CASE STUDY

RAIN READY RANGELANDS - MULGA PARK PADDOCK CHALLENGE

AT A GLANCE

Key takeaways

- The importance of complete and accurate baseline data to inform management programs
- Data-driven decision making to improve resilience
- Necessity for enhanced grazing management information

Challenges

- Integration of data collection with daily operations
- Climate and environmental variabilities with Central Australia's 'boom and bust' cycle

INTRODUCTION

Mulga Park Station, owned by Shane and Alethea Nicolle, is located 420 kilometres southwest of Alice Springs, on the border of South Australia and the Northern Territory. It is tough country, spanning a vast and rugged terrain and with an average annual rainfall of just 269 mm. The station breeds shorthorn cattle on pastures dominated by mulga mitchell grass, bandicoot grass, and woollybutt grass. Pasture production at Mulga Park is dictated by the highly variable climate of Central Australia – something that Shane and Alethea are well aware of. Participating in the Paddock Challenge provided new information about their pastures and paddocks and whether opening up country would prove beneficial.

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HOW AND WHY MULGA PARK GOT INVOLVED

The Nicolle's journey with the Rain Ready Rangelands (RRR) Paddock Challenge project began as a natural progression from their involvement in the Quality Graze Steer Challenge on Old Man Plains Research Station, which was run several years prior. Their involvement in the Steer Challenge meant that Shane and Alethea had seen what their cattle were capable of under the Quality Graze grazing strategies; strategies which were all based on the long-term carrying capacity. Shane had noticed that there were limited carrying capacity guidelines for the land types of Mulga Park in the southern Central Australian region, making it difficult to implement similar grazing strategies to those in the Old Man Plains trials. The researchers working with Mulga Park Station on the Paddock Challenge are experts on modelling long-term carrying capacity (LTCC) and tapping into that expertise was part of the incentive for Mulga Park to be involved.

Shane & Alethea Nicolle at Mulga Park Station

Prior to the Paddock Challenge, Shane had stocked paddocks according to his local knowledge and on the basis that stock numbers can be reduced when needed. However, the very dry conditions of 2019/20 and the performance of their steers in the Steer Challenge meant that Shane and Alethia were already thinking about exploring new approaches. The Paddock Challenge aligned with their goals of enhancing land productivity and improving their understanding of cattle performance data management. By participating, Shane and Alethea hoped to not only refine their grazing management but also contribute valuable data and insights to the broader pastoral community.

A key part of the Paddock Challenge was marrying up the detailed local knowledge of owner managers with revised LTCC estimates and then designing and testing a grazing strategy that might deliver benefits for improving both cattle productivity and pasture health. More specifically, the station was keen to use improved carrying capacity calculations to determine the economic advantages of developing a new watering point in Brice's Paddock. To reach this decision, Shane needed to know if the cattle were already using that country and if there would be gains in the carrying capacity of the paddock and cattle performance if they invested in a new watering point.

Participation in the Paddock Challenge meant that he could collect the required data to provide these guidelines for both himself and the wider Central Australian pastoral district.

Shane refers to the 'boom and bust' cycles of the Central Australian region, emphasizing the importance of being prepared for the inevitable dry times before they arrived. He and Alethea aim to have a robust contingency plan in place, ensuring that Mulga Park Station can maintain resilience and productivity even during challenging dry years. With the 2019/20 drought fresh in the minds of all producers in the area, Shane and Alethea want to be well prepared for future dry times and have more control over their decision-making.

IMPLEMENTATION

The Paddock Challenge set out a comparison between two distinct grazing strategies, each in a separate 'research' paddock:

- Mary's Paddock: continued under the Nicolles grazing management without modifications.
- Brice's Paddock: managed with a new stocking strategy derived from the Quality Graze Project on Old Man Plains Research Station and based on the LTCC of the paddock.

Throughout the two-year project, the Nicolles and their staff were busy collecting regular faecal samples, water testing, building exclosures, and collecting crush side data on cattle (pregnancy tests, wet/dry status, and body condition scores) and putting on and swapping out GPS tracking collars on the cattle.

