Customising the Grazing Land Management education workshop to the Barkly region of the Northern Territory

Meat & Livestock Australia acknowledges the matching funds provided by the Australian Government to support the research and development detailed in this publication.
Abstract

This project supported the customisation of the existing Grazing Land Management (GLM) Education Package to the Barkly region of the Northern Territory. Meat and Livestock Australia (MLA) supported the initial GLM education package development in 3 regions, and subsequently has collaboratively funded the customisation of the workshop in other regions of northern Australia. The materials for the Barkly version of GLM, including PowerPoint presentations and participant workbooks, were customised through review of relevant research and other reports and consultation with local producers and technical experts. These have been tested and revised through a technical review workshop and producer feedback.
Executive summary

The Grazing Land Management (GLM) education package aims to increase awareness, understanding and uptake of grazing land management strategies and practices that are both profitable and sustainable. A major feature of GLM is its focus on the specific soils, vegetation types and management issues of each region, requiring each regional version of the package to be appropriately customised. This project supported the customisation of the GLM materials to the Barkly region of the Northern Territory, in combination with funding from the Caring for our Country Program.

Customisation of materials involved:
1. Collation of all relevant local examples applicable to the issues covered in GLM, including scientific reports, Ag Notes, Technical Notes and local data sets.
2. Creation of a representative case study property
3. Creation of land system profiles and associated pasture growth tables
4. Review of all the existing GLM materials
5. Holding a technical review workshop.
6. Finalising materials and formatting and desk-topping these in accordance with the agreed format and style.

It is anticipated that the materials will be frequently updated and revised as new information becomes available from both research and development projects and producer experience.
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1 Background

The Grazing Land Management (GLM) educational package was developed to support the adoption of sustainable, profitable grazing practices and strategies. Initial development of GLM materials customised versions for four regions of northern Australia. Since then, versions of GLM have been customised for most regions in northern Australia, and the materials have been valuable for both workshop delivery and as key resources for other extension activities.

The Commonwealth Government Caring for Our Country (CFOC) Program funded the Grazing Land Management Demonstration, Evaluation and Continuation project in the Katherine region between 2008 and 2010. One of the objectives of this project was to produce customised GLM workshop materials for the Barkly region. These resources allowed a project officer and a consultant to be engaged to undertake the process of customising the GLM resources for the region’s climate, soils, vegetation, priority issues and enterprise types. MLA funding supported this process, in particular the desk-topping and publishing.

2 Project Objectives

The project objectives were to:

1. Customise the GLM education workshop package to the Barkly region.
2. Produce the revised workbook, PowerPoint slides and facilitation manual and delivered them to MLA as desk-top edited documents and files ready for use in workshops.

3 Methodology

The customisation of the GLM package took the existing materials and adapted these to suit the Barkly region in terms of climate, land systems and production strategies as per other customisations such as Central Australia and a number of Queensland regions. The process of customisation involved the following actions:

1. Information was gathered regarding weeds, pasture growth, fire history, woody species invasion and other issues of concern in the Barkly region. These were in the form of scientific reports, Ag Notes, Technical Notes, pastoral industry survey results and reports from reliable websites.

2. A case study property that incorporated key issues and management responses. This property was based on a real area of the Barkly that included many of the land systems found throughout the region. Using the actual geographical features, a fictitious boundary and internal fencelines were created, mimicking what would typically be found on any station in the region. Topical management issues for pastoralists in the region [according to the results of the 2004 Pastoral Industry Survey] were included. These included overgrazing around water points, weed infestation, patch grazing and underutilised areas. Options regarding how to rectify these issues were explored and analysed from a financial viewpoint by Breedcow Dynama.

3. Land system profiles and pasture growth tables were created using information collected from geographical surveys (Christian, et al. 1954), knowledge from local technical experts and data collected from SWIFTSYND sites. Not all of the land systems had these sites, so it was necessary to use local knowledge and experience to adjust GRASP modelling for each land
systems. This produced the pasture growth tables used as a key part of the GLM materials.

4. A review of the PowerPoint sides and the seven modules of the workshop notes by a consultant and Department of Resources [DoR] staff was conducted. It was decided that two of the standard workshop modules, pasture development and tree grass balance, would not be developed as stand alone units but built into other modules to cover any necessary issues. The reason for this decision is that pasture development is not widely employed on the Barkly and the majority of the region has a little coverage by woody species.

