Department of Agriculture, Fisheries and Forestry

Lighter stocking maintains 3P grasses
– the backbone of profitable grazing systems

Stocking rate and beef production in the Qld Gulf

Many producers have described how they have improved herd productivity and profits by backing off their stocking rates.

Heavier stocking rates can maximise returns in the short term. The net return may not be so high when the capital tied up in livestock and variable costs are taken into account.

Table 1 includes the broad land types across the Northern Gulf Catchment and safe stocking rates in 70% of years.

These stocking rates assume land is in good condition and distance between water points is no more than 2—3 km.

How do your stocking rates compare?

Table 1. Land types across the Northern Gulf and safe stocking rates in 70% of years

Land type	Safe stocking rates (ha/AE)
Alluvial soils	4
Black soil/black basalt	4
Marine plain	6
Red basalt	6
Red duplex	6
Bluegrass/coolibah	7
Georgetown granite	8
Old alluvial	8
Other granites	9
Redearth	10
Yellow earth	12
Sandy forest	20
Sand ridge	20
Range soil	20
Lancewood	40

3P – Perennial, Palatable and Productive

e.g. Mitchell grass, blue grasses, black spear, buffel

- **3P grasses are critical for sustainable beef production due to their relative reliability and resilience in even the worst of seasons**
- **Density of 3P grasses is greatly reduced under heavy stocking rates**
- **Heavier stocking rates reduce net return in the long term**
- **Reduced stocking rate, wet season spelling and pasture improvement have a large impact on carrying capacity and gross margins**
- **Heavier stocking rates lead to land degradation and reduced carrying capacity.**

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Stocking rate affects productivity

Blanncourt Station, Georgetown

Glen and Cheryl Connolly

Average rainfall 800 mm

Blanncourt is a typical family-run breeding enterprise with 2600 head on 18,753 ha.

The family operation:

- runs fairly high grade Brahman cattle and introducing Charolais bulls
- markets their cattle to live export, store market or background at home, then custom feed (CQ) to sell to Southern Queensland markets
- market depends on economics at the time
- has approximately 1100 ha of improved pasture (mainly buffel, Urochloa, stylos and butterfly pea)
- grow approximately 800 – 1200 t forage sorghum silage per year on the Gilbert River alluvial country for backgrounding steers and cull heifers
- cows are mustered in May and September for weaning and processing (brand, castrate, dehorn)
- third muster is done in December to process calves only—no weaners are removed.

In response to reduced stocking rates, wet season spelling, feeding programs, cross breeding and pasture improvement over the past 15 years, the family has achieved the following:

- 70% increase in area of the property in A and B land condition
- 33% decrease in breeder numbers
- 23% increase in weaning rate
- 80–100kg/head increase in average annual live weight gain
- 80% decrease in cow deaths
- Total gross margins increased by 93%.

Table 2. Property and herd figures for 1996 and 2010 on Blanncourt Station

	1996	2010
% of property in A and B land condition	15%	85%
Number of breeders (including heifers)	2270	1533
Weaning rate	46%	69%
Annual live weight gain	60–80 kg/head	140–180 kg/head
Cow deaths	190	38

Reduced stocking rate, wet season spelling and pasture improvement can have large impact on carrying capacity and gross margin.

Steers on sorghum silage at Blanncourt Station

Stocking rate affects productivity

Namuel Station, Georgetown

Kevin and Kelly Bethel

Average rainfall 800 mm

A stocking rate demonstration was established at Namuel Station in 1994 with paddock and herd measurements recorded from 1994 to 1998. Based on the recommendations of a local management group, a 'high' stocking rate (5 ha:AE) was allocated to Bottom Aurora paddock (1594 ha) and a 'safe' stocking rate (7 ha:AE) was allocated to Top Aurora paddock (1858 ha).

The data from the stocking rate demonstration (table 3) provided the following results:

- Safe stocking rate had on average a 10% higher branding rate over the three consecutive years
- Dry cow cull weight, on average, was 56 kg heavier for the safe stocking rate
- Wet cull cow weight, on average, was 50 kg heavier for the safe stocking rate.

Table 3. Herd production figures from the high(5 ha:AE) and safe stocking rate (7 ha:AE) on Namuel Station across three years

	1995		1996		1997	
Stocking rate	**1:5 ha**	**1:7 ha**	**1:5 ha**	**1:7 ha**	**1:5 ha**	**1:7 ha**
Branding rate	56%	67%	62%	72%	70%	79%
Dry cull cow weight	418	497	438	484	358	400
Wet cull cow weight	327	381	378	384	291	332
Steers – weight gain/year	64	96	87	111		

Strong healthy calves at Namuel Station

Black spear grass (a 3P species) dominated pasture at Namuel Station

Stocking rate affects profitability

Wambiana Station, Charters Towers

Lyons family

Average rainfall 640 mm

Long term research trial site

The Wambiana grazing trial was established in December 1997 near Charters Towers to objectively test how a range of grazing strategies cope with climate variability. To ensure relevance to the grazing industry, the trial was run in close association with a grazier advisory committee. Trial paddocks contained a range of soil types to reflect conditions in large, commercial paddocks.

Wambiana treatments and approximate stocking rates:

- **Moderate stocking rate**—relatively constant stocking at 8–10 ha/AE*.
- **Heavy stocking rate**—relatively constant stocking at 4–5 ha to May 2005; thereafter stocked at 6/AE until May 2009 when stocking rates were returned to 4 ha/AE.
- **Variable stocking**—stocking rates adjusted upwards or downwards in May based on end of wet season feed availability (3–12 ha/AE).
- **SOI variable stocking**—stocking rates adjusted upwards or downwards in October based on feed availability and SOI forecasts for the next wet season (3–12 ha/AE).
- **Rotational wet season spelling**—spell a third of the paddock each wet season; relatively constant stocking at 7–8 ha until November 2003 and at 8–10 ha/AE thereafter.

*1 AE = 1 animal equivalent or 450 kg steer.

Accumulated gross margin

After 14 years, accumulated gross margin (AGM) is highest in the MSR and VAR followed closely by the SOI and R/Spell (Fig. 1). Despite the recent good years, AGM is still by far the lowest in the HSR and only about half that of the other four strategies. The parallel nature of the AGM lines for the different treatments suggests that AGM in the HSR will not catch up with those in the other treatments irrespective of how good future seasons are.

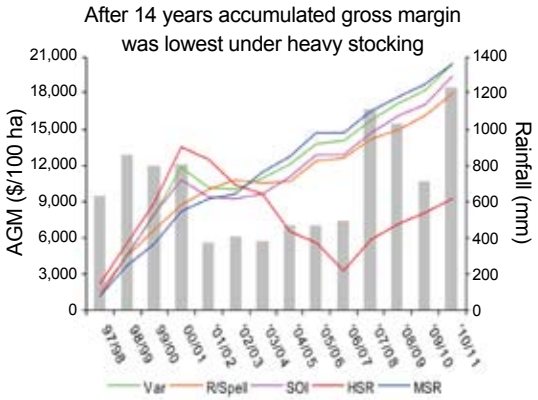

Figure 1. Accumulated gross margin for five grazing strategies at the Wambiana grazing trial from 1997/98 to 2010/11. Interest at 7.5 % and price differential based on condition score (non-compounded interest).

Steers in the R/Spell treatment in 2005 were in very good condition despite the dry conditions due to the availability of forage.

Cattle in the HSR treatment had to be given drought feeding in 4 of the 12 years of the trial due to the extreme shortage of feed in the late dry season.

For more information or enquiries contact

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