# Measurement of Landholder Knowledge and Skills in the Desert Channels Region





## **EXECUTIVE SUMMARY**

A survey of landholders about agricultural management practices was conducted to determine how attitudes, skills and knowledge are changing based on meetings, workshops and field days conducted in the Desert Channels Region. The survey was a self-assessment by landholders to obtain information that would represent practices in relation to managing for change. The survey targeted landholders from across the region who have participated in project activities and attended DCQ field days and workshops.

Survey responses have been collected from representative landholders on four occasions to identify changes in knowledge and skills over time. The questions are identical allowing for statistical review of findings.

The findings from this survey are consistent with subjective advice from workshops and one-on-one interactions with landholders and indicates that there remain significant areas where landholders have not embraced emerging opportunities to better refine critical decision-making areas. Practices have improved across many categories over time; however there has still been limited adoption of best management practices in many areas. More work is required to fully understand the blockages; however, landholders do have confidence in their own decision-making abilities, knowledge base and ownership of the decisions they make. Most properties surveyed carried stock year-round, including during the dry season.



The Farm Business Resilience Program is jointly funded through the Australian Government's Future Drought Fund and the Queensland Government's Drought and Climate Adaptation Program.

Decision making about stocking rates was mostly determined using broad assessments of pasture and long-term experience. A variety of methods were used to determine stocking rates, but past experience was the primary driver of their decision. Control of prickly acacia has increased within the region over time.

Management of areas in poor or very poor condition involved the reduction of stocking rates and, in some cases, the exclusion of stock completely. Infrastructure and management of grazing in waterways was variable but has shown improvement since the baseline survey. Emphasis placed on reducing erosion risk has generated some improvement in practices since the previous measurement but results still vary as does gully management.

The results demonstrate the need for ongoing engagement with and support for landholders to adopt improved grazing management practices given regional trends of declining land condition. Key production and ecological indicators such as groundcover and perennial grass species composition have been identified as under performing. Grazing management impacts strongly on these factors.

## **BACKGROUND AND OBJECTIVES**

The skills and knowledge development of livestock business owners and managers are a key driver of practice change and landholders' implementation of improved management to maximise their business resilience. The objective of the survey was to reassess the knowledge and skills of landholders in the region in order to understand the differences capacity building activities have made to landholders and their ability and practices for managing change and guide better delivery models for the region.

## **SURVEY METHOD**

Landholders in the Desert Channels Region were surveyed to provide a representation of management practices in the Desert Channels management area. The landholders surveyed included the participants in DCQ projects who have attended DCQ field days and workshops to determine the success of DCQ activities in improving agricultural management practices, skills and knowledge across the region.

## **SURVEY RESULTS**

A summary of the results is provided below, the attached appendices provide a graphed view of results.

#### **Carrying Capacity**

71.33% of survey participants indicated that they determine their carrying capacity through their experience over time and is consistent with the generally accepted view on what their country can carry. 14.33% indicated that their carrying capacity is determined using property maps indicating land types, observed trend in land condition and historical stocking rate information, recorded in paddock book or similar. The remaining 14.33% indicated that their carrying capacity is determined using property maps indicating land types, infrastructure, assessments of land condition (e.g. ABCD), and distance to water and historical stocking rate information, recorded in paddock books or similar, is used to inform assessments. These results show deviation from the baseline survey which showed no landholders who considered carrying capacity using property maps, land condition, and distance to water. Additionally, as opposed to earlier surveys, no landholders indicated that they do not consider carrying capacity at all. This change demonstrates a significant outcome in terms of improvements in landholder skills and knowledge.

#### **Stocking Rates**

33% of survey participants indicated that they determine their stocking rates through a broad assessment of pasture availability and cattle numbers across the whole property before the dry seasons starts. The remaining 67% of landholders determined their stocking rates using long-term experience in conjunction with paddock diaries or similar records to assess and adjust stock numbers in every paddock before the dry season starts to ensure adequate residual pasture and groundcover at break of season. These results show an improvement on baseline survey results as a greater proportion of landholders indicated they were using better management practices to determine their stocking rates across the region.

