

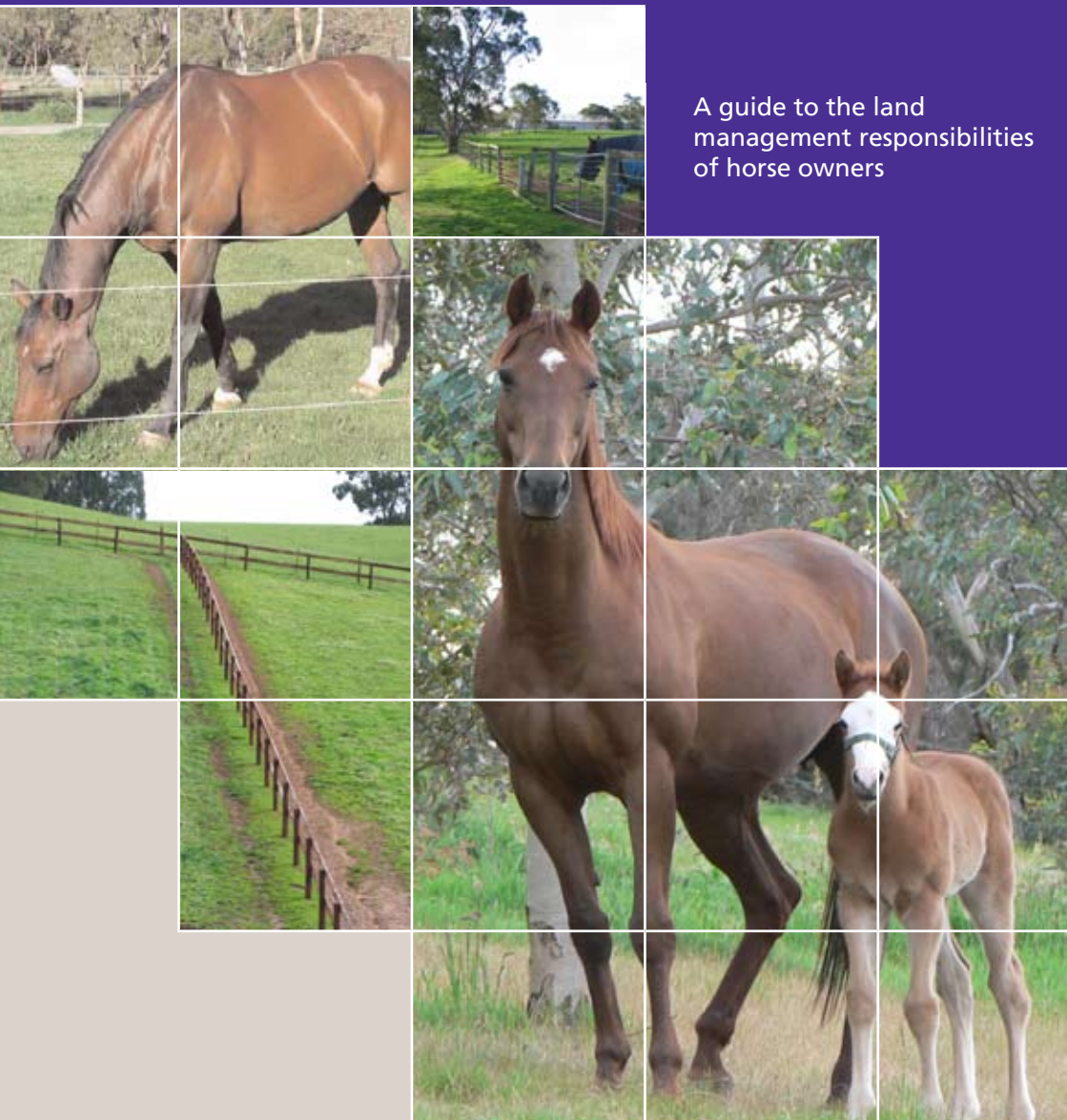


Government of South Australia
Adelaide and Mount Lofty Ranges
Natural Resources Management Board

Horsekeeping

on small properties in the
Mount Lofty Ranges

A guide to the land
management responsibilities
of horse owners



Acknowledgement is given to the following:

- Hoofprints – a manual for horse property management by Jacquie Foyel
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- Primary Industries and Resources SA
- Mount Lofty Ranges Catchment Program
- Natural Heritage Trust

Healthy and sustainable rural landscapes

This guide outlines your responsibilities for management of natural resources when keeping horses in the Adelaide and Mount Lofty Ranges region.

