

## **Development of a grazing land management education program for northern Australia's grasslands and grassy woodlands**

C.R. Chilcott, M.F. Quirk, C.J. Paton, B.S. Nelson and T. Oxley

*Queensland Department of Primary Industries and Fisheries, Animal Research Institute, Yeerongpilly, Queensland 4105, Australia, Email: Chris.Chilcott@dpi.qld.gov.au*

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**Introduction** Recognition of the potential to enhance grazing land management to meet the goal of sustainable beef production has been increasing over the past decade. Recognition of the relationship between poor land management and negative off-site environmental impacts, such as soil erosion and a decline in the condition of rivers and adjacent near shore coastal areas from sediment transport, has increased also. This concern has matured somewhat to include the critical link between land condition and production, and the threat to sustainable carrying capacity that comes from declining land condition. Concurrently, interest has increased in optimising the use of pasture, e.g. through the development of infrastructure (watering points, fencing), through more pro-active management e.g. alternative grazing systems, spelling of pastures, and through pasture development. In fact, it can be argued that achieving production goals while improving and maintaining the health of the land has become the major on-property issue for northern Australian graziers.

The increasing demand for better information and decision tools to support grazing land management has been accompanied by investment into relevant research and development (R&D). However, despite this investment there has been limited uptake of new management information. Consequently, this has limited further investment into strategic, long-term R&D. An education product was developed to address the lack of adoption of management information. The product was targeted specifically to address the needs of grazing land management as identified by graziers in northern Australia.

**Materials and methods** The Grazing Land Management (GLM) package was developed in response to identification by industry (Meat and Livestock Australia) of the need for a 'product' that would enhance management of grazing lands in northern Australia by transfer of information to graziers. This 'product' includes: (1) description/presentation of the principles, concepts and relationships underlying sustainable grazing land management; (2) the technical process or framework that supports planning, decision-making, and implementation; and (3) the design and delivery that would both interest and genuinely assist producers. Decision support and educational tools were developed to aid the adoption of principles, for example, determination of the (sustainable) carrying capacity of land types within a property's paddocks according to land condition. The financial implications of management decisions also were assessed using a case study property with representative land types and a grazing business structure appropriate for the local region. The GLM education package is based on a workshop format and includes a technical manual, participant's workbook and technical manual.

**Results** Development of the GLM package highlighted the need to provide regionally-specific information on which graziers could make informed decisions. Accordingly, education packages have been developed for specific regional ecosystems, based on (water) catchment boundaries. Four regional packages - the Burdekin Catchment, Burnett Catchment, Victoria River District and Mitchell Grasslands of Queensland have been completed and delivery to graziers continues. GLM packages for another five regions (Queensland Murray-Darling Basin, Fitzroy Catchment, Northern Gulf Catchment, Mulga woodlands, and Central Australia rangelands) are being developed now.

**Conclusions** The development and delivery of GLM packages has allowed past R&D efforts to be communicated to graziers in a manner that facilitates adoption of sustainable land management practices. A number of unique tools were developed including a land condition framework, a carrying capacity calculator, and land-type information sheets. The success of the package (identified by graziers and R&D organisations) has attracted additional investment for further development and development in other regions. Importantly, workshop participants have indicated overwhelmingly a willingness to adopt land management practices or adjust stocking rates according to the principles promoted in the education program. This highlights the success of the program as a trigger to adopt improved land management, and the need for on-going extension support to ensure sustained improvements in land condition over the longer term.