



## FACT SHEET

A guide for land owners and managers in the Mount Lofty Ranges

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# Grazing Livestock in the Mount Lofty Ranges

Sheep, horses and cattle comprise most of the livestock enterprises within the Mount Lofty Ranges, with an increasing interest in alpacas, deer and goats.

For a successful and sustainable grazing enterprise, consideration is required for appropriate land management. All land owners have a duty and responsibility to care for the land under their control.

Inappropriate grazing practices will result in land degradation such as wind and water erosion, dry land salinity and pollution of watercourses.

Proper planning, monitoring and vigilance are important to prevent land degradation. Land degradation will become worse over time. Prevention is more cost effective than remediation.

## LAND MANAGEMENT PRINCIPLES

There are a number of essential principles required for sustainable land

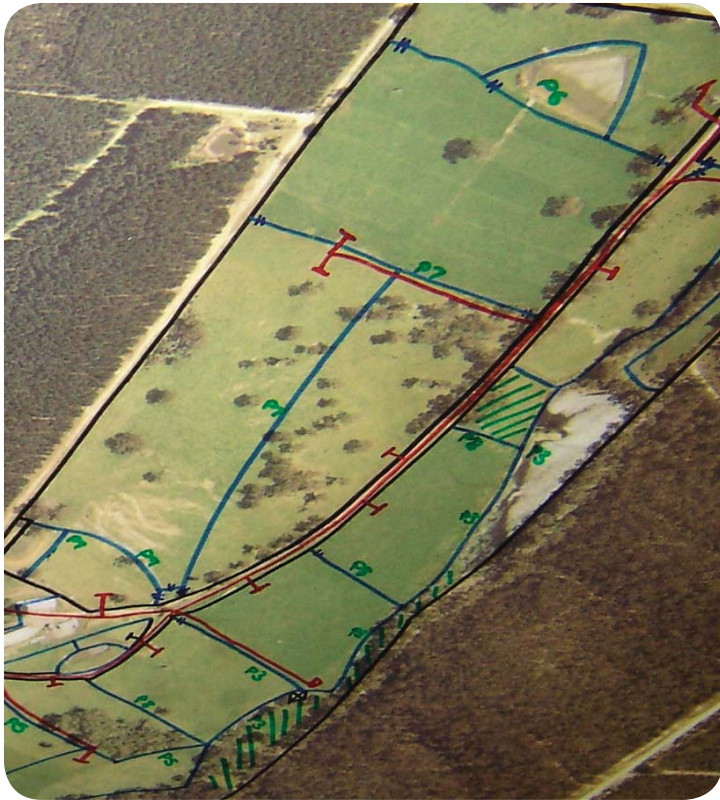
management, regardless of the type of grazing animal.

- **Healthy soils** – soil needs to be free of compaction, free-draining and not affected by imbalances such as nutrient deficiencies and soil acidity.
- **Pasture management** – good pasture management requires the selection of appropriate plant species, a healthy soil, weed control and grazing management.
- **Grazing management** – always maintain adequate groundcover across the whole paddock and protect sensitive areas at all times.
- **Property planning** – ensure a grazing enterprise is viable while at the same time protecting land. Attention to land types and capability, fence-lines, watering points, shelter belts, wind breaks and watercourses need to be considered when developing a property plan.



Above: Paddocks are tailored to land type through property planning.





Above: An aerial photo is an essential tool for property planning.

## PREVENTING LAND DEGRADATION WITH PASTURE AND GRAZING MANAGEMENT

For the sustainable management of pasture you need to consider:

- Soil fertility and structure.
- Pasture mixes (plants).
- Management of wet soils.
- Grazing management.

These factors will vary depending on the type of animal being grazed. Specialist advice should be sought to assist in the selection and establishment of pasture species appropriate to your area, soil condition and type of animals.

As a general rule, to manage pastures, aim to start grazing paddocks when pasture is green and 6 – 10cm high. Graze the pasture to 2 – 4cm in one week (two weeks at the most) then rest the paddock until pasture is 6 – 10cm high. Over the summer month's aim for a two week grazing period followed by a six to ten week rest. Ensure adequate ground cover at all times. A vital part of successful rotational grazing is to have enough feed ahead of the animals.

When feed quality and/or quantity run low, supplementary feeding will be required to maintain stock condition and protect paddocks from erosion and subsequent soil loss. Types and amounts of supplementary feed will depend on the stock. It is recommended you consult a qualified land management advisor for further information.

