

ARIDGRAZE PROJECT

MULGA PARK Paddock CHALLENGE



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.

Since 2022, they have been involved in the Paddock Challenge project, alongside the Department of Agriculture and Fisheries. It's an exciting project. Grazing practices and long-term carrying capacities are being explored, and all in a commercial station context.

It's a holistic approach. The work supports the collection of pasture and land condition information, herd production data and a better understanding of business performance.

SCIENCE IN THE Paddock

One of the greatest strengths of the paddock challenge concept is the two-way learning. Science is meeting experience and both are tested.

This is the first time pasture growth has been intensively studied on some of the mulga land types of the southern Alice Springs region. Several years of pasture data collection have allowed the research scientists to model pasture growth. This is important information for calculating long-term carrying capacity.

The model, calibrated from monitoring sites on Mulga Park, accurately predicted pasture growth. However, the recommended carrying capacity for one of the paddocks wasn't what Shane expected. Shane says, "It's mostly woollybutt and bandicoot grass in that paddock. Digestibility can be pretty low." While there may be plenty of grass in a good season, low digestibility and poor nutritional value can limit how much useful feed cattle can consume. For cattle to select the best-quality diet, utilisation rates need to be low enough that cattle are not forced to eat poorer-quality material.

It's evidence of the two-way learning. In this instance, information on pasture quality, not just quantity, helps the researchers reassess the assumptions used in current methodology for determining safe levels of pasture utilisation on different land types in Central Australia.

AT A GLANCE

Key takeaways

- Real world experience enhances research results when producers and scientists work together.
- Understanding land capability and pasture potential is key to grazing management decisions.

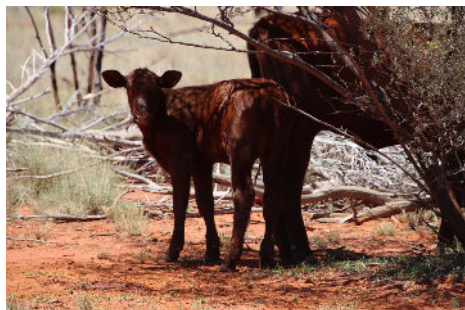
Challenges

- Getting good herd performance data is difficult.
- Understanding land condition potential is complicated and can take a long time.

Developing good relationships between scientists and producers leads to open communication, two-way learning and better outcomes for industry.



Shane & Alethea Nicolle at Mulga Park Station



“Our business has grown, so it feels busier all the time, but are we getting bang for our buck?”

Alethea Nicolle

Owner, Mulga Park Station



Top: Mulga Park shorthorn

Middle: Sand dune country

Bottom: Collecting data to calibrate pasture growth models

HOW CATTLE USE THE LANDSCAPE

Central Australian rangelands are very old and highly weathered creating a complex spatial array of land types – all with different pasture growth potential.

Without good mapping, it is difficult to adequately differentiate land capabilities. For Mulga Park, this means that quite variable mulga land types are often lumped together. The sand dunes also support a range of different pasture types. While elevation models may be useful for capturing landscape features, they often miss variations in soil and geomorphology which influence pasture growth.

Without baseline information, producers rely on their experience. Shane has a very good appreciation of the various pasture species, and how cattle use the landscape. He noted that cattle had spent most of 2025 grazing in an area that had recently burnt. This area predominantly supported regrowth of mulga Mitchell grass, a preferred pasture species. Documenting this knowledge helps inform science.

Isolated rain events also influence cattle activity in mulga country. Animals might walk 10km from a watering point, to chase a storm. The problem, says Shane, “Is that eventually they have to walk all the way back and they can drop a body condition class in a week!” To overcome this problem, developing more watering points is high on the priority list.

SHOW ME THE MONEY

The Nicolle’s have also been looking at financial risk strategies with Senior Economist Christophe d’Abbadie (Western Australian Department of Primary Industries and Regional Development). Alethea noted the boom-and-bust economic cycle associated with high stocking rates and commented that she would prefer less pressure in the system.

“I would like to have reserves built into our business”, she says. It’s useful to identify risk appetites but there are challenges with different views in the one business, “I’m more conservative than Shane, he loves the challenge!”, laughs Alethea.

Jokes aside, it is hard work to get all the herd and economic data together to really understand the business. “Our business has grown, so it feels busier all the time, but are we getting enough bang for our buck?” asks Alethea. Where they used to write mustering data on paper, they now use hand-held data readers to record herd parameters. The focus when recording individual animal data, is getting maximum information for effort.

Pasture quality, herd performance and economic stability are known to all be strongly linked to land condition. Alethea raised the question, “How do we know if land condition could be better?”

It’s a tricky question to answer and it takes considerable time for change to be observed. Grazing exclosures constructed through the project, and ongoing pasture assessment will hopefully help provide some insights.

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