11 Managing Native Pastures during Drought

KEY POINTS

- Drought is a natural part of the Tasmanian environment, and it should be taken into account in all property plans and management procedures.
- During drought, destock rather than overgraze native pastures.
- Allow adequate time for native pastures to recover following grazing during and after drought.
- Overgrazing native pastures during and after drought can have a deleterious effect on long-term productivity.

WHAT IS DROUGHT?

Drought is not just a period of low rainfall. Rather, it is a prolonged, abnormally dry period where not enough rain falls for normal pasture growth. Droughts often extend over several years, relieved only by brief, transitory rains. Over longer time periods, there may be periods of a decade or more that seem 'drought prone'. During these low rainfall periods, not every year is dry, but the rainfall in most years is below the long-term average and there are consecutive years of drought.

The lower rainfall areas of Tasmania, such as the Midlands, Derwent Valley, Fingal Valley, East Coast and Flinders Island, have experienced a sustained dry period with lower than average rainfall for most years since the mid 1970s (Figure 14). Although extended periods of lower than average rainfall are evident further back in Tasmania's rainfall records, evidence from climatic modelling suggests that the present dry period is related to global warming associated with the greenhouse effect.

Australian state and federal governments have recently acknowledged that drought is part of the natural variability of Australia's climate, and have restricted drought relief for farmers and agricultural communities to times of so-called 'exceptional circumstances'. In other words, farmers are expected to cope with normal rainfall variability and the occasional drought, so drought relief is available only for unusually long or severe droughts.

For pasture growth, the timing and quantity of rainfall can be just as important as the total annual rainfall. Regular rainfall events that maintain soil moisture without surface run-off are the most effective. Rainfall coming in very light falls at regular intervals or in a few large falls is far less effective.

EFFECTS OF DROUGHT ON NATIVE PASTURES

The most obvious effect of drought on native pastures is a lack of pasture growth. Most native grasses are highly tolerant of drought conditions. Healthy, vigorous plants use their root systems to access water deep in the soil, or they become dormant until soil moisture increases. However, when native grasses are grazed heavily just before a drought or after flushes of growth following light rains during a drought, their ability to regenerate and regrow after the drought may be severely reduced. Heavy grazing during dry periods, especially in summer, can expose the growing points of native grasses to high temperatures, which may kill the plants. For example, tussock grasses can provide a good fodder reserve during drought, but if the tussocks are grazed too heavily they may die completely. If they do survive, they may take several years to regain their former vigour.

Rainfall variability in the Midlands of Tasmania

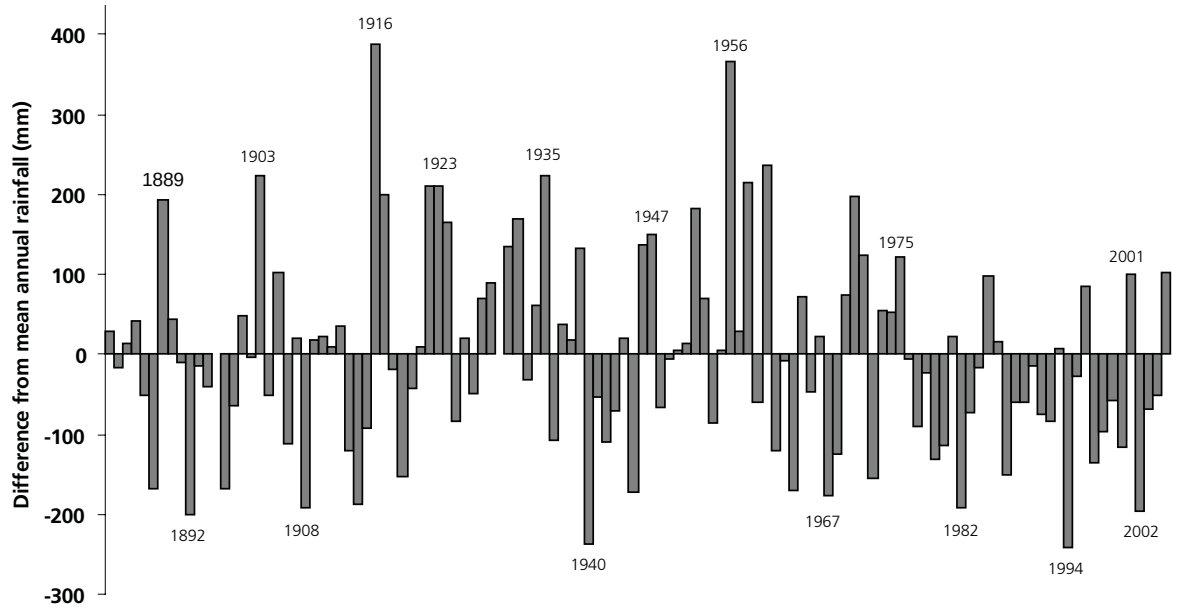

Figure 14. The Midlands of Tasmania has experienced an exceptionally dry period since 1976. The annual rainfall records for Oatlands for 1883–2005 are shown as the difference from the mean annual rainfall of 553 mm.

MANAGING NATIVE PASTURES DURING DROUGHT

The ways in which native pastures are managed during drought have major effects on the sustainability and long-term productivity of grazing enterprises.