Simple information is presented that will help you to avoid adverse impacts to natural resources on and around your land, including soil, water and vegetation.

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Introduction

There are thousands of horses in the Mount Lofty Ranges on large, medium and smaller sized properties. This number is likely to grow because horsekeeping is attractive to many people moving to the hills.

Many of the properties where horses are kept, fit into the 'smaller' category. They are not generally used for commercial purposes (except for agistment) but rather for the keeping of horses for recreation and related activities. Often, the owners of these properties are people who have not had long links with the land.

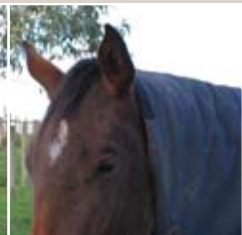
This booklet is designed to assist those people keeping horses on areas less than 8 ha (or intending to do so). The aim is to help make a success of horsekeeping; to make it enjoyable, but also, importantly, to ensure that horsekeeping does not adversely impact on the land (which by definition includes soil, water, air and vegetation).

Horses and legislation

To protect the natural resources and landscapes of the State, and to ensure land is used within its capability, all landowners and land managers are required to comply with legislation. In essence, natural resource legislation exists to ensure that land is used sustainably.

Under the Natural Resources Management Act 2004, owners and managers are deemed to owe a 'duty of care' to the land which means that soils must be protected and pest animals such as rabbits and foxes, and declared weeds, for example gorse (*Ulex europaeus*), need to be controlled. Also, under some circumstances, grazing of native vegetation may be considered 'clearing' under the Native Vegetation Act and regarded as not complying with the Act.

The Development Act 1993 also has a role to play and, so far as horsekeeping in the Mount Lofty Ranges is concerned, means that



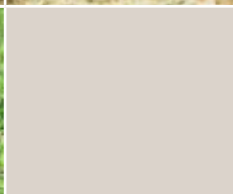


permission is required under certain circumstances to keep horses. According to the Act and its regulations, 'horsekeeping' occurs where there is more than one horse for every 3 ha of land or where handfeeding a horse is involved.

In other words, if you are handfeeding horses on the property or, for example, you intend to keep more than two horses on 6 ha of land, you are undertaking development and require the permission of your local council.

Depending on the zone in which the land is located, those wanting to run horses may have to invest in certain capital improvements. For example, you may need to have one stable and yard for every horse on the property. Such facilities are necessary so that paddocks can be 'spelled' and given time to recover from grazing.

Local councils have powers under the Development Act and have their own zoning regulations. It is advisable therefore, to check with your council before embarking on a horsekeeping venture or intensifying the use of land where horses are currently kept. The council will be able to advise you of your rights and obligations as a horsekeeper and, if you are a newcomer to the industry, the processes and time involved in getting approval to run horses.





Land and horsekeeping

When planning for horsekeeping, there are broadly three types of land that need to be recognised to match the carrying capacity with the best management system:

All-year access areas – these are gentle to moderate slopes, well- drained, and loamy to clay soils. They provide ongoing access for horses except when conditions become too wet or when surface vegetative cover becomes too sparse.

Restricted access areas – these include areas which become waterlogged in winter and/or can include steep slopes and/or highly erodible sandy, shallow or poorly structured soils.

Prohibited areas – these are extreme slopes, areas affected by landslips, gullyng, tunnelling, salinity, creek lines and areas of native vegetation.

These three classifications need to be considered when assessing stocking rates and compatible management systems.

How many horses?

So... how many horses can you run on a given area of land?

Obviously, the answer to this is related to the classifications above, the rainfall and also to the improvements on the land – fences, watering points, stabling and yard facilities, and so on.