5. All the materials were reviewed at a technical review workshop which was attended by eight people. The outcomes of this workshop were used to adjust the materials prior to finalisation.

6. The materials were then finalised and sent to be formatted by desk-top publishers and edited for style and consistency in accordance with the publishing standards of MLA EDGE network.

4 Results and discussion

At the beginning of October 2010 a technical review of the GLM workshop materials was held in Tennant Creek. Participants included one Rangelands Coordinator from AACO, one Landcare officer, one NRETAS staff member from the weeds branch and five DOR staff with technical expertise. Another experienced producer was invited to attend the workshop however he was unavoidably detained, although he was able to provide his feedback on the material via email and phone calls.

What the pilot workshop participants liked:

- The inclusion of the Mitchell grass downs of the Queensland information and examples as this area is very similar to the Barkly region of the NT.
- Biodiversity content.
- Case study property.

What could be improved/included:

- The utilisation rate of some of the land systems had to be checked as it may have been overestimated.
- Refinement of the case study property.
- Use of more local photos.
- Information regarding the cost of weed control versus costs of weed prevention.

The workshop participants provided feedback on all of the module content, particularly the modules regarding weeds and fire. These comments were recorded and the workshop content, including PowerPoint slides, Workshop notes and Planning Workbook, were adapted to accommodate these recommendations.

Other aspects of the workshop that were customised to the Barkly region included the pasture growth tables, land system descriptions, pasture growth photostandards, pasture utilisation photostandards and resources included in the GLM toolkit.

Having the local technical experts at the review workshop was very valuable. Where there were scientific examples from the region that had previously escaped attention,
the technical experts were able to provide these which strengthened the messages
the workshop seeks to convey to pastoralists. An example was the inclusion of work
with burning pastures on the Barkly Tableland, which suggested that fire can be, on
occasion, a useful tool in managing Mitchell grasslands. By having the results of the
research available at the full workshop, the topic was openly discussed as the
participants knew the information was locally relevant and applicable.

The recommendations from the pilot workshop were included in the final materials,
which are now ready for use.

5 Success in achieving objectives

Having as many local examples as possible in the GLM materials makes the
concepts of the workshop directly applicable and relevant to participants.
Customisation of the workshop material was completed in accordance with the
publishing standards of MLA EDGEnetwork, with the final result sent to MLA on a
compact disc.

Pilot workshops have been held as a part of customisation processes in each region.
A technical review workshop was held at the start of October 2010, with a
commercial workshop held at the end of November 2010 at Helen Springs.

The Department of Resources encouraged all producers on black clay soils to attend
as this was the first workshop of its type to be held in the region. This workshop was
also partly funded by the Caring for Our Country Program which enabled producers
to attend for only $450 per station for a course that usually costs $2,000. Twelve
producers attended the workshop, representing 31,100 square kilometres.

Participants are required as part of the workshop to progressively fill out an
evaluation form. This form asks the participant’s previous knowledge about each
module, their opinion of the value of various areas of the content and also the quality
of the workshop overall. The rating system used on the evaluation form rates 1 as
indicating no use, 3 as useful and 5 indicates very useful. The Barkly GLM workshop
was rated by participants at 4.1. The Barkly GLM workshop evaluation report,
created from the feedback forms completed by participants, is included in Appendix
1.

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 is considered a very valuable tool to ensure the long term
sustainability of the Barkly region pastoral industry.

At the Barkly GLM workshop an activity that was run on the last day called
Start/Stop/Keep. In this activity participants list on post-it-notes what activities they
will stop doing, what they will start doing and what activities they will keep doing as a
result of what they have experienced over the previous three days. The activity is
anonymous which encourages participants to be honest and open with their ideas.
During this activity six participants stated that they would undertake either start
pasture monitoring or improve their current approach to pasture assessment, four indicated they would stop overgrazing or overstocking, and four stated they would continue to monitor their pastures.

There are a multitude of factors that affect the decisions producers make in regards to their land management between attending the workshop and actually implementing the practices, so it is difficult to predict the actual on ground outcomes based on what participants have stated they intend to change. However, based on what producers outlined they intended to change (see Appendix 2) it could be expected that there will be improved land condition and long term productivity gains for the Barkly pastoral industry as a result of them being able to access the Barkly GLM workshop.

