

Lessons learnt on how to plan for dry times.

David Marsh 30th August 2018



David Marsh at 'Allendale' 15th August 2018



Cattle grazing at 'Allendale' August 2018

Recent TV stories of the dry conditions affecting New South Wales and Queensland have shown the depressing conditions that seem to go hand in hand with the regular onset of dry weather in Australia.

Whilst I find myself feeling deep empathy for those who have found themselves in such situations, we have found we are no longer seeing the scenes we saw on our farm in the late 60s and 1982/3. By changing our management philosophy: we, our business and our land is not suffering like it used to.

Back in 1982 I was a young farmer trying to show myself that my efforts could grow more wool and wheat than the district average. Allendale was a mixed enterprise farm, but livestock were our main business. 1982 was the driest of the forty-seven years I've been farming at Boorowa in the south west slopes of New South Wales. It's considered "safe" country, 625 mm average over 120 years of records. 1982 only delivered 240 mm.

But back then I had almost no idea of how to plan for the variability of the climate I lived in. My planning was about having enough hay and grain on hand to feed for six months. We pretty much ran fixed enterprises every year. Doing that in 1982 turned this place into a desert. We reduced numbers too late and only received \$1.50 per head for ewes, some were of no value.

The land we loved lost cover and dust storms were frequent. In January 1983 we had a 30 mm storm that fell in twenty minutes. Fourteen fences were flattened by the force of the run-off. We fed out a lot of hay and 400 t of oats before buying wheat from the government at a 50% subsidy. As dry times go it was a short one, really only a year and a half. We went backwards financially, psychologically and the environmental cost was extreme.

I felt so ashamed at the way our paddocks looked and had to admit to myself that I was the cause of the devastation. I resolved to never let this happen again. I started looking around for different ways of farming.

Fast forward to 1999, I was studying for a Master's Degree in Sustainable Agriculture and I'd heard about Managing Holistically and had enrolled in a course. These two courses changed my life and outlook and managing holistically gave us a framework for making decisions that were socially, economically and environmentally sound.

Basically, it gives you the tools to always be running a stocking rate that is matched to the resource, the grass.

In my previous farming life, my focus was on the money, an economic relationship with the land. The philosophical shift in thinking had more balance: the people, the business and the future resource base of the land.

We had some principles we tried hard not to violate.

- These days the focus of our decisions is toward a functioning landscape, increasing in diversity.
- Having full ground cover of living or dead plants to protect the soil from erosion.
- Animals to convert the grass into saleable products,
- Allowing plants to recover for a long time after short graze periods.
- Planning time for other species to become established.
- Planning time for recreation.

The heart of our livestock management is a grazing plan. In the growing season, (April to December) we are planning how much time plants need so they are fully recovered before being grazed again. This varies according to the rate of growth which is influenced by heat, cold, rainfall and day length. When growth is slow plants need a long time to recover. When growth is fast they need less time.

Plants grazed for full recovery produce between two and three times the biomass compared to set stocking.

Two fundamentals of grazing, don't stay too long in fast growth, and don't return too soon in slow growth.

To achieve the recovery we desire for our plants we needed more paddocks. We have gradually created more paddocks over the last twenty years. Now we have 100. We paid for this by diverting the fertiliser and chemical budgets for two years. It was a one-off cost that gave ongoing benefits. For the past nineteen years we have not used either chemicals or inorganic fertilizers.

We are tapping into the inherent capacity of landscapes to become more diverse if we allow them to. That is consistent with the trend of evolution.

Our season becomes dormant in many years about the beginning of December.

Then we do a dormant season grazing plan.

- Each year we assume there will be 150 days of no growth, plus another 60 days in case the autumn break is late. So we plan for 210 days of no growth every year.
- We work out how many days of grazing are on the whole farm
- Then divide the total number of days into the number of grazing days
- The result should be 210 or more. If it is less than 210, the available feed will not last 210 days, meaning we are overstocked.
- **The sooner we reduce numbers, the longer the feed will last the animals we retain.**
- Reducing numbers early, means we are usually selling into a high value market because most people are not even beginning to think they need to reduce numbers.

Planning in the growing season

- Planning for recovery
- Minimise the number of mobs of stock
- In dry times we try to have one mob only, this adds recovery time to all paddocks

2002 – 2010 Nine dry years, no \$ spent on feeding, full ground cover, stock numbers reduced or increased as conditions changed, no feeding, (Over nine years this saved us between \$500,000 and \$800,000). More species establishing, especially native grasses.

