

MEAT AND LIVESTOCK AUSTRALIA



FINAL REPORT

"Delivery of PROGRAZE, PROGRAZE Farmwalk
and PROGRAZE Plus"

SGS.370

1 January 1997 to 31 December 2000

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NSW Agriculture

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1.0 ABSTRACT

This is the final report of a technology transfer project "Delivery of PROGRAZE, PROGRAZE Farmwalk and PROGRAZE Plus", program SGS.370 of the Sustainable Grazing Systems Key Program. The project was funded by NSW Agriculture, Meat and Livestock Australia, Land and Water Resource Research and Development Corporation and PROGRAZE participants.

The project was initiated to:-

- * enhance meat and wool producers' skills in pasture and livestock assessment, and plant species recognition
- * demonstrate how these skills are used, with enhanced knowledge and understanding of the grazing system, to improve these producers' grazing management decisions.

During the period 1997 to 2000 inclusive, 1812 producers, completed PROGRAZE in one of the 111 PROGRAZE courses held in New South Wales. This represents 312 participants and 11 courses in excess of contract targets. The total number completing PROGRAZE in NSW since the program was first delivered in April 1994 is 4012.

In addition to PROGRAZE, two additional packages were delivered under the PROGRAZE banner. They were PROGRAZE Farmwalk and PROGRAZE Plus. A total of 1275 people participated in PROGRAZE Farmwalk and 213 in PROGRAZE Plus. This represents 775 and 33 respectively in excess of contract targets.

A review of PROGRAZE by Coutts and Daniels (1996) identified "overwhelming evidence that the majority of producer participants gained knowledge about pasture management and animal performance strategies as a result of their participation in PROGRAZE. Change in attitudes to pasture quality and factors to consider in decision making was evident as a result." Also, "the change in attitudes and approach to management outlined in previous sections (of the review) provides a strong basis to argue that PROGRAZE is assisting in a 'culture change' of participants".

When participants were surveyed 10 to 12 months after completing PROGRAZE, 89% indicated their participation had resulted in improved financial returns to their farm and 96% considered they had more productive and sustainable pastures through the use and adoption of skills and knowledge gained in PROGRAZE.

PROGRAZE is recognised as one of the most successful extension programs ever conducted by NSW Agriculture. The project has in most instances exceeded expected outcomes and has had a significant influence on how grazing systems are managed within this State.

2.0 EXECUTIVE SUMMARY

This is the final report of a technology transfer project "Delivery of PROGRAZE, PROGRAZE Farmwalk and PROGRAZE Plus", program SGS.370 of the Sustainable Grazing Systems Key Program. NSW Agriculture, Meat and Livestock Australia, Land and Water Resources Research and Development Corporation and PROGRAZE participants funded the project.

The report represents the period from January 1997 to December 2000. Prior to this, from July 1993 to December 1996, PROGRAZE was a sub program of the Temperate Pastures Sustainability Key Program.

PROGRAZE was originally developed by NSW Agriculture with funding assistance from the Meat Research Corporation and International Wool Secretariat. Delivery of PROGRAZE to meat and wool producers in NSW commenced during April 1994 and in Victoria, South Australia and Tasmania during 1995 and Western Australia in 1997. The course in each of these States was based on the NSW model.

The primary aim of the project was to improve on-farm grazing management decisions by: -

- * enhancing meat and wool producers' skills in pasture and livestock assessment, and plant species recognition
- * demonstrating how these skills are used, with enhanced knowledge and understanding of the grazing system, to improve these producers' grazing management decisions.

It aimed to achieve outcomes that more effectively and efficiently meet production and market targets for livestock and livestock products, while maintaining or improving the productivity and sustainability of pastures.

Development of PROGRAZE was based on the assumption that if there was to be a significant improvement in on-farm grazing management decisions, graziers needed skills to assess, with a degree of objectivity, the quantitative and qualitative characteristics of pastures. Other skills that were seen as being important were the ability to assess the fat or condition of livestock and to be able to recognise important pasture and weed species within their district.

These skills coupled with enhanced knowledge of the pasture/animal interface, in particular, a better understanding of how pasture characteristics influence livestock production, and how grazing can influence short and long term pasture production were essential to the adoption of technology to improve the efficiency and sustainability of grazing systems.

PROGRAZE is a course delivered to groups of graziers via 8 half-day field days. Emphasis is on localised groups of participants, they being more likely to have grazing systems issues that are similar. A typical group comprises participants from about 15 farms. Field days are held on these farms, usually 2 to 4 weeks apart.

Deliverers of PROGRAZE in NSW are, primarily, experienced extension staff of NSW Agriculture. Each segment is delivered by 2 staff covering both agronomic and livestock disciplines. This is a significant strength of the delivery process in that it allows delivery of

each segment with a strong technical presence and provides the group with flexibility to pursue related and locally relevant issues with a range of technical support available. During the period of this report, 1997 to 2000 inclusive, 1812 producers completed PROGRAZE in one of the 111 PROGRAZE courses delivered by NSW Agriculture. Since April 1994 when the course was first delivered, the total number of producers completing PROGRAZE through courses delivered by NSW Agriculture is 4012.

There is strong evidence PROGRAZE has been successful in improving skills, knowledge and understanding of pasture and livestock management and has resulted in practice change by participants. Thirty percent of participants replying to a mail survey, which had a response rate of 52.7% and conducted 10-12 months following their completion of PROGRAZE, indicated their participation in the program had a major impact on their grazing management. Fifty six percent described the impact as moderate and 13% minor. One percent indicated there was no impact.

When asked in the same survey whether their participation in PROGRAZE had or would result in improved financial returns to their farm, 89% said 'yes'. Ninety six percent believed their participation had or would improve the productivity and stability of their pastures.

Coutts and Daniels (1996) in a review of PROGRAZE considered the positive response to PROGRAZE by participants (producers and departmental officers) as being striking and considered it rare to come across such enthusiasm and commitment to an extension program. They considered changes in attitudes and approach to grazing management provided a strong basis to argue that PROGRAZE has assisted in a 'culture change' by participants.

NSW Agriculture staff delivered two additional packages under the PROGRAZE banner. These post-PROGRAZE activities were PROGRAZE Farmwalk and PROGRAZE Plus. During the four years encompassed within this report, 1275 people participated in PROGRAZE Farmwalk activities and 213 in PROGRAZE Plus.