The Department of Resources will continue to support the Barkly GLM workshop to aid in the extension of research results to pastoralists and promote the use of sustainable grazing practices. Ongoing monitoring and evaluation of the workshop and its participants will help assess the impact of GLM workshops and associated extension activities on the meat and livestock industry through time.

7 Conclusion and recommendations

A recommendation for the delivery of this and other workshops in the future is to continuously evaluate every area of the material to determine if there are more recent and/or applicable references or scientific results that could be incorporated. This ensures the pastoralists in the region have the most up to date information from which to develop and enhance their grazing management practices. The customisation of the Grazing Land Management materials has allowed the promotion of sustainable grazing practices to producers in a unique area of Australia that have previously had to individually adapt examples from other regions. This project has therefore provided the producers in this area the understanding of the scientific principles, tools and technical support required to successfully plan and implement improved grazing management practices.

8 Bibliography


9 Appendices

9.1 Appendix 1 Barkly Grazing Land Management Workshop

23rd – 25th of November at Helen Springs Station

Introduction

The Barkly Tableland is an area of approximately 100,000km². It is comprised of 44 properties, and of these, 6 stations were represented at the Barkly Grazing Land Management Workshop, and one station from Western Australia. The total area of these stations is 39,349 km², with a total breakdown of station areas visible as Appendix 1. Below, can be seen Figure 1, a graph depicting the area of land held by each station that was represented at the GLM workshop as a proportion of the entire Barkly Tableland.

![Diagram showing station areas represented at the workshop](image)

**Figure 1** – Stations represented at the Barkly GLM workshop form 30% of the Barkly Region in terms of area.

The presenters of the workshop were Mick Quirk, MLA, and Jenny Milson, DEEDI Longreach. Chris Materne, DOR Alice Springs, was also present as a supporting role for the purpose of local expertise. A full list of participants can be seen as Appendix 2.

The participants were asked to fill out their feedback sheet at the end of each module. The average rating of each module can be seen below in Figure 2.
As can be seen in Figure 1, the Managing Grazing module was on average the most favoured, closely followed by the Planning module. It is also of interest to recognise that the lowest average rating was for the Managing Fire module which was given 3.721. From this, it can be assumed that participants were more than satisfied with the majority of content matter as all areas were rated above ‘useful’.

**Results from feedback sheets and discussion**

**Module 1**
Module one included an introduction into the Grazing Land Management principles and a discussion of the glossary of terms that are commonly used in the GLM material. For this reason, no feedback was required as to the content of this module.

**Module 2**
This module contained information regarding the grazing ecosystem. A large proportion of the module was spent discussing climate, climate drivers and tools that are available that can be used to help understand and predict weather patterns. Some members of the group were already using median rather than average as an indicator of expected rainfall, while this was a new concept to others, it prompted discussion between participants as to why this is a better practice.

A memorable point of Module 2 was the section regarding the nutrient cycle and energy flow, with some participants asking delving questions regarding the biochemical components of these processes. Mick and Jenny handled this well, explaining a complex chemical process in an understandable manner with unforgettable examples.

The graph of results from the feedback sheets completed by the workshop participants can be seen in Figure 3 below.
Customising the GLM education workshop to the Barkly region of the Northern Territory

The grazing land ecosystem

Climate Land Types Land condition Energy flow Nutrient cycling Water cycling Biodiversity Exercises Whole Module

Figure 3 – The ratings given to each section of Module 2 – Understanding the grazing ecosystem. Each participant rated the grazing land ecosystem section highly, as well as the land condition segment.

The land condition section was of high interest with the participants, especially the effect land condition has on safe carrying capacities and the resources that are required to bring a degraded area back into good condition. Participants discussed amongst themselves how this correlation needs to be stressed to their respective head offices to allow more effective and financially efficient management decisions to be made.

