

Benchmarking practices support grazing practice change

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Abstract. Grazing BMP is a benchmarking program available to beef cattle graziers in four focus catchments in Queensland. From 2013 to 2015 over 1000 grazing businesses completed Grazing BMP modules. The benchmarking standards are based on the best available science, current regulations, codes of practice and sound business principles. Program delivery and follow-up extension support is focused in the priority Great Barrier Reef (GBR) catchments. Grazing BMP standards have been mapped to the GBR water quality management practice framework that aligns them against modelled water quality outcomes for the range of grazing practices. Independent program evaluation identified that 82 per cent of survey participants had implemented at least one change because of participation, with the benefits of the program being improved decision making, identification of improved practices and peer networking opportunities. Of the practices most closely related to water quality improvement, 30 per cent said they had made a change in grazing management.

Keywords: Grazing, Best management practice, Benchmarking, Practice change, Extension coordination, Water quality improvement

Introduction

The Grazing Best Management Practice (BMP) program is a voluntary, industry-led process that assists beef cattle graziers to identify improved practices to enhance their long-term business profitability and sustainability. Grazing BMP allows a grazier to undertake a strategic review of their entire grazing business with the opportunity to identify improvements in land management, animal production, animal health and welfare and people and business management practices. At its core, Grazing BMP has been designed to foster an environment of continuous improvement through the benchmarking process as well as the provision of extension support for graziers to improve their practices.

The motivation for Queensland Government funding is to achieve improvements in the quality of waters entering the Great Barrier Reef lagoon as a component of the Reef Water Quality Protection Plan (Queensland Department of Premier and Cabinet 2013). As well, the Queensland and Australian Government fund follow-up training and extension. The program has been designed to allow the industry to transition away from reef regulations (Queensland Government 2009) to a voluntary industry-driven assurance program. It is anticipated that the aggregated grazing industry BMP data will, over time, provide evidence of sound environmental and ethical practices to Governments, consumers and the community.

Modelled on other successful industry BMP programs such as *myBMP* (Cotton Australia 2016), Grazing BMP assists grazing businesses to benchmark their practices, compare their performance against industry best practice and identify opportunities for improvement (through the completion of action plans). Grazing BMP (Grazing BMP 2015) is currently divided into five modules: Soil Health, Grazing Land Management (GLM), Animal Production, Animal Health and Welfare, and People and Business. For each of the 157 standards, graziers self-assess their business practices for each standard: below, at, or above industry practice. Participants have the opportunity to identify a standard where they seek to improve through action plans.

Grazing BMP delivery

Grazing BMP project delivery was initially focused in the two largest reef catchments of the Burdekin and Fitzroy; expanded to Burnett Mary in 2014 and in 2015 moved into South East Queensland Catchments (motivated by improving Moreton Bay water quality). Grazing BMP is delivered through a partnership of AgForce (Queensland's grazing industry organisation), the Queensland Department of Agriculture and Fisheries (DAF) and four regional natural resource management groups (NQ Dry Tropics, Fitzroy Basin Association, Burnett Mary Resource Group and SEQ Catchments). The program's success has seen a growing demand for its delivery outside of the project catchments.

Grazing BMP phase I ran from 2013 to June 2014 with 616 grazing businesses participating in the Fitzroy and Burdekin catchments. This number represented 19 per cent of Burdekin's graziers and 15 per cent of Fitzroy's graziers. Those who completed the GLM module manage a combined total of 3.4 million hectares. In the first 12 months of phase II (2014-17), 415 grazing businesses, who managed a further 3.3 million hectares, completed modules.

Participants complete modules online at www.bmpgrazing.com.au in either a facilitated workshop or a one-on-one environment. Both modes are delivered by accredited industry facilitators (project staff). The design of the workshops and one-on-one module completions is primarily based on Coutts and Roberts (2011) group facilitation/empowerment and information access models of extension. Whilst some technical information may be presented, the workshops are not training events. Through the process of benchmarking, participants identify practices they may want to improve, identify additional information and skills needed to make changes and identify where further support is available.

