



# Burnett Mary REGIONAL GROUP

Practical Solutions for Natural Resource Management

## Land Management Strategies for Drought

### Grazing Lands

John Day 2014

Droughts are a common factor that landholders deal with in the management of their properties. Queensland has a variable climate with dry seasons occurring more often than wet. A drought defence plan should be geared to work with the natural variability and not ignore it. The aim should be to minimise the effect of drought and reduce any long term loss of production.

The following points may help when planning to minimise degradation and long term production losses from drought.

#### Maintenance of Soil and Pasture Resources

The two main natural resources at the disposal of the grazier are soil and pasture. Soil and pasture reserves are like the nucleus of a good stud herd. If you look after the nucleus, you can rebuild the whole herd again when conditions are favourable.

Drought management in grazing lands should aim to maintain soil and pasture resources in a condition that will not minimise or reduce the future production potential of the property.

Drought conditions can be nature's way of giving the soil a spell, a natural fallow, and the system will work that way when sufficient vegetative protection for the soil is left during the dry period.

#### Where the Problems Begin

If you remove most of your pasture reserves and the top soil is exposed, valuable nutrient rich dust can be blown or washed away by wind and rain. When the fine surface mulch from the top 5-10 cm has been lost, the soil left behind is hard. It is often packed tight by cattle to the extent that moisture will not penetrate unless there is very gentle rain over a long period. When heavy rain hits this hard surface it will run off at high velocities which in turn washes away more soil.

The remaining pasture plants may grow and set seed, but there is a very hostile and dry environment for both parent plants and new seeds trying to germinate. This scenario of reduced cover, increased run off, soil loss and in turn less cover will perpetuate if left unchecked. If this erosion and pasture deterioration cycle is not broken, large areas can become completely denuded of vegetation.



## The Cover Story

Research shows that 40 to 60% cover or 500 to 1000kg of dry grass per hectare is necessary to reduce erosion from drought breaking rains.

By keeping these levels of pasture for cover, you are also keeping sufficient healthy pasture plants to reseed the whole paddock when the season breaks. Grass tufts gradually die off with age. This natural process places great importance on seed reserves and seedling survival to ensure the future production of the pasture.

## How Do We Stop the Degradation Cycle?

### Pasture Monitoring

The main weapon we have to combat the insidious effect of drought is to monitor pasture reserves and stock numbers on a regular basis.

Ideally, when the pasture approaches the critical level of about 60% cover and 1000kg of dry grass per hectare, you need to make some firm decisions about reducing the number of stock on the property.

Another critical point is to have good cover when you are likely to get storms. Therefore, you should plan to come into the spring and summer storm period with a minimum of 60% cover and 1000kg per hectare of pasture on your property.

### Pasture Spelling

A system of paddock spelling should be used throughout the summer period to allow good seed set of all favourable pasture species.

For example, paddocks of predominantly pitted blue and Queensland blue grass need to be spelled early in the season. Paddocks of predominantly forest blue grass or black spear grass need to be spelled from January on. The length of the spell will depend on the species, but two to three months with no stock or half normal stocking rate has proved to be adequate. Many rotational and cell grazing management systems will provide these longer spells for the various soil and pasture types.

### Property Management Planning

Utilising a farm plan to map out land types and fragile risk areas, then gradually fencing them off will assist to increase efficiency of management and returns from the property as a whole. By using this strategy, production is increased and the risk of degradation on all land types is reduced.

### Fodder Conservation

To supplement paddock feed, plan to regularly accumulate and store hay or supplements such as cotton seed and molasses, if you keep a store of up to six months supplement by buying when supplies are plentiful, considerable savings can be made. Parts of these stock piles can be utilised each winter and replaced to ensure the reserves are always good quality.

Modern methods of silage making are also worth considering as a drought fodder reserve.

A source of fodder reserve not yet fully explored is the use of browse trees and shrubs. Research and producer experience show that these trees can provide an excellent reserve to fatten stock annually and also supplement grass reserves during drought

periods. The most useful species to date is leucaena (*Leucaena leucocephala*). There are also several new species under trial, some of which are showing promise.

There are several native species which are also valuable drought reserves. For example, mulga (*Acacia aneura*), Red Ash or White Myrtle (*Alphitonia excelsa*), Wilga (*Geigeria parviflora*) and Kurrajong (*Brachychiton populneus*). These should not be forgotten and can be managed to augment other supplements during a drought period.

### Contour Ripping

If you have scalded areas with bare soil and no grass it can be worthwhile to deep rip on the contour. This will allow water to enter the soil and germinate any seed washed or blown onto the area. However, retaining a good grass cover in the first place is a much better erosion control method than the roughness effects of ripping. If a combination of pasture monitoring, conservative stocking and storing drought reserves is practiced, the property will be more self-sustaining. This will in turn mean fewer fluctuations in overall production and income.