Module 3

Managing grazing is the title of the third module, and was carried-over between day one and day two of the two and a half day workshop. This is a largely significant module that prompted discussion and interaction about the participant’s current practices and highlighted common problems, concerns and issues. On the morning of Day two, a local innovative producer, Scott Armstrong, gave a brief presentation of the infrastructure being put in place at the family run station, Beetaloo Station, and the theories behind their recent expenditure. Beetaloo is currently implementing significant infrastructure changes including installing watering points every two kilometres as a mechanism to intensify a traditionally extensively run enterprise to assist in the management of patch grazing and to utilise the land efficiently. Scott explained where the management practices are currently directed and their plans for the future, which follow closely the GLM principles. Scott’s presentation was the focus of much discussion between participants for the rest of the course, particularly regarding the effect uniform stocking rates may have on different land systems. Having a well known, progressive, local producer give a brief presentation on their current practices was beneficial to the absorption of the workshop content by the participants.
Figure 4 below, provides a visual assessment of how participants valued the module content.

![Avg rating Mod. 3](image)

**Figure 4** – The ratings given to each section of Module 3 – Managing Grazing. The participants found this module extremely valuable which was demonstrated by the feedback received. The exercises were rated nearly as highly as the stocking rate section.

A failure on my behalf was to not fully understand the information given to me by my supervisor regarding the cost benefit of adding additional water points. This was commented upon by one participant in the feedback sheets.

Module 4
Managing with fire was covered on day two. Traditionally this area of Australia is not burnt often for management practices and considerable effort is made to extinguish fires caused by lightning strikes that occur on the Mitchell Grass downs. Although recent research results indicate this may not be the best practice for effectively managing Mitchell grass on black soils. Chris Materne, et. al 2008, found that a late dry season burn can be beneficial to grazing management as it assists in removing rank pasture, controlling wood weed infestations and can be used to manipulate grazing patterns. This information was incorporated into the Barkly GLM customisation. Figure 5, below, demonstrates when the Barkly region was last burnt between 1997 and 2009.
Figure 5 – Years since last burnt 1997 – 2009 of the Barkly Region. Much of the Mitchell Grass Downs area of the Barkly Region has not been burnt for over 13 years. Source: NAFI website

Figure 6 below, provides an indication as to the participant’s thoughts on the issue.

![Avg rating Mod. 4](chart)

Figure 6 - The ratings the participants of the Barkly GLM workshop gave to each section of Module 4 – Managing with fire.

It is interesting to note that this module was not received as well as the other modules, however, it is still considered useful on average according to the feedback provided by the participants. The highest rated subject area of Module 4 was the area of using fire to manage the tree/grass balance as woody encroachment from Gidyea and Turpentine are becoming a management issue in some areas.
Module 5
Managing weeds was presented on the morning of the third day. On top of the standard slide presentation, local Barkly Landcare Officer, Naomi Wilson, provided a brief slide show demonstrating the cost effectiveness of preventing weed occurrences on stations and the implications, both financially and environmentally, of not treating weeds until an infestation is present. Below is Figure 7, representing the average of the participants' thoughts on each section of Module 5.

![Figure 7 - The ratings the participants of the Barkly GLM workshop gave to each subject area of Module 5 - Managing weeds.](image)

The exercise for Module 5 asked participants to think about how the case study pastoralists could prevent weeds from being brought onto their station. This was a great exercise as it showed the group that the onus is on them to prevent weed occurrences on their properties, rather than the visiting people such as contractors.

The participants of the Barkly GLM workshop did not perceive themselves to have any significant weed infestations at the moment although they are able to acknowledge that knowledge of how to prevent weed infestation is highly valuable. This is reflected through the consistently high results provided by the participants through the feedback sheets regarding the managing weeds module.

Module 6
Module six is the planning module. Participants were provided with maps of their stations including infrastructure and land system layers. Figure 8, below, indicates how the participants received the information and tools.
This module was well received however it could have been better. The maps provided to the participants had numerous errors. Some of the errors of the maps and others from this module included:

- No grazing radii around the water points on the maps
- Paddocks missing from more than one station on the maps
- Safe land system utilisation rates were not provided
- There was not a pasture growth module for the Sylvester land system
- The ‘What to use when you don’t have…’ spreadsheet was not provided with the maps or the pasture growth tables.
- The ‘What to use when you don’t have…’ spreadsheet was not explained previous to starting the planning activity.

