finalreport

Natural Resource Management


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# Customising the Grazing Land Management education workshop to the Southern Gulf, Desert Uplands and Channel country regions in Queensland

# Abstract

This project supports the continued customisation of the Grazing Land Management (GLM) education package. Meat and Livestock Australia (MLA) supported the initial GLM education package development, and in conjunction with Desert Channels Queensland (DCQ) via the Natural Heritage Trust (NHT) three new regional versions have been customised with local information and locally-calibrated decision making tools. We have accumulated the locally relevant information in all regions, and completed case-study properties and land type frameworks. However, the customisation of the workshop for these regions proved challenging as there was little relevant local case studies, research trials or published studies that reinforced the principles espoused within the workshop content. PowerPoint presentations and participant workbooks have also been customised and published for the three new regions.

# Executive Summary

The Grazing Land Management (GLM) education package aims to contribute to increased awareness, understanding and uptake of grazing management strategies and practices that are both profitable and sustain the natural resource base of the grazing enterprises. The initial development of the package highlighted the need for regionally specific information on which graziers could base their decisions. Accordingly, this project supported the customisation of the GLM package in the Southern Gulf, Desert Uplands and Channel Country regions.

Customisation of the regionally specific GLM packages involves the following steps:

1. Collation of locally relevant publications, information, photos and data sets.
2. Development of a land type framework derived from producer surveys, reference material and discussions with agency staff.
3. Develop a local case study property which is used to demonstrate the financial and natural resource management implications of changed grazing management practices on land condition.
4. Review of materials at a technical review and pilot workshop which includes local producers who provided critical feedback to the regional developers.
5. Publication which includes formatting by desktop publishers and editing to ensure consistency of style and appropriate language in accordance with the MLA EDGE*network* style guide.

Three pilot workshops were held and the following recommendations were made:

**Southern Gulf**

- Convey legitimate use of fire, one participant's positive experience might be used to influence others.
- More local photos and examples.
- Provide information on local weed issues and make case study weed map more realistic.

**Channel Country**

- Inclusion of a discussion on fodder management.
- Greater attention to the opportunities to conserve native plants and animals.
- Inclusion of the channel country sustainable grazing project results.

**Desert Uplands**

- Simplify the forage budget exercise.
- Include a short discussion on climate change.
- Improve the link between weed management and grazing management planning.

As the workshop is delivered in these regions, locally relevant case studies, photo standards and pasture growth measurements will be accumulated and integrated into the workshop materials.

# Contents

# 1 Background

The Grazing Land Management (GLM) education package was developed in response to identification from industry of the need for a product that would enhance management of grazing lands in northern Australia by transfer of information to graziers. This has in part been driven by both:

- an increased recognition of the potential to enhance grazing management to meet the goal of sustainable beef production; and
- an increased recognition of the link between poor land condition and negative off-site environmental impacts, such as soil erosion.

The GLM package aims to contribute to increased awareness, understanding and uptake of grazing management strategies and practices that are both profitable and sustain the natural resource base of the grazing enterprises.

The initial GLM development took place in four regions (NAP 3.325 Development of a Grazing Land Management Education Program for Northern Australia):
- Burdekin Catchment, Queensland
- Burnett Catchment, Queensland
- Victoria River District, Northern Territory
- Mitchell Grasslands, Queensland.

Highlighted during the development was the need to provide regionally specific information, such that further development would be based on either specific regional ecosystem types or catchments. Since that initial development, new regional versions have been customised for the Fitzroy, Northern Gulf, Maranoa-Balonne and Mulga Lands of the Western Murray Darling Basin (supported by NBP.221). As of March 2007 there have been 37 workshops in Queensland with 500 participants representing 288 businesses.

# 2 Project Objectives

This project supported the customisation of existing GLM packages to the Southern Gulf, Desert Uplands and Channel Country regions of Queensland. To achieve this, the project had the following objectives:

- Customise the GLM education workshop packages to the following regions:
    - The Southern Gulf
    - The Desert Uplands
    - The Channel Country
- Produce a revised participant workbook, produce revised PowerPoint slides and facilitation manual and deliver package to MLA as a desk-top published document ready for use in workshops

# 3 Methodology

The customisation of the GLM package was based on the existing workshop materials, modified and updated to meet local land types and production systems. The customisation of the GLM package involved the following steps:

1. The collation of locally relevant publications, information, photos and data sets. This involved a technical meeting with local grazing experts and agency staff to provide assistance and feedback. In regions where new project staff were appointed they attended and presented at field days, Landcare meetings and farm visits in order to increase their appreciation of local

grazing management issues. All new staff undertook training to gain accreditation for Certificate IV in Assessment and Workplace Training to ensure their workshop planning and delivery skills are up to date, and to be consistent with training requirements under FarmBis. New staff attended commercial GLM workshops as participants to gain an appreciation of the workshop content, processes and outcomes.