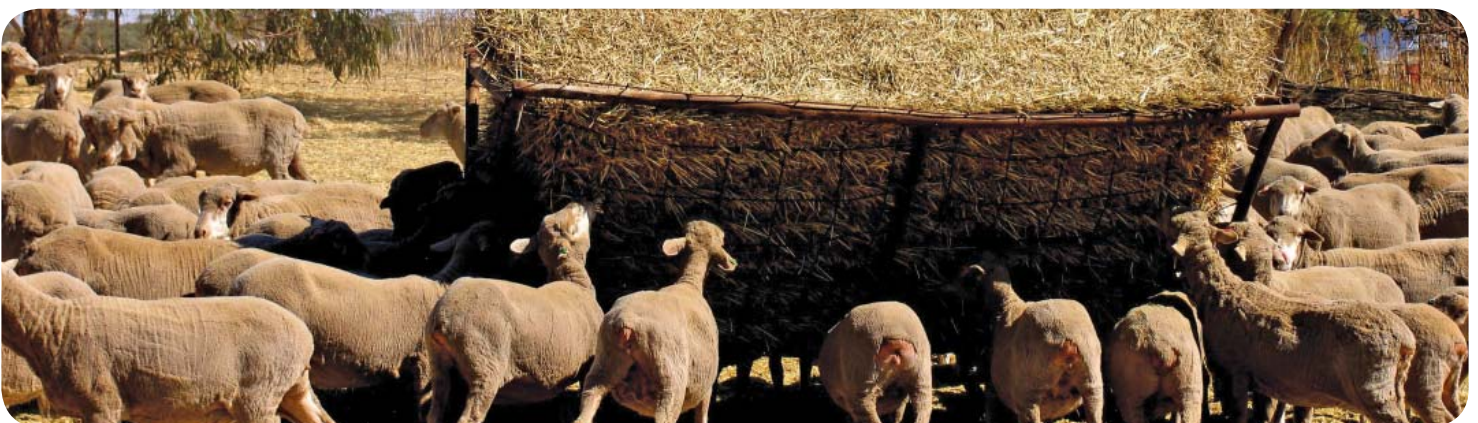
The Department of Water, Land and Biodiversity Conservation (DWLBC) have developed a guide to assess suitable levels of ground cover required to reduce the risk of erosion.

Wind Erosion	Minimum Cover %
Loam	15
Sandy Loam	20
Sand	50
Water Erosion	Minimum Cover %
Level Land	60
Sloping Land	75

Table 1: Recommended dry matter cover levels for reducing soil loss (DWLBC 2008).

These levels will not prevent erosion occurring during intense rainfall or very windy conditions; however, they will provide soil protection under most conditions if paddocks have adequate cover.

To prevent soil erosion, remove stock from the paddocks, and either place in containment areas, agist off farm or sell.



Above: Supplementary feeding at containment will assist in preventing soil erosion and maintaining pasture seed reserves.





*Above: High density of perennial pastures and clover.*



*Above: Poor density weeds are able to out compete pastures.*

## GUIDELINES FOR BEST MANAGEMENT PRACTICE TO MAINTAIN A HEALTHY PASTURE

Pastures that consist mainly of annual grasses with little clover are considered poor while those with a high density of perennial grasses, good clover content and few weeds are considered high quality.

- **Monitor** pastures for any changes. Look for an increase in perennial plants and clover, and a reduction in pasture weeds. After two years, review the pasture and determine inputs required to increase its production. If considering an over-sow or a re-sow, consult a land management advisor.
- **Test** soil and plants to diagnose and monitor soil nutrients to ensure optimum fertiliser applications. Monitor soil pH to determine if soil acidity is increasing and if so, how much lime is required to correct the problem.
- **Use** soil amendments and modifications where soil limitations can be corrected. For example, add lime or dolomite to acid soils and trace elements where deficiencies are known. Test soils before undertaking any remedial actions.
- **Encourage** biological activity of soil microbes and earthworms by correcting pH imbalances and increasing soil organic matter.
- **Understand** the growth patterns of pasture species and match grazing to these patterns.
- **Consider** native perennial pasture species as a low input alternative to introduced grasses.

When establishing or renovating pasture or fodder crops, care must be taken to avoid erosion by wind and water.

