



Drought management of pasture, stock and people

David Mitchell

"Bimbimbie", Delegate, NSW 2633

Abstract. During 1996-98, the Monaro area of NSW experienced one of its worst droughts, with rainfall for every month from July 1997 to June 1998 being below average. We attempted to manage the drought initially by traditional means - agistment and hand feeding. However, as the drought intensified, we had to sell cattle on agistment and from our core herd, and be selective about how the remaining animals were fed. The use of bypass protein and urea allowed us to utilise low quality Poa tussock to keep the remaining cattle alive. In our sheep enterprise, we sold most wethers and destroyed uneconomic sheep. We then established a sheep feedlot which allowed us to successfully feed our remaining sheep and preserve our pastures so they could respond quickly when the drought broke. We believe that the 'people' side of drought needs more attention. We found that participation in a 'drought focus group' allowed us and others to exchange ideas and give each other support. We emphasise the value of being in control at all times, rather than responding to climatic and management events during drought.

The following is an account of the mid 90's drought in the southern Monaro. This is only one of many stories.

The annual average rainfall in our area is 630 mm but, being 700 m above sea level, winters are cold and severely limit pasture growth. The family properties of "Currawong" and "Bimbimbie" are located on undulating granite country, 18 km north west of Delegate. The properties, covering 2,000 ha, are made up of:

- 1,000 ha improved pastures (mainly phalaris/sub clover).
- 700 ha native pastures, mainly weeping grass (*Microlaena stipoides*) and Poa tussock (*Poa sieberiana*)
- 300 ha natural bushland.

The major block is owned and run by my parents while 400 ha is owned and run by my wife Andrea and myself. I have off farm employment, working 17.5 hours per week. Prior to the drought our stock numbers were 13,000 dry sheep equivalents (dse) Merino enterprise and 4,500 dse Murray Grey enterprise.

The Drought

My parents endured the early 80's drought, but I had little recollection of it. Even working in the wool industry throughout Australia over the last 15 years, I had never encountered a drought in the real sense of the word. The last three years were a shock,

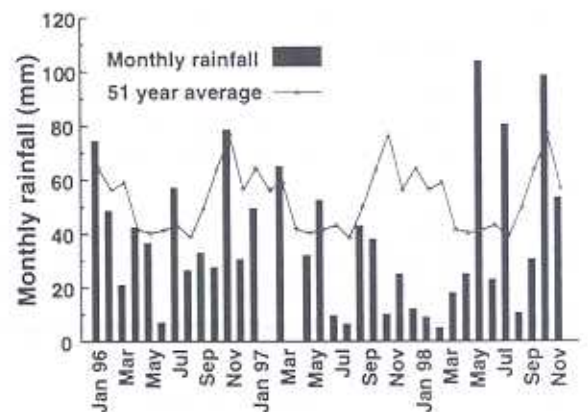


Figure 1. Monthly rainfall at "Bimbimbie", Delegate for 1996-1998 compared to the long-term average.

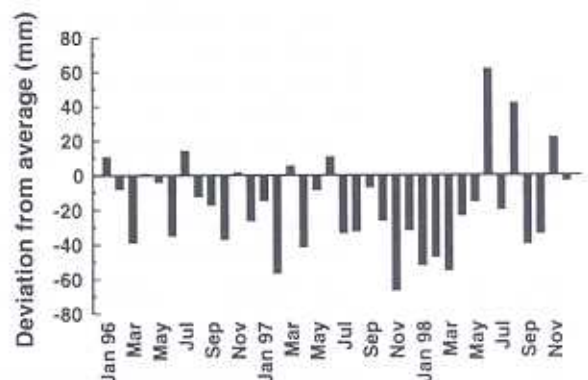


Figure 2. Deviation of monthly rainfall from the long-term average (Bars below zero indicate rainfall for that month was below average, and vice versa).

mentally draining and damaging, and set me on a very steep learning curve.

Figure 1 shows the monthly rainfall from February 1996 to the breaking of the drought in August 1998 together with the long term monthly averages, and Figure 2 shows the deviation of rainfall from the average. For the 2 year period August 1996 to July 1998, 19 of the 24 months had below average rainfall, with 7 months having below 10 mm. During the 11 months July 1997 to June 1998, no monthly rainfall reached the long-term average.

(Insert Figures 1 and 2 about here)

The cattle story

Drought is insidious, and its onset is rarely easy to identify. When no autumn break came in 1997, and after feeding on and off over the last 12 months, Dad felt that we would face the worst winter in his lifetime (little did he know that would be the following year, the winter of 1998). Tough decisions had to be made, with most of the cattle herd being in score 2 condition. We came up with the following options:

- Reduce cattle numbers on the property (agistment and sale)
- Maintain liveweight of the remaining breeders using supplements to increase use of the abundant poor quality dry feed (Poa tussock) in the native pastures.