PROGRAZE Farmwalk provides those who have completed PROGRAZE with the opportunity to further develop their skills, knowledge and principles contained within PROGRAZE. PROGRAZE Farmwalk is conducted on-farm and usually in paddocks with the group determining the issues to be addressed. Commonly these issues are pasture assessment, the relationship between pasture characteristics and livestock production, pasture and livestock targeting, pasture management and fodder budgeting. Ninety two percent of those surveyed following PROGRAZE Farmwalk indicated their grazing management would be influenced as a result of their participation.

PROGRAZE Plus is a post-PROGRAZE course developed with financial support from MLA. It introduces participants to a planning process for the development of whole farm grazing plans. While the user is able to assess the impact of decisions across the whole farm, they work at a paddock and mob level in terms of those decisions. Grazing plans developed within PROGRAZE Plus are subjected to a fodder budget as a means of assessing the plan's likely success. Surveys of participants conducted a year or more after completing the course indicated 60% continued to use the process and of these 58% said it had a major impact on the grazing management of their farm. Forty two percent described the impact as being moderate.

Much of the success of PROGRAZE, and the related packages, can be attributed to the technical expertise, presentation and adult learning skills of the NSW Agriculture staff involved in their delivery.

3.0 MAIN RESEARCH REPORT

3.1 Background to the Project

The project continues on from M.415, a component of Sub-program 6.3 of the Temperate Pasture Sustainability Key Program (TPSKP). Bell & Allan (1997) described the background to PROGRAZE in their final report of this project.

The impact and success of PROGRAZE during TPSKP and the continued demand for the course by beef and sheep producers were undoubtedly important reasons for the inclusion of the project within the Sustainable Grazing Systems Key Program (SGS).

During the period from April 1994 to December 1996, 2200 people in 109 groups undertook PROGRAZE in NSW. Surveys prior to them commencing the course and again at the end indicated a significant increase in the skills and knowledge of participants relating to the interface between pastures and livestock and with grazing systems in general. Surveys conducted about 12 months after participants completed the course indicated a substantial level of adoption of the skills, knowledge and principles contained within PROGRAZE. Results of these surveys are contained within the final report of M.415.

Apart from PROGRAZE, two additional packages were delivered by staff of NSW Agriculture under its banner, during the course of this project. They were PROGRAZE Farmwalk and PROGRAZE Plus.

In both instances, package development was based on feedback obtained from past participants of PROGRAZE.

In the case of PROGRAZE Farmwalk, requests were received from individuals and groups who had earlier completed PROGRAZE. They were looking for an opportunity to revise their pasture and livestock assessing skills and to review issues such as those surrounding the relationship between pastures characteristics and livestock production, pasture management, fodder budgeting and planning pasture supply for specific livestock markets. PROGRAZE Farmwalk was used to satisfy this demand with the group deciding the topics to be addressed and with the activity being nearly always held on the farms of participants.

PROGRAZE Plus was developed following requests by participants who completed PROGRAZE. These producers were incorporating the skills and knowledge contained within PROGRAZE into their grazing management decisions and could recognise benefits. However, they also recognise there was greater potential for improvement because their emphasis was on part of the farm and with a few mobs. They were having difficulty implementing management changes across the whole farm and were concerned, if they did, the impact these would have on the farm's feed supply.

PROGRAZE Plus is a planning process used for the development of whole farm grazing plans. The user operates at a paddock and mob level with the impact of decisions on paddock and farm feed supply assessed. The assessment is achieved through a fodder budgeting program especially developed for the project called PRO Plus (McPhee *et al.* 2000).

Financial assistance from MLA funded a development group, which guide the development of PROGRAZE Plus.

3.2 Project Objective

The Sustainable Grazing Systems Key Program goal is:-

By 2001, at least 2000 producers in the southern Australian High Rainfall Zone will have been shown to be 10% more profitable and sustainable as the result of SGSKP, and a further 5000 producers will have trialed at least part of the 'package'.

The objectives of this project were:-

- 3.2.1 By December 2000, to have trained 1500 meat producers in the higher rainfall zone of New South Wales, in pasture and livestock assessment through attending a PROGRAZE course.
- 3.2.2 By December 2000, to have 75% of the people participating in PROGRAZE, using skills and knowledge from PROGRAZE to assist decision making on matching pastures and livestock.
- 3.2.3 By December 2000, to have refined the grazing management skills and knowledge of 500 producers through PROGRAZE Farmwalk and 180 producers through PROGRAZE Plus, and have 75% of those producers changing their current grazing practices based on skills and knowledge from the courses.

3.3 Methodology

3.3.1 PROGRAZE

While this report covers the period from January 1997 to December 2000, PROGRAZE was delivered by NSW Agriculture staff prior to this and incorporated as project M.415 within a Sub Program 6.3 of the Temperate Pastures Sustainability Key Program (TPSKP).

The methodology used to deliver PROGRAZE over these two periods did not substantially change. Bell & Allan (1997) and Bell & Allan (2000) provided a detailed description of this methodology.

During the period of this report two additional reprints of the PROGRAZE manual took place, June 1998 and April 2000. Prior to each reprint the views of deliverers were canvassed via a series of meetings. Their experience in delivering PROGRAZE, their collective knowledge of grazing systems and their feedback from participants have been important to the development of the manual and course in general. The process has contributed to deliverer 'ownership' and commitment to the project.

New to the manual were a sustainability component, in particular the role of pastures and grazing management in addressing the adverse impacts of the water cycle. The other was one that described the impact of pasture intake on wool production and quality. However, the existing material, with the exception of the cattle management segment, received extensive revision.

Those components of the manual receiving significant revision included that relating to the impact of pasture height (independent of herbage mass) on livestock intake. Various aspects of the pasture segment were also revised, including those relating to the grazing management of individual species, incorporating recommendations from Technical Bulletin 47 (FitzGerald & Lodge, 1997). The pasture growth curves and feed year plans for the various regions have been revised and new curves and plans included for coastal regions. To assist with fodder budgeting, pasture intake tables based on herbage mass and digestibility have been included and area relating to grazing strategies and systems expanded.

