HorsesLandWater

With climate adaptation tips & stories from horse owners!

Action Planner and Horse Property Management Guideline

www.horseslandwater.com

HorsesLandWater

HORSE SA

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

HorsesLandWater is a program of Horse SA (The Horse Federation of SA Inc.)

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HorsesLandWater "Horse TV" youth video
www.youtube.com/watch?v=GH-omQY3aY8&feature=g-user-f&list=FL-smsuELWJP3opP5dlAO1qA

About HorsesLandWater

Horse SA has led a range of horse keeping & environmental management initiatives under the program name of "HorsesLandWater". It has been recognised that a vital component of making a difference in true on-ground improvements is the presence of targets for desirable sustainable land management practices and the support network of family, friends and fellow horse owners. The HorsesLandWater program recognises that:

- Environmental (on-ground) outcomes can potentially be achieved in a more straightforward manner if the pathways to those outcomes have been developed with, for and by the horse owners for horse owners.
- Management guidelines for horse properties, developed in conjunction with and supported by government agencies, will provide important steps in enhancing government's confidence in the commitment of the horse keeping community to environmental management.
- A key to horse property owners taking action to improve land management are linkages to horse health and support through a community based organisation, such as Horse SA.
- The best practice principles outlined in this resource provide a clear guide for horse property managers as to which actions will have a greater possibility of meeting their environmental duty of care.
- Best practice principles underpinned by a monitoring and continuous improvement model have the greatest potential for success, as achievable targets can be set.
- The horse keeping community was identified through the original HorsesLandWater research project as drawing more benefit from best practice advice rather than self-directed risk assessment.

This guideline will assist horse keepers to comply with current regulatory requirements by providing a framework for environmental improvements.

Through extensive consultation including surveys, interviews, site visits, workshops, field days, testing of practices and the recording of collective experiences, this guideline has been put together. Horse SA hopes that you, your horses and your property (or agistment land) on which your horse lives will benefit from the information contained within.

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How to use the Action Planner and Horse Property Management Guideline

This guide has been developed to assist horse property managers to assess and continually improve their environmental management relating to:

- whole of property management (activities or issues that affect the environment and need to be managed across the entire property),
- paddock management (activities or issues that are specific to paddocks and grazing areas), and
- intensive horse keeping (activities or issues that are specific to areas of intensive horse keeping such as stables, yards etc.).

STEP 1 Work through each section and for each topic and **select the statement that best reflects the *current* management practice** on your horse keeping property:

- Ideal
- Nearly there
- Just beginning
- Haven't thought about it

The notes about land management associated with each practice will help guide your decision about where you currently are with your horse property management.

STEP 2 At the end of this process, record your results on the table in the **'Summary of results of the checklist'**.

STEP 3 The topics that you rated the lowest, starting with "haven't thought about it", should be your highest priority for making improvements in the near future.

STEP 4 Once you've identified your highest priority areas, the next step is to develop Action Plans to assist you in better managing and controlling these areas. Look at the corresponding topics in the Management Guidelines to help you develop the plans for your property.

Step 4a – Choose the **short term improvement action(s)** which:

- can be planned and conducted within one year;
- helps your property comply with (regulatory) requirements not to cause environmental damage or harm to immediate assets such as soil, nearby water bodies, air and native vegetation;
- is financially feasible to implement in the short term; and
- fits in with family/ enterprise time commitments.

Step 4b – Choose the **long term improvement action(s)** which:

- needs to be planned and conducted over a longer time period (e.g. more than one year);
- needs additional resources currently not available in your budget; and
- enhances the overall aesthetics of your property.

STEP 5 Check your progress (monitor) and evaluate if your improved management practices have worked or partially worked, but could be better. Make some notes and then adapt, adopt new or change practices as part of continuous improvement on your horse property.

What is a catchment?

A catchment is an area of land that catches rainfall, and directs it to a creek, river, dam or gutter, which eventually flows out to the ocean or a lake.

Water is the link throughout the catchment. As well as the rivers, dams and reservoirs, a catchment also includes groundwater, stormwater, wastewater and related infrastructure including sewage pipes and treatment systems.

It is important to maintain a healthy catchment to ensure water courses:

- can support aquatic life such as fish, frogs and insects
- can supply safe drinking water for communities
- are available for recreation use.

Everybody lives and works in a catchment, so we all have a responsibility to look after the environment within our local catchment.

All properties need to be well managed to prevent pollutants (including sediments from soils, nutrients from manure and fertilisers and chemicals) from damaging the surrounding environment and/or entering the watercourses or groundwater.

The way you manage activities on your horse property can have a direct impact on the surrounding environment and the quality of the water that runs off your property which in turn has an impact on your catchment's health. These include activities such as:

- soil health, pasture composition and groundcover maintenance
- weed control
- manure management
- storage and application of veterinary products and chemicals; and
- horse access to and across watercourses.

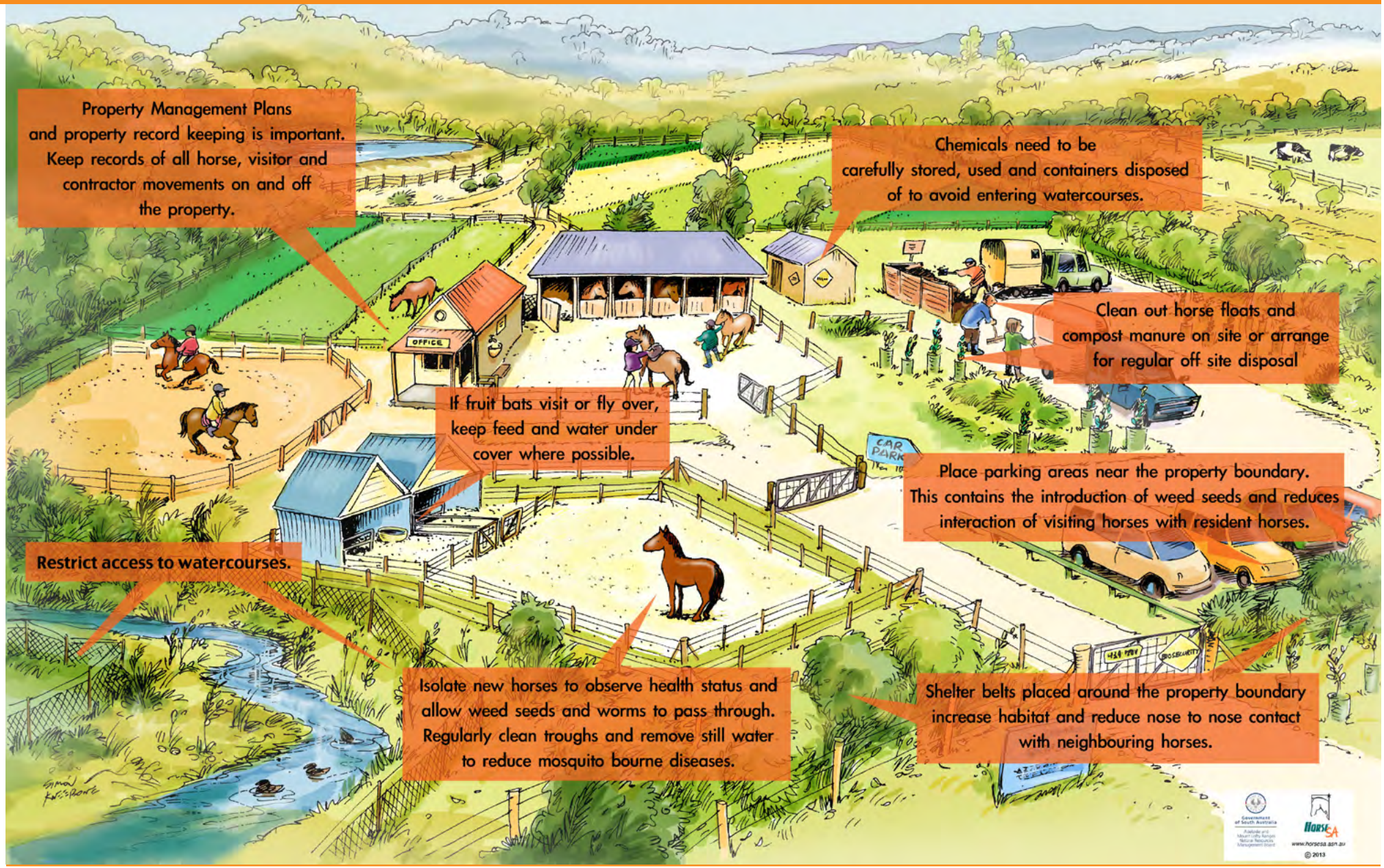
A horse property that practices sound environmental management will have quality pastures, low incidence of weeds, habitats for native birds and animals and well-maintained watercourses. Sound environmental management not only translates into healthy land but also provides an environment that will have positive impacts on the health of the horses that live on such a property. It has the added benefit of potentially adding value to the property greater than the financial investment.

