

# Better pastures produce more beef, the secret lies in groundcover

Jeff has had a long involvement with the local Landcare group, and during the past 15 years has undertaken various projects on his property. "The Landcare projects we have undertaken have assisted us in establishing necessary infrastructure for our rotational grazing system across our whole property."



## Ideas for the future

Jeff says of his management system: "There's always room for improvement, we just don't know how good it can be. We can just keep going and see the improvement in land condition."

Much of what the Campbells have achieved and implemented on their property stems from their longterm involvement with Landcare and Catchment Management, and the Queensland Murray-Darling Committee, their regional NRM body. They have volunteered to undertake trials and research on their property, share their findings with their neighbours, implement new concepts and continue to undertake training relevant to their industry and natural resource management base.

Some of the technologies and concepts Jeff would like to learn about and implement into the future include satellite monitoring using bare ground index and understanding soil carbon.

He also believes that an Environmental Management System, (EMS) is important for the industry particularly from a marketing point of view.

"If we can prove that we are continually improving the environment, and we have a documentation process there to do that, it does help with any of our overseas markets. I think at some point in the future we have to



3P pastures demonstrating recovery after rain.



The Maranoa river in flood at Currawarra.

QMDC's Landcare Sustainable Practices project aims to deliver increased landholder engagement and adoption of sustainable and innovative natural resource management (NRM) practices by primary producers.

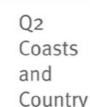
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# Better pastures, produce more beef, the secret lies in groundcover

On Currawarra, north of Mitchell in south-west Queensland, the Campbell family have transformed their grazing management to establish a business that is more productive and resilient to adverse climatic events.

**Goal:** To allow Currawarra to fully develop into healthy landscapes, resilient to change and disturbance and produce highly productive pastures, woodlands and beef cattle.

## Overview

Jeff and Jackie Campbell's property Currawarra represents land in prime condition to maintain a level of productivity, and also to maintain its natural resource base, even during adverse climatic events.

Currawarra has been described as a property in 'A' type land condition using the Land Condition rating system as used in the Meat and Livestock Australia Grazing Land Management package.

The property has increased from land condition 'C' to land condition 'A' since 1995 when the Campbells began introducing some changes in management. (More information on the land condition grading can be found in Box 1.)

Jeff Campbell says the family employs a 'holistic' management approach to the business.

"The outcomes of a holistic decision framework benefit both the natural resources that support the business and the family members that manage the business. This management approach attempts to address the cause of the issue, not just the symptom."



This project is supported through funding from the Australian Government's Caring for our Country initiative and contributes to the sustainable farm practices national priority area.

"Working together—healthy landscapes, viable communities"

**Producers**  
Jeff and Jackie Campbell

**Location**  
Mitchell, Queensland, on the Maranoa River

**Property area**  
25,000 hectares

**Enterprise**  
Beef cattle breeding, carrying on average 1200 head

**Land types**  
50% grassy woodlands to open grasslands  
50% closed woodlands

**Annual rainfall**  
525mm

**Catchment**  
Maranoa-Balonne



Currawarra has been in the Campbell family for 55 years. Prior to 1995, Jeff began to notice the quality of the pastures deteriorating, land degradation occurring and the carrying capacity of the property becoming significantly reduced. He began to question the viability of the enterprise for the future of his family.

**Box 1: A Condition land condition has the following characteristics**

- Good coverage of 3P\* grasses for that land type with less than 30% bare ground. No significant weed infestations.
- No erosion and good soil surface condition.
- No, or early signs, of woodland thickening.
- 100% of original carrying capacity for that land type.

\* 3P grasses are those that are perennial, palatable and productive.



Looking for answers he decided to implement a time controlled rotational grazing (TCRG) system across the whole property. This meant taking paddocks from a set stocking rate to running all his cattle as one mob and creating 24 paddocks across the property. This process required significant investment in fencing and additional watering points.

**A new approach to grazing management**

Jeff Campbell describes time controlled rotational grazing as employing short periods of grazing (an average of 14 days per year) in order to achieve even grazing pressure. Short grazing periods allow pastures to have long rest periods to fully recover. Deep rooted perennial grasses with large crowns result.