#### **Prickly Acacia**

Of the landholders surveyed about the presence of prickly acacia on their properties, 17% indicated that there was no prickly acacia present, 50% indicated that they had low levels, 17% had quite frequent occurrences and the final 17% had high levels of prickly acacia. This is an improvement on the results collected in the baseline survey and indicates an improvement in the proportion of landholders undertaking weed control works on their properties. The reduced proportion of landholders indicating they have frequent prickly acacia infestations indicates an improvement in weed control practices across the region.

#### Management of poor (C) and very poor (D) condition

Of the landholders surveyed, 29% indicated that while they have identified land in poor condition only minimal land management activities have been undertaken. However, 43% of survey respondents indicated that that not only have they identified the areas in poor condition, but they have also reduced stocking rates or excluded stock in those areas. The remaining 29% of the landholders indicated that they had no land in declining condition on their properties. The results indicate that most landholders with land in poor or very poor condition had reduced stocking rates in those areas.

#### Infrastructure used to control grazing in paddocks with waterways

The survey results show that of the landholders surveyed, 43% have no fencing or off-stream waters to control grazing in their paddocks and management is the same as the rest of the property. A further 29% of survey participants indicated that there is limited fencing of these areas. The remaining 29% indicated that most waterways are fenced off from cattle and/or other measures are used (watering points, supplement feed) to attract cattle away from these areas. The results demonstrated an improvement in the region from the baseline survey which showed a greater proportion of landholders that manage their waterways the same as the rest of their property. This indicates that there has been some success in promoting improved management practices across the region.

#### Management of paddocks with waterways

Of the landholders surveyed, 29% indicated that there is no special management of paddocks with waterways, they are managed the same as the rest of the property. A further 14% indicated that some spelling of watercourse paddocks may be undertaken, and stocking rates do not change. These landholders implement wet season spelling occasionally/every few years and a regular pest and weed management strategy is undertaken. Another 43% of survey participants indicated that the stocking rates within these paddocks are reduced and wet season spelling is undertaken regularly and in conjunction with weed and pest control programs. The remaining 14% indicated that they had no frontages or wetland on the property. This demonstrates an improvement in the management practices since the collection of the baseline survey. This shows an improvement in the management practices employed by landholders in the region over time.

#### Management of roads, tracks and fence line features to reduce erosion risk

Of the landholders surveyed, 57% had 'whoa boys' or equivalent in place on some roads to reduce erosion risk. A further 14% had 'whoa boys' or equivalent in place on all areas where needed and avoided sodic subsoils. The remaining 29% of survey participants indicated that all roads, tracks and fence lines are planned and built with attention to the erosion risk and that where possible tracks run on ridges/ along contours avoiding highly erodible sodic subsoils and 'whoa boys' or equivalent are in place on all areas where needed. The most recent survey indicated that some landholders were falling short of the benchmark set by the baseline survey. However, the proportion of landholders implementing more favourable practices had improved on the levels of the 2020 and 2021 measurements. This indicates that the increased emphasis placed on the reduction of erosion risk has been successful.

#### Management of catchment areas or paddocks with gullies

The most recent survey of landholder management practices indicated that 43% of landholders surveyed managed catchment areas or paddocks with gullies no differently than the rest of their property. A further 14% of survey participants responded that stocking rates are reduced to increase groundcover in gullied areas of the paddock/property and no remediation of the gully is undertaken. 29% of participants indicated that stocking rates remain unchanged in the gullied area of the paddock/property and some attempt has been made to remediate the gullied area. The remaining 14% of landholders responded that stocking rates are reduced, and fences are used to restrict stock access to the gullies for most of the year. Additional infrastructure such as watering points may be used to reduce grazing pressure around gullied areas. The results show a reduction in the proportion of landholders who are not undertaking any management of their gullied areas and increased proportions of survey respondents who are doing some active management. This shows some improvement in the management of gullied areas across the region.

## RECOMMENDATIONS

- 1. The surveys represent an objective mechanism to evaluate extension services and messaging and if possible should be continued even if in a modified form.
- 2. Key results indicate an adoption and a possible refinement of a future survey would have to better understand how landholders obtain and adopt messaging information

## APPENDIX





3. How do you manage stocking rates













desert channels QUEENSLAND 98 Galah St, LONGREACH Phone: 07 4658 0600 Email: info@dcq.org.com Web : www.dcq.org.au