

DESERT KNOWLEDGE CRC

The Central Australian Grazing Strategies project
Working Paper Series

Time-controlled
rotational grazing:
Tara, Qld

D. Walsh

Working Paper

59

2009



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Tara Station, Qld

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Contributing author information

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Desert Knowledge CRC Working Paper #59

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ISBN: 1 74158 144 3 (Web copy)

ISSN: 1833-7309 (Web copy)

Citation

D. Walsh. 2009. *Time-controlled rotational grazing: Tara Station, Qld.* DKCRC Working Paper 59, The Central Australian Grazing Strategies project Working Paper Series. Desert Knowledge CRC, Alice Springs.

The Desert Knowledge Cooperative Research Centre is an unincorporated joint venture with 28 partners whose mission is to develop and disseminate an understanding of sustainable living in remote desert environments, deliver enduring regional economies and livelihoods based on Desert Knowledge, and create the networks to market this knowledge in other desert lands.

Acknowledgements

The Desert Knowledge CRC receives funding through the Australian Government Cooperative Research Centres Programme; the views expressed herein do not necessarily represent the views of Desert Knowledge CRC or its Participants.

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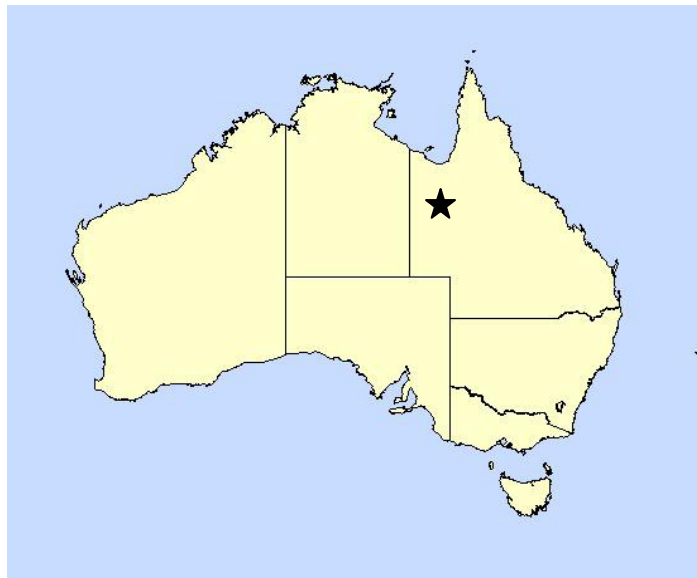
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Time-controlled rotational grazing

Tara Station, Cloncurry, Qld



Key points

**14,000
hectare
intensive
system
(whole of
property)**

**69% increase
in kilograms
of beef being
turned-off
compared to
old system**

**Measurable
increase in
pasture
quality and
quantity**

**Overheads
and direct
costs have
fallen**

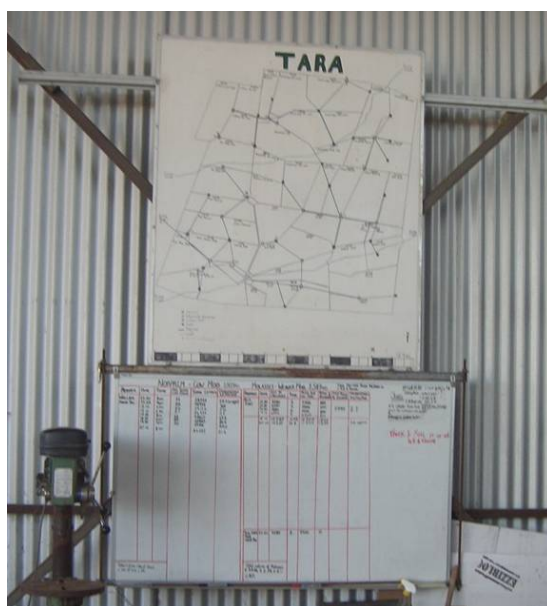
Dan and Sue Lynch have owned Tara station near Cloncurry, Queensland since 1976. They run Brahman cattle for the manufacturing, feedlot and live export markets. The property is 14,000 hectares and consists mostly of flat Mitchell grass plains on clay-based black soils. The main trees and shrubs on the station are gidgee, silver-leaf box, whitewood, coolibah, bloodwood, mimosa bush and conkerberry. The dominant grasses are Mitchell, flinders, feathertop and bluegrass. The average rainfall is 400 mm a year and is summer-dominant.