2017-2018 in practice

The spring was drier than most, we only had about one third to a half of an average spring. The season became dormant at the end of November 2017, a month early.

Stock November 2017: 240 cows and calves (4300 dse), 250 joined heifers (3000 dse)

We did our dormant season plan and knew our animals would run out of grass early, so 250 joined heifers were trucked out in November 2017.

At the moment we are running agistment only, but the principle of reducing numbers is the same if you own the stock.

If we have too many stock and no grass we will soon have no money.

This strategy effectively reduced our stocking rate by 40%, and was a decision that reduced stress on us, and assured that ground cover was maintained.

With agistment, when stock leave, your income drops, but the remaining feed lasts much longer for the stock you retain.

The autumn in 2018 opened dry and has continued so.

We assessed how many days of grazing we had ahead of us in April.

The result indicated we needed to make further reductions.

Early May: 240 calves were weaned and left the farm in May 2018. This was another 1400 dse reduction, leaving 240 pregnant cows 2880 dse. We were then understocked and brought in another 60 pregnant cows, 720 dse (total dse 3600).

Now we have 300 cows almost finished calving at the end of August 2018.

Total dse August 2018: 5400

We have been in a slightly better rainfall situation than much of NSW but have only measured 220 mm for the year.

We still have full cover, the little falls of rain have led to some recovery in the paddocks we have grazed over the last two months. Although we have had many heavy frosts growth is still happening. Many local farms have been feeding for months and pastures are very short. This means growth starts from a very low base and is slower.

We have 150 days of grazing ahead of us, which has a calming effect on people, stock are maintaining condition, land is covered and growth is happening.

We have spent nothing on feeding.

The growth that is occurring is partly because our plants have large root systems and organic matter is high and holds more moisture.

Spring is already starting here in a dry year.

We will continue to monitor growth rates and plan further reductions if spring is delayed or doesn't happen.

By matching stock rate to carrying capacity, we avoid feeding costs, early sales stimulate cash flow.

If we get it right or close to it, we may also be in a position to buy when everyone else is selling and prices are falling.

Appendix

Learning how to plan grazing is easy but requires some training. My advice would be to enroll in a RCS Grazing for profit, or a Holistic Management course. It could be the best investment you will make.

How to estimate how much grass you have now.

Go to each paddock and estimate how many square metres of grass will feed a 45kg wether (1 dse), for a day. Don't agonise about getting this 'right', you will get better at doing this over time, and once you begin moving the stock you can immediately tell how close you are by looking at the paddock the stock have just left. If there's a lot of feed left, you've been pessimistic about how much feed there is. If the paddock is as bare as the road, you have been too optimistic. In both cases you can simply adjust the time you spend in the paddock and observe the result.

- As an example, say you decide that ten square metres will feed a sheep (1 dse) for a day.
- Each hectare is 10,000 square metres so in this example 1 ha will feed 1000 dse for a day.
- If the paddock is 8 ha it will feed 8,000 dse for a day.
- I can do these assessments on our 800 ha in about two hours. In grazed landscapes there are often many paddocks that are similar, but it still pays to go to each paddock so you don't fudge!
- Record the number of grazing days for each paddock. Add them all up and you'll have a large number.
- Divide this big number by the number of dse equivalents you have on hand.
- In our case now we have 300 cows and calves. Each cow and calf is equivalent to 18 dse so we are running 5400 dse.
- In the growing season the above process gives a snapshot of how many grazing days you have ahead now. As it is a growing season recovery is happening in all paddocks if it rains.
- You can't punt on grass assuming it will rain.
- In this year with very little rain the soil moisture will be used up very fast as it warms up.
- So in these conditions it will be important to be pessimistic about growth rates.
- Today we have 150 days of grass ahead of us for 5400 dse, but if it does not rain in September, growth will slow or stop, so we will be planning stock reductions by the end of September.
- Doing that will mean that the grass we have now will last longer if we cut 33% of our dse by end September.
- If it does rain in September as the weather warms, growth will be fast and we will be able to continue with 300 cows and calves.
- Delaying number reductions by punting on future rain or grass can cost us dearly in three ways.
 1. It adds to anxiety.
 2. It could cost a lot if we decided to buy feed. (We would not do this), or if the market falls down the track.
 3. Our land would suffer and lose cover which we want to avoid at all costs.