Have a plan

Drought is one of the biggest uncertainties affecting farm enterprises, and graziers are increasingly being encouraged to be self-reliant in managing rainfall variability. Although it is tempting to avoid thinking about drought when times are good, having a drought plan—preferably written—is beneficial. A drought plan may involve reducing stock numbers if specified amounts of rain do not fall by specified dates, categorising paddocks according to erosion risk, and selecting one or two paddocks to be used as 'sacrifice paddocks' so that not all the pastures become degraded. It is better to use already degraded pastures on flatter areas as sacrifice paddocks, because they can be resown later, and they are not highly susceptible to soil erosion.

Native pastures can be seriously degraded if grazing is not controlled during drought.

The most basic preparation for drought is to have a plan for destocking and accumulating water, fodder and cash before the drought begins. Farmers are being encouraged to invest and save money in good years, so they can be more financially secure during drought years. However, the interests of short-term profitability may conflict with the long-term sustainability of native pastures during drought. During normal rainfall years, higher stocking rates are more profitable.

However, higher stocking rates make grazing enterprises more susceptible to drought, and result in more rapid degradation of the pasture resource. The key is to destock early in the drought by selling, lot feeding or agisting out livestock before fodder reserves are exhausted.

Use native pastures as feed but don't degrade them

Native pastures are commonly used as feed during drought. Under prolonged dry conditions, the damage to native pastures can be minimised by removing livestock as soon as planned minimum levels of pasture mass (e.g. 500 kg DM/ha) or maximum levels of bare ground (e.g. 30%) occur. These levels should not be exceeded. Overgrazing of native pastures should be avoided at all times, but overgrazing is particularly critical during drought. If grazed too heavily during drought conditions, native grasses may be depleted or eliminated from native pastures, leaving the soil susceptible to erosion and creating bare areas where weeds can invade. The invasion of weeds may be irreversible, and may cause a decline in pasture condition and productivity. Unlike sown pastures, most native pastures cannot be resown.

Monitor the feed available

The major problems faced when managing pastures during drought are not knowing if a dry period will turn into drought, and not knowing how long a drought will last. Careful monitoring of soil moisture, pastures and livestock is recommended to improve drought management practices. Continuous monitoring of the available feed and livestock requirements allows feed shortages to be identified early, and provides the opportunity to respond quickly by destocking or buying fodder.

Sheep waiting to be fed grain during drought. Watch out for weeds in areas where grain or hay has been used.

Determine the number of livestock early

Some graziers argue that properties are overstocked if it is necessary to feed grain during a drought. Developing a contingency plan for selling the least valuable livestock first allows the resource base, including stock bloodlines and pastures, to be kept relatively intact. The arrival or otherwise of the 'autumn break' is often regarded as a good time to reassess winter stocking rates.

In poor seasons or when the autumn break is late, it may be useful to reduce stock numbers so the demand for feed matches that available. Nominating a 'disposable' (can be sold when needed) portion of the flock allows graziers to respond rapidly to drying conditions and possible feed shortages. For this strategy to be successful, the priorities for disposing of stock must be clearly defined ahead of time, and may include stock already identified for culling, old wethers, old ewes and younger wethers. Young breeding ewes are often the highest priority for retention in order to maintain the genetics of replacement stock, though the fertility of these ewes is often compromised by poor seasons.

To make sure the demand for feed does not exceed that available, the critical periods in the year for feed availability should be identified. For instance, in most districts, if the autumn rainfall has been low and little feed is available by the end of April, it will be too cold for significant pasture growth before the end of September, even if good rain falls in winter. In such circumstances, stock numbers should be reduced in autumn or concentrates sourced for supplementary feeding.

Avoid overgrazing after drought

After a drought breaks, the pastures need time to replenish their energy reserves. Most drought damage occurs as a result of continuous grazing of new growth after the drought breaks. Allowing adequate time for the pastures to regenerate and recover after a drought results in more rapid growth rates. Ideally, wait until at least 1000 kg DM/ha is available before grazing. After a bad drought, wait until the native grasses have flowered.

Take care also to control any weeds that have germinated in areas where imported feed has been fed out.

These silver tussocks have been heavily grazed during drought, and will need resting to allow them to recover.

Lindsay Nicolson

'Bonneys Plains', Conara

'Drought is how you perceive it. We have periods of low rainfall, but we never have periods of no rainfall. So, you've just got to look at what rainfall you get and manage according to that.

'During periods of low rainfall, we move stock on to our native country. We're fortunate that 70% of the property is native, because it means we've got a fall back position to cope with dry periods.

'If a dry spell persists, our policy is to reduce stock numbers. We try not to leave it until the stage where stock are flogging the pasture out or exposing a lot of bare earth. We get rid of the oldest stock first. We might sell two years of cast-for-age stock, rather than one.

'In the past, we just ran everything in the native country during dry periods and didn't destock. Looking back on that policy, it wasn't so good for the native country.

'There's still a perception that you can use native pastures as a store of feed that will persist regardless of stocking rates during dry periods—but I don't think that's the case.

'When rainfall returns to normal, we try to rest our native pastures for 12 months. I think that having a break following a dry period is critical—allowing things to recover rather than grazing them immediately. If you rest native pastures for a full 12 months after a dry period, it's just incredible how much they recover. Resting native pastures following a dry spell is probably just as important as what you do during the period of low rainfall.

'You have an abnormal amount of bare ground after a dry period. If you can allow the grasses to set seed in the following season, the chances of regeneration are pretty good. I've kept a close eye on that, and you do get some good regeneration if you're lucky enough to get a half-decent season following the dry period.'