*“In 1995 I committed myself to employing rotational grazing for five years, but after two years we were convinced of the production and natural resource management benefits. We have seen an increase in land condition over time. As a result our landscapes are healthier, we have seen an increase in 3P pasture species (see box 2), we are seeing better resilience of our pastures after disturbances such as fire, drought or heavy grazing, and there is greater stability with higher levels of ground cover and organic matter. This helps us minimise the risk of surface water erosion and evaporation.”*

**Box 2: Snapshot of 3P pasture species**

3P pasture species are those that are perennial, palatable and productive. They do not have to be native to be 3P. The following pasture species can be found on Currawarra:

- Forest Blue Grass (*Bothriochloa blaghi*)
- Black Spear Grass (*Heteropogon contortus*)
- Kangaroo Grass (*Themeda triandra*)
- Buffel Grass (*Cenchrus ciliaris*)
- Brigalow Grass (*Paspalidium caespitosum*)
- Gatton Panic (*Panicum spp.*)
- Queensland Bluegrass (*Dicanthium sericeum*)

To undertake rotational grazing, water points need to be evenly distributed so even grazing pressure occurs. The results of this even distribution of watering points for livestock include:

- even percentage of groundcover
- increased pasture diversity
- building of topsoil, increase soil organic matter (SOM) and soil organic carbon (SOC)
- increased rainfall infiltration, thus reducing soil erosion.

*“The most significant of these changes for me is the increased rainfall infiltration, because this has resulted in the increase in the percentage of 3P pasture species, land condition and carrying capacity. Increased rainfall use efficiency has resulted in better pastures producing more beef.”*



A swathe of Currawarra pastures.

The Campbells still have to manage for drought conditions. Both livestock and land are managed to be maintained in a healthy condition (Land Condition ‘A’ and ‘B’). This allows livestock to be either sold whilst in forward condition or before prices decline as a result of forced or panic sales.

*“Maintaining critical levels of groundcover ensures the water, nutrient and energy cycles remain fully functional, land condition remains high and pastures are capable of responding to rainfall events,”* Jeff says.

To maintain the rotational grazing system, constant monitoring of groundcover in paddocks is required as well as some analysis of the make-up of grass species and what stage they are at in their growth cycle. Jeff says this is particularly important in winter when *“you can plan to have your grass at different stages when the frosts come, you can have some just about recovered and not gone to seed and it seems to be able to carry a bit of nutrient into the frosted period a bit better.”*

**Box 3: The benefits of time controlled grazing for the Campbell family**

**Economic benefits:**

- Higher carrying capacity and stocking rate resulting in higher returns.
- Higher sale yard prices due to a reputation for producing high quality easy handling cattle.
- Controlled mating ensures calving patterns match pasture growth phases.
- Increased income from more marketing options
- Bulls required has gone from 4% to 3%.
- Reduced fixed and labour costs.
- Better forage budgeting and action plans to respond to dry seasons.

**Lifestyle benefits:**

- Less stock handling days.
- Low stress stock handling is more enjoyable.
- Family members sufficient to complete all livestock handling (mustering, branding, weaning, etc).
- Yearly planning possible e.g. the herd is in a paddock close to the yards when mustering is required.
- More free time for family and to pursue other interests.
- Family members have been able to remain employed, and other properties have been purchased.

**NRM benefits:**

- Increased efficiency of water, nutrient and energy cycles.
- Land condition improvements (from ‘C’ to ‘A’).
- Improved tree/grass balance, healthier trees with faster rates of growth.
- Increased pasture biodiversity.
- Higher percentage of ground cover.
- Improved soil organic matter content.
- Less soil erosion.
- Reduced risk of weed invasion.

**The challenges**

There are always threats to any beef cattle enterprise, so how are these managed within the Campbell family’s grazing system?

*“In these types of rangelands we are always going through transitional periods depending on the type of management or outside influences that are going on. Whether the country has been burnt or there are rabbits or prickly pear, or we’ve pulled it or put buffel grass on it, the balance is always changing. I think that’s what people have to realise: that when you are grazing these rangelands it is never static and your management decisions need to adapt to those influences.”*

Some of the challenges they address are:

- **Control of pest/feral animals** – Sustainable macropod harvesting, based on the Mitchell Sustainable Wildlife Enterprise Project, is carried out regularly according to government regulations using a professional and baits are distributed twice a year to contribute to catchment-wide wild dog management. These practices reduce grazing pressure, livestock losses and infrastructure damage.
- **Managing thickening** – This involves maintaining a tree/grass balance. Vigorous healthy perennial pastures compete with tree seedlings and suppress woodland thickening. Animal impact with rotational grazing also contributes.

• **Prevention of weed introduction –**

Currawarra is situated on the Maranoa River and floods provide a pathway for the introduction of unwanted weed species, particularly parthenium. As a collective, Jeff and several of his neighbours manage and monitor the river bank to reduce the risk. This involves fencing out stock, establishing off-stream watering points, maintaining vegetation cover and carrying out monitoring and spot spraying after floods.



Some of the erosion once found on Currawarra due to lack of groundcover and poor surface stability.

Significant thickening is visible in the background of this photograph.