The presentation of the manual has been improved with greater use of colour, figures were re-drawn to improve their understanding and aids incorporated to assist the user move around the manual.

Apart from NSW Agriculture's ongoing commitment to training, including a policy of Workplace Trainer Accreditation, specific PROGRAZE training occurred at a number of levels. Four, two day training courses were conducted for recently appointed officers although these courses did include some experienced staff. Participating in PROGRAZE groups whose deliverers were experienced officers augmented formal training of recently appointed staff. In addition, one-day meetings that involve training and general project updates occur on a regular basis. Staff have also participated in interstate training programs.

PROGRAZE Deliverer Accreditation was implemented during the first year of this project. Accreditation was introduced to coincide with the use of non-agency deliverers of PROGRAZE, providing a degree of quality control over the delivery process. Twenty-seven NSW Agriculture staff are accredited PROGRAZE deliverers. Staff training programs and a requirement for extension staff to hold Workplace Trainer Accreditation complement PROGRAZE deliverer accreditation.

Delivery of PROGRAZE by NSW Agriculture since 1 July 2000 has been based on a policy of full cost recovery. Delivery costs are based on NSW Agriculture's staff consultancy rates. Since the introduction of this policy, participants have access to FarmBi\$ funding.

Agreement was reached in December 1999 with RIST NSW for the delivery of PROGRAZE by NSW Agriculture staff on their behalf. Groups are yet to be initiated under the agreement.

An evaluation was conducted at the conclusion of courses and a survey mailed to participants some 6 to 12 months after they completed the course. The course evaluation aimed at obtaining an assessment of each course and its potential on-farm impacts. The mail survey aimed to obtain a measure of the adoption of PROGRAZE principles and the on-farm impact of the program. The results of both the evaluation and mail survey are reported in 3.4.

3.3.2 PROGRAZE Farmwalk

PROGRAZE Farmwalk was provided following requests from individuals and groups who had earlier completed PROGRAZE. They were looking for an opportunity to revise their pasture and livestock assessing skills and other issues relating to PROGRAZE.

The methodology used to deliver PROGRAZE Farmwalk was based on self-directed learning principles. Boundaries were placed around the activity, they being the skills, technology and principles contained within PROGRAZE and pasture and grazing management in general.

The focus of PROGRAZE Farmwalk activities were commonly pasture assessment, the relationship between pasture characteristics and livestock production, pasture and grazing management, fodder budgeting, planning pasture supply for specific livestock markets and implementing technology for specific circumstances. During periods of deteriorating pasture conditions supplementary feeding and the use of GrazFeed often dominated the activity. PROGRAZE Farmwalk is conducted on the farm of a group member, and as the name implies, through a farm-walk format usually visiting a series of paddocks.

Results of producer evaluation of this project are reported in 3.4.

3.3.3 PROGRAZE Plus

PROGRAZE Plus is a planning process used for the development of whole farm grazing plans. The user operates at a paddock and mob level with the impact of decisions on paddock and farm feed supply assessed. The assessment is achieved through a computerised fodder budgeting program, especially developed for the project, called PRO Plus (McPhee *et al.* 2000).

The methodology originally devised by the development group for the delivery of PROGRAZE Plus was a 5 session course consisting of:-

- *Session 1 (1 Day)*. A detailed explanation to participants of the information they were required to assemble and the methodology used to achieve this outcome. A brief introduction to PRO Plus.
- *Session 2 (2 Days)*. Conducted about 4 weeks after Session 1 and requires participants to develop a grazing plan to cover about 3 months with the plan being assessed with the used of PRO Plus. The plan might be revised based on the fodder budget delivered by PRO Plus. Hands on experience using PRO Plus.
- *Session 3 (1 Day)*. Conducted about 2 months after Session 2. Address problems/issues identified by participants in the use of PRO Plus. Explore ways to expand the use of PRO Plus as a planning and decision support tool.
- *Session 4 (1 Day)*. Conducted about 3 to 4 months after Session 3. Again address problems/issues identified by participants in the use of PRO Plus. The sharing of experiences in the use of PRO Plus.
- *Session 5 (1Day)*. Conducted about 6 months after Session 4. Review the first 12 months using the PROGRAZE Plus planning approach. Identify strengths and weaknesses of the process. Devise, were possible, corrective procedures for the weaknesses or areas of concern.

Following the pilot course which commenced at Yass, NSW in February 1997, and from those early courses which followed, it became apparent improvements should be made to the course structure.

The course as now delivered by NSW Agriculture consists of a one-day session and four half-day sessions. Participants get immediate access to PRO Plus in Session 1. As the course was originally structured, participants were required to collect considerable information about their farm in hard copy between Sessions 1 and 2 for entry into PRO Plus in Session2. Instead they enter the information directly into PRO Plus and also make a first attempt at a grazing plan and fodder budget prior to attending Session 2. This way the course is significantly more advanced by Session 2, with participants immediately into planning and budgeting. The delay

in getting to this stage in the previous format was causing frustration amongst many participants.

A participant's manual supports the workshop. However the key to PROGRAZE Plus is PRO Plus, a computerised fodder budgeting program developed by NSW Agriculture. A series of upgrades have occurred to this computer based program since its original release. The upgrades have been based mainly on user feedback.

PRO Plus received second prize in the Royal Agricultural Society Australian Software Competition for Decision Support Systems in 1998.

A mail survey was used to obtain a measure of the impact of PROGRAZE Plus on grazing systems. The results are reported in 3.4.

3.4 Results and Discussion

3.4.1 PROGRAZE

3.4.1.1 Course Evaluation

Immediately following the completion of their course, participants are requested to complete an evaluation. The evaluation aimed at obtaining an assessment of each course and its potential on-farm impacts. The data is based on 823 responses.