### Removal and Control of Stock to Reduce Degradation

Combined with pasture monitoring, a timetable for reducing stock numbers should be developed and continued until the feed supply improves.

### Stock Removal

Stock should be removed from fragile or unstable areas and areas previously suffering from degradation as soon as possible.

Animals should not be allowed back into these areas until after the drought breaks. Stock should be prevented from overgrazing areas which carry large water flows (for example, natural depressions, floodplains, dam spillways or soil conservation waterways).

### Water Management

Strategic placement of permanent water will spread grazing pressure and more evenly utilise pasture. In many cases this can be achieved using polythene pipe and troughs. With this system of main waters and troughs, it is very easy to control waters. Controlled waters enable self-mustering to be used giving considerable reduction in costs. Small to medium sized dams can also achieve the desired outcome however, it is still wise to fence the storage and pipe water to a trough with either a syphon or solar system to reduce costs and extra labour.

### Make Decisions Early

The key to successful drought mitigation is to consider your options early in a dry spell and to take into account normal weather patterns. For example, low rainfall over summer usually means drought before the following spring.

Decide whether you are going to feed, agist, sell, or combine the three.

If you are selling, reduce cattle numbers selectively. For example:

- Normal sale cattle first;
- Breeders over eight years old second;
- Cull weaner heifers third; and then
- Next years male sale cattle.

As an alternative, it could be a good time to selectively cull breeders and hold more male cattle to produce cash flows after the drought.

If agisting, the best option is to send steers to fattening country close to markets. Breeders are often a risky agistment proposition. Contract feedlot fattening is another.

As the dry spell progresses, monitor pasture closely then reduce numbers to try and maintain the grass cover above the critical level of 60% or 1000kg per hectare of dry pasture.

### Stock Management for Feeding

When feeding, consider removing most or all of the stock from the paddocks which are getting below 60% cover and feed them in a semi-feedlot situation close to home. This option will reduce running and labour costs for supplement distribution and water maintenance. To do this, select a paddock which is flat with adequate water facilities and sufficient shade for large numbers of stock. An old cultivation area is ideal. This will allow you to cultivate and re-establish a pasture once stock have been removed.

On more extensive properties you can use a small holding paddock in each main block in the same fashion. This restricts the pasture damage to a small portion of the property. These small paddocks can be spelled and kept in good condition during non-drought periods.

### Use Conservative Stocking

The best insurance against drought is to have a conservative stocking policy at all times. If we do this, the turnoff of stock from the property will be of higher quality, and at a younger age.

Conservative stocking policies have proven to be economically and productively sound throughout Australia.

### After Rain

#### Watch Stocking Policy

After drought breaking rain, there is always the temptation to return stock to the pasture too soon. This can be just as detrimental to the pasture's survival as overgrazing prior to the break. If you can allow a month's growth before returning stock the pasture should recover quickly. As you go through the season after rain, you need to allow the pasture to set seed. This will ensure seed reserves for the following season. If the pasture is not allowed to set seed, then this will open the door for the degradation cycle to start again.

If your plant numbers are limited, then the time lag before stock can be returned is longer. Allowing these existing plants to set seed is critical. If they are not allowed to set seed, then the pasture is destined for many years of reduced production.

Any large scalded areas which have been deep ripped may need to be fenced and allowed at least one good season to recover before stock are returned. Temporary electric fencing can be an inexpensive and reliable option to allow these areas to rehabilitate.

Overgrazing directly after drought breaking rain can assist the undesirable grass and weed species to get a foothold in your pasture. Any of the desired grass parent plants or seedlings which grow after drought breaking rains will be preferentially and heavily grazed by stock. This gives species such as the wire grasses and broad leaf weeds a chance to grow and seed. At this stage it is wise to look at individual grass plants to assess their viability. If the stock are not removed to allow the better

grasses to set seed, there will be a dramatic reduction in your desired grasses in the following seasons.

### Rehabilitate Where Necessary

If your pastures are already invaded by pest species, you will have to embark on a rescue mission. Research conducted at Brian Pastures, Gayndah has indicated that black spear grass pasture can be rehabilitated by the proper use of fire and pasture spelling. If the pasture is almost totally destroyed, the other option is renovation and introduction of improved pasture species. If you use the option of improved pasture, it is important to consider strategic contour bank protection for areas you propose to disturb. This is particularly important on slopes over 1%.

### Conclusion

There will be times when regardless of what precautions are taken, dry weather will exhaust the resources available to run your enterprises. We can reduce these disasters to perhaps once in a life time by actively planning and preparing for the dry spells throughout the better seasons. By using the management strategies mentioned, there can be many benefits to the normal operations of a beef producing enterprise as well as having a substantial safety margin against dry weather.