These options were decided on because of cost effectiveness, and to ensure the economic survival of the family business. The timetable shown in Ta-

Table 1. Timetable of cattle management events during 1997-98.

1997	
March	Early weaning of calves. Draft all breeders into Good, Average and Poor, based on condition score. Started feeding supplements (weighed some cows 2 weeks after starting).
April	All steers sold. Calves, heifers and dry cows trucked to Moree on agistment.
May	Reduced breeders further - poorest cows sent to Moree
June	Weighed and reclassified cows into Good, Average and Poor condition (over 72 days, average weight loss 0.2 kg/head/day).
July-Sept	Cows rotated between phalaris and Poa tussock pastures (supplements fed on both).
August	Moree agistment cattle sold.
October	No spring break. Two further trucks of breeding cows sold Two trucks of older cows sent to Holbrook on agistment
November	Calf marking of core herd (85 cows and calves)
1998	
January	Cows on agistment at Holbrook sold.
February	40 ha grazing oats sown to save the core herd
March	No autumn break. Core herd sold - 2, 3 and 4 yo cows @ \$48/head
August	Drought broke

ble 1 was followed in 1997-98.

Key cattle management practices

Classing of stock into condition scores. The classing of the stock into Good, Average and Poor based on condition scores was very helpful. It gave us the ability to concentrate on the bottoms and implement a different management regime for each, leading to cost effectiveness and gaining better control of each class.

Supplementary feeding of bypass protein and urea. The use of bypass protein and urea (the McCosker Brew) as a supplement gave us the ability to "make better use of what we had". Poa tussock with around 4.4% crude protein and 6.5 MJ metabolisable energy was a poor quality forage, but in abundance in our native pastures. The supplement fed the microbes in the gut, enabling the animals to make better use of this coarse, unpalatable feed. At the peak feeding, the ration was 140 grams/head/day (with 32% urea) which costs about 7c/head/day. This was very cost effective, and far better than agistment, where management was made difficult by distance, and which cost 30c/day. We also reduced our labour costs for feeding (only two per week using sheltered self feeders).

We basically held the weight of 2000 dse of cattle for 8 months at a cost of \$3,360 on what would normally be useless feed. By mid winter 1998, after a little rain, there was some growth in the improved phalaris pastures. Most of this feed went to the Merino enterprise, but one paddock was locked up for the cattle and produced about 700-1000 kg DM/ha over 4 to 5 weeks. The rotation of the cattle between the Poa tussock country and the phalaris pastures was a successful tactic implemented by my father. With their gut primed from the supplement, cows

began to put on weight immediately on the short green feed. They put on one condition score in 3 to 4 weeks and milked extremely well. In previous years, when not supplemented, it normally takes 4-6 weeks for the gut to acclimatise to green feed and the stock to gain weight when brought down from the Poa tussock country. Dad rotated cows and calves every 4 to 5 weeks.

Lessons

Reflecting on our actions, the cattle feed program was extremely cost effective and did not threaten the economic survival of the family business. We would have been better off if the supplements were started earlier when cattle were in condition score 2-2.5 rather than 2 or below. With more information, and just a little more rain, we would in all probability have saved a very productive cattle herd (32 years of breeding producing steers which enjoyed a premium at Rangers Valley). This was without a doubt the most devastating part of the drought.

The Sheep Story

After the demise of the cattle and no autumn break for the third year running, we were looking down the barrel of the worst winter on record. The sheep were on full drought rations, with most of them in 2 score condition or less. There was very little ground cover and no green feed, which meant the soil was dangerously exposed to wind and rains.

The way the sheep were being run (spread out all over the property) was ineffective, causing devastation to our country and pastures and giving us no control over the stock (running after any vehicle within hearing distance and rogue wethers turning up 15 km away). The quandary was that stock were better off left alone to allow them to conserve energy, but they needed constant monitoring, assessment and feeding. The focus for us became to gain control of the situation. I decided the answer was to establish a drought feed lot, and the timetable we followed for the sheep is shown in Table 2.

Drought feed lot

The feed troughs were built out of conveyer belting and bush logs and the yards out of ringlock. The total cost of construction was \$1 per dse. Before entry to the feed lot, all sheep were classed and any sheep not worthy of feeding for 6-8 months were shorn and shot. A drench, a 5 in 1 for pulpy kidney, and vitamin A and E injections were all given to give the animals the best opportunity for survival. Bentonite was added to the feed ration to help prevent acidosis and low quality hay was available to provide some roughage.

The feed lot combined the conservation of our land and pastures with the economic maintenance of our stock on an adequate ration. It also reduced la-

Table 2. Timetable of sheep management events during 1997-98.