It is important to understand how activities on your horse property can be managed to prevent poor water quality in your catchment and promote horse health. Once issues are identified you can then begin working towards managing activities on your property to reduce or prevent pollutants harming the surrounding environment and catchment.

This HorsesLandWater Horse Property Management Guideline is designed to assist you to recognise any improvements in management practices that will promote catchment health on your property.

Pam Brookman

Land management and horse health



Summary of good practice benchmarks

SECTION 1
WHOLE OF PROPERTY

1. A Property Management Plan for the management of natural resources is in place, actively used and reviewed (updated) annually
2. The number of horses on the property and the management system used has been determined by the land capability and the needs of horse property managers
3. Approvals and permits are in place for horse keeping and property improvements
4. Horse facilities are sited and managed with consideration given to convenience and potential environmental impacts, and through open communication with neighbours
5. A bushfire survival plan is documented, communicated, carried out and reviewed
6. An emergency management & recovery plan is developed, communicated, carried out and reviewed
7. Existing habitats are protected and enhanced for native plants and animals
8. Veterinary products and chemicals are stored and transported according to labels, relevant legislation and recommended guidelines
9. Veterinary products and chemicals are applied and disposed of according to labels, relevant legislation and recommended guidelines
10. An active program to prevent weeds entering or leaving the property is in place
11. Pest animals are identified and a specific control program put into place
12. A plan exists for the suitable disposal of deceased horses

SECTION 2
PADDOCK MANAGEMENT

1. All grazing areas have at least 70% (for soil susceptible to water erosion) and 50% (for soil susceptible to wind erosion) ground cover throughout the year
2. All grazing areas have quality pasture grasses and legumes with less than 10% weed species and no proclaimed plants
3. An active pasture weed control program is in place that is regularly monitored and reviewed
4. Proclaimed (declared) pest plants are identified and controlled
5. Horse access is restricted from seasonal wet (waterlogged) areas, wet seeps (boggy areas) and drainage lines while the soil is wet and soft
6. Horses are restricted from steep, erosion-prone slopes
7. Action is regularly taken to prevent manure build up in paddocks
8. No fence line tracking is evident
9. Horse feeding, watering and congregating areas are managed to prevent dust, mud and erosion
10. Paddock shelter and shade areas are managed to prevent dust, mud and erosion
11. Watercourses are fenced to restrict horse access
12. Stock crossings are selected and designed to prevent stream bed and bank erosion

SECTION 3
INTENSIVE HORSE KEEPING

1. Intensive horse use areas are managed to prevent dust, mud, manure build up and stormwater/water course pollution
2. Horse manure and soiled bedding is stored in a manner that prevents water runoff entering or escaping the storage site
3. Intensive horse keeping areas are regularly cleaned and waste disposed of appropriately
4. Feed is stored in dry, sealed containers and is not accessible to vermin
5. Horse transport vehicles are cleaned out with waste collected and contained for disposal or recycling
6. Waste water from wash down areas does not enter watercourses or stormwater drains

WHOLE OF PROPERTY

1. PROPERTY MANAGEMENT PLAN

A property management plan for the management of natural resources on the horse property is in place and is actively used and reviewed (updated) annually.

A property management plan (PMP) is a working plan of the design and management of a horse property that is based on the property's physical resources, the equine activities e.g. breeding, that are undertaken on the property, your goals, financial & time factors.

A well thought out and workable PMP has great benefits. It will help ensure:

- ✔ You achieve your personal goals for your property and lifestyle
- ✔ The natural resources on your property and the surrounding environment, are well managed
- ✔ The specific requirements and personal goals of your horse keeping enterprise are met.

A well-designed PMP will set out future property improvements or management regime changes that are achievable for you.

Many horse property managers are probably already doing many of the things that would be included in a PMP, but may not have put these down on paper as a formalised plan, others may have done a plan some years ago and it now needs updating.

A PMP would look at ways you can eventually reach the "best practice" outcomes that are outlined in this guideline. Having a documented PMP is often an advantage when applying to local councils for approval to erect new stables or make other changes to your horse property.

The most important outcome of all is knowing that our horses are benefiting from optimum pasture cover, shelter, and good water quality and are staying healthy due to mud, dust and other environmental factors being well managed.

Steps to achieve good practice

Starting a PMP from scratch or updating a plan for a horse property should not be a difficult task. You can keep an eye out for workshops run on the topic by your local Natural Resources Management (NRM) office or do one yourself. Involving family, staff or clients (especially if horse agistment is your business) will give a greater chance of success in the update of the final plan.

The basic steps are:

1 Write down your personal vision (lifestyle, financial, personal) then write down your vision for your horse property (type and number of horses, how you will keep them) both in short and long term goals. Consider aspects in relation to biosecurity, emergency planning (fire, flood, storms etc.) and climate change.

2 Source an aerial photo of your property, this could be through Google maps, Nearmaps or other mapping program or purchase an aerial map through your state government department dealing with maps.

3 The next few tasks will require you to layer information over the map. Depending on your IT skills & the program, you may be able to do this straight onto the computer, or if using a print out or photo of your property, purchase clear plastic sheet available from survey suppliers or perhaps the department that sold you the map.

4 First layer: add the physical features of the property including the boundary, hills, flats, drainage lines, rocky outcrop, native vegetation

5 Second layer: draw the boundaries of the land capability classes on the property (refer to separate text box)

6 Look at how your horse keeping can be matched e.g. grazing on the flats (and do the flats get boggy in winter and have to be sectioned off?) restrict horse access to water courses or steep land, plan to manage remnant native vegetation

7 Third layer: Draw the existing property layout e.g. fences, shelter sheds, raceways

8 Fourth layer: this is the future or "realistic" plan based on how you can best accommodate your goals and work towards the best practice benchmarks within the time and money available.

9 Write down, in priority order, the activities you plan to undertake to implement your realistic property plan over a timeframe of 3-5 years.

10 Write down ways you can monitor the health of your horse property e.g. soil testing, pasture cover assessments, photo points

It's important to involve family, clients and friends in the implementation of the plan. Make sure everyone knows how they can put it into practice.

What is land capability?

Land capability refers to the ability of land to be used for a particular purpose, or managed in a particular way, without degradation.

Different types of land have different land capabilities, depending on soil type, slope, drainage, rainfall etc. For example, steep land with clay soil that that gets soft when wet cannot withstand having as many horses kept on it as flat, well-drained land.

The key is to recognise the factors that are present (and how minor or severe they are) that limit land capability for horse keeping on any piece of land.

The main capability factors that are important for horse keeping are:

- Potential for soil erosion
- Susceptibility to waterlogging
- Soil strength e.g. soft when wet or dusty when dry
- Saline areas
- Soil pH (although acidity can be overcome)
- Rockiness
- Stream banks, watercourses etc.
- Terrain - different slopes and aspect
- A land capability class map of the property is one of the main steps in a property management plan.

2. HORSE KEEPING SYSTEMS

The number of horses on the property and the management system used has been determined by the land capability and the needs of horse property managers

An important decision to make when planning how to best manage your property are how many horses you keep and how they are housed and fed.

The choice of the horse keeping system for any property needs to take into account:

- The "capability" of the land on the property
- How much time, money and other resources e.g. yarding, are available
- The type of horse enterprise

As more horses are kept on a given area of land, more time, money, management and facilities are needed for it to be a successful enterprise.

A realistic approach needs to be taken so that horse property can be well managed within budget and time constraints, and to meet your personal goals, so that the horses are healthy and there is no risk of adverse harm to the environment.

Steps to achieve best practice

1. Identify the land capability of your property

If you have a good understanding of the soils on your property and their limiting factors for management, plus rainfall, slopes and location of watercourses, then you already have some understanding of the land capability.

Land management advisors and rural consultants can help you to assess land capability on your property and assist with planning stocking rates, property layout and management.

Refer to the text box "what is land capability" to remind you of how to assess your horse property.

On land where horses are kept, land capability falls into three main categories

1. All year access: Land that has no significant constraints and horses can be kept on it all year around, except when you choose to spell pasture.
2. Restricted access: Land with significant capability limitations e.g. winter waterlogging, steep slopes. Horses are only permitted access when conditions will not lead to land damage or raise the risk of horse injury or ailments.
3. Prohibited access: land that is not suitable for horses, such as steep slopes in high rainfall areas e.g. 1000 mm +, sand hills, saline areas & creek lines.

AGISTMENT SUCCESS

As an agistee in a fairly unique situation, I am happy to say that I have some control over how my horses are kept on the 15 acres leased. I am the only one there, with horses and some other livestock to help maintain the property.

My property owner is happy for my input, my work and the way I have organised things. He is able to see that the horses have in no way damaged the land (to his surprise!).