Question 1. What was your general level of satisfaction with PROGRAZE? (%)

Excellent	Good	Fair	Limited Use	No Use
47	48	5	0	0

Question 2. Indicate which best describes your thoughts in respect to the following. (%)

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
PROGRAZE was too technical	0	5	71	24
PROGRAZE provided me with a good basic understanding of the principles of grazing management	44	56	0	0
The method of presentation helped me better understand the course content	32	66	2	0
The deliverers & PROGRAZE information has challenged me to modify my grazing management	27	69	4	0
Follow up activities would help me apply these skills on farm	35	60	5	0

Question 3. Indicate if PROGRAZE has, or is likely to, influence your decisions in respect to the following. (%)

Decision	Strongly	Moderately	Minor	No Influence
Matching pastures to better meet the needs of livestock	66	31	3	0
Use fat scores for stock management	41	46	12	1
Grazing management for worm control	34	45	16	5
Achieving livestock and/or pasture targets	55	41	4	0
Manage pastures to improve their production/stability	71	26	3	0

Question 4. Have you changed, or plan to change, any significant management practice/s as a result of PROGRAZE? (%)

No Change	Plan to Change	Have Changed
10	53	37

Question 5. Would you recommend PROGRAZE to others? (%)

Yes	No
99	1

The following is a summary of the evaluation.

- Ninety percent of respondents indicated they had changed or planned to change their management practices as a result of PROGRAZE.
- PROGRAZE received high levels of participant satisfaction. Ninety five percent describing the course as either 'Excellent' or 'Good' and 99% indicating they would be prepared to recommend the course to others.
- The PROGRAZE experience had, or would have, a significant influence of pasture and grazing management decisions.
- There was a strong positive reaction by participants to questions related to the delivery of PROGRAZE. Ninety eight percent agreed presentation had helped them better understand the course content and 96% indicated deliverers and content had challenged them to modify their grazing practices.

3.4.1.2 Mail Survey

Participants who registered for PROGRAZE in a particular year, were mailed surveyed towards the end of the following year, generally about 6 to 12 months after completing the course. The data represents the aggregation of three separate annual surveys. Those participants who registered in 2000 are not included.

The average response rate to the survey was 52.7%. The data is based on 445 responses.

The survey aimed to obtain a measure of the adoption of PROGRAZE principles and the on-farm impact of the program.

Question 1. Describe the impact your participation in PROGRAZE has had, or believe will have, on the grazing management of your farm. (%)

Major Impact	Moderate Impact	Minor Impact	No Impact
30	56	14	1

Question 2. Provide the most appropriate response to how you use, or may use the, following PROGRAZE activities. (%)

Activity	Often	Occasionally	Never	May in Future
Assess pastures to better meet the feed requirements of livestock.	68	27	1	4
Assess pastures to assist decisions relating to maintaining or improving their productivity.	70	26	1	3
Use pasture benchmarks to assist decisions relating to the feed requirements of livestock.	41	42	6	11
Use fat/condition scoring to assist decisions relating to breeding and/or finishing stock.	50	36	5	9
Use GrazFeed to assist with meeting livestock feed needs from pasture and/or for supplementary feeding.	12	24	25	39
Use grazing strategies aimed specifically at maintaining or improving the species composition of pastures.	57	32	2	9
Use fodder budgeting to assist paddock stocking rate decisions.	26	39	13	22
Use grazing management to 'clean' pastures as part of a worm control strategy.	48	30	9	13
Use pasture species recognition skills as part of pasture assessment.	66	30	1	3
Refer to the PROGRAZE manual	16	68	6	10

Question 3. If you have made changes to grazing management on your farm as a result of PROGRAZE, list what you consider the 3 most important. (%) Replies to this question were categorised into subject areas. The results represent the relationship between the number of times a subject area was mentioned compared to the surveys returned. Eighty two percent of respondents answered this question.

Subject Area	Response
Managing the feed supply/quality for livestock	50
Grazing system or method	50
Pasture assessment	25
Pasture species management	24
Livestock assessment/production/management	19
Pasture management - general	17
Stocking Rate	12
Weed control	6
Worm control	6
Supplementary feeding	6
Fodder budgeting	5
Plant species recognition	3
Sustainability issues	2

Question 4. Do you believe your participation in PROGRAZE has/will result in improved financial returns to your farm? (%)

Yes	No
89	11

Question 5. Do you believe your participation in PROGRAZE has/will help improve the productivity and sustainability of your pastures? (%)

Yes	No
96	4

The following is a summary of the survey outcomes.

- Almost all respondents indicated PROGRAZE had, or will have, an impact on their grazing management. Eighty six percent described this impact as either 'Major' or 'Moderate'.
- The responses to Questions 2 and 3 do indicate, at least amongst respondents, a high level adoption of PROGRAZE technology and principles.

- The adoption of PROGRAZE technology and principles had, or will have, a positive impact on the financial returns on a high proportion of respondent's farms.
- The adoption of PROGRAZE technology and principles had, or will have, a positive impact on the productivity and sustainability of pastures a high proportion of respondent's farms.
- While not evident in the data as presented, there was little between year differences in the data.

3.4.2 PROGRAZE Farmwalk

The methodology used to deliver PROGRAZE Farmwalk was based on self-directed learning principles. PROGRAZE Farmwalk was based mainly on the pasture and grazing management technologies associated with PROGRAZE.

Variation existed between groups in the technologies covered. Each group determined its own direction. For this reason the evaluation was brief and general. Participants completed the evaluation at the end of the activity. Formal evaluation of PROGRAZE Farmwalk occurred during 1999 and 2000. The following represent data from 219 evaluations.

Question 1. What was your general level of satisfaction with the activity? (%)

Excellent	Good	Average	Poor	Bad
12	68	20	0	0

Question 2. Are your grazing management decisions likely to be influenced by this activity? (%)

Yes	No
93	7

Question 3. Would you attend a similar activity in the future? (%)

Yes	No
98	2

The following is a summary of the survey outcomes.

- PROGRAZE participants appreciated the opportunity to review and reinforce issues relating to pasture and grazing management and found value in the activity.
- Respondents recorded a high level of satisfaction with PROGRAZE Farmwalk.
- PROGRAZE Farmwalk significantly influenced grazing management decisions.

3.4.2 PROGRAZE Plus

PROGRAZE Plus participants were mailed survey 12 months or more following their completion of the course. The average response rate to two separate surveys was 59%. The data is based 78 responses.

