Burwood Serials Section
221 Burwood Highway
BURWOOD VIC 3125

J.B. Forwood AM
GPO Box 1547
DARWIN NT 0801

Parash Institute, Parash
PO Box 15875-5431
#54, 5TH FLOOR, Vesal Ave
TEHRAN 14178-53868
IRAN

CHANGE OF ADDRESS FOR COUNCIL SECRETARY

Please note that the contact details for the Secretary of the ARS Council have changed. After acting in the role for several months, Sandra Van Vreeswyk has recently accepted the position of Manager of the Pastoral Land Management section of the Department for Planning and Infrastructure. This section administers pastoral leases in Western Australia and provides support to the Pastoral Lands Board of WA.

Sandra's new contact details are as follows:

Sandra Van Vreeswyk
Department for Planning and Infrastructure
PO Box 1575
Midland WA 6936
Ph: 08 93475120
Fax 08 93475009
Email: sandra.vanvreeswyk@dpi.wa.gov.au

INFORMATION SNIPPETS

Desert Knowledge Australia

Do you know what Desert Knowledge Australia is all about? Formed in 2000, it is a consortium of desert Australian industry, Aboriginal organisations, government and non-government parties. It began in Alice Springs with significant support from the Northern Territory Government, and is now developing business networks and partnerships right across inland Australia to ensure an economically sustainable future for Australian desert regions.

Further to this, the Desert Knowledge Cooperative Research Centre (DK-CRC) was established in mid-2003. This centre links indigenous Australians, university researchers, as well as business, and government leaders to develop informal and formal knowledge, Indigenous knowledge and Western research to increase social, economic and cultural capital in desert communities.

Want to know more? Check out the Desert Knowledge Australia website at www.desertknowledge.com.au. Also, look for further information in an upcoming issue of the *Range Management Newsletter*.

4th National Native Grasses Conference

The 4th National Native Grasses Conference will be held from 11 – 13th October 2005 in Burra, South Australia. It is being hosted by the Stipa Native Grasses Association, Native Grass Resources Group (SA) and the Mid North Grasslands Working Group (SA).

Items on the agenda include native pastures for profit, soil health, indigenous grassland management, fire ecology, landscaping applications, broad-acre establishment, grassland biodiversity and more.

For further information contact Christine McCrae at cmcrae@hwy.com.au

New and Improved Social Atlas Now Available

A new and improved version of the publication *Country Matters – Social Atlas of Rural and Regional Australia* has recently been released. This Social Atlas describes the economic and social life of the 7 million Australians who live outside the capital cities while providing comparisons between Metropolitan and Non-metropolitan areas.

The atlas contains 70 maps describing the population, employment, household, income and education characteristics of rural and regional Australia. Primarily drawing on data from the Australian Bureau of Statistics' Population and Housing Censuses for 2001 and 1996, it examines changes in these factors over time in Statistical Local Areas. It was produced by the Bureau of Rural Sciences to provide the necessary information for the development of government policy. It was been jointly funded by the Department of Agriculture, Fisheries and Forestry and the Rural Industries Research and Development Corporation

The atlas is available to view by clicking on the report title at the Bureau of Rural Sciences website (<http://data.brs.gov.au/mapserv/pdfatlas/index.html>). A hardcopy of the atlas can also be purchased for \$56 including postage and handling by contacting 1800 020 157 or Email: salesbrs@brs.gov.au.

An interactive web version of the Social Atlas can also be found at the BRS website (<http://data.brs.gov.au/mapserv/pdfatlas/index.html>). This Interactive Social Atlas will let you create and download customized social atlas products for any region in Australia, by selecting a region of interest and all or some of the social data information you require. The application will create the selected maps in a single PDF that is emailed directly to the you.

Kimberley, southern WA, New South Wales, northern Australia and southern Queensland. It presents a wealth of botanical, ecological and general information through a combination of text, photographs, icons and distribution maps for 353 species (with reference to a further 81), making it one of the more comprehensive of the field guides produced to date. The provision of Aboriginal names and usage, where known, is a feature that adds to the book's general interest.