To maintain ground cover, my horses are hand fed daily, amounts dependent upon the season. Weeds are managed and the horses rotated through a number of paddocks. Manure is collected in the smaller paddocks daily and worm counts are done with wormers only being given as necessary not as routine.

There are trees for natural shelter. In my work space and high traffic areas (water trough, gateways), I had road rubble and gravel laid.

Being a responsible horse owner, I make it my business to learn as much as possible about current trends affecting the horses' wellbeing by attending Horse SA educational events, online seminars and courses, and reading books galore!

Jan Dodds

Horse keeping systems

Low input system: Pasture quality only requires limited seasonal or no hand feeding. It does not involve use of stables & yards or daily input of labour but does require pasture management.

Medium input system: (paddocks and hand feeding) Uses stables & yards for routine management e.g. horses may be yarded when the paddock cannot withstand hoof activity or pasture cover is too low.

High input system: (Stables & yards) Where horses spend the majority of their time contained and may only spend a short time in a paddock each day or being exercised.

2. Work out your property's nutritional potential, also called the "stocking rate" or "carrying capacity"

To work out the nutritional potential or stocking rate of your horse property:

1. Find out the "nutritional potential" in what is known as dry sheep equivalents or "DSE"s. You may need to consult your local agricultural consultant or NRM officer.
2. Estimate the total nutritional potential of your property by multiplying your district's DSE with the number of hectares of horse grazing access on the property (taking into account the months of the year horses can use restricted access areas). The actual nutritional potential could be lessened if pastures are in poor condition, or pasture production is restricted by soil factors e.g. shallow soil, low soil fertility etc.

3. Work out the stocking rates you can use with your intended type of horse keeping system.

Besides the nutritional potential of the property, the actual stocking rates used on horse properties depends on the type of horse management system used. This is generally:

Low input: (paddocking, no or little seasonal handfeeding)

- Has fewer horses than the nutritional potential (stocking rates) of the land
- Does not require stables/yards or a daily input of labour but does require pasture management throughout the year

Medium input (paddocking/occasional yarding/hand feeding)

- Has the same number or marginally more horses than the nutritional potential of the land
- Has stables/yards for routine management e.g. when paddocks are waterlogged

High input system (stables/yards)

- Has many more horses than the nutritional potential of the land
- Has stables/yards where horses spend most of their time except when being exercised or let out into a paddock for a few hours.

Dry Sheep Equivalents (DSEs)

The horse & livestock carrying capacity (or nutritional potential) of land is referred to as DSEs or "dry sheep equivalents". The DSE is the number of dry adult sheep i.e. sheep who are not pregnant or lactating, that can be kept on one hectare of good dryland pasture without supplementary feeding year after year. One DSE is the nutritional requirement of a 50 kg wether, but it can also be thought of as a measure of how much grass that will grow.

The DSE's of horses are generally accepted to be:

Ponies	**6**
Light	**10**
Draught	**14**

3. DEVELOPMENT APPROVALS

Approvals and permits are in place for horse keeping and property improvements

Introduction

If you plan to keep horses on a property, or are considering making additions or changes to your existing horse enterprise, you may need certain types of prior approval as required by State and local planning and development regulations.

It is important you contact your local council to find out what regulations may apply to your situation and what permits, licences or formal approvals may be needed.

Steps to achieve best practice

To identify what approvals you will need for your proposed horse enterprise or property improvements, the suggested course of action is:

1. Contact your local council planner to find out about development application requirements if you are considering

- Keeping horses (i.e. if current land use is different such as horticulture)
- Increasing horse numbers
- Increasing horse numbers above previous approvals, or
- Putting up stables, sheds or other structures
- Watercourse or dam alterations

You should also find out if you need to apply to any state government agencies for permits, licences or formal approvals or contact each agency directly.

2. Apply as soon as possible to your council, and provide all the information that is requested.

Follow up on any enquiries as soon as possible to minimise delays.

There will be variation between what different councils ask for in relation to horse keeping development applications, so you will need to find out in detail what your own council requires i.e. do not rely on information from another horse owning friend living in another district.

The following is a basic checklist of outcomes that you should take into consideration when planning (or modifying) a horse keeping enterprise. These are the sort of things that councils may ask to be included in an application. E.g. How you plan to;

- Prevent soil erosion
- Prevent water pollution
- Prevent an increase in pest plants, pest animals or vermin
- Protect areas of significant native fauna and flora
- Maintain or improve the visual appeal of the area where it is located and be managed so as not to unreasonably affect adjoining properties
- Satisfactorily contain the horse in a manner safe for the horse
- Ensure the health and welfare of the horse

3. Apply to any other agencies (if needed) for permits or approvals.

Your local council can advise on permit requirements. This may include alterations to dams, native vegetation clearance or building approvals. Do this as early as possible to minimise potential delays.

4. After council development approvals are provided, you can proceed.

Any significant changes to what was agreed to will need to go back to council. Likewise with any other licences or permits.

Property Identification Codes (PIC)

Most states of Australia have now introduced a Property Identification Code (PIC) system. The regulations vary slightly in each state, but on most occasions a property owner will need to apply to get a PIC if one or more horses, sheep, cattle, alpaca etc. is kept on the property. The purpose of a PIC is to greatly assist emergency responses (in relation to livestock) to disease outbreaks and natural disasters such as bushfire.

Contact your state department for agriculture or primary industries.

4. SITING OF STABLES, YARDS AND INTENSIVE WORK AREAS

Horse facilities are sited and managed with consideration given to convenience and potential environmental impacts, and through open communication with neighbours

Horse property facilities such as stables, yards and exercise arenas need to be well designed and managed to avoid environmental and neighbourhood problems such as

- Excess odour (especially from urine)
- Excess noise (potential concern to neighbours)
- Rodents (attracted to stored feed & spilt feed)
- Dust and mud, and
- Pollution of water resources from runoff

These potential issues should be considered when you are putting up new horse facilities or upgrading existing facilities, because of their potential impacts on your neighbours, and because of certain environmental regulations.

Steps to achieve good practice

- Discuss your plans with your neighbours and if there are any issues, aim to negotiate a solution that is reasonable and meets both your needs
- Design and manage stables to control odour from urine – install an impervious floor, regular clean stable floors and replace bedding materials
- Set up horse facilities so that runoff is not contaminated with waste and cannot pollute water resources such as stormwater drains, creeks and drains
- Manage manure so that odour problems are avoided – regularly remove manure from stable collection bays and around intensive work areas
- Surface high horse traffic areas with a suitable material that will prevent dust or mud problems
- Keep horse feed in sealed containers, promptly clean up spilt feed, and use baiting for rodent control. Look around to select a type of feed container that reduces feed spill on the ground.
- Design and locate stables, yards and ancillary buildings so that you will minimise potential noise and odour problems for your neighbours e.g. adequate buffer distance from a neighbour's house
- Install gutters on stables and shelters to control stormwater
- When planning loading and unloading areas for horse floats, consider ways to minimise noise and odour for your neighbours
- Look at maintenance, re-routing or upgrades for any tracks or trails utilised around the property, to ensure that water moves off the trail surface and does not form pools or erosion channels
- Consider biosecurity principles when planning traffic movement around a property. Gate signage, a car park area for visiting vehicles and an area where visiting contractors can wash down tractors or equipment to reduce disease or pest plant spread in and out of properties.

5. FIRE PREVENTION PLANNING

A fire prevention program is documented and implemented throughout the year

The threat of fire is high for many stable yard, where the storage of hay, bedding and electrical faults can be potential causes of fires. There is a greater threat on horse properties located in rural areas with a high bushfire risk.

The Country Fire Service (or your state equivalent) will have a lot of information available online on how to prepare your property for the fire season and to develop a (bush) fire safety plan. This includes firebreaks on property boundaries, breaks & vegetation around buildings and keeping understory vegetation at a low height.

Local councils may give notice to a landowner requiring specific action to be taken to remedy a potential hazard. Failure to comply is an offence and the council may carry out the work and recover the cost from the landowner.

Steps to achieve good practice

Research the latest information provided by the Country Fire Service, or equivalent in your state, and link yourself to the emergency warning communication on offer (e.g. text, email alerts). It will help you to be aware of any Total Fire Ban days and the season for which you can apply for burn off permits. Your local fire service may also hold open days, offer to visit your property or help coordinate a neighbourhood fire group and invite you to be part of a district fire plan.

Develop a bushfire survival plan. This should outline the work to safeguard your property, and what actions may need to be taken on high fire risk days and if a fire threatens.