At Grazing BMP workshops, participants complete an 'expression of interest' form where they select options for training and extension support. This enables project staff to design and better coordinate training and extension follow-up in response to identified grazier needs. Grazing BMP delivers on one of Coutts' recommendations (2014) for BMP and Farm Management Systems, to enhance the coordination and collaboration for the delivery of extension and education.

Monitoring and evaluation

Monitoring and evaluation have been integrated into the Grazing BMP project from feedback gathered at workshops, annual grazier surveys and an end of phase I external evaluation. Surveys have been designed to obtain both participant feedback on their Grazing BMP 'experience', suggestions for improvement and the impact that Grazing BMP has had on fostering practice change. By the end of 2015, the program had conducted three external surveys. A telephone survey of 40 graziers was completed as a component of the evaluation of phase I of the program (Roberts Evaluation 2014). Twenty-nine participant graziers were interviewed face to face in late 2014 (Grazing BMP Report 2015). The results of the 2015 external participant survey are presented in this paper.

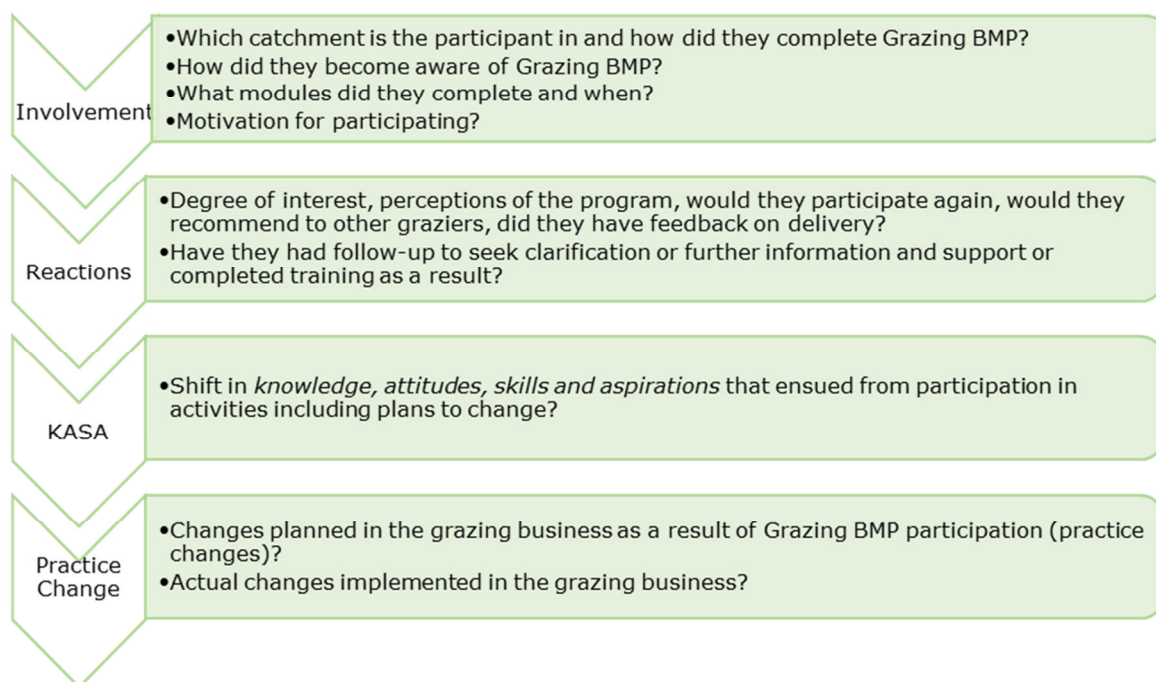
Evaluation methodology

The 2015 Grazing BMP participant survey was conducted with 69 graziers interviewed across the three project catchments of the Burdekin, Fitzroy and Burnett Mary. Interview participants were randomly selected from project records with a greater weight towards the Burdekin and Fitzroy catchments. As the program had only been delivered in the Burnett Mary for twelve months a reduced number were selected and interviewed, although 15 interviewees was considered a minimum sample to provide confidence in the results and make meaningful comparisons across the three catchments. Only those who had completed a minimum of three modules were considered, however, of these, the majority had completed all five modules. An equal number of Burdekin and Fitzroy participants who were randomly selected from the database was provided to the evaluator who then made contact with the participants and interviewed those that