Question 1. Did your participation in PROGRAZE Plus help your understanding of the concepts behind PROGRAZE Plus and the operation of PRO Plus? (%)

Strongly	Moderately	Slightly	Not at all
78	17	5	0

Question 2. Which of the following best describes the impact PRO Plus has had, or you believe will have, on the grazing management of your farm? (%)

Major Impact	Moderate Impact	Minor Impact	No Impact
39	40	14	7

Question 3. Do you continue to use PRO Plus? (%)

Yes	No
62	38

Those who answered 'yes' to this question, their responses to Question 2 were 'Major Impact' 59% and 'Moderate Impact' 41%.

Those who answered 'no' to this question, their responses to Question 2 were 'Major Impact' 16%, 'Moderate Impact' 35%, 'Minor Impact' 35% and 'No' 14%.

Question 4. Those who answered 'yes' to Question 3, what do you consider the most important uses you have for PRO Plus?

Planning stock movement /spelling pastures/analysing feed availability during year/being organised and confident with stock numbers.

Forward planning of pastures and stocking rates.

Gives me more confidence in planning numbers/likes planning discipline/undertaking "what ifs".

Early identification of cattle trading opportunities. Determine fertiliser needs.

Decision making tool during dry or drought periods.

Managing pastures.

Calculating pasture use and available pasture at future dates.

Planning stock movements to utilise feed.

Feed and fodder budgeting.

Allocation of feed for ewes vs wethers and weaners. Estimate stocking carrying capacity at various times during the year. Look at the impacts of other

enterprises.

Allocation of paddocks for ewes to start lambing at end of winter

Better usage of winter and spring pasture, more accurate prediction of production.

It does the calculation. Allows you to run several scenarios. Retention of data. Fodder budgeting.

Closing paddocks preparing for lambing. Paddock selection for weaning.

Reaching contract specifications. Managing wool quality. Grazing for dry matter targets.

Planning/feed budget/adjusting stock numbers to best utilise expected feed available.

Allocation of feed.

Paddock management.

Forward planning of feed. Stocking rate. Cost effective fodder purchase. Better used of feed.

Enhancing feed budget skills/determining stocking rates/strategies to get through winter.

Useful when meeting feed shortages.

Allows us to match mob requirements to available feed. Saving feed, time and money.

Feed budgeting for a feed year. Estimating annual production from individual paddocks. Getting a feel for pasture production, potential and limitations over the seasons.

Question 5. Those who answered 'no' to Question 3, why are you not using PRO Plus?

Time taken to assess dry matter each month. Really not practical to spend time required to do it properly.

Too time consuming on a whole farm basis - large numbers of mobs and paddocks.

Good seasonal conditions. Time involved in setting up and operating.

Trying to structure working day. Time in office wasted time.

Cumbersome. Use only in only critical times. Use GrazFeed

Too fussy and time consuming. Pastures in all paddocks similar, simpler format okay.

Too time consuming, quick feed budgets easier to do on paper.

Grazing minor part of farm. Do hope to use in future.

Too much collection of field data.

Not enough hours in day. A bit above my head.

Unable to attend because of work commitments. Also computer 'dyslexic'.

Insufficient time to devote to fully understand program. Stock profit low, devoting more time to grain.

Good season - no pressure to use it. Time. Lack of motivation to sit down at night to do it.

Time.

Question 6. Would you like to make any other comments in respect to PROGRAZE Plus and/or PRO Plus?

The following are comments of those who answered 'yes' to Question 3.

Due to time constraints, I do not use it as much as I should.

Made me look at paddock situation differently. Really understand livestock & pasture interaction. Found I could carry more stock per hectare.

Keep up the good work.

Need to use for 12 months to be fully confident. Problems assessing dead pasture in summer.

The new version (v 2.0.1) makes it a truly useful tool. Can now recommend it to others..

Keep going.

Further workshops to understand the program's quirks. When will the upgrade be available?

The more get together & discussions the better, these over a significant period due to differing seasons.

Handy to view the grazing plan by mob as well as paddock.

Will use it more in tight seasons. In its simple form is a good tool.

The PROGRAZE 'system' really becomes useful after PROGRAZE Plus.

Fearful my epitaph will read 'got it all done - died anyway'. Time management a problem.

Suggest regional pasture growth default settings to reduce input time.

The following are comments of those who answered 'no' to Question 3.

The change in methods of assessment & thinking will continue to be most useful & are constantly used - especially for getting stock to target weights and condition. I can tell myself exactly what I have to do to reach a goal and afterwards, exactly why I did not make it.

PROGRAZE Plus gave me a better understanding of the fundamentals. It help unlock what we learnt in PROGRAZE.

It is an excellent program which we have not had much need to use due to excellent seasons. Should have used it to trade in stock and possibly made money but acted conservatively instead.

A good concept/idea and worth developing.

Well conceived, well designed logical application of PROGRAZE principles but to complicated & fussy to use for regular updating.

I like the principle of the program.

Despite my difficulty in using the program, the basic information & strategies have been useful. The concept is sound & I reflect on the basics during management decisions.

Please keep the program going. Very worthwhile.

Initially I found the program very useful. Profitability determines the level of commitment to pasture management.

I think you need a good producer group which is dynamic and motivated to complete the course and continue meeting to keep people interested.

Don't give up on farmers like me. I see PRO Plus as a time saver and a tool over the next 5 years will become invaluable in predicting pasture/stock mismatching as well as grazing opportunities.

When I did the course my computer skills were not very good.

Question 7. Have you recommended PROGRAZE Plus/PRO Plus to others? (%)

Yes	No
72	28

The following is a summary of the survey outcomes.

- The PROGRAZE Plus course is effective in achieving understanding of its planning principles and in the operation of PRO Plus.
- While only 62% of respondents were still using PRO Plus 1 to 2 years after the course all of this group considered it was having, or will have, a significant impact on their grazing management.
- The overwhelming reason given by those who were not using PRO Plus related to time constraints. This group was still very positive to its concept and operation.
- The survey requested additional information relating to improving the PROGRAZE Plus course and the PRO Plus software. Much of this feedback has been implemented. Two major software upgrades occurred.

3.5 Success in Achieving Objectives

The project objectives were:-

Objective 1.

By December 2000, to have trained 1500 meat producers in the higher rainfall zone of New South Wales, in pasture and livestock assessment through attending a PROGRAZE course.

Objective 2.

By December 2000, to have 75% of the people participating in PROGRAZE, using skills and knowledge from PROGRAZE to assist decision making on matching pastures and livestock.

