Does Less Mouths = More Pasture = More Profit?

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Time of grazing and stocking rate are important management tools available to managers of rangelands to manipulate their pastures. The term Total Grazing Management (TGM) is used to describe how this is done. TGM is essential to economical and sustainable grazing. This has become extremely relevant to all farmers and graziers as a result of the Federal Government's policy of becoming self-reliant against drought.

The failure to correctly manage pastures and the animals (domestic, feral and native) grazing them has received little *whole farm research*. Exceptions are Hamilton Research Institute (Vic), and Michael Boyce & Co (NSW) who show better returns from increased stocking rates on highly improved pastures. In contrast many small plot trials have been carried out over the years on improved pastures. A major part of NSW's sheep and cattle do not have the luxury of grazing improved pastures that are regularly fertilized. Most stock are grazing various rangelands, native pastures or pastures that regenerate after cropping. In the rangelands very limited work has been carried out on either small plots or on properties. The plot work has been of limited application as it has not targeted the following:

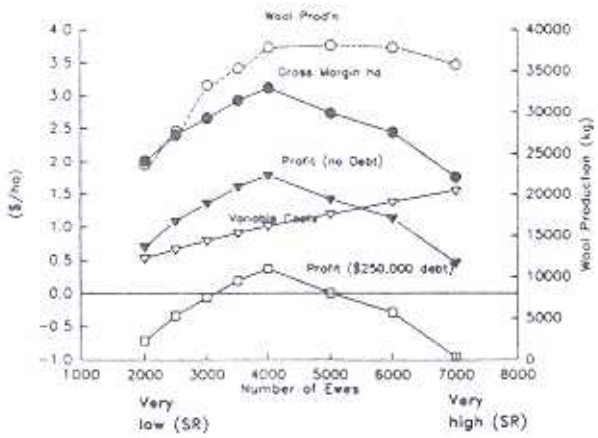

Figure 1: Gross margins and profit at various stocking rates (M.I. 500 cents clean) for a 26,315 ha property with WLCRCC 7,500 sheep flook (**Note:** Living and educational expenses have not been deducted).

- Long-term wool production;
- Lambing percentages and consequent genetic gain;
- Stock turnoff figures;
- Drought resistance (very important due to the Federal Governments new self reliance policy); or
- The interaction of the whole farm management package.

(2) Wool production/ha between a conservative stocker and heavy stocker was similar. The heavy stockers long-term production was more prone to highs and lows (crashes), in comparison to the more stable production of the conservative stocker.

(3) Costs were lower for the conservative stocker as they were shearing less sheep for similar production.

(4) Conservative stockers adult ewes cut 6.5 kg or better (23 -24 micron).

(5) Conservative stockers had lambing percentages exceeding 85%.

(6) Conservative stockers had annual sales of 35 - 40% of the flock.

(7) Conservative stockers made 30 - 40% of annual income from stock sales. For heavy stockers this was 5 - 20% which reflected low lambing percentages, heavy losses and poor condition of sheep.

(8) The controlling of feral and native animals as part of Total Grazing Management resulted in better returns and significant drought mitigation.

(9) In the Hay area the two producers (both conservative stockers) without irrigation were observed to have higher production and income than those with irrigation. This may indicate it is better to manage what you have better rather than trying to spread yourself too "thinly" just because irrigation is available.

Further work carried out in a preliminary survey by C & LM Wagga used landholders data to simulate the effect of reducing stocking rates to examine:

Financial and Production Survey

A financial and production survey was undertaken by this author to test the hypothesis widely held by extension officers that conservative stocking levels in semi-arid rangelands is not only ecologically but economically advantageous.

This survey involved 21 landholders in the Rosewood-Belah rangetype in the Ivanhoe-Balranald-Wentworth area and a further 13 landholders in the bladder saltbush - white top grass areas around Hay. Many of the latter landholders had some irrigated pastures.

Results

The following long term results were observed:

(1) Conservative stocking was more profitable (Figure 1).

- Economics of reducing stocking rates on improved pastures.
- The encouragement of more vigorous and deep rooted pastures to prevent salinity.

The simulated results in Table 1 show that the lower income and lower costs of the lower stocking rate actually resulted in a higher gross margin.

Stocking Levels and Drought Management

The above information shows the economic benefit of conservative stocking which is also integral to good drought management. A major benefit of conservative stocking and control of native and feral animals is in achieving Total Grazing Management (TGM). Man-made droughts which are induced by poor TGM, result in major economical and ecological costs. Walker (1993) estimated the 1981/82 drought cost Australia about $7,500m.

Table 1: Gross margin for 3 different stocking rates at Wagga based on November 1992 prices.

Parameter	Stocking level (ewes)		
	High (2250)	Medium (2000)	Low (1750)
Total income (a)	$85754	81743	80918
Total variable costs (b)	26946	23890	20379
Total purchases (c)	5625	5000	4375
Gross margin (a-b-c) = (d)	53183	52853	56164
Gross margin/ewe	23.64	26.43	32.09

The impact of management strategies employed by three graziers at Ivanhoe in the 1991 - 92 drought are presented below.

Landholder A

With a *long-term management package* of rabbit control, fodder storage and reasonably conservative stocking, this grazier achieved wool cuts of 7 kg/ewe (24 micron) and 50% lambing (at the tail end of the drought in July - August). Long-term wool production averages 1.7 kg/ ha, but was 2.00 kg/ha in 1992 when losses were low.

Landholder B

This producer is in the process of developing a good overall management package, which also involved undertaking a large-scale kangaroo and goat control programme in 1991. Wool production in 1992 was 1.65 kg/ha, against a long-term average of 1.40 kg/ha for the property. The effect that goats and kangaroos was having on the property had been severely underestimated. Lambing percentage was 70% (April/May) and adult wool cut 5.4 kg (23 micron) for an August shearing when conditions were very poor. Annual losses averaged 8% of ewes. Other strategies included: fox baiting, agistment and grain feeding. This landholder had nearly 4000 sheep to sell and sold wethers offshears for $18, when the rest of the district was restocking or trying to breed up as a result of high losses and very low (less than 30%) lambings.

Landholder C

This grazier was overstocked with sheep, goats and kangaroos and also had severe water problems which contributed to a lost of 82% of the flock. This resulted in wool production of only 0.15 kg/ha as against the average of 1.2 kg/ha. This has severely effected the financial ability of this landholder.

Conclusion

As most of NSW's stock graze unfertilized native pastures, the strategy of running less stock better can result in:

- Improved profitability.
- Better drought mitigation.
- Better perennial pastures.

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