agreed to participate. Very few declined to participate. This process added to the randomness of selection. The final break-up of total survey interviewees was: 41 per cent from the Burdekin, thirty six per cent from the Fitzroy and twenty three per cent from the Burnett Mary. Project resources influenced the total number of participants interviewed rather than being representative of sample size from each catchment.

In line with the project's mantra of continual improvement, the 2015 standardised questions were refined from the 2014 telephone survey and the face-to-face participant survey conducted in late 2014. The questions were structured to capture where and how participants completed Grazing BMP, training completed, planned and implemented practice change in their business and their overall views of the program (refer figure 1).

Bennett's Hierarchy (Bennett 1975) guided the order of questions and question focus, which provided a clearer understanding of a grazier's stage of practice change. The DAF Paddock to Reef team provided comments on the questions and examined the opportunity to capture data for subsequent Reef Report Cards (Queensland Government 2014).

The 2015 survey was conducted by an external evaluator who interviewed the graziers in either a face-to-face format or via telephone, with approximately 55 per cent of interviews conducted face-to-face. When requested, questions were emailed to graziers prior to the survey. All interviews followed a standardised set of questions with results entered into a database linked to the Grazing BMP project.

Figure 1. Hierarchy of survey questions

Results

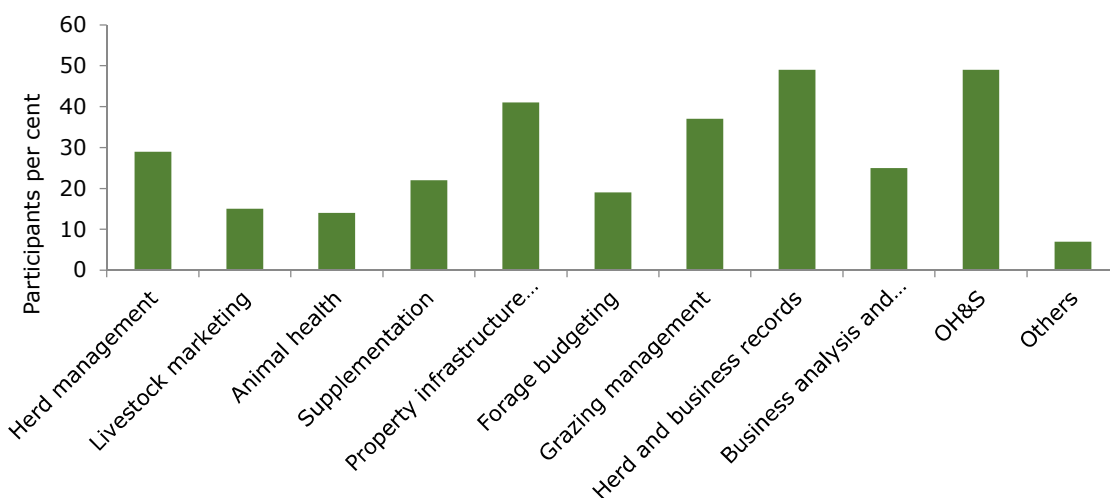
Of the 1,000 grazing businesses that had undertaken Grazing BMP at the time of the survey, 30 per cent had completed all five modules (Long 2015). The majority of those surveyed completed their modules in the preceding 18 months. There are two primary means of completing Grazing BMP modules; with 86 per cent of the total completing modules in a workshop format and ten per cent completing modules with the support of an accredited industry facilitator in a face-to-face environment. The balance had completed modules independently through the website.