“Shane knows the grasses, but I used to just see green grass. Now I can see the importance of understanding the different grasses and pasture and how they are relevant to what we are trying to achieve”

Alethea Nicolle
Owner, Mulga Park Station

Top Image: Two of Mulga Park station crew learning low stress stock handling techniques with Bruce Maynard

Bottom Image: Mulga Park Station

ADAPTATIONS AND CHALLENGES

The integration of data collection technologies marked a significant shift in Shane and Alethea Nicolle’s management practices at Mulga Park Station. A crush side data collection hardware system required the couple to tackle the steep learning curve associated with mastering new software. The couple’s willingness to learn and ask questions throughout the project was a testament to their openness to adapt and change.

At times, infrastructure challenges made it difficult to efficiently collect herd performance data. With over 20 watering points on the property, not all yards were equipped with cattle handling infrastructure such as crushes, drafts, scales, or integrated data collection systems. The Nicolles don’t walk their cattle because of the dense mulga country across the property, so to collect data in the two research paddocks, they needed to set up temporary, portable yards each time they collected data, which was a huge amount of work. Furthermore, the challenges were compounded by issues of staff availability and time constraints.

Effective implementation of new management practices and technologies required not just initial training but ongoing support and supervision. Shane and Alethea found that their limited manpower was often stretched thin over the vast expanses of Mulga Park, making consistent application and monitoring of the new strategy more difficult. Time constraints also affected their ability to promptly address and adapt to the immediate needs dictated by environmental changes or technological demands. Shane himself jokingly admitted to passing the role of data collection over to his daughter as a way to speed up the process.

The Nicolles attended a Grazing Fundamentals and Paddock Power workshop early in the project. Alethea spoke of the benefit of pulling together information from the workshops with the on-ground project work. ‘Shane knows the grasses, but I used to just see green grass. Now I can see the importance of understanding the different grasses and pasture and how they are relevant to what we are trying to achieve,’ she said.

OBSERVATIONS AND LEARNING

Throughout the Paddock Challenge, Shane and Alethea meticulously documented a range of observations and gained insights that reshaped their approach to management and expanded their understanding of herd efficiency and production. The learning curve associated with adopting new technologies such as crush side data collection hardware initially presented a challenge; however, it promises to lead to better understanding of their herd and pasture performance. This shift from intuition-based to data-informed decisions was one of the most transformative aspects of the challenge for Shane and Alethea. Alethea was eager to have 'information at their fingertips' so they will be able to make educated decisions on cattle movements and paddock management. Prior to the project, they had never captured this amount and depth of data before and therefore didn't have a baseline to create goals and move forward for improvement. Shane also expressed how he 'wanted to both capture the data but also understand it and follow through with it.'

The Nicolles also invited neighbouring properties for a 'paddock walk' with the researchers to demonstrate the project and talk about learnings over the past two years. The paddock walk facilitated in-depth discussions around regional herd management practices, water quality, pastures, and supplementation.

THE FUTURE

As they looked to the future, Shane and Alethea are keen to learn and implement data-driven decisions into their pastoral production system. They plan to use baseline data collected during the Paddock Challenge to continue growing their understanding of their herd performance as they worked towards a more sustainable and productive herd on very marginal country with a highly variable climate. They realise that two years is a short period for testing a different approach to grazing management: 'I think we need at least another three years of data to get a good baseline picture,' said Shane.

Alethea commented that before they could consider implementing programs such as weaner and heifer management, they needed to understand the country better and their cattle in more detail. This project has helped with their move towards implementing more targeted work programs, based on analysis of more detailed herd data. As Alethea said about options for targeted selection of better performing animals, 'It's about cutting the dead wood to clean up the mob.' With this deeper understanding of their land and its capability, they hoped to have a more streamlined herd management program with a consistent and reliable herd.

Shane has been eagerly anticipating the final data and results from the Paddock Challenge, as he is particularly interested in how the various data points, ranging from water quality and faecal sampling to cattle GPS tracking, interact and contribute to a comprehensive understanding of their operations. He is already thinking of ways to incorporate these insights into his management strategies at Mulga Park Station.

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