Objective 3.

By December 2000, to have refined the grazing management skills and knowledge of 500 producers through PROGRAZE Farmwalk and 180 producers through PROGRAZE Plus, and have 75% of those producers changing their current grazing practices based on skills and knowledge from the courses.

Success in achieving objectives:-

Objective 1.

During the four years of the project, 1812 producers undertook PROGRAZE in one of 111 groups. The objective was exceeded.

Objective 2.

Results from the course evaluation and the mail survey do indicate at least 75% of the people who participated in PROGRAZE are using skills and knowledge from PROGRAZE to assist decision making on matching pastures and livestock.

A range of data from the mail survey supports this assertion. Examples are, when asked if their participation in PROGRAZE had or would result in improved financial returns to their farm, 89% replied 'yes'. Then when asked if their participation in PROGRAZE had or would result in improved productivity and sustainability of their pastures, 96% replied 'yes'.

Objective 3.

During the four years of the project, 1275 people participated in PROGRAZE Farmwalk and 213 in PROGRAZE Plus. In terms of participation, the objective was exceeded.

The other part of this objective relates to the changing of grazing practices. Data from the PROGRAZE Farmwalk evaluations do indicate the target of 75% change to grazing practices was achieved with 93% of respondents answering 'yes' to the question "Are your grazing management decisions likely to be influenced by the activity?"

Data from the PROGRAZE Plus mail survey does indicate the 75% target for practice change was probably met with this project. This is despite only 62% of respondents were still using PRO Plus 1 to 2 years after the course. When asked to describe the impact of PRO Plus had, or believe will have, on the grazing management of their farm, only 7% indicated no impact.

3.6 Impact on the Livestock Industries

The impact of PROGRAZE, and its associated packages, on the grazing industries has been substantial. Issues addressed within PROGRAZE are relevant to decisions made daily on grazing farms. For this reason it is difficult to quantify the production and financial benefits of the program. Individual case studies and testimonials are probably the best indicators of these benefits (Elliot & Elliot, 1999; Mitchell, 1999; Peake, 1999; Burbidge, 2000; Hall, 2000; Hyles, 2000).

Recognition across the grazing community is testimony to the impact of the program. Participation rates in excess of 4000 in NSW and 8000 nationally, with the demand for courses showing no significant decline in this State, are also indicative of the impact PROGRAZE has had and will continue to have in the future.

3.7 Conclusions and Recommendations

It is generally regarded within NSW Agriculture that PROGRAZE is one of the most successful, and by many the most successful, extension program that has targeted the extensive grazing industries.

Broadly, the success of PROGRAZE can be attributed to four main factors.

1. It addresses technology that is not well understood by many graziers, yet they can recognise its importance to the viability of their grazing system. It is relevant to their needs.

2. It takes a systems approach to extension rather than the more traditional, single issue or narrow focus. It does not so much supply answers but rather develops skills, knowledge and principles which are applied in various combinations depending on circumstances
3. It is delivered via adult learning principles.
4. Deliverers have sound technical expertise and presentation skills. They recognise the knowledge and experience brought to the group by participants and respond flexibly to group needs.

Demand for PROGRAZE remains amongst NSW producers. NSW Agriculture remains committed to PROGRAZE, and the associated packages. NSW Agriculture will continue to deliver the course within this State.

To capitalise on the success of PROGRAZE it is important that extension programs, which deal with the interface between pastures and livestock, embrace PROGRAZE concepts and terminology. There is a significant challenge for funding bodies and extension agencies to ensure this occurs. The greatest risk to this expansion will probably come from a lack of communication within and between organisations.

When developing future packages it is important the elements that led to the success of PROGRAZE are incorporated into these packages. Specifically, principles associated with adult learning, and in particular a co-learning approach, should not be neglected. The importance of this approach was recognised in Coutts and Daniels (1996), Review of PROGRAZE.

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3.9 Appendices

Newspaper articles associated with the project follow.

Stock system wins graziers

By RHONDA TURNER

WITH numerous success stories emerging from across the region, NSW Agriculture's PROGRAZE program is continuing to provide producers with a unique opportunity to improve their grazing management.

PROGRAZE is an initiative which comprises of a series of eight workshops designed to use group activities to facilitate change in attitudes by producers to grazing management.

Technical Specialist (Grazing Systems) at the Tamworth Centre for Crop Improvement Alan Bell said PROGRAZE provided producers with an opportunity to better understand how pasture characteristics influence livestock production and the effect of grazing livestock on pasture productivity.

"This results in being able to more efficiently meet production and livestock market specifications and long term productivity of pastures," Mr Bell said.

Over 3000 producers have now completed the course in NSW since its inception in 1993.

Late last year survey forms were mailed by NSW Agriculture to 207 participants who commenced PROGRAZE during 1997. Of those who responded all said PROGRAZE had an impact on their grazing management (79 per cent described this impact as moderate or above) while 97 per cent of participants believed their participation had or would help improve the productivity and sustainability of their pastures.

"As with earlier surveys, the results provide a strong endorsement of PROGRAZE," Mr Bell said.

An independent review, conducted by the Rural Extension Centre in Queensland, found

strong evidence that PROGRAZE is successful in improving knowledge and understanding of improved pasture and animal management amongst producer participants, resulting in changes in attitude. Of the 187 respondents to the evaluation survey, 185 indicated they would recommend PROGRAZE to other producers.

Tamworth district agronomist Ian Collett

suggested PROGRAZE was probably the most well accepted and successful program NSW Agriculture had ever enacted to address the problem of grazing management of pastures.

"We've now completed about 25 groups out of Tamworth and other near centres and we have just started another at Mary's Mount south of Gunnedah. We are also about to commence one at Quirindi," Mr Collett said.



Tom Rummery and his son Matthew inspect the pastures at "Wandjina", Bendemeer. Mr Rummery believes there is not a decision on the farm that doesn't some how come back through the PROGRAZE system.

Photo: GEOFF O'NEILL

Bendemeer producer a PROGRAZE fan

ONE producer who can't praise PROGRAZE enough is Tom Rummery of "Wandjina", Bendemeer.

Mr Rummery produces fine wool merino sheep and crossbred beef cattle and completed the course as a member of the Bendemeer PROGRAZE group in early 1997.