As it was, having grazing radii on the maps provided to the GLM workshop participants is not a standard procedure. This requires extensive consultation between the GIS mapping person and the producers before this can be completed. This issue could have been avoided had there been better communication between myself and the mapping person. Because of this, there was not the necessary information or tools for participants to get the maximum benefit from the activity, despite the participants rating this module highly.

**Workshop overall**

Overall, the workshop was beneficial according to the feedback sheets completed by the participants.
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Workshop overall

From the feedback provided, it could be concluded that the participants found the presenters to be knowledgeable in the subjects presented, were more than satisfied with the catering and the venue and rated the presentation and conduct of the workshop highest overall in this section, with an average result of 4.75.

Overall comment on the workshop

- “Excellent and very informative. Presenters had extensive knowledge” - Michael Johnson
- “Very informative workshop, presenters very willing to help and pass on their knowledge” - Ross Myhill
- “Great workshop to do over three days. Need to spend more time on module 7 (planning)” - Rhys Jinks
- “Overall the workshop was good, but was a huge amount to take in in one sitting” - Todd Cordie
- “Great venue, well run course” - Ryan Gurney
- “Very professionally presented - all presentations were helpful and relevant to ‘real’ life” - Jeff McInnmey
- “Very knowledgeable presenters. Thank you Jenny and Mick” – Richard Peatling

Why did you attend the workshop?

- “Was asked to by my manager” - Andrew Coleman
- “Better my knowledge” - Nick Reimers
- “A need to develop knowledge on grazing systems to increase bottom line” - Geoff Murrell
- “Attend the workshop to understand and develop more skills which I can put into practice” - Rhys Jinks
- “To better my knowledge and understanding of land and pasture management” - Peter Raeleigh
- “To learn more, but also to make better management decisions” - Todd Cordie
- “Opportunity was presented so I took advantage” - Jeff McInnmey
- “To better improve my understanding of land management in the Barkly District” - Ryan Gurney
What would you say to others to encourage them to attend / why do you think they should attend?

- “Well worth going to. You will definitely learn something” - Andrew Coleman
- “Very interesting” - Nick Reimers
- “To evolve and run a sustainable business you must have good rangelands management” - Michael Johnson
- “Forage budgeting, land condition assessment, pasture yields” - Geoff Murrell
- “People should attend this workshop to understand and gain more knowledge in the beef industry” - Rhys Jinks
- “Integral to good management - you must attend” - Richard Peatling

What have you found most useful?

- “Days two and three and the discussion by people in the learning group” - Andrew Coleman
- “It’s all useful” - Nick Reimers
- “Grass budgeting” - Michael Johnson
- “ABCD framework and how important it is to keep land in good condition” - Ross Myhill
- “Forage budget calculations” - Ben McGlynn
- “Forage budget and long term cattle carrying capacity calculator” - Peter Raeleigh
- “Land and pasture assessment and calculating the pasture yield” - Todd Cordie
- “Land assessment, pasture assessment, grass identification” - Jeff McInnerney.
- “Matching stock numbers” - Ryan Gurney
- “Property planning” - Richard Peatling
- “Difficult to answer as I did not know what to expect” - Andrew Coleman
- “A lot more in-depth than I thought, climate and land condition” - Ross Myhill
- “Know when other workshops are on that will give me more skills. More information on Module 3, 6 and 7” - Rhys Jinks
- “Co-producer experience” - Ben McGlynn
- “A copy of the slides” - Todd Cordie
- “The knowledge to manage land types with commitment” - Ryan Gurney
- “Resources provided. Good humour of the presenters” - Richard Peatling

Are there additional resources or support that you would like?

- “Not that I can think of at the moment” - Andrew Coleman
- “Satellite mapping” - Michael Johnson
- “A follow up in time to keep everyone on track and motivated to keep on top of pasture management” - Ross Myhill
- “More matches” - Ryan Gurney
Conclusion
Although there was room for improvement and areas that could have been better prepared, overall, it has to be concluded that the Barkly Grazing Land Management Workshop was a success. This can be determined by the following facts:

- 11 participants coming from 7 stations, with two participants from one station travelling approximately 5 hours to get to Helen Springs for the specific purpose of attending the workshop
- 30% of the region was represented at this workshop
- On average none of the workshop material was rated less than three (useful)
- The comments section of the feedback sheet is strongly positive
- Unofficial feedback via word-of-mouth has also been strongly positive from some of the most progressive producers who attended.
- One of the headstockman who attended the course relayed the course content to his stockcamp the very next day.