Participants were asked about their motivation for completing Grazing BMP with 80 per cent nominating a desire to improve their management practices followed by a desire to compare their business against industry standards (68 per cent). Fifty percent indicated they wanted to learn more about the program whilst 32 per cent were interested to see how they could access funding. One notable theme in the other responses from Burdekin graziers was participants not wanting the return of a regulatory environment for their grazing business (Queensland Government, 2009). Pannell (2008) concluded that negative incentives such as regulations can come at a private cost. Under the Queensland Government reef regulations, Burdekin grazing landholders were required to prepare an environmental management plan specifying their management of a number of regulated activities. Accordingly, some participants identified the voluntary Grazing BMP process as a preferred alternative and at a lower private cost to regulations.

Participants' reactions to completing the modules were positive with 71 per cent rating their satisfaction at either a 6 or 7 on a scale of 1 to 7. Feedback from the workshop environment was that workshop discussion (peer-to-peer, speakers and with facilitators) was considered beneficial and reinforced learnings and raised awareness of new practices. Questions seeking participant views of the program and return participation were asked. An overwhelming 94 per cent of participants said they would recommend Grazing BMP to other graziers and 86 per cent said they would complete a Grazing BMP reassessment. The program advocates that graziers complete a Grazing BMP reassessment at least every two years.

In response to the question of what changes participants planned to implement in the next 12 months, most participants identified more than one change with recording keeping, farm safety procedures, grazing management and property infrastructure being the top four (refer figure 2). The practices were grouped by topic based on the module key areas (Grazing BMP 2015). Of those interviewed, 85 per cent identified they had made at least one change in their business.

Figure 2. Planned changes*

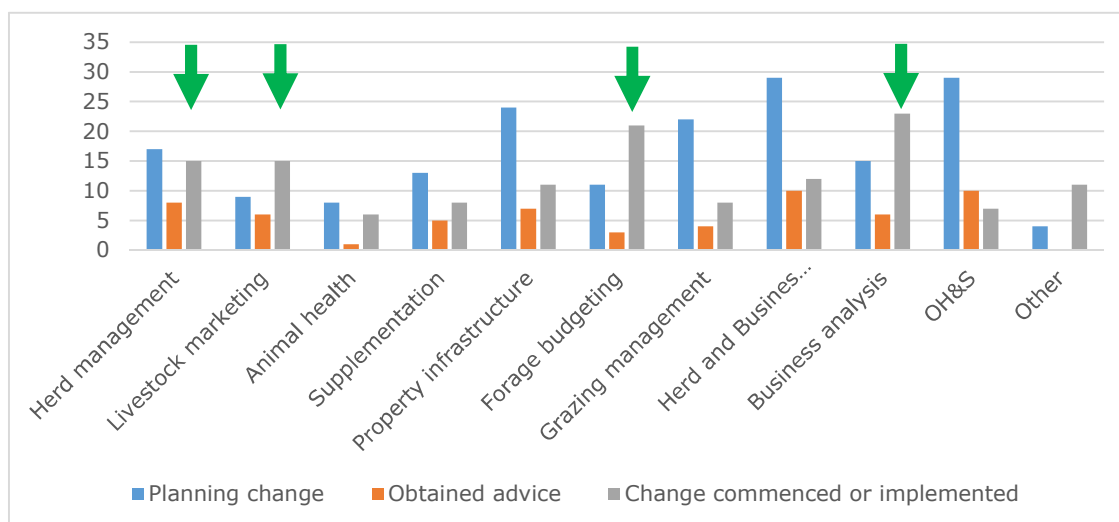


*Participants could identify more than one area of planned change.

Of those that had planned a change, 77 per cent said they had already sought additional advice or information on the topic with many having sought information on more than one topic. The top two topics for those seeking information and advice matched the planned changes of record keeping and farm safety procedures (OH&S). As part of seeking additional information, 40 per cent of participants had completed training, however 78 per cent said that they were still seeking training and/or additional information across multiple topics.

A series of questions focused on what changes participants had implemented as a result of Grazing BMP with 82 per cent reporting making at least one change in their grazing business. Record keeping (both herd and business) and property infrastructure (e.g. fencing, water points) were the two leading areas of change. Figure 3 presents a comparison between those that had planned a change, those that had obtained additional information/advice and those that had commenced or implemented their planned change. It should be noted many had only completed Grazing BMP in the past 12 months.