A plan may contain

- Fire breaks around the property and major infrastructure
- Keep areas close to houses and stables regularly grazed
- Storage of hay in a separate building away from the main stable block
- Fire fighting equipment is on hand, in working condition. Reach of hoses is tested
- Water is available for fire fighting or points that water can be sourced from is known

Family, staff and agistment clients should be aware of

- Reporting a fire
- Emergency evacuation plans (including what to do with the horses) & assembly points
- Communication plans (remember power may be cut)
- Keep fire truck access areas clear
- First aid kit location

Evacuation Kit (Sample Only)

Have as much of this ready, labelled and in sealed containers in or near your horse float or make up a smaller kit in a backpack if leading horses.

HORSES

- ✔ Feed for at least 3 days. Bagged feed may be easier to transport.
- ✔ Buckets
- ✔ Place horse information sheets in stable, float and be ready to put online if needed – with a recent photo of yourself and your horse included
- ✔ Copies of horse identification, veterinary records & proof of ownership
- ✔ Spare head collars with long leads (not nylon or plastic)
- ✔ Blankets / rugs – natural fibre
- ✔ Fluorescent spray paint, Livestock Marking Crayon
- ✔ Recorded diet for your animals
- ✔ Recorded dose and frequency for any medication your horse requires. Provide veterinary contact information for refills instructions in several places at home – Animal ID + on your person

GENERAL ITEMS

- ✔ Maps of local area and alternate evacuation routes (in case of road closures)
- ✔ Towels (to use as blindfolds for horses if needed)
- ✔ Flashlight & batteries
- ✔ Radio & spare batteries
- ✔ First aid kit (human and horse)
- ✔ Emergency contact list (human and horse)
- ✔ Knife (sharp, all-purpose)
- ✔ Fly spray (flood waters attract insects)
- ✔ Heavy gloves (leather)
- ✔ Wire cutters
- ✔ Duct tape & spare baling twine
- ✔ Human “Grab Bag” (change of underwear, toiletries, medications etc)

6. EMERGENCY RESPONSE PLANNING

An emergency response plan is documented, communicated to all relevant people and reviewed annually.

Identify natural disasters such as flood, fire, strong winds, other weather events or a disease outbreak that could occur in your region.

It is important to have an emergency response plan in place to ensure you respond to an emergency situation in a safe and effective way that will minimise harm. This is the best way to protect the family, horses and other livestock. It is too late once the emergency starts.

Steps to achieve good practice

1. Draw up an emergency response plan for your property.

You should do this together with family and staff. Assistance with emergency planning can be obtained through various government department websites e.g. Country Fire Service, State Emergency Services, state departments for agriculture and your local council.

Your emergency response plan should cover the range of emergency situations that could potentially occur on your property, such as:

- fire
- flood, drought, strong winds, storm
- livestock disease
- accidental spillage or leakage of chemicals
- potentially other threats, e.g. bomb, depending on your own risk assessment.

2. Make sure all relevant people are aware of your plan including family, staff, visitors, neighbours and relevant local authorities.

Display a laminated copy in easily accessible places on your property, such as on entry to the stables.

3. Test your plan (e.g. do emergency drills, practice disinfection procedures, practice managing a simulated chemical spill).

This will identify any problems within the plan and will ensure all relevant persons are aware of and have participated in the implementation of the plan.

4. Review your plan each year and update if needed. Practice the plan.

Tips for EVACUATING with horses

- ✔ Have a written plan AND PRACTICE
- ✔ Which horses stay, which go? A two horse float can only carry two horses
- ✔ Let neighbours & colleagues know where you are going and leave contact information
- ✔ Register with the emergency evacuation centre if one has been set up
- ✔ All horses must be identified and in more than one way if possible. Put your mobile number in livestock crayon on their rump or neck, livestock ID tags on the neck, luggage tag tied into the mane and other ways to keep your details with your horse.
- ✔ Determine evacuation routes and "safe places/ paddocks" ahead of time
- ✔ Leave as soon as possible to avoid road closures, especially if you will be pulling a float
- ✔ Remember authorities may close roads and you may not be able to return for several days
- ✔ Be sure to take enough food, water, and medications to support your animals for at least 72 hours/? Plus cater for horses left behind
- ✔ Turn off electricity at the mains (gates/garage doors)
- ✔ Plan as you may not be able to come back for three or more days

Tips if NOT EVACUATING

- ✔ Do not lock horses in a stable. They could be trapped if the building were to flood, have something fall on it, or collapse or if it is a fire. Let them out into a paddock and shut the stable door afterwards as horses have been known frequently to run back into a stable – only to die by fire
- ✔ Sort out automatic gates, doors, garages so they can work off of power not be locked shut when the power goes off
- ✔ Have enough food and hay for at least 3 days. Store these in sealed containers or plastic bags and place as high off the ground as possible (flood)
- ✔ Have enough water for at least 3 days. Consider storage containers, in case you need to move them for any reason. Do not rely on automatic waterers. Have some water purification tablets available
- ✔ Have a chain saw, fuel, hammers, saw, nails, screws, and fencing materials to make repairs to keep livestock and horses contained
- ✔ Do not stay outside with your horse during the fire, flood or storm
- ✔ After the storm, flood or fire, examine your property for burning embers, fallen objects, sharp objects and other dangerous materials, contaminated water, downed power lines, water and gas leaks, dangerous wildlife or horses with injuries.

EMERGENCY RESPONSE _ ID FORM

Increase the chances of a quicker reunion between you and your horse after a disaster or accident. Visit for http://bushfire.horsesa.asn.au/ further instructions, tips & links

INSERT SIDE ON CLEAR PHOTO OF HORSE

NEAR SIDE

(NO RUGS, BOOTS, PLAITS OR OBJECT TO HIDE HORSE)

INSERT SIDE ON CLEAR PHOTO OF HORSE

OFF SIDE

(NO RUGS, BOOTS, PLAITS OR OBJECT TO HIDE HORSE)

INSERT FRONT ON CLEAR PHOTO OF HORSE

FRONT ON

(NO RUGS, BOOTS, PLAITS OR OBJECT TO HIDE HORSE)

INSERT CLEAR FRONT ON HEAD SHOT PHOTO OF YOURSELF

YOU

(NO HATS, SUNGLASSES, SHADOWS OR OTHER OBJECTS HIDING YOUR FACE)

HORSE IDENTIFICATION: Name_____Breed_____

Age_____ Height_____Colour_____Sex_____ Markings_____

Branded YES/NO _____ Microchipped YES/NO? PIC* No _____

VET_____Mobile_____Clinic_____

Daily Medications? If yes, note_____Current Vaccinations_____

Any standard horse feed NOT to feed?_____Other Notes?_____

HORSE OWER: Name_____Mobile _____

Email:_____ Facebook Yes/No Skype address_____

Street Address (not PO Box) _____

I give permission Yes/No for a Registered Veterinarian to treat/ arrange care for horse up to $_____

I give permission Yes/No if assessed by trained Emergency Services, for equipment hire up to $_____

I give permission Yes/No if assessed by trained Emergency Services, to use cutting or other method which may damage my property (e.g. horse float) to undertake a rescue. Signed_____date_____

One copy x House, 1x Float, 1x Stable, 1 x House, 1 as file on Smartphone ready to Text. Set up FB pg. with same photos/ID

SAMPLE ONLY

HORSE SA SAMPLE ID FORM FOR EMERGENCIES

Increase the chances of a quicker reunion between you and your horse after a disaster or road accident.

7 HABITAT FOR NATIVE PLANTS AND ANIMALS

Existing habitats are protected and enhanced for native plants and animals

Many horse properties have native plant habitats and other areas which can be homes for native animals, birds and fish.

Properties where horses are kept can contribute towards providing valuable habitat for our dwindling native plant and animal communities.

It is important that such habitats are preserved and managed on horse properties. There may be significant opportunities to enhance habitats on the property. The planning and management of these habitat areas should be a key part of the Property Management Plan.

Landowners have responsibilities to preserve and protect native vegetation, including forest, woodland, grasslands, wetlands and watercourses and should check with local authorities.

Steps to achieve good practice

1. Look at what is already on the property – native vegetation (including trees, shrubs and grasses), creeks, wetlands etc. which could be habitats for animals and keep an eye out for native animals and birds on your property.

Advice on habitats is available from your local council, local Landcare group, NRM Board or other groups or private contractors specialising in this area of advice.

2. Look at how you can manage and protect the habitats on your property.

- Protect native vegetation from decline and to protect watercourses is to fence these areas off to keep horses and livestock out
- Control any weeds and pest animals that occur in these areas
- If using pesticides and chemicals, look at keeping a reasonable buffer distance between the spray area and the native habitat to avoid spray drift and prevent damage to native vegetation.
- Keep to the marked trails and track surface areas when exercising horses

Some other options to consider that could help you protect significant stands of native vegetation on the property include:

- Entering into a formal Heritage Agreement on a block of native vegetation, whereby a payment is made to the property owner and the vegetation is fenced by the agency. This is a permanent agreement that applies to the property title
- You may be able to apply for funding subsidies for fencing of existing vegetation or replanting of local native species on the property. Contact your local NRM agency or advisor for information. Note that in some cases an informal management agreement may apply to care for the fenced area of native vegetation

3. Consider ways you can expand or enhance habitats on the property. Some ways to do this are:

- Plant local native species
- Leave fallen hollow logs, and
- Look at expanding vegetation areas to build on wildlife corridors in your district

Talk to other landholders in your district and NRM advisors about what is best to plant in your district.