You may hear people saying “this is 8 DSE country” or “10 DSE”. They are referring to a time-honored stocking rate system where the carrying capacity of the land is equated to ‘dry sheep equivalents’ or how many

Below and Right: The tendency of horses to congregate in one area and the effects of their hooves on the soil can lead to serious wind and water erosion problems.





dry (non-breeding) sheep of average condition can be kept on the land without weight loss or handfeeding.

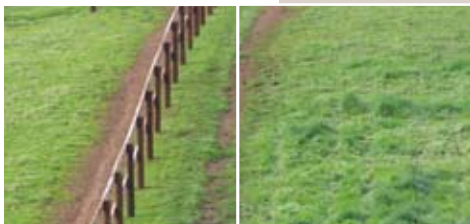
It has been calculated that for every 10 dry sheep, you can run one light horse; for every 14 dry sheep, one draught horse; and for every 6 dry sheep, one pony.

Areas such as those around Hahndorf are rated at 11 DSE per hectare, whereas Roseworthy is 5 DSE country.

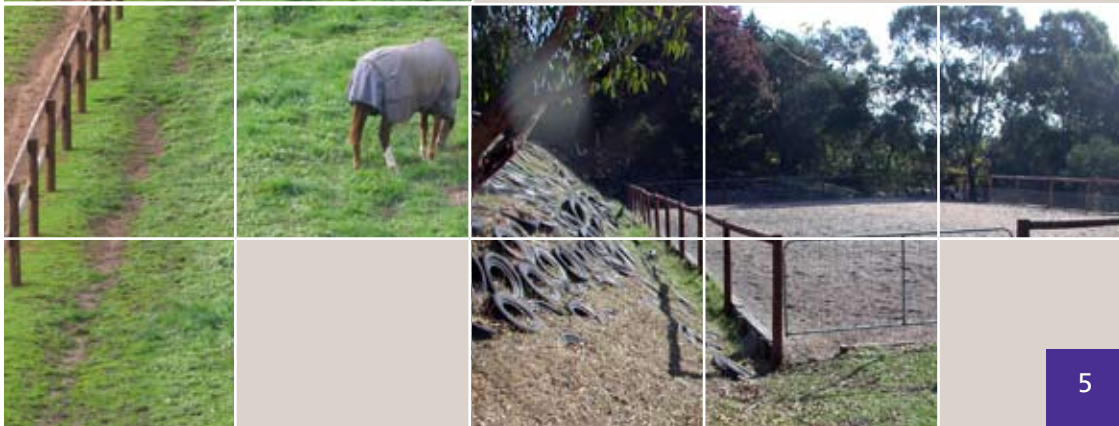
This means (according to the scale above) you could run about two ponies per hectare at Hahndorf; but at Roseworthy you need more than 1 hectare of land for every pony.

Let's say you have 8 hectares of land at Clarendon which is rated generally at 9 DSE. To calculate how many horses you can run consider the following:

- 2 ha is taken up by a house, buildings, yards and prohibited areas such as creek lines and native vegetation.
- 6 ha are therefore available for pasture.
- However, 2 ha have restricted access due to waterlogging for six months of the year. The carrying capacity of these 2 ha is 4 DSE



Left and Below: Steep slopes are potential erosion sites and need to be considered carefully when planning for horsekeeping.





Pasture management

each, so you have 4 ha left of all-year access with the 9 DSE rating.

- In total you therefore have 44 DSE (2 ha x 4 DSE + 4 ha x 9 DSE = 44) – sufficient capacity for four light horses or three large horses. Such figures provide only a general guide and careful observation is still needed to ensure paddocks are not degraded.

As a landowner, it is advisable to learn and understand the concept of 'DSE' as it will guide you on deciding how many animals the land can sustainably carry.