The grazing strategy

The grazing strategy used at Tara is time-controlled rotational grazing. The property is divided into 42 paddocks of varying shapes, with all being 365 hectares in size. Fences are mostly single wire electric, but three barb or electric wires are used for weaners and two electric wires are used for laneways. There's a minimum of two waters in each paddock, with up to four waters in some paddocks. The system has been in operation for ten years. Ninety-two percent of Tara is spelled at any given time.

The decision to implement time-controlled rotational grazing was made after Dan attended a Grazing for Profit School in the late 1990s. He also visited others that were using alternative grazing systems. He then developed a full plan before implementing the new system across the entire property over the course of three years. He continues to gather knowledge to fine-tune the management of his grazing system.

His approach to the development of his paddock system was quite innovative when he started ten years ago. No one else in the district was doing anything like it and he also decided to try something other than the traditional "wagon wheel" paddock configuration common to intensive grazing systems. By implementing paddocks of any shape with multiple waters, Dan has been able to reduce grazing intensity near the water and improve the evenness of use of each paddock.



After doing his research and talking to others, Dan planned his full time-controlled rotational grazing system on paper before implementing the new concept over the entire property within three years.

Image courtesy of Dan Lynch

Decision making for stocking rates, timing and spelling

Stocking rates are determined based on rainfall and pasture available. Dan has used the Rainman program to determine a “green date” (the date by which there is a high probability that the wet season will have started) and a “critical date” (the date after which there is little chance of more rain). He uses Rainman in a similar way when purchasing new properties or looking for suitable agistment.

A formal feed budgeting exercise is undertaken at the end of the growing season (about April) to calculate the number of stock days per hectare available for the coming dry season. The grazing budget is based on the amount of grass available with the quantity of palatable species being a key indicator. Care is taken to ensure that adequate biomass will remain at the end of the growing season to allow rapid regrowth of the pasture when rain falls again.

Two mobs of cattle are run most of the year, however three or more are run when Dan is segregating cattle. Paddocks are grazed for variable lengths of time rather than being grazed for a set period. The spelling and grazing regime is dictated by the number of cattle in the mob, the time of the year, the amount of pasture available and the time since a paddock was last grazed. Ideally, Dan lets the pasture recover to “stage three” (a point where re-growth has been significant and then begins to slow due to the effects of shading) before it is grazed again. This usually takes about 90 days of rest from the start of the wet season.

Grazing Charts (promoted by Resource Consulting Services) are used to record feed availability, stocking rates, stock movements, paddock spelling intervals and rainfall. A series of seven monitoring sites is used to keep track of trends in land condition.

“Native pastures need to be rested, especially during their growing period”



The spelling and grazing regime is dictated by the number of cattle in the mob, the time of year, the amount of pasture available and the time since the paddock was last grazed.

Image courtesy of Dan Lynch

“Positive results can be seen within two years if you are committed to implementing the system well”

Objectives of the grazing system

The reasons for adopting time-controlled rotational grazing at Tara include:

- to increase gross margin, increase turnover and reduce overheads
- to improve production
- to increase the stability of production and income
- to improve land condition and prevent degradation
- to improve drought management.