Books of this genre are inevitably judged largely by the quality of the photographs. They are excellent and the multiple photographs for most species, illustrating general appearance as well as diagnostic features, not only add colour and interest but also nicely compliment (or even surpass) the text as an aid to identification. The effective use of photographs, and graphic annotations, extends also to the glossary which is made vastly more intelligible for the layman than the definitions alone would otherwise allow.

Grouping of species into broad growth forms, a common feature of such works, should ensure that it is easy to use in the field although I found myself wondering about the utility of the simple key aimed at assisting with this classification. In addition, the book is comprehensively indexed by both scientific and common names so that most searches should be readily accomplished. The use of only one common name, with acknowledgement of several others, will hopefully go some way towards standardising common usage which remains a barrier to communication between scientists and laymen, as well as between laymen themselves.

The layout design, with essential information such as taxonomy, size, flowering time, habitat, and status presented in colour boxes or icons around the margins is thoughtful and makes the information most likely required by the non-specialist available at a glance. The book is conveniently compact, and the laminated cover and section sewn binding should make it robust for field use.

One feature of the book that I found unhelpful was the reference to some plants as 'rangeland indicator species' without further explanation. While the meaning may be clear to those familiar with the local terminology the lack of clarity is unfortunate in a book that is intended to contribute to improved management of rangeland resources. A certain amount of assumed background is also evident in some of the land form descriptions (eg the difference between 'tablelands' and 'plains') but the use of photographic illustrations is helpful here. In a few places the text could be more polished and a few editorial glitches still remain.

Nevertheless, this book will be welcomed alike by landholders, students, agency staff and the general public. It is sure to be a common sight on coffee tables and in utes in South Australia and elsewhere in years to come.

Ron Hacker
NSW Department of Primary Industries
Trangie Agricultural Research Centre
Email: ron.hacker@agric.nsw.gov.au

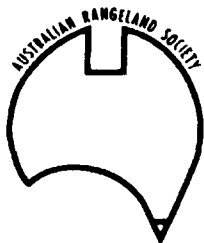
BOOK REVIEW

Plants of Outback South Australia

By Frank Kutsche and Brendan Lay
© Department of Water, Land and Biodiversity
Conservation, South Australia, 2003

[Ed. This book was featured in the RMN 04/2 July 2004. This review was received shortly after the last newsletter went to press]

This attractive book fills a long standing gap in the availability of user-friendly field guides to the flora of the rangelands, complementing those now available for the



The Australian Rangeland Society

ABN 43 008 784 414

2004 ANNUAL REPORTS TO MEMBERS

[Ed. These reports are additional to those presented in the July 2004 Range Management Newsletter]

FINANCE AND AUDIT OFFICER'S REPORT

*Tim Ferraro, ARS Finance and Audit Officer, c/o Central West Catchment Management Authority, PO Box 227, Wellington NSW 2820.
Email: tim.ferraro@cma.nsw.gov.au.*

As stated earlier, we were hoping to include the audited accounts in this issue of the newsletter. However, these have been delayed because of the need to comply with new requirements. In particular, this has required a representation of the conference accounts in a new format. We are confident that the accounts will be available for the March 2005 newsletter.

SUBSCRIPTION MANAGER'S ANNUAL REPORT

Ian Watson, ARS Subscription manager, c/o Centre for Management of Arid Environments and Department of Agriculture Western Australia. PO Box 483 Northam, WA 6401. Email: iwatson@agric.wa.gov.au.

Based on ARS members database as at 16 May 2004

Membership and Subscriptions

Membership of the Society stands at 356, as of the 16th May 2004. This is a 4% increase compared to the same time last year. However, there has been a decline in the number of "FULL Individual/Family" members over the last 12 months from 214 to 199. This has been offset by increases in some of the other membership categories such as "Students", "Institution / company" and "PART" membership. Just on three-quarters of the membership receiving both the Journal and Newsletter (Table 1).

Indications are that membership may have stabilised since 2000 (Figure 1). At approximately the same time last year membership stood at 334 and corresponding figures for 2000, 2001 and 2002 were 336, 371 and 330 respectively. However, it needs to be recognised that membership was 638 in 1989.