2. Development of a land type framework for the region. The land types were chosen based on vegetation and soil characteristics, and defined in terms that landholders use referring to their units of management (eg. Bluegrass/Browntop plains). The collation of the land types for the catchment was derived from producer surveys, reference material and discussions with agency staff. Given the variety of schemes used to describe land types for different purposes (eg: regional ecosystems, Australian soil classifications, land units), a major task is to combine those schemas, which have been added to the land type sheets. The land types formed the basis of the pasture growth simulation modelling, with a number of climate locations modelled. These pasture growth output tables are the basis of the long and short term carrying capacity, and forage budget calculations. The output of the pasture growth tables were calibrated against producer expectations of long term safe carrying capacity, with the utilisation rates derived from published research in combination with local observations.

3. Development of local case study properties, that are used to demonstrate the financial and natural resource management implications of changed grazing management practices on land condition. The case study properties are based on local land types, and include a range of topical management issues relevant to the regions, including overgrazing, fire management, sown pastures, and weeds. Each case study scenario was analysed using the Breedcow, Dynama and Investan steady state herd modelling and financial analysis programs.

4. Review of the PowerPoint slides and participants workbook in each of the seven theory modules and including local material that enhances the relevance of the package to the region. The majority of the local material came from local research, for example in the Southern Gulf Bishop (1973a; b; c; d; 1974a; b) had undertaken several investigations into pasture production in the bluegrass browntop plains near Cloncurry, including assessments of the impact of fertiliser on pasture production. The findings of these studies and the data were integrated into the pasture production modelling and the Pasture Restoration (Sown Pastures) module in this version. A challenge has been to gather information and data that is in a useable format and that has clear and succinct messages. Some of the locally researched information could not be incorporated as it did not provide a succinct message (which is important given the time limitations associated with the delivery of the workshop) or it did not meet the relevant learning outcome required in the module.

5. All materials were tested in a technical review pilot within the region, with the outcomes used to adjust the materials prior to finalisation. The outcomes and feedback of the regional pilot workshops are provided in the following section.

6. All materials are finalised, formatted by desktop publishers and edited for style and consistency in accordance with the publishing standards of MLA EDGE*network*.

# 4 Results and Discussion

As part of the customisation of the regional GLM educational materials a technical review and pilot workshop was undertaken in each region. The outcomes of each region are summarised below:

## 4.1 Southern Gulf

The pilot workshop was held in Mt Isa on 6-7 June 2006. Representatives from six organisations attended including three from the Southern Gulf Catchments NRM Group and one from the Australian Agricultural Company and local agency staff attended.

What they liked:

- Use of iconic models, "Minties exercise" to explain the energy flow and the "sponges exercise" to demonstrate plant available water content.
- Use of Burdekin data to link soil loss and water quality decline, critical to understanding the effects of overgrazing on downstream water quality.
- Combining of the fire and tree/grass balance modules, this was first done in the Northern Gulf version.
- Shallow water ponding examples and clay pan remediation.

What could be improved?

- More local photos and examples, such as Toorak trial.
- Enhanced emphasis on outdoor activity, particular cutting grass and developing graziers own photo standards
- Convey legitimate use of fire, one participant's positive experience might be used to influence other.
- Increase the emphasis on the positive outcomes of fire, especially when combined with grazing practices.
- Local examples of introduced woody weed problems, such as Prickly Acacia, rubbervine and Parkinsonia.
- Provide information on local weed issues and make case study weed map more realistic.

The recommendations from the pilot were included in the final materials. Additional pasture growth estimates were required for some of the land types in the region, and exclosure were established in October 2006 on bluegrass/browntop and spinifex plains land types, and final harvest will be concluded in May 2007. Photo standards of pasture growth phases and yield are also being collected as part of the continued improvement of the workshop materials.

## 4.2 Channel Country

The pilot was held in Longreach on 12-14$^{th}$ June 2006. Graziers from three channel country properties attended along with representatives from Desert Channels Queensland, the Environmental Protection Agency, and DPI&F staff.

What they liked:

- Flow of the workshop and the principle espoused within the content.
- The emphasis the uniqueness of the channel country when compared to other regions across the rangelands, although this could be further emphasised.
- Rational discussion on tree grass balance.
- Inclusion on the impacts of infrastructure development on land condition.
- Discussions on the impact of fire, although this should be integrated into grazing management planning.