8 STORAGE AND TRANSPORT OF CHEMICALS

Veterinary products and chemicals are stored and transported according to labels, relevant legislation and recommended guidelines

It is important to store and transport chemicals safely to avoid any harmful effects to yourself, other people, your horses, your property and the wider environment. Agricultural and veterinary products include fertilizers, pesticides, fuel and horse health treatments.

Property managers need to be aware of, and comply with, regulations that apply to the storage and transport of chemicals and veterinary products. Acts with environmental provisions place a duty of care on anyone who uses or disposes of agricultural and certain veterinary chemical products and fertilizers.

Procedures for the safe storage and transport of products are given on container labels and on Material Safety Data Sheets (MSDS) which are available from retailers or manufacturers.

Steps to achieve good practice

- Read the labels of any veterinary or chemical products you intend to use, so that you understand the appropriate methods for storing and transport.
- If you are not sure of some aspects, or need more information about any product, speak to the supplier or contact your veterinarian.
- Check with your local NRM board to see if there are any guidelines to using particular chemicals in your area.
- Make sure you have a safe, secure area to store your veterinary & chemical products, including any that are hazardous. A chemical storage shed with a concrete floor or a lockable rodent-proof cabinet are ideal.
- Always transport chemical products according to the label instructions.
- Work out an emergency response plan for chemical spills, poisonings or leakage. Have a spill response kit (e.g. absorbent material such as 'kitty' litter) located close to the storage area. This is needed to ensure that any spillage does not harm the environment, people or animals through runoff or seepage.

SUSTAINABLE PRACTICE IN ACTION

When we bought our 5-acre property, 10 years ago, we intended to set up a property, using sustainable practices that would permanently benefit our horses, the land and ourselves. Our property management decisions, have set us up for the future and built a long-term resilience for the environment, thanks to information and courses provided by Horse SA and the Adelaide & Mt Lofty Ranges NRM Board. We balance the needs of our horses, the land use and any impact we may have on the environment.

We constantly evolve through trials and errors. We trial paddock grasses, vegetation for windbreaks, weed and pest control, erosion control, paddock rotation, horse management and waste management. We have achieved more than we thought possible, in a relatively short time.

We recycle and reuse just about everything on our property. Shelterbelts are watered from wash down bays, water troughs, rainwater tanks and natural water channelling. These shelterbelts provide shade and windbreaks for the horses and homes for birds and lizards. We reuse all hay left from feeding and in hay sheds onto bare patches in the paddocks and slash native grasses after the first seed, to plant a seedbed for the next season. We utilise the manure for composting, mulching the shelterbelts and as a riding track in the paddocks. Sawdust is used in composting, mulching and in the riding arenas.

We will continue to face challenges, but with help and information from Horse SA, will always be mindful of our footprint on the land.

Jacqueline Raphael

9 APPLICATION AND DISPOSAL OF VETERINARY PRODUCTS AND CHEMICALS

Veterinary products and chemicals are applied and disposed of according to labels, relevant legislation and recommended guidelines

It is important to use and dispose of chemicals correctly to avoid any harmful effects on yourself, other people, your horses, your property and the wider environment. Agricultural and veterinary products include fertilizers, pesticides, fuel and horse health treatments.

Property managers need to be aware of, and comply with, regulations that apply to the application and disposal of these products. Acts with environmental provisions place a duty of care on anyone who uses or disposes of these products, which includes fertilizers.

Any person applying or disposing of these products needs to observe label instructions, giving consideration to prevailing weather conditions and maintaining equipment used for application.

Each state of Australia has its own relevant Act and Regulations pertaining to the use of agricultural and veterinary products. In many states products are categorised as "Restricted". Only persons who are authorised and have specific qualifications and training (e.g. your equine veterinarian) are allowed to obtain and use these products, according to what is stated on the product label.

Methods for applying and disposing of these products are written on the product labels and Material Safety Data Sheets (MSDS). Undertake a search online for fact sheets from your state Environment Protection Agency, Department for Agriculture and NRM Board.

In some areas, there may also be "Codes of Practice" or guidelines available that specify what products can or cannot be used in particular areas such as around watercourses.

There are services available for the disposal of used containers. There may be special deposit days promoted by your local council, often called "hazardous household waste disposal days" or perhaps a program called "Drum MUSTER" operates in your area. AgSafe "ChemClear" is another program. Contact your local council or NRM board for disposal options.

Steps to achieve good practice

- Read the labels of any veterinary or chemical products you currently have, or intend to obtain, so that you understand the appropriate methods for application and disposal
- Check with your local NRM board to see if there are any guidelines to using particular chemicals in your area.
- Before using "Restricted" chemical products, make sure you have the necessary licence or permit.
- Make sure you clean and dispose of used containers according to instructions. Use a service such as ChemClear to dispose of used containers.
- Work out an emergency response plan for chemical spills, poisonings or leakage. Have a spill response kit (e.g. absorbent material such as kitty litter) located close to the storage area. This is needed to ensure that any spillage does not harm the environment, people or animals through runoff or seepage.

www.amlrnrm.sa.gov.au/Publicationsandresources/Videos/Weedinfo.aspx

NEW IDEAS

After battling Salvation Jane with sprays restricted due to a vineyard next door, we drew on permaculture and new Natural Sequence Farming ideas to improve our soil and strengthen pastures.

We supported our dung beetles, switching our horses to Australian author Pat Coleby's natural diet and ceasing harrowing – this transformed our paddocks into self-managing wonders!

Stable waste builds compost and has earthworms teeming. Shelterbelts are a mix of exotics and natives giving summer fodder, shade, habitat and soil conditioning leaf mulch.

Our main pastures are now chemical-free, strong perennial grasses that hold their own in our climate-change affected summers.

Anthea Starr, Oakwood Park, Oakbank

10 PREVENT WEEDS ENTERING OR LEAVING THE PROPERTY

An active program to prevent weeds entering or leaving the property is in place

Weeds on horse properties are a concern because some species are toxic to horses. Weeds growing in pastures reduces the amount of good grazing available to horses, as weeds take the place of desirable, edible pasture plants. Weeds can also do environmental harm, especially when they grow in native vegetation.

Horses are selective when grazing and are less likely to eat undesirable plants, unlike cattle or sheep. Horses will also overgraze their favourite areas and leave other parts of the paddock to go rank. Horse paddocks will need to be proactively managed to keep them in good condition, especially if small in size.

An important aspect of weed control on horse properties is the risk that weeds can be imported onto the property through

- hay
- feed contaminated with weeds or weed seeds
- contractors coming on to cut hay or undertake other work
- visitors

Equally, weeds can also be exported from the property by these means. Most weeds actually don't enter properties via horses; it is usually by purchased hay, bird droppings, water and wind. It may not be possible to completely prevent weeds entering the property, but reasonable steps can be taken. Declared (proclaimed) pest plants need to be controlled on the property according to legislation.

Steps to achieve good practice

- Identify any weeds that are already on the property, and make sure that these are actively managed and controlled.
- Find out what weeds are known to occur in your district and how to manage them if found on your property
- Isolate/quarantine new horses coming onto the property. It is good practice to separate new horses for 10 – 14 days after arrival to make sure they are healthy and not harbouring any diseases. This will make sure that any weed seeds from unknown plants, residue from worming or other treatments can be passed through the horse's gut system. Manure needs to be collected and stored separately as part of an isolation/quarantine program.
- Grooming and cleaning the hooves of horses moving off and onto properties will assist in managing the introduction of other plant diseases, such as Phytophthora or Branched Broomrape.
- When buying hay, try to get hay that is weed free or is known to come from a property not known for having a weed problem. Depending on the size of your property, it may be possible to grow your own hay and keep for feeding back to your horses.
- Make sure any other horse feed, or feed for other stock, is weed free.
- Designate a car park area for visitors and entry/exit point for the property for visitors and contractors. Surface the area to help manage erosion and act as a barrier for weed seeds or contaminated soil.
- Speak to contractors about your concerns and provide a cleaning down area for machinery if this is determined as necessary.
- Put up signs or use other means to communicate your weed quarantine precautions to clients, visitors etc.

A WORK IN PROGRESS

We have horses and sheep on our 25 acre property. We have a garden around the house, and grow most of our own fruit & vegetables. Two dams supply all the water we need year round to provide drinking water for stock, and watering the garden around the house.