"For me personally it has given me a method by which I can collect more objective data on my property," he said. "Now I do it without even thinking — I'm assessing the pasture all of the time."

He said skills learnt during the PROGRAZE course enabled him to better meet the livestock market requirements he aims for.

"Last year was not an easy year for us — it was extremely dry with little feed through winter but we still had our best year in cattle production."

He put this result largely down to PROGRAZE — "we hit the market with our steers right where we had aimed 12 months before and because we hit it I think we actually made money out of farming last

year".

At one stage, he said he and his wife Rachel had conducted a pasture assessment across the entire property using the PROGRAZE skills and had come to the conclusion that stock numbers needed to be reduced.

"We had a look at which sort of animal we couldn't continue to carry, it was the bullocks, but we weren't prepared to sell them because they were short of where we wanted them.

"We looked around, and again

using the same PROGRAZE skills we found an agistment paddock that we knew they could do well on — and they did. They were off farm for about 200 days and they came home having made 0.6kg per day."

He said the bullocks had been taken right through to about two years old and had averaged about \$700 per beast for the year.

"For us, there is not a decision on the farm that doesn't some how come back through the PROGRAZE system that we learnt," Mr Rummery said.



Producers benefit from pasture work

By **TERRY McHUGH**

NSW Agriculture Maitland media officer

Prograze has linked well to management for Upper Hunter graziers Bob and Christine Searle of Sandy Hollow who finish stock for the new Hunter Natural Cooperative beef alliance.

The Searles run a 200 head self replacing cow herd of Angus cross cattle on their "Riverview," property producing domestic market weight cattle.

"We were doing a lot of things, but we didn't know why," said Mr Searle.

"Prograze has put these practices into a language that is useable and given us the opportunity to continue to refine our grazing management.

"Initially I had fixed ideas.

"Prograze continually challenged me to be more objective instead of subjective.

"Not only does Prograze open up your mind, there is great interaction with other members of the group.

"Prograze defined stock classes and feed requirements that enable us to plan better the feed-needs for a 12 months period," he added.

"It also defined three systems for participant of this Prograze group - store stock; the intensive system with irrigation and strip grazing; and the system we use.

"Our operation is to wean, supplementary feed from feeders and give the weaners access to phalaris based pastures," Mr Searle said.

He is one of a group of people who direct sell through the newly formed Hunter Natural Cooperative beef alliance that can supply Meat Standards Australia (MSA) graded product to wholesalers and retailers.

The aim of Hunter Natural Cooperative is to provide a whole-herd selling system that can meet any

market specification through a democratic business structure where members will benefit by value adding through advanced marketing.

Mr Searle said the combination of experiences from Prograze and as a member of the steering committee of the Hunter Natural Co-operative has given him a greater understanding of marketing needs.

The Searle's cattle are grown-out to meet specific markets.

These are the 180-200 kg carcass weight for the domestic trade, and between 200-245 kg for the super-market trade.

His final word on Prograze - "I found the whole experience interesting and enlightening."

■ For further information on Prograze contact your local NSW Agriculture office.

Pictured above: Bob and Christine Searle and NSW Agriculture Singleton agronomist Jacinta Christie at the Martindale Prograze meeting.



Prograze boosts potential

WAGGA Wagga district graziers, Rick and Pam Martin (pictured left), became painfully aware of increasing soil acidity on their "Burnbank" property in the early 1980s. Their crops were yellowing, with whole patches dying out.

"We were almost growing more weeds than crop," Mr Martin said.

Soil pH was mostly 4.5 in calcium chloride - the worst areas measured 3.9.

"We had to make a decision to do nothing, sell out or commit to a landcare program to combat rising water tables and dryland salinity," Mr Martin said.

In 1991 the obvious first step was to lime significant areas of their Landcare-award winning property. They have so far applied up to five tonnes of lime per hectare, in two applications, to correct their major acid soils problem.

Soil pH is now up to 5.5 reversing the decline in crop yields and allowing them to grow lucerne in the pasture phase.

"Since we started liming we have been able to sow down 300ha of perennial pasture on country that was too acidic for successful establishment," Mr Martin, a Sustainable Grazing Systems participant, said.

The lime program was essential for more efficient water use in both crops and pastures and turned a rising water table into a pasture-rich asset.

But a run of wet years meant that by 1990, one-third of the 940ha property was affected by severe water logging.

"It just became a bog," said Mrs Martin, "which cut the property in half. The water was just oozing out of the ground."

A tree planting program now covers 10 per cent of the property. Before the trees, "Burnbank" was almost devoid of native vegetation.

The Martins have planted shelter belts, planted out large recharge areas, hill tops and ridge lines, fenced-off areas for natural regeneration, fenced-off a lagoon, and eroded gullies.

The Martins have now pruned 10,000 trees for forestry and a small wetland has been established at the lower end of the plantation to filter any nutrients before they flow into the creek running through the property.

"We have seen a dramatic increase in bird and animal life in these areas and we have platypus in our creek."

Mr Martin said they were integrating their conservation, landcare and sustainability efforts by treating protected areas as a

separate farm enterprise.

"We realise our conservation work will not only stop the decline in the value of our land but will enhance it and protect our financial viability," he said.

Fences can be opened to strategic grazing to reduce fire risk or provide vulnerable stock with shelter. The rest is now under magnificent perennial pasture to soak up water.

"We've proved we can establish highly productive perennial pasture on both the cropping rotation and areas prone to waterlogging," Mrs Martin said.

Part of the program has been in skills development through "Prograze".

"We felt we had spent so much money on our pastures we wanted to get it right and manage them to get the investment back. We hadn't grazed before and needed to learn fast."

While they were still doing Prograze they started on Prograze-Plus, a computer-driven enhancement that builds on grazing management skills.

This results in much greater grazing management control and optimum pasture utilisation.

"The good thing about Prograze-Plus is that it forces the discipline of mapping out a grazing plan," Mr Martin said.

Strategies influence breeding

RON AGGS

Camden

SEVEN years ago, the management of Narrangullen Station, near Yass, saw the need to change the way they grew their stud cattle — without compromising 60 years of good breeding.

The property had bred bulls for commercial breeders who supplied steers and heifers for the domestic market.