The following practices are encouraged:

- Minimise tillage and adopt direct drill.
- If cultivation is necessary, leave the soil surface rough. Seed can be sown dry and therefore earlier in the season. Avoid leaving soil bare during wet period.
- Soil conservation structures such as grade banks and furrows may be necessary during establishment on erosion prone land. Never cultivate through a waterway or a drainage line.



*Above: Temporary electric fencing can assist in preventing soil erosion.*





- Attention to established and new pasture is required, especially if the rainfall season is late starting or if there is a false break. New pastures need special care and management until they are well established. It is recommended to lightly graze a newly established pasture to allow seed to set in the first season. Red-legged earth mites can devastate clovers. Treat as necessary.
- If supplementary feeding, avoid over-grazing during dry periods. It is not recommended leaving gates open for animals to wander through the paddocks as this will result in selective grazing and degraded pastures.

Recommended practices for weed control in pastures include:

- **Crowd them out** – Establish vigorous perennial grass and clover swards by maintaining soil fertility.
- **Don't buy weeds** – Take care when purchasing hay or grain or when buying stock to avoid the introduction of new weeds.
- **Remember** – Annual weeds can often be controlled by spray topping and broad-leave weeds by spray grazing. Contact your local agronomist for further information.

### PREVENT TRACKING AND PUGGING

Tracks used by stock can become bare resulting in the channeling of water leading to erosion.

Pugging, caused by hard hooves on wet soils, damages the soil structure impeding drainage and aeration, making it difficult for pasture plants to establish and grow.

The strategic placing of watering points and proper management of stock will reduce the impact. Areas, which suffer continual tracking or pugging, need to be rubbled or covered with hardwearing vegetation. Protect wet areas by fencing to exclude stock during wet periods.



*Above: Pugging caused by hard hooves on wet soils damages soil structure.*

### MANAGING WATERCOURSES AND DAMS

To protect water quality and prevent bank erosion, the fencing of watercourses and dams to exclude stock is recommended.

Environmental benefits include:

- Reduced polluted run-off into watercourse. A grassy vegetated buffer of at least 10m can trap silt, nutrients, pathogens and chemicals from paddock run-off. Vegetated buffers can double as shelterbelts, as well as providing habitat for native animals.



*Above: Sufficient watering points will reduce stock tracking.*



- Better water quality for stock, drinking water supplies and the environment.
- Reduced faecal contamination (pathogens and nutrients).
- Ability to prevent stock drinking water contaminated with toxic algae (blue-green) and diseases (e.g. Ovine Johnes disease).
- Reduced likelihood of toxic algal bloom because of less nutrients and turbidity.

## STOCKING RATES

The correct number of livestock on a given area of land is critical for sustainable land management as too many animals on a small area of land will result in degradation, exposing soil to rapid deterioration by wind and water erosion.

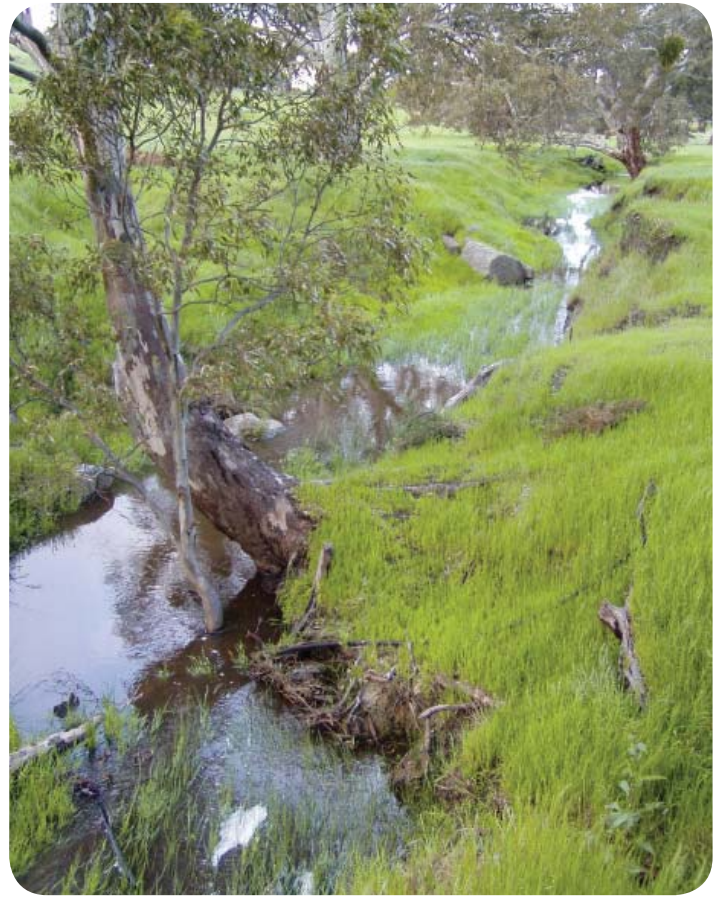
The number of livestock that can be grazed during the season will vary depending on the season, condition of the pasture and the soil. Feed requirements are determined by the type of livestock and will vary according to sex, lactation and age.