The dams are fenced off from the horses, but sheep can access the gully to keep it grazed down. Water is pumped up to a tank at the top of our property to give us pressure to water the garden and fill troughs (and I even use it at times to sprinkle the arena if we have a long dry spell).

The house uses rainwater collected in 2 x 10,000 gallon tanks, and we have a separate tank kept full for firefighting.

With house, stables and sheds, there is ample roof area to collect large amounts of rainwater, and given the longer, hotter summers we are considering putting in an extra tank just to supply the stable & wash down area & surrounding garden.

Over the years I have planted more than a thousand trees – always using horse manure as a thick mulch and most have managed to survive with no watering. The next part of the plan is to plant a fodder tree belt.

Any property is a constant work in progress!

Helen Whittle

11 PEST ANIMALS

Pest animals are identified and a specific control program put into place

Introduced animals such as rabbits, foxes, feral goats, starlings and sparrows cost many millions dollars each year due to the harm they do to the natural environment and to primary production. Horse properties are at risk of harm from these pest animals.

Their harmful effects include grazing and destruction of vegetation, damage to crops and pastures, preying on livestock, harm to native animals and their habitats, and indirect effects such as soil erosion and decline of water quality. The presence of pest animals can also reduce the value of land.

Rabbits for example can still cause a lot of damage even in low numbers. Rabbits are still a major concern despite the impacts of rabbit calicivirus disease. Foxes and cats are considered to be major threats to biodiversity in many areas through their impact on native animals.

Mice and rats are attracted by feed, which in turn can attract snakes.

Rabbits, foxes, feral goats and deer are declared (proclaimed) pest animals in some states, where property owners have responsibilities to control their pest animals.

Horse owners need to check with their local authorities in relation to which animals and birds are considered a pest in their area.

Steps to achieve good practice

- Find out what pest animals are known to occur in your district, and which of these you should be prepared to control on your property. Your local council or NRM board will be able to provide this information.
- Keep an eye out for and identify any pest animals on your property, including signs of their presence.
- Find out the approved/recommended methods for controlling any pest animals. Methods will depend on property location e.g. properties located adjacent to housing may use different methods to those in more rural areas.
- Carry out the recommended pest animal control strategies for each type of pest animal that applies to your property. This may mean taking certain measures at specific times of year, or at times when pest animals reach a certain population level.
- Regularly monitor pest animals and modify your programs accordingly

Rabbit hole

12 DISPOSAL OF DECEASED HORSES

A plan exists for the suitable disposal of deceased horses

Disposal of deceased horses is an important issue that horse owners should plan ahead for in order to reduce the emotional and financial stress when the necessity arises.

Horses may need to be destroyed at short notice as a result of accident, illnesses or injury. Disposal of deceased horses both on-property and off-property should be considered.

Burying horses in some districts, such as the Adelaide Hills watershed region is not approved. The decomposition process can lead to pollutants leaching into groundwater.

Steps to achieve good practice

Suggested actions are:

- Discuss with the family/client ahead of time what options are available
- Burial on or off property
- Euthanasia by an equine veterinarian
- Commercial stock collection and disposal services
- Transport to a slaughterhouse
- Cremation

Deceased horses can be buried on the property in many districts. When selecting a site consider avoiding environmental impacts through location of the pit as far away from watercourses, drainage lines and shallow groundwater as possible. Ensure that there is enough space and spacing of pits for the number of burials required into the future.

Horse SA has prepared an information sheet "Keeping Horses – Making the Final Decision".

RECORDS & TESTS

During the time since we bought our Scott Creek property in 1996, we have noticed quite a change in the seasons.

In these seventeen years we have kept records of rainfall, creek levels and times of hay cutting, and other information relative to the running of our property.

In the early years hay wasn't cut until late November through to December. The last few years it has been the norm for the hay to be ready at the end of October or at least early November.

Regular soil tests and follow up maintenance so far have ensured a consistent supply of good quality hay.

Jim & Sandy Doig

PADDOCK MANAGEMENT

1. MAINTAIN GROUNDCOVER

All grazing areas have at least 70% (for soil susceptible to water erosion) and 50% (for soil susceptible to wind erosion) ground cover throughout the year

Groundcover on horse properties includes living plants (pasture, natural vegetation) or dry plant residues, stones or gravel. It is important that there is adequate groundcover on properties to prevent the risk of soil erosion by water or wind and to reduce dust which can lead to problems with horse health.

Soil erosion by water (i.e. rain washing soil from the paddock) can result in pollution of water in creeks and dams and cause a build-up of silt. Soil erosion causes loss of the most fertile part of the soil, which reduces pasture growth. Other effects of soil erosion are the build-up of soil on Fencelines and roadways, and dust storms.

Bare soil in paddocks is also a problem because it increases the risk of horses getting sand colic and respiratory tract infections.

On horse properties, soil erosion is most often a problem in places where horses congregate, causing bare ground along Fencelines, around feeding areas and near gateways. Steep slopes and water courses are more susceptible to erosion.

In South Australia, property owners have a responsibility to take reasonable steps to prevent land degradation, such as soil erosion, under the Natural Resources Management Act 2004.

Steps to achieve good practice

1. Measure the ground cover level in your grazing paddocks at least twice a year e.g. at the end of summer and at the end of winter.

Percentage of ground cover means the proportion of the soil surface that is covered by plant material or similar. If the ground cover levels on grazing areas are less than adequate, this may be due to one or more reasons such as low soil fertility, unsuitable soil pH, lack of desirable plants in pastures or poor grazing management.

2. Assess soil fertility and soil pH levels: Desirable pasture plants need reasonably good soil fertility levels as well as soil pH that is not strongly acidic.

Undertake a soil test every few years. Advice about soil testing and kits are available through your NRM Office. The NRM office can also provide you with advice on interpretation of the soil test results and what additional management techniques may be required.

3. Evaluate your pastures: Ensure they have a good composition of desirable pasture species.

Pastures that have a lot of weeds and annual plants become bare over summer, whereas perennial plants give good groundcover through summer. With poor pastures, a full pasture renovation program will be required. Pastures with a reasonable number of desirable species can be maintained with a weed control and grazing regime.

4. Grazing Management: For best results, grazing should start when pastures grow to 10-15 cm height.

Spelling the pasture (removing stock from grazing) should start when pastures are down to 3-5 cm height. Grazing below this height weakens perennial plants. This can be achieved through establishing a rotational grazing program on your horse property. This means putting horses in a paddock only for a certain period and then moving them to another paddock to spell the pasture. This can also be achieved through use of temporary electric fencing to graze a paddock in “strips” or “cells” for the same effect.

Other ways to promote quality pastures include:

Manage manure to avoid build up and reduce areas of rank growth where horses do not graze

- Rotate feeding areas
- Create a hardened surface around gateways, troughs and other traffic areas
- Plan to remove horses to another paddock, yard or agist off site when pasture is too low
- Plan to reduce and manage effects caused by Fenceline tracking
- Regularly check ground cover in more susceptible areas such as slopes, wet patches and take action to restrict horse access if required
- Plant shelter belts which will help manage the effects of wind (and resulting erosion)

2. PASTURE COMPOSITION

All grazing areas have quality pasture grasses and legumes with less than 10% weed species and no proclaimed plants

Pastures that have good quality plants will provide the best grazing for horses and protect the soil from erosion. Without good management, most pastures that have had any type of stock grazing will deteriorate over time and become full of weeds.

Weedy pastures have poor feed value, some weeds are toxic to horses and the resulting dust from bare patches can cause health issues for horses including sand colic and respiratory tract infections.

Good quality pastures ideally consist of 70 – 80 % desirable pasture grasses, 20 – 30% legumes and less than 10% weeds. Examples of legumes include sub-clover, medic and lucerne. Legumes are nutritious for grazing livestock and help "fix" the nitrogen in the soil, reducing the amount of fertilizer that needs applying.

Steps to achieve good practice

1. Identify the pasture plants in your horse paddock

Determine if there are enough desirable plants or if a weed control or paddock renovation is required.

2. Assess soil fertility and pH

Soil tests should be undertaken every few years. Soil test results will guide what type and how much fertilizer or other treatments should be applied to promote a healthy pasture and guide a weed control program.

3. Make sure pastures have a grazing program

May include rotational grazing, cross-grazing with cattle or sheep, spelling and if required, slashing of long, rank grass.

4. Improve pastures

Many properties benefit from having a paddock or two renovated each year. This forms part of a Property Management Plan (PMP). Seek advice about pasture & legume species suited to your area. Within each species will be different varieties which grow better within certain rainfall zones and soil types.

Where possible, use a "direct drilling" method. This is where the seed is sown along with fertilizer into unworked soil. A herbicide may be required to be applied before direct drilling. This method reduces the type of soil erosion caused by traditional ploughing.

If your pastures only lack perennial grasses or legumes, it may be possible to "over sow" these into the existing pasture, rather than undertaking a complete renovation.