Results

Livestock and pasture

Dan uses the Profit Probe tool (from Resource Consulting Services) to benchmark production and financial performance every year. At the production scale, indicators such as branding percentages, live weight gains and kilograms produced per hectare are monitored. Key indicators like return on investment and gross margins are analysed at the enterprise level. Dan has measured a 69% increase in kilograms of beef turned off per hectare compared to the previous grazing regime. He believes this is due to a mix of factors including improved pasture quality and quantity and better animal husbandry practices (e.g. controlled mating) made possible by the new system. Dan has also measured a 1% increase in average crude protein in his pastures since changing from set-stocking.

There were difficulties with livestock behaviour in the early stages of implementation. Dan notes that you have to understand animal psychology – you can't group animals closely together after they have been used to living in an extensive system and immediately expect higher productivity. It takes time for the cattle to adjust their grazing patterns and to learn to live in closer managed herds.

A benefit of the grazing system is the ability to quickly implement changes. For example, changing feed conditions (e.g. due to an unexpected growth event) can be capitalised upon by adjusting mob size or the rate of rotation.

Financials – costs and profits

The costs of development ten years ago were \$1.20/ha for fencing and \$28.10/hectare for waters. There have been no extra labour costs, and other overheads and direct costs have fallen because of the improvement in animal and resource management. The Lynch's recouped the financial outlay for their development way back in 2000.

Land condition

Since the implementation of time-controlled rotational grazing nine years ago, Dan has noticed an increase in pasture biomass, quality (crude protein) and palatability. There has been a gradual increase in desirable plant species and a decrease in undesirable ones on the monitoring sites. There is now less soil capping, less run-off and better moisture retention. An increase in retained litter at the soil surface is apparent and has led to noticeable increases in the number and diversity of ants

and other insects.

People

Dan feels that he has a much better understanding of how to grow pasture and the economics of managing a beef enterprise as a direct result of implementing this grazing strategy. He feels that it took about two years to adapt fully to his new way of managing. Unfortunately, the higher level of expertise required to manage this system makes it somewhat more difficult to source skilled staff. A shortage of skilled staff sometimes makes it impossible for the owners to leave the property. However, the benefits of the system far outweigh any disadvantages and the Lynch's pride themselves on retaining a highly positive attitude.

Drought and pest animal management

The time-controlled rotational grazing system is a useful way to manage for drought conditions. Dan notes that you always know exactly how much pasture you have and how much the stock on hand require. As a result, you end up working within the natural constraints of the environment and climatic conditions. A risk management strategy is also always in place. On Tara, this comprises a cut-off date based on the predictability of receiving 50% of annual rainfall. If less than 50% of the annual rainfall has fallen by the cut-off date, stocking rates are immediately reduced to ensure that stocking rate will match likely pasture availability.

As with most rotational grazing systems, keeping other herbivores from destroying the feed in spelled paddocks is a concern. On Tara, kangaroos and pigs are a problem and the Lynch's employ a contract roo shooter who also does some pig trapping.

“The benefit of this system is that it enables more control over stocking and the business”

Advantages of the system

Dan nominates the following three advantages of his grazing system:

- increased sustainability
- increased profitability
- decreased costs.

Disadvantages of the system

Some of the disadvantages of adopting a different grazing system have been:

- the need to understand animal behaviour much better
- a higher commitment to management
- you need a highly skilled person to relieve you
- it takes time to change old mindsets and habits.

“It is possible to emulate the natural system as closely as possible and still achieve a very good economic outcome”

Recommendations to others who want to try it

- gain knowledge of alternatives so you can make decisions based on best available knowledge
- visit other systems before choosing which one to implement
- plan and do detailed costings of all alternatives.

Plans for the future

The whole of Tara is fully developed and managed under the rotational grazing system. Dan is happy with the way it is working and is yet to see a better system for managing his property. Management skill continues to improve as the Lynch's gain more experience and learn more about how their system responds to different conditions. The beauty of this highly responsive grazing strategy is that it already encompasses climate variability and Dan believes that it will continue to do so in the long term.

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