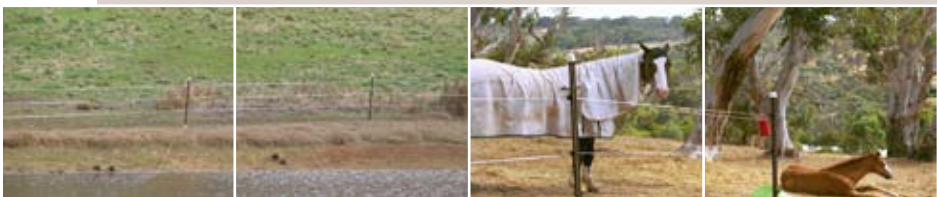
However, in the context of this factsheet which is mainly concerned with small properties, the number of horses you can run is linked to the type of land, the improvements on it, zoning regulations and, importantly, supplementary handfeeding (because you will need to regularly confine stock so that broadacre areas can recover from grazing and not become degraded).

The aim is to have a pasture which is nutritionally good for horses and is hardwearing. With a good pasture and good grazing management, groundcover can be kept to at least 70% which ensures erosion and weed infestations are minimised.

Grazing management is a real skill. Good managers ensure that:

- Paddocks are fertilised regularly.
- Pastures are not eaten down too hard.
- Weeds are controlled.
- Insect pests are monitored and controlled.
- Only adequate feed is available in spring to avoid founder.
- The most appropriate grasses, combined with subclovers, are sown.
- Soil pH (acidity) is managed.

Below: Controlling land degradation by using fencing to limit access.





Weed control

Under the Natural Resources Management Act 2004, some plants are 'declared' which means they must be controlled – examples in the Mount Lofty Ranges include gorse and blackberry, but there are many others too. Weed control programs are coordinated by the Adelaide and Mount Lofty Natural Resources Management Board - contact your nearest office for more information and advice.

There are also weeds which compete strongly with beneficial pasture plants – examples include dock, sorrel, wireweed and Capeweed and these are an indicator of a poorly managed pasture.

There are plants poisonous or toxic to horses – salvation Jane and Cape tulip for example.

As a landowner/manager you need to be constantly vigilant when it comes to weeds and their control. Ensure that:

- You know and recognise your weeds.
- Brought-in feed is free of weeds – cheap hay can become expensive in the long run.
- Rubber tyres, boots, etc. are cleaned of seeds before leaving properties visited for horse events.
- Grazing is managed so it does not result in bare areas which are prone to weed invasion.
- Regularly inspect your property for weeds and control them promptly.

Spring flush

Apart from weed control, good managers also ensure that in spring there is not too much feed in their paddocks (spring flush) as this can lead to horse health problems, including founder. Acute founder is a serious condition affecting predominantly the front feet or, occasionally, all feet of the horse. It is most common in obese horses and ponies grazing on lush, green pasture during spring.

There are a number of strategies you can adopt to counter the spring flush. More information on pasture management, including the best

Below: Cape tulip bulbs and flower.



Below: Poisonous salvation Jane.





plants to grow on your horse property, is available from your local NRM Board Office or agricultural consultant.

Pasture plants

In relation to plant selection, and as a general guide for the Mount Lofty Ranges, consider species such as phalaris, cocksfoot, kikuyu and perennial ryegrass combined with a sub-clover. Within these species there are varieties suited to particular rainfall zones or soil types. For example, the 'Sirosa' cultivar of phalaris is recommended on acidic-neutral soils in the 450-650 mm and in the 650+ mm rainfall zones, whereas kikuyu is recommended only in the latter if irrigation is not available.

If water is available then kikuyu, which is useful in high traffic areas, can be grown just about anywhere. Cocksfoot is also a useful perennial pasture species and performs better than others on sandy loams or sandy soils. It remains the landholders responsibility to ensure that these species do not become invasive, especially into bushland, watercourses and vineyards.

Soil management

Before you rush out and buy what can be expensive pasture mixes or ring up the nearest contractor to renovate your paddocks, remember that soil fertility has a major impact on the condition of pastures.