Newly sewn pasture needs time to establish, therefore horses (and other livestock) need to be removed from the paddock and control programs for pests such as the red legged earth mite put into place.

3 WEED IDENTIFICATION AND CONTROL

An active pasture weed control program is in place that is regularly monitored and reviewed

Weeds on horse properties are a concern because they reduce available grazing and may be toxic for horses. Weeds can also choke out native vegetation, including grasses.

Abundant weeds usually indicate that pasture quality is poor, which often is reflective of poor soil. Hay cut from these paddocks will contain weeds and be of lower nutritional value. Proclaimed (declared) weeds must be controlled according to legislation.

A range of methods will be needed to control weeds on any property, including grazing & pasture management, chemical or biological control and a hygiene program. One method alone will not be enough.

Steps to achieve good practice

1. Undertake a regular weed inspection on your horse property. Identify unknown plants

2. Establish a weed control program

Advice is available from your local NRM office on methods, especially for any proclaimed species.

3. Establish a weed hygiene program which includes

- Try to ensure that hay & feeds brought onto a property are free from weeds & weed seeds
- Quarantine new horses for 10 – 14 days, allowing weed seeds to pass through their system
- Designate a parking area for cars, floats & visitors (surfaced if possible) and an entry/exit point.
- Clean boots, car & float tyres etc. before entering your property or in a place on your property designated for this
- Speak to contractors about your concerns and provide a cleaning down area for machinery if required
- Put up signage or other means to communicate any key messages to visitors

4. Manage pastures

Good quality pastures will have many desirable plants that will tend to out-compete most weeds.

5. Review your weed control program each year

This will involve regularly monitoring pasture quality. Make notes each season about the effectiveness of control methods and modify plans accordingly.

4. PROCLAIMED PEST PLANTS

Proclaimed (declared) pest plants are identified and controlled

In any region you live, there are certain pest plants "proclaimed" under the Natural Resources Management Act 2004. The list of plants will vary in each region. Examples of proclaimed weeds in the Adelaide Hills include gorse and blackberry, whilst state-wide poison ivy and perennial thistle are listed.

Generally, pest plants are proclaimed because they are poisonous to livestock may be difficult to control leading to invasion of native vegetation and reduced value of the land.

All landholders have responsibilities to control proclaimed weeds and to report these to their local NRM office, who will also be able to provide advice on control methods.

It will be important to talk with your NRM office and local council about any proclaimed weeds that need controlling on adjoining land (public or private) and roadsides. A weed control program that uses more than one method is more likely to be effective.

Steps to achieve good practice

- Undertake regular inspections of your property. Seek advice from your NRM office about any weeds that cannot be identified and for control methods for proclaimed weeds.
- Prepare a weed control plan, seeking advice where needed. Carry out the plan noting what worked and what did not work so that the plan can be adapted for the next season.
- Introduce a weed hygiene program to your property. Refer to Weed Identification and Control.
- Manage pastures. Refer to Maintain Groundcover & Pasture Composition.

QUESTIONS ABOUT THE FUTURE

I live on the wrong side of Goyder's line – therefore the line on the map where the rainfall drops will be moving westward towards Eudunda in years to come and my grasslands (which are perfect for my horses) may end up becoming more like saltbush country.

It hasn't happened yet, but on the cards for the future.

So how do I maintain my grasslands for longer?

Can I proliferate the spear grass in any way to maximise my pastures longevity? Can it be mechanically reaped and seeds collected for re-seeding other areas of the property where it is less prolific?

These are all questions I have to prepare for climate change challenges.

Kirsty Dudley

5. SEASONAL WET AREAS, WET SEEPS AND DRAINAGE LINES

Horse access is restricted from seasonal wet (waterlogged) areas, wet seeps (boggy areas) and drainage lines while the soil is wet and soft

Property owners have a responsibility not to damage watercourses. In South Australia this is a requirement of the Natural Resources Management Act 2004.

Most soils get very soft when the soil is wet, with the exception of sands. If horses or other livestock have access to wet soils, this can cause:

- "pugging" made from hooves sinking into wet soil – this damages soil structure and leaves behind a hard imprint of compacted soil when the hoof print dries out
- "skid marks" causing damage to pasture plants & roots torn out of the ground when horses slide to a quick halt from speed or just from regular use where soil structure may be poor or on a slope
- "bare spots" from where soil erosion has occurred, perhaps where horses have congregated or pasture cover was poor

Pugging can also increase water "ponding" after rainfall, which leads to build up of bacterial and algal growth on the ground. When the water runs off, it can contribute to water pollution of creeks and dams. In some weather conditions, ponding may also attract mosquitos which have been known to transfer diseases such as Kunjin & Ross River Virus to horses.

Waterlogging mainly occurs in low lying areas, on soils with poorly draining sub-soils, soils around springs, seeps and drainage lines and on areas over shallow water tables. Sloping land can also be affected by waterlogging. It is important horses are kept off waterlogged areas, which in many areas is just for a few weeks or months a year.

When inspecting paddocks in drier times, areas prone to waterlogging may be indicated by dried out "pugging" and weeds such as dock.

Steps to achieve good practice

- When drawing up your Property Management Plan, indicate the areas prone to waterlogging on one of the overlays
- Investigate ways to restrict horse access to these areas when wet, which may include permanent fencing, temporary electric fencing (ideal for short term management), moving horses to drier paddocks, into yards or off the property and feeding horses away from waterlogged areas.
- Look at ways to improve wet areas, which may include
  - Removing horses, spelling & re-seeding with water-tolerant pasture species
  - Design swales (broad, low contour banks) & tree shelter belts to slow down, disperse and manage water
  - Investigate soil treatments such as gypsum if required

6. STEEP SLOPES

Horses are restricted from steep, erosion-prone slopes

Steeply sloping land needs to be carefully managed as there is a high risk of soil erosion. It is also more difficult (or impossible) to access this land with machinery.

Where horses have access to steep slopes, bare areas can quickly develop. When wet, horses will make “skid marks” ripping up pasture roots which can lead to further erosion. Fenceline tracking on a steep slope is a risk factor for erosion.

Pastures may not grow as well on steep slopes if the soil is shallow or rocky. If machinery cannot access the slopes, then it will be quite difficult to maintain a good pasture as management activities such as weed control will be very difficult.

Steep slopes are regarded as land with an incline of 15% or more in areas up to 1000 mm annual rainfall and above 12% slope in areas of more than 1000 mm per year.

Steps to achieve good practice

When preparing your Property Management Plan, identify slopes of 12% or more and mark them on your plan overlay. A slope can be measured using a clinometer, which can be borrowed from your local NRM office.

Plan to restrict horse access to steep slopes, including any sloping land that has soil erosion problems in the past. This can be achieved through permanent or temporary fencing to only allow horses to graze these areas for short periods when there is plenty of pasture cover and the soil is dry.

Maintain good pastures, which could include sowing or encouraging native perennial grasses. These grasses can be a hard wearing ground cover which will last well through summer.

7. MANAGEMENT OF PASTURE

Action is regularly taken to prevent manure build up in paddocks

Manure from grazing animals, including horses, is high in nutrients e.g. phosphorus and nitrogen and contains pathogens e/g. cryptosporidium. Build-up of manure can cause horse health problems and as run-off into watercourses, pollution.

If manure is left to build up in horse grazing paddocks, pasture growth will become uneven with bare patches. A “horse sick” paddock is where pasture growth becomes tall and rank around manure pads, both due to the concentrated nutrients and because horses avoid grazing near manure. Large bare areas are also evident. This is a sign of an overgrazed paddock.

In many areas, landholders are responsible for ensuring that they avoid depositing or discharging waste or pollutants into any water courses, bores or onto land where it might enter the watercourses. In South Australia the Environmental Protection Authority has a policy that outlines this responsibility.

Steps to achieve good practice

- Regularly collect manure from areas where it builds up e.g. small paddocks or in larger paddocks, harrow to spread manure out and break up the pads.
- For collected manure, refer to Stable & Yard Waste Storage and the Cleaning & Disposal of Waste sections in the Intensive Horse Keeping section of this booklet.
- Keep lactating mares away from watercourses as their manure can contain concentrations of pathogens and viruses
- In higher rainfall areas, encourage dung beetles to populate your paddocks
- If pasture growth is uneven, consider management methods to address this e.g. slashing or cross-grazing
- It may not be necessary for all manure to be removed from paddocks. Manure is a natural fertilizer which helps maintain soil fertility and pasture health. The aim is to manage manure in a way that the problems described earlier do not occur.

HEALTHY PADDOCKS

Over the last few years with longer warmer summers I’ve recognised the need to look at an alternative to putting in an annual crop over my 2 x ½ acre summer paddocks.

Even with careful strip grazing and daily hand feeding the results by the end of summer were areas of bare ground and little stubble to protect the soil from wind or water erosion.