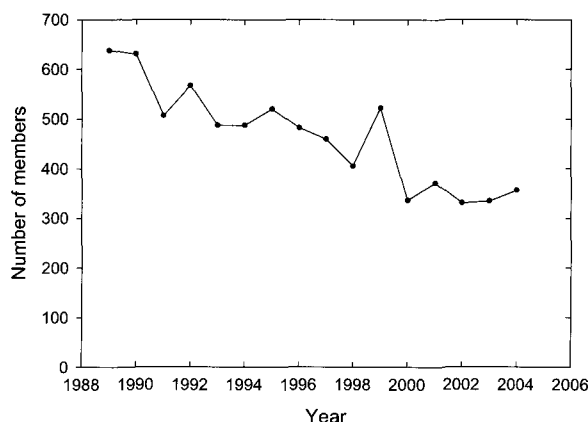


Figure 1: Number of members since 1989, at time of AGM.

An extremely pleasing aspect is that already this year, there have been 43 new members join (to be precise, this is since October 2003 – but it is recorded as 2004). At the same time last year, 20 new members had joined. This increased to 33 by the end of the year. That is, membership to date is already higher than for the entire year 2003.

These figures understate the total number of members in a full year. For example, the database shows 434 members and subscriptions for 2003 (as at 18/12/2003). This is a slight increase on the figure of 427 at the end of 2002.

Few people notify the Subscription Manager that they wish to resign from the Society, most simply decide not to renew their membership. All the resignation notes that I have received this year have stated their reason for resigning as either because they had retired, or had ceased to work (and therefore have a professional interest in) the rangelands. No one has contacted me to say they were dissatisfied with the Society or its services and publications.

The majority (92%) of members and subscribers come from Australia (Table 2), with almost 50% coming from Queensland and New South Wales. Of the international members and subscribers, 63% have United States addresses (Table 3).

In 2004, subscription rates remained unaltered from 2003.

Note that accurate figures for member locations, new members, un-financial members and members who have resigned are difficult to produce. Subscription agents handle many of our subscriptions and bulk-up orders before mailing to their clients. Some of our "Victorian"

members fall into this category. Many institutions change agents from time to time, thereby becoming un-financial or resigning only to start a new subscription with a different agent. Some individuals when they change their place of work allow their current membership to lapse and begin a new membership through their employer. Others “re-join” the Society after a period of being un-financial and can’t therefore be considered as new members. Some members back-pay for previous years when they join so that membership numbers for a given year are often not settled until one or two years later.

Thanks

Malcolm Howes, as always, provided fantastic support to the Subscription Manager. Malcolm mails both the Newsletter and Journal and in doing so deals with many of the “Return to Sender” and back-issue requests efficiently, promptly and without fuss.

The Council and Noelene Duckett also contributed, in many different ways, to making the life of the Subscription Manager much easier.

Table 1: Membership breakdown as at 16 May 2004

Member type	FULL -		PART -	Total
	Journal and Newsletter	Journal only	Newsletter only	
Individual / family*	199	-	50	249
Institution / company	27	-	3	30
Students	12	-	6	18
Library	28	30	1	59
Total	266	30	60	356

* Includes six ARS Fellows and six “ex-officio” non-paying members such as the ARS archive and the National Library of Australia.

Table 2: Australian members and subscribers by state and territory

	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	Total
Number	13	75	39	79	47	4	17	52	326

Table 3: Overseas members and subscribers

	Canada	Falklands	Germany	Iran	Japan	Mexico	Nether lands	Saudi Arabia	South Africa	UK	USA	Total
Number	1	0	1	1	1	1	3	0	0	3	19	30

AUSTRALIAN RANGELAND SOCIETY AWARDS

The Society has two awards to assist members with either:

- Studies related to the rangelands, or
- With travel expenses associated with attending a conference (or some other activity).

Applications for each award close in June of each year. Any member of the Society interested in either award is invited to apply.