One indicator of soil health is the soil's pH level (a measure of acidity and alkalinity). Above a pH of 7.0, soils are alkaline and below 7.0, acidic. Acidic soils can seriously inhibit plant growth. Acidification of soils is a natural process which has been accelerated by agricultural practices such as the growing of nitrogen fixing pasture plants and the spreading of nitrogenous fertilisers. Both these practices increase nitrate levels causing soils to acidify. When soil pH (measured in water) falls below approximately 5.5 then it is likely that production

From Left to Right: Cocksfoot;
phalaris; and well-covered pasture.





from that land will decline, predisposing the land to erosion due to insufficient plant cover. Applying lime or dolomite lime will raise soil pH.

To find out the nutrient levels and pH of your soil you will need to obtain a soil test kit from your local Natural Resource Centre, agricultural retailer or fertiliser company. Collecting a sample for testing is best carried out in summer/autumn when soil is dry. A full test report will indicate the level of major nutrients such as phosphorus, potassium and nitrogen, as well as trace elements such as copper, zinc and others. A pH reading will also be supplied to indicate the level of soil acidity. An appropriate fertiliser and liming regime can then be established.

Technical advice on soil testing and liming is available from natural resource management staff, PIRSA, industry representatives and consultants.

Overgrazed paddocks and excessive use of fertiliser produces runoff which can damage sensitive aquatic environments. Overgrazing exposes bare earth which can lead to rill erosion, removes valuable top soil and adds sediment to watercourses. Much of this sediment carries phosphorus which contributes to eutrophication (nutrient pollution). Over-use of fertiliser can also increase phosphorus and nitrogen in waterways. Keep 70% pasture cover at all times and seek technical advice for appropriate fertiliser applications.

Tracking along fencelines can also create serious gully erosion on hillsides. Filling and compacting with dolomite will help avoid injury to horses and prevent severe erosion heads from further degrading land.

Good soil management will encourage earthworms, promote more productive pastures and reduce landcare problems.



Right: Soil testing



Manure management

Land managers have obligations under legislation, such as the Environmental Protection Act 1993, to ensure manure is not a source of off-site pollution.

Manure left in paddocks not only poses a risk of environmental pollution, but can also cause under-utilisation of pastures since stock will not graze near manure clumps. It can also cause a build-up of harmful intestinal worms.

Remove manure daily from stables, yards and intensive exercise areas and store in areas protected from rain and surface run-off to avoid manure or leachate draining into a watercourse. If this occurs bacteria and nutrients can reduce water quality and increase algal growth, resulting in the death of aquatic life.

Horse dung can be regularly picked up from paddocks, bagged and sold to home gardeners. This is effective, but labour-intensive. Another option is to spread manure by simply dragging a piece of weldmesh, or similar material, behind a vehicle. This will recycle nutrients back into soil and is best done after a rain in Autumn. Encouraging dung beetles will also help to bury manure and contribute to nutrient recycling.

When implementing a property management plan ensure watercourses have a suitable native vegetation buffer to help combat nutrient run-off.

Stables, yards and fences

As previously mentioned, owners of horsekeeping properties less than 3 ha in size may be required to have one stable and one yard per horse.

Stables and/or yards facilitate the feeding and handling of stock and also enable grazing land to be spelled from horse activity, giving

There are many stable designs, but a good stable should have an appropriate surface and drainage.





pastures time to recover and allowing land management operations such as weed spraying and soil fertilising to occur with a minimum of fuss or inconvenience.

Stables and yards also enable you to isolate new horses for a couple of days so that you can keep an eye on their health, including worm infestations, and is a good biosecurity measure.

When you are handfeeding stock, the best plan is to feed in the stable or yard because this will facilitate weed control and cause less erosion in your paddocks.

There are many stable, yard and fence designs. Ask other horseowners for their advice and look around the area for situations similar to yours.

Here are some guidelines to consider:

- The stable/shelter and yard must be big enough so that the horse can roll, lie down and move around. The horse should have continual access to both the yard and stable/shelter. The back of the building should face the prevailing winter weather and for a 15 hh horse should be at least 3.7 m x 3.7 m and 2.75 m high (check with your local council for regulations). Yards must be surfaced.
- 10 cm of compacted rubble or dolomite topped with 15 cm of sand and with a minimum slope of 1/30 provides both a good surface and drainage.
- If an enclosed stable is built, it must have cross flow ventilation but not a draft. The inside of the stable/shelter should be lined to a height of 1.3-1.5 m with suitable kick-proof material, for example timber, masonry, concrete or steel sheeting.