The composition of workshop attendants varied in age, position (e.g. manager, overseer and headstockman) and time spent on the station they were from. It is not only beneficial to the region to have such a diverse group of producers attend a workshop such as the Grazing Land Management workshop, it is beneficial to the industry, participants are able to take the principles with them when they move stations, regions or even states.

Appreciative acknowledgements must go to the Caring for our Country Program, NTCA, MLA for financially supporting the customisation of the GLM material to the Barkly, DEEDI, Melissa Driscoll of MD Rural Solutions, Barkly Landcare and NT DOR and its staff, particularly Trudi Oxley, Chris Materne, Robyn Cowley, Tracy May, Caroline Pettit, Whitney Dollemore and Ellena Hannah for their assistance in providing such a successful GLM workshop; one to be remembered.

Grazing Land Management – Choosing your future
Ensuring that what you do today enhances land condition, improves production and strengthens your business for tomorrow

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<tr>
<th>Barkly GLM Station areas</th>
<th>Area (km²)</th>
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9.2 Appendix 2 – List of participants

From these stations were 12 participants:
- Richard Peatling (Overseer/Head stockman) – Alexandria Station, NAPCo
- Michael Johnson (Manager) – Avon Downs, AACo
- Rhys Jinks (Head stockman) – Avon Downs, AACo
- Geoff Murrell (Manager) – Helen Springs Station, SK Kidman & Co
- Ross Myhill (Head stockman) – Helen Springs Station, SK Kidman & Co
- Ben McGlynn (Manager) – Brunchilly Station, SK Kidman & Co
- Peter Raeleigh (Head stockman) – Brunchilly Station, SK Kidman & Co
- Andrew Coleman (Head stockman) – Brunchilly Station, SK Kidman & Co
- Ryan Gurney (Overseer) – Soudan Station, NAPCo
- Todd Cordie (Head stockman) – Soudan Station, NAPCo
- Nick Reimers (Head stockman) – Ruby Plains, SK Kidman & Co

The presenters of the workshop were Mick Quirk (MLA) and Jenny Milson (DEEDI Longreach)

Department of Resources staff present included:
- Pieter Conradie – Alice Springs / Tennant Creek Pastoral Production Team Leader
- Cassie Duggan – Technical Officer (Tennant Creek)
- Casey Collier – Technical Officer (Tennant Creek)
- Chris Materne – Pastoral Production Officer (Alice Springs)
- Jodie Ward – Grazing Land Management Officer (Katherine)
9.3 Appendix 3 - Start/stop/keep doing for Helen Springs GLM workshop

23-25 November, 2010

**Stop Doing**
- Making assumptions
- Overgrazing paddocks when we don’t have to
- Judging pasture condition for quantity instead of quality as well
- Thinking I have more feed than is really available
- Overstocking
- Overstocking paddocks
- Doing things the same way they have always been done
- Doing what has always been done
- Assessing pasture while driving
- Leaving heavily grazed areas grazed for too long
- Thinking the Barkly has consistently good rainfall
- Smoking!

**Keep Doing**
- Spelling paddocks
- Questioning my manager on how his quadrat/pasture assessment is going
- Wet season spell
- Monitor pasture
- Rotate to rest
- Observing pasture quality
- Checking the pasture condition
- Fully assessing pasture growth
- Keeping on top of weeds
- Continue to use a moderate stocking approach
- Spelling country and awareness of not hammering country
- The country developing
- Utilisation of pasture
- Spelling of paddocks over the wet

**Start Doing**
- Plan for future development
- Assess pasture
- Learn more about property plan
- More pasture and land assessment
- Making the pasture more accessible for cattle
- More consideration of land condition
- Observation of weed populations and spread
- Paying attention to the variety of grass species as opposed to the two or three main ones
- Assessing pasture/land using ABCD framework
- Pasture budget
- Take notice of weeds (awareness)
- Understand pasture species better
- Scientific names of plants
- Assessing and measuring land condition
- More in-depth pasture monitoring
- Burning
- Measuring land condition and utilisation
- Walking away from the road or fence to assess pasture
- Revisit property plan and start strategic weed plan
- Utilising pasture better