Their stock had good maternal and milk traits and the ability to survive and breed in tough conditions.

Emergence of new markets required Narrangullen to increase animal muscularity, growth rates, frame and

maturity pattern.

"Changing our cattle meant changing their feed. We had to identify our problem growth areas in the feed and the livestock," manager, Tim Rixon said.

"The plan we initiated, using PROGRAZE principles, now brings optimum feed and production in both sheep and cattle for around 10 months of the year."

Narangullen was 60 per cent native and 40pc improved pasture with low legume content. Minimal super phosphate input, very large paddocks, and no autumn resulted in a feed gap up to September.

"We started pasture improvement and a three year

grazing oat paddock rotation," says Tim Rixon.

"Both sheep and cattle ate down the over abundance of phalaris and that gave the clover an even chance to get the nutrients for growth."

For the past three years they have used Bimbal oats, under sown with a mix of Telila, Lincoln, Balansa and white clover.

"Our successes are due to grazing decisions being made eight to 12 months in advance.

"We ensure we use all the feed we have, and consider all the other linked factors like stocking rate, paddock size and the choice of grazing animals."

Coal mining, cattle grazing management

It may seem odd to find a Singleton coal miner learning about pasture management in a Prograze group at Martindale, near Denman in the Upper Hunter.

Dig deeper and you find Prograze member Peter Thompson is just one of the group whose major income source is from off-farm work.

There is a coal laboratory technician, teachers, and a retired policeman in amongst the beef and dairy producers.

But they have two things in common — they have land and cattle.

They joined NSW Agriculture district agronomist, Jacinta Christie, to improve their grazing techniques and learn more about the natural and introduced pastures of the area.

During the eight sessions NSW Agriculture Maitland beef cattle officer, Ian Blackwood, spoke on specialist livestock nutrition information to link pasture growth to beef production.

This exposure to cattle feed requirements, fat and muscle scoring, and being made aware of other markets with potentially more income were some of the highlights for Peter Thompson.

Mr Thompson's cattle enterprises are 50 Angus and Angus x Hereford breeders on 40 hectares of Hunter River flats at Singleton, and another 100 breeders on 400 hectares of hilly country at "Yarramundee," Falbrook, via Singleton.

Vealers are currently turned off both properties for sale through Singleton saleyards.

He joined the Prograze group to improve the efficiency of his river flats' operation and to gain experience in native pastures.

The hilly country was seeded and fertilised 15 years ago.

It has been let return to native pastures because of low cattle prices, high pasture seed and fertiliser costs.

Prograze gave Mr Thompson the knowledge to identify desirable and undesirable native pasture species.

It also gave him the know-how to better manage these to get a dominance of the desirable species, he said.

However, the main advantage of Prograze is now being able to predict and forecast stocking rates and feed availability.

■ For further information on Prograze contact your local NSW Agriculture office.



Peter Thompson of Singleton, Joanne Taylor of Martindale and NSW Agriculture's Ian Blackwood at the Prograze meeting.



"Use the right number of stock to consume all available live pastures," NSW Agriculture livestock officer, Greg Meaker (left), tells graziers. Tim Rixon agrees it's vital to get the balance.

Backtracking on PROGRAZE

ALAN BELL
Tamworth

PROGRAZE was developed in consultation with graziers and first delivered to NSW beef and sheep producers in April 1994.

The course has been a catalyst for change in grazing systems management.

More than 4000 meat and wool producers have participated in courses in NSW since PROGRAZE was first delivered and more than 8000 since the project was adopted in Victoria, South Australia, Tasmania and Western Australia.

Where the principles have been applied, many producers say they have increased profits, by meeting improved production and market targets.

At the same time, the system teaches how to maintain or improve the productivity and stability of pastures.

The development of PROGRAZE was based on the assumption that to make significant improvements, managers needed objective skills to assess pastures, the fat or condition score of livestock, and economically important pasture and weed species.

Particularly important was recognition of the interaction between all these.

In particular, managers needed to understand how pasture characteristics influence livestock production and how grazing can influence short and long-term pasture productivity.

The course is delivered to groups over eight half days; on group members' farms between two and four weeks apart.

Emphasis is on localised group membership, increasing the likelihood of participants having similar pasture and enterprise issues, thus a support network to compare notes.

A typical group comprises participants from about 15 farms.

PROGRAZE also teaches how to develop grazing plans for the entire farm — targeting pastures to livestock requirements, using pasture more efficiently by fodder budgeting, supplementing livestock nutrition with concentrate or roughage feeding and achieving desirable, productive and stable pasture.

■ Contact Alan Bell, NSW PROGRAZE co-ordinator, (02) 6763 1254, fax (02) 6763 1222

4.0 ADMINISTRATION REPORT

4.1 Staff and Financial Report

NSW Agriculture staff contributions to this project totalled 128.5 staff months. By individual packages the contribution, in staff months, was PROGRAZE 108.15, PROGRAZE Farmwalk 10.0 and PROGRAZE Plus 10.35.

Financial contributions to NSW Agriculture in support of the project were:

Meat & Livestock Australia	\$112,500.00
Land & Water Resources R&DC	\$12,500.00
Participant contributions	\$250,450.00

4.2 Contribution by Research Organisation

The contribution made by NSW Agriculture to this project was \$M2.009 or 84.6% of the total cost of the project. This calculation is based on a contribution of 128.5 staff months charged out at NSW Agriculture's consultancy rates. The contribution only covers staff inputs to the development and delivery of PROGRAZE, and its associated packages. It does not include variable costs associated with the delivery of courses such as travel, nutritive value analysis, printing and other incidentals. These were covered by external funds.

4.3 Intellectual Property

Intellectual property arising from the project includes the PROGRAZE trademark, the PROGRAZE manual, the PROGRAZE Plus manual and the PRO Plus manual and software.

The PROGRAZE trademark is owned by NSW Agriculture.

Copyright in the PROGRAZE manual is shared between NSW Agriculture and MLA. Copyright in material incorporated in the PROGRAZE manual after September 1997 remains with NSW Agriculture. NSW Agriculture grants MLA royalty free license to use that material as part of PROGRAZE.

Copyright in the PROGRAZE Plus manual is vested with NSW Agriculture and MLA.

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