A standard method has been developed to assist landowners to calculate approximately how many animals they can support on their property. A Dry Sheep Equivalent (DSE) is the unit against which other animals are compared.

Table 2 shows the number of DSEs that can be kept per hectare, depending on annual rainfall and pasture condition.

When calculating the carrying capacity of property, consideration needs to be given to the:

- location and the size of the property.
- type of stock.
- pasture mix, annual- or perennial- based.



*Above: Protect watercourses by excluding stock.*

## CALCULATING YOUR TOTAL DSEs

Break your animals into their class, assign a DSE value and calculate the total DSEs.

Once you know the total DSE rate, you can now work out your actual and potential stocking rates.



*Above: Stock are a major contributor of pathogens to watercourses and dams.*



Type of Livestock	DSE Value	No. Equivalent to 100 wethers
<b>Alpacas (based on 65 kg animal)</b>		
Dry adult	0.9	111
Hembra	1.3	77
Macho	1.1	91
<b>Deer</b>		
Fallow dry female or castrate	1.5	67
Fallow breeding deer and fawn	2.2	45
Red dry female or castrate	2.1	48
Red breeding female hind	3.0	33
Red stag	4.5	22
<b>Goats</b>		
Dry Angora	1.0	100
Breeding Angora	1.5	67
Dry milk or meat goat	1.5	67
Milk or meat goat – lactating	3.0	33
<b>Sheep</b>		
Dry sheep – wether, ewe, hogget score – condition 2	1.0	100
Dry sheep – wether, ewe, hogget – fattening	1.4	70
Breeding ewe	1.5	67
<b>Beef Cattle</b>		
Dry cow steer 350 – 450 kg	8 - 10	
Yearling steer		
Fattening 250 – 400 kg	8 - 10	
Store 250 – 350 kg	5 - 7	
Fattening cattle 20 – 32 months	9 - 12	
Cow with calf at foot – up to 8 months)	13 - 16	
Bulls – 100kg	16	
<b>Horses</b>		
Dry	10	
Gelding	12	
Mare with foal	16	
Pony	7	
Stallion	16	

**Table 2:** This table compares different classes of livestock to a standard DSE. For example, it shows that a dry fallow doe will consume one-and-a-half times more feed than a dry sheep.

### CALCULATING STOCKING RATE

**Stocking rate OR DSE / hectare =**  
 Total DSE's ÷ Total grazing hectares.

Example: 365.5 DSE ÷ 40 hectares  
 = 9.0 DSE/ha

The stocking rate in the example property is 9.0 DSE/ha.

### PROPERTY PLANNING

Through property planning, the management of each paddock can be tailored precisely to the one land type.

With planning, areas such as watering points, fencelines and gate locations can be sited to avoid erodible areas and minimise tracking by stock.

Property planning will assist in decision making for the best placement of improvements such as fences, yards, troughs and raceways, shelterbelts, windbreaks and revegetation – all of which can contribute to increased productivity, higher property values, better aesthetics and easier management.

When improving the farm layout consider:

- Purchasing an aerial photo to illustrate your plans.
- Fencing to land class.
- Sufficient watering points on hard sites (e.g. gravel pad) at central locations within paddocks.
- Establishing smaller paddocks to control grazing management.
- Fencing watercourses, native vegetation, landslips and areas susceptible to water logging.
- Establishing well-sited shelter belts and wind breaks.
- Incorporating a raceway to improve stock movement areas excluded from stock such as native vegetation, revegetation and dams.



**Above:** Property planning identifies suitable sites for revegetation.