Examples
of yard layout



- Build a perimeter drain around the area so no surface water can enter.
- Manure should be removed daily.
- It is preferable to have the stable area surrounded by a grass apron which will absorb and use the draining urine as fertiliser.

So far as paddock improvements are concerned:

- Make sure there are sufficient watering troughs to spread the activity of horses around the property. Try to locate them on hard surfaces and allow for 360 degree access.
- It is a good idea to fence off the corners of paddocks so that horses can't congregate there. Electric fencing is a cost effective way of doing this.
- When paddocks are being rested fill in any holes with stable manure, sawdust and hay and spread some grass seed to allow these areas to recover. Protect the area until the grass is re-established.
- If planting windbreaks, select species that are not poisonous to horses.
- Make sure you have enough paddocks to rotationally graze – as a general rule, one weeks grazing and five weeks rest. In spring, if there is too much feed either make hay in some paddocks or continually slash.
- You should stop grazing a paddock when the pasture gets down to 4-5 cm high, or cover is below 70%.

Below and Right: Good combination of shelter belts and electric fencing.





Getting the knowledge

If you are new to horsekeeping or simply want to update your horsekeeping knowledge and skills, consider enrolling in one of the many courses or free field days offered by the Adelaide and Mount Lofty Natural Resources Management Board. Information is provided on subjects such as pastures for horses including pasture renovation, the best species and varieties for varying situations, weed control, fencing and property planning.

Your local Primary Industries and Resources SA office is also a source of information, as are Natural Resources Centres. Specialist advice can be obtained at these centres, as well as from private consultants, Horse SA and from contractors.

Horse SA

Horse SA is a not-for-profit community based organisation supporting the horse industry in South Australia.

Visit the HorsesLandWater.com website to download your free copy of the Horses Action Planner and Property Management Guidelines.

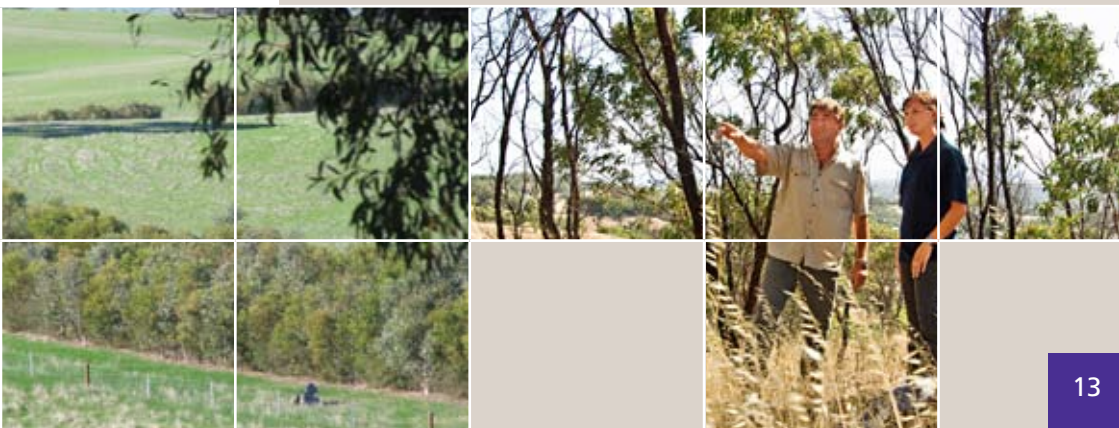
Also available on this site are details about horse-related events, links to information resources and other contacts.

Telephone: 8294 2460

Email: horsesa@horsesa.asn.au

Website: www.horsesa.asn.au

Horse owners need to be aware of their horses' health and welfare – but they also have a duty of care to the land they manage. Degradation of that land (which by definition includes soil, water and vegetation) must not occur.





Contacts for further information

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