Australian Rangeland Society Travel Grant

This grant is intended to assist eligible persons to attend a meeting, conference or congress related to the rangelands; or to assist eligible persons with travel or transport costs to investigate a topic connected with range management or to implement a program of rangeland investigation not already being undertaken. The grant is available for overseas travel and/or travel within Australia. It is not intended for subsistence expenses.

Australian Rangeland Society Scholarship

This scholarship has the purpose of assisting eligible members with formal study of a subject or course related to the rangelands and which will further the aims of the Australian Rangeland Society. The scholarship is available for study assistance either overseas or within Australia. It is not intended to defray travel expenses.

How to Apply

Members interested in either grant should submit a written outline of their proposed activity. Applications should clearly address how the intended activity (ie. travel or study) meets the aims of the Society. Applications should be brief (less than 1000 words) and should be submitted to Council before 30th June. Application forms and guidelines can be downloaded from the ARS website at <http://www.austrangesoc.com.au>. Those requiring further information should contact the ARS Secretary, Sandra Van Vreeswyk, at sandra.vanvreeswyk@dpi.wa.gov.au or Ph (08) 93475120.

Conditions

Applications for the Travel Grant should include details of the costs and describe how the grant is to be spent. Details of any other sources of funding should be given. Those applying for the Scholarship should include details of the program of study or course being undertaken and the institution under whose auspices it will be conducted. Information on how the scholarship money will be spent is required, as are details on any other sources of funding.

Applications for either award should include the names of at least two referees.

Finally, on completing the travel or study, recipients are required to fully acquit their grant or scholarship. They

are also expected to write an article on their activities or experiences for the *Range Management Newsletter*.

Eligibility

No formal qualifications are required for either award. There are no age restrictions and all members of the society are eligible to apply. Applications are encouraged from persons who do not have organisational support.

Travel or study assistance can be made available to a non-member where Council considers that the application meets the aims of the Society, and is of sufficient merit.

Overseas Travel and Study

There is a restriction on both awards for overseas travel or study assistance in that the applicants must have been members of the society for at least 12 months. The grants can be for Australian members travelling overseas or for overseas members to study within Australia.

MEMBERSHIP APPLICATION FORM



The Australian Rangeland Society

TAX INVOICE / RECEIPT ABN 43 008 784 414

Please complete and return to the Subscription Manager, Ian Watson, PO Box 483, NORTHAM WA 6401
Ph (618) or (08) 9690 2179: Fax (618) or (08) 9622 1902: iwatson@agric.wa.gov.au

I, [name]

of [address]

Postcode..... Email address

Phone Fax

apply for membership of the Australian Rangeland Society and agree to be bound by the regulations of the Society as stated in the Articles of Association and Memorandum.

Enclosed is a cheque for \$AU..... for full/part* membership for an individual/student/institution* for the calendar year 2004.

(* delete as appropriate)

Charge my Mastercard VISA Bankcard AU\$.....for full/part* membership for an individual/student/institution* for the calendar year 2004

Card No.:_____ Expiry Date:

Signature:..... Date: Cardholders Name:.....

If you were introduced to the Society by an existing member please include their name here

Please list details of your institution & student number if you are applying for student rates

Membership Rates; GST inclusive

Australia

Overseas Airmail

Individual or Family -

Full (Journal + Newsletter)/Student

\$80.00/\$60.00

\$100.00/\$80.00

Part (Newsletter only)/Student

\$45.00/\$30.00

\$55.00/\$35.00

Institution or Company -

Full (Journal + Newsletter)

\$110.00

\$135.00

Part (Newsletter only)

\$60.00

\$70.00

- All rates are quoted in AUSTRALIAN currency and must be paid in AUSTRALIAN currency.
- Membership is for the calendar year 1st January to 31st December. Subscriptions paid after 1st October will be deemed as payment for the following year.

Australian Rangeland Society Privacy Statement. Consistent with national privacy legislation, the Australian Rangeland Society (ARS) will only use members' personal contact information for keeping its records up to date, and enabling member access to ARS products and services e.g. meetings, events, newsletters, journals and conferences. ARS will not use members' information as supplied to ARS for any other purpose and it will not disclose the information to any other party without the member's consent. This will be achieved through email communication or any other means as appropriate.