Figure 3. Comparison of participants planned changes, those that obtained information and those that had commenced or implemented change as a result of Grazing BMP



In the highlighted topics in figure 3 there were four topics in which there were a similar number, or more, participants who had commenced or completed a change than planned a change:

- herd management
- livestock marketing

- forage budgeting
- business analysis.

The highlighted results suggest that for these topics, participants had made their planned change a priority for their business and, where needed, sought the additional information or held the knowledge to proceed to implementation. In contrast, in the other topics the majority of participants were either still seeking additional information, had yet to implement the change or were unable to implement the change.

Table 1 contrasts the difference between planning and implementing a change for all topics. The grazing management topics are separated as they have the greatest influence on improved water quality outcomes on-farm and in the Great Barrier Reef lagoon, which is the policy driver for the investment of public funds in Grazing BMP. For all topics graziers had implemented proportionally more changes. In contrast for the grazing management topics a far lower percentage had implemented the change, yet most were not seeking additional information.

Table 1. Graziers implementation of changed practices

Grazing Businesses	Grazing management*	All topics
Total surveyed	69	69
Businesses prompted to plan a change	37	58
Businesses who had undertaken training or sought additional information	17	53
Business who were still seeking training or additional information	4	53
Businesses who had commenced and or implemented a change	21	57

*Practice topic most directly influencing water quality outcomes

Many grazing management practices are more complex, involve longer planning and implementation phases (examples include: construction of additional fences and water points, reducing the number of cattle stocked). Rolfe and Gregg (2015) identified there are financial costs in both the capital expenditure and/or foregone income through changes in grazing management such as reducing stocking rates and wet season spelling. Additionally Rolfe and Gregg (2015) identified that there are greater business risks associated when implementing changes relating to grazing management in contrast to implementing other practices such as collecting additional records. Additionally Star et al. (2015) presented economic modelling indicating that many improved management practices are financially rewarding, yet landholders with dated management practices remain hesitant to change. The results showed that landholders' financial returns can vary substantially across different 20-year periods of a climate cycle, demonstrating the variability in expected returns may be an important reason why landholders are cautious about changing their management practices. Equally Panell et al. (2006) identified the long-term nature of land degradation and the practices to ameliorate the degradation can be slow to take effect. Supporting this pattern Rolfe et al. (2016) recently identified that a decline in grazing land condition is often highly visible to extension and scientific agencies, however, land degradation can be largely 'unseen' by many producers.

In summary, the survey results presented in table 1 illustrate that many graziers may have the knowledge and skills required to make grazing management changes, but there are other influences that delay the implementation of the identified practice change, and consequently improvement in land condition and water quality.

Conclusions

The foundation of Grazing BMP is an opportunity for graziers to complete a strategic review of their grazing business in a non-threatening environment through assessing themselves against industry best practice. Where a grazier identifies they require additional information and a change they want to implement, the project responds through the provision of follow-up training and extension support. Rolfe and Gregg (2015) identified information gaps as one of the barriers to the adoption of improved practices and Pannell et al. (2006) identified that where follow-up support is provided it enhances the likelihood of a practice change. These evaluation results identified both a positive participation experience and general endorsement of Grazing BMP by those surveyed. More importantly, many participants identified Grazing BMP as having stimulated them to plan and implement changes in their grazing business. Whilst Grazing BMP is funded to support improvements in reef water quality (Grazing BMP 2014) graziers identified the need for extension support across all areas of their business to bring about meaningful

practice change. In support of a whole-of-business capacity building approach Marshall et al. (2011) identified there was a positive relationship between landholders strategic skills, environmental awareness and social capital and the take-up of new practices.

Finally, the survey data identifies a clear difference between the implementation of grazing management changes, which have more public benefit than the business related changes that have a clear private benefit. Given the project is funded as a policy instrument to improve reef water quality, there is a critical need to develop policy options that not only support graziers to identify a need to change, but also supports them to implement grazing management practice changes.

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