1997	
November	60 percent of wethers sold.
1998	
March	Designed and constructed sheep feedlot.
April	Uneconomic sheep destroyed. Remaining sheep into feedlot.
June	Snow. Provided some moisture.
August	Drought broke
September	Sheep out of feedlot.

bour requirements. As the feedlot was only 20 metres from the house and integrated into the woolshed and yards, sheep were quickly inspected and attended to without driving round the paddocks. Transport of feed grain was minimised with a silo on site, and the mad rush of hungry stock was avoided (it is estimated that sheep lose 20% of a drought ration intake by walking around looking for feed in the paddock). The labour component was reduced down to 3 hrs/week/1000 dse (2 feeding times per week).

Key sheep management practices

Weaners. Sheep entered the feed lot in three mobs - weaners, ewes and wethers. Weaners were at a critical body weight (15 kg), and had to gain weight to survive. They went on to a ration of 3 kg/week (80% pinched wheat, 18% cottonseed meal, 2% salt and lime) costing 12c/head/day.

Ewes and wethers. These initially received an all grain (pinched wheat plus 2% salt and lime) ration of 3 kg/week costing 8c/head/day. After two weeks, the weaners were gaining weight and the ewes and wethers were going backwards fast. It appeared obvious to us that the omission of the cottonseed meal was the limiting factor. We therefore changed the ewe and wether ration immediately to 88% pinched wheat and 10% cottonseed meal costing 10c/head/day. The results were instant and astonishing. Both the ewes and wethers settled down and gained weight after one week.

The Lessons

The bypass effect and the priming of the bacteria in the rumen was again demonstrated. In my opinion, part of any drought ration must contain a bypass protein component for the animal to make best use of that ration. Some hungry ewes showed an example of this, when one day in the feed lot a straw broom used to clean out the troughs was devoured, leaving only the wooden handle.

We started with the cheapest hay that we could get our hands on (still too expensive). After the sheep were going forward, we decided to stop the hay in the ration. This was the wrong move - they needed roughage. We then tried corn stalks (ex-

tremely cheap at the time), and they worked. The use of very poor quality, cheap roughage was only possible through the use of cottonseed meal.

The weather had a major impact on the vitality of the sheep and was monitored carefully. Even though the feed lot provided good protection, we increased the ration by 50% 1 to 2 days before a predicted cold snap. Over the 6 months, the sheep were let out twice because of severe cold storms.

We monitored the sheep every two weeks, weighing and drafting the bottom 1-2% off and putting them out into a designated paddock.

The breaking of the drought came with a snowfall in June and was followed by good rain in August. This is where the feedlot showed its real potential, by protecting and priming the pastures (paddocks had been destocked for 6 months). Within 3 weeks of the August rain, these paddocks had reached 700-1000 kg DM/ha and we were able to let the sheep out. With the sheep's gut primed by the cottonseed meal, they immediately started putting on weight, and made efficient use of the fresh green feed available.

When the sheep left the feed lot we had on average 1000 kg/ha green feed in our paddocks, while neighbours had less than 200 kg/ha. We also had finished our feeding program up to 8 weeks earlier than some neighbours. In hindsight, we could have finished feeding several weeks earlier still.

Drought feedlotting is not for the faint-hearted but the rewards are numerous including:

- protection of land and pasture
- a quantifiable feeding regime and,
- a high degree of control.

The drought feed lot was my biggest win in agriculture.

The People Story

This is the side of drought that does not get much attention, but is probably the most important. I saw people very close to me going right to the edge of losing it. The social ramifications in my lo-

cal community have been major, to the extent that it has been changed forever. The problem lies in the insidious nature of drought, and the inability of many people to take charge of the situation and plan well. I feel this can only be achieved by stepping off farm and looking elsewhere. The answer lies, I think, in drought focus groups.

Our drought group started in early 1996 by default, in the form of a PROGRAZE group. Our ability to assess pastures is probably pretty poor because there weren't any to assess in that period, but we had a very effective drought group. The group allowed us to gather relevant information, obtain technical advice, and rub shoulders with our peers, giving us the ability to console, look in at the farm from outside, and make crucial decisions. This group was one of the greatest assets to me during the drought.

It might well be the role of Departments of Agriculture to initiate the formation of these groups in times of drought and service them with facilitation and technical advice.

Conclusions

I saw the devastation of land, the devastation of stock and, most of all, the devastation of people. We should all be prepared for the problems that drought inflicts. The fact is that drought will always be a part of Australian agriculture. If drought can be seen in a positive light, it should be seen as chance to learn, to perform under pressure, and as a definite character building process. If I have learnt anything from this last drought, it could be summarised into the following five points:

- Plan well
- Start early
- Have access to up to date information
- Have the ability to get off farm and rub shoulders with your peers
- Most of all, BE IN CONTROL

Successful management in severe drought involves a three pronged strategy: *Prime your stock, prime your pasture and prime your people.*