What could be improved?

- More channel country photos of land types and data.
- Add a discussion on the role of fodder
- More attention on the opportunities for conserving native plants and animals.
- Inclusion of the channel country sustainable grazing project results (NBP. 329).
- Refocus the short-term carrying capacity (fodder budget) exercise to channel country situation
- Allowing existing planning frameworks to be accommodated within the planning module.

Many of the suggestions were integrated into the workshop. Additional information and tools generated from the Channel Country grazing project (NBP. 329) will be included as they become available.

## 4.3 Desert Uplands

The pilot workshop was held in Charters Towers on 29-31 May 2006. Grazier's from the Lake Galilee and Lake Buchanan areas attended representing three grazing properties as well as two representatives from Desert Channels Queensland and two from the Desert Uplands Committee. The workshop was evaluated and the feedback is summarised below:

What they liked:

- Workshop was interesting and well presented.
- Module 2 Understanding Grazing Systems was very comprehensive but easy to follow and understand.
- Utilisation rate concept is explained well.
- Starting the planning process, allowed participant to put the theory into practice

What could be improved?

- Simplify and minimise definitions.
- Decrease the number of scientific charts.
- Short discussion on the potential impacts of climate change.
- Simplify the forage budgeting exercise.
- Provide more information about weeds and control options
- Improve link between weed management and grazing land management planning.
- Some financial analysis of the effect of weed control.
- More financial data and scenarios, how much does is cost to sow?
- Current information on vegetation management, what are you allowed to do?

All changes and improvements recommended throughout the pilot workshop process. Additional, a number of participants in the pilot would like to have more references within the participant's workbook in order to follow-up on research after the workshop. Most sources and references are given in the technical manual, although the format and flow of the technical manual differs from the PowerPoint presentation and the participant's workshop. In later reviews of the technical materials more cross-referencing is required. Additional pasture growth estimates were required for some of the land types in the region, and exclosure were established in October 2006 in the central Desert Uplands on Ironbark/ Spinfex country in good condition (A-/B+). Another suggestion was to develop scenarios on what a landholder could do with a small investment (e.g. $30,000) and how this would improve their grazing management and the financial outcomes.

# 5 Success in Achieving Objectives

Locally relevant information has been accumulated in all regions and the customisation of the Southern Gulf, Desert Uplands and Channel Country versions of the GLM workshop is completed. All workshop materials have been edited and formatted in accordance with the publishing standards of MLA EDGE*network*, and are attached on a compact disc which includes all versions of the workshop for Queensland.

Pilot workshops for all versions were held as part of the customisation of the workshops. The Desert Uplands and Channel Country versions have been presented as completed commercial workshops. Materials for all workshops have been published and are ready for use.

# 6 Impact on Meat and Livestock Industry - now & in five years time

The initial development of the GLM workshops and subsequent customisation supported by this project will aid in the transfer of research results and best practices recommendations to land managers throughout Northern Australia. There are now ten GLM customised regions in Queensland:

- Northern Gulf
- Burdekin
- Mitchell Grass Downs
- South East Queensland (formally Burnett)
- Mulga Lands
- Maranoa Balonne
- Fitzroy
- Southern Gulf
- Desert Uplands
- Channel Country

The impact of the workshops on achieving change and improved profitability and sustainability will be difficult to isolate from other natural resource management initiatives currently underway, e.g.: NRM regional bodies funded through the National Action Plan for Water Quality and Salinity and the National Heritage Trust 2.

The Department of Primary Industries and Fisheries will continue to use the GLM workshops as part of an engagement process to improve grazing land management and profitability. Ongoing evaluation of the effectiveness of the workshop will establish the impact of the package on the Meat and Livestock industry in the future.

# 7 Conclusions and Recommendations

Through this project a number of recommendations for the GLM workshop delivery arose:

- Development of locally relevant photo standard based on the land type framework used within the workshop
- Finalise customisation in region across Queensland where a package is not currently available (Border Rivers, Traprock and Northern Tablelands, Condamine and Southern Balonne and Eastern Downs). Versions of the workshop are currently being developed for Mackay Whitsunday's and the Wet Coast and Tablelands.
- A review of the technical manual once all regions within Queensland have a customised version of the GLM workshop. This would involve an update of recent project findings and new publication, cross-referencing to the to participants workbook, and inclusion of

supplementary issues in grazing land management (wetlands, nature conservation and biodiversity, “Stocktake” Monitoring Package).

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