I’ve switched to sowing a perennial pasture mix with some success as this crop endures for longer and topped with moving sites of round bale feeding, where wasted hay is left, more areas have been covered to protect the soil over summer for longer periods.

With heavy clay soils on slight sloping land the compaction of soil with 4 horses in small paddocks was great.

Along with changing crop type I now annually deep rip the paddocks with some gypsum spread late summer to capture as much rain for the crop to use rather than have it run off into the neighbours paddock.

Monica Seiler

8. FENCELINE TRACKING

No fenceline tracking is evident

Fenceline tracking is where hoof traffic wears down the pasture along a fence, resulting in a bare strip which erodes to a hollow. Horses walk along Fencelines for many reasons, but separation anxiety from fellow equines is common.

The gutter formed from tracking can cause significant erosion, in some cases seeing the fenceline itself collapse. Tracking on steep land can be quite difficult to remediate.

Suggested actions to manage tracking may include

- Keeping horses in pairs or herds, avoiding horses living alone in adjacent paddocks
- Establish double Fencelines, with shelter belts between paddocks. There are great environmental benefits but also may assist to reduce the tracking time spent by some horses.
- Plan to manage the behaviour of a horse left behind when his paddock mate goes out for a ride. Yarding or placing a temporary companion in the paddock may be options.

Management & repairs of damage may include

- Regularly spell paddocks by rotational grazing
- Sowing more hard wearing pasture species nearer to Fencelines that may be more resistant to tracking
- Investigate use of temporary electric fencing around areas susceptible to tracking or erosion
- Fill in the depressions with quarry rubble or similar to prevent further erosion, along with other management techniques to reduce or eliminate further tracking occurring.
- Remove horses; fill in the depressions and re sow pasture. When horses return to the paddock, combine with other management techniques to reduce or eliminate further tracking occurring.
- Review all factors including geography, fenceline design & positioning, how horses are housed, fed, worked and moved around the property to trial different solutions.

9. MANAGEMENT OF HORSE FEEDING, WATERING AND CONGREGATING AREAS

Horse feeding, watering and congregating areas are managed to prevent dust, mud and erosion

Areas where horses congregate, such as hand feeding areas, water troughs, gateways and shelters have a lot of hoof traffic which can quickly wear down pasture, leaving bare and unstable soil.

These areas are more susceptible to soil erosion, leading to mud & dust, pugging and compaction. Bare soil in grazing or feeding areas increases the risk of horses getting sand colic, respiratory tract infections, infected eyes or other health issues coupled with manure build-up which often also happens in these areas.

Poorly managed congregating areas can also lead to water run off polluting adjacent land or water courses.

Steps to achieve good practice

- If hand feeding is done in paddocks, select the location carefully. Avoid clay, sand or low lying areas that get wet easily
- Select areas to feed and water horses that are away from areas that drain directly into watercourses
- Consider permanently surfacing traffic areas
- Rotate the location of hand feeding areas to reduce pasture damage and bare ground appearing
- Locate water troughs on stable ground away from paddock corners, with a hardened surface around them
- Consider using rubber matting or other movable feeding option which can be moved around the paddock, helps control erosion and reduces the opportunity for hay being mixed in with soil

10. SHADE AND SHELTER

Paddock shelter and shade areas are managed to prevent dust, mud and erosion

Horses need natural or man-made protection from sun, wind, rain and temperature extremes. This can be provided naturally by well-established trees & shelter belts or a constructed shelter.

Horses will congregate around shade & shelter areas, creating hoof traffic which leads to pasture degradation and the resulting dust & mud. This is compounded when shelters do not have guttering & drains to manage stormwater.

Steps to achieve best practice

- Locate man-made shelters away from slopes, clay, sand or low-lying areas where possible.
- Install guttering and drains to shelters, along with ground hardening in and around the site such as dolomite
- Consider shelters that are movable (UK models are built on a sled design) which can be moved around if the first site does not prove suitable, or the shelter is moved as part of your paddock management regime
- Feed the horse in the shelter to keep feed dry and to encourage maximum impact (time spent by the horse in one spot) to be concerntrate on a durable surface

RECYCLING AND PADDOCK MANAGEMENT

Recycling fencing iron for paddock shelters has helped reduce costs of establishing smaller paddocks to separate horses and provide a dry place to feed in winter reducing amount of hay that is wasted.

Using the cheaper option of compacted road base, or over size material in shelters and areas of high traffic, like gateways and around water troughs rather than shell grit or sand has kept cost down and works better as packs down so does not get blown or washed away.

When the paddocks get muddy a temporary electric fence can be erected to confine the horse on the road base area keeping them clean and at less risk of getting greasy heel or hoof fungal infections. This protects the paddocks from getting pugged up too.

Monica Seiler

11. MANAGEMENT OF WATERCOURSES (INCLUDING EROSION GULLIES & DAMS)

Watercourses are fenced to restrict horse access

When horses are allowed access to watercourses, including creeks, dams or erosion gullies, their hooves can disturb the fragile ground leading to further erosion and disturbance to watercourse beds and banks.

Manure which has been allowed to build up on slopes leading to watercourses can also pollute water. This is more likely during heavy rain, as water runoff will contain nutrients and pathogens.

Research has shown that young animals, including foals on lactating mares, can affect water quality through the introduction of Cryptosporidium and Giardia from their manure. Careful consideration needs to be given to planning the design & layout of properties housing mares and foals. Property management regimes need to consider use of rotational grazing to ensure that lactating mares are not left with foals in paddocks without protected creek lines.

Studies have shown that livestock do better on reticulated water, than water available from creeks. Creek water is often variable through the seasons and when left in small ponds or with almost no flow will start to taste different as salts and other nutrient concentration becomes higher.

Horse riders using long distance trails need to bring along a collapsible bucket. Horses should be tied away from the watercourse, with the water fetched in a bucket. This will avoid damage to creek banks and beds.

Steps to achieve good practice

- Plan to fence off watercourses, riparian zones, dams & gullies to manage access by horses & livestock
- Plan to set up a reticulated water system on your horse property, removing the need for horses to access creeks
- Manage access to and across watercourses e.g. stock crossings at creeks or dam entry points

12. STOCK CROSSINGS

Stock crossings are selected and designed to prevent stream bed and bank erosion

If horses are allowed to walk across, congregate or play through watercourses their hooves can disturb the ground leading to erosion problems and disturbance of stream beds. A build-up of manure left in these areas can also pollute the watercourse.

Horse riders on trails also need to consider selecting the best crossing point for creeks to avoid creek bank damage. When horses are allowed to paw in the water, this can disturb the creek bed and in some cases causing turbidity.

In South Australia, creek crossing points are considered a "water affecting activity" therefore advice will need to be sought before construction.

Steps to achieve good practice

Where horses need to be able to cross watercourses on a property, crossings should be carefully sited, designed and constructed to minimise impact on the watercourse. It may be an option to use a natural crossing if available i.e. a site that has a sound creek bank to support approach and a hard base of stone or rocks in the bed itself.

Prior to building a stock crossing (or bridge or culvert), seek advice on the permit procedure from your local NRM office. To create a stock crossing you will need to consider water flows, flood events and your budget. Stock crossings can be combined with fencelines and gates to help manage horse access.

MANAGEMENT FOR INTENSIVE HORSE KEEPING

1. HORSE EXERCISE AREAS & YARDS

Intensive horse use areas are managed to prevent dust, mud, manure build up and stormwater/water course pollution

Intensively used areas on horse properties such as stables, yards, arenas and saddling up areas attract a lot of hoof traffic. Unless the ground on these areas is very stable or surfaced with a hard-wearing material, there may be problems with mud, dust and soil erosion.

Often these heavy traffic areas also form part of a workplace, and there is the consideration of safety associated with dust, mud and uneven surfaces for agistees, staff, visitors and clients.

Water ponding in puddles, hoof pug holes and other still water will encourage the breeding of mosquitoes in the right weather conditions.

Manure needs to be managed so it is regularly collected, stored and removed. Manure build up around intensive horse keeping and work areas is not only unsightly with horse health related consequences, but can lead to other problems from run off, leading to reduced water quality in our watercourses.

Steps to achieve good practice

- Review the stable yard/ traffic area layout. Improvements to layout and aspect could reduce dust and mud. Ideas may include relocating the wash bay (water run off) & dedicating a car park away from work areas
- Harden heavy traffic areas with asphalt, dolomite, quarry rubble or similar. It may be feasible to establish hard wearing grass such as kikuyu in some areas and use movable solutions such as equine rubber matting in others
- Regularly collect manure, with a sound plan for removal from the site before storage overflows
- Install guttering and drains to manage stormwater
- Plant garden beds & shelter belts which can help absorb and disperse water. Vegetation can also help manage wind flow pattern, reducing dust
- Artificial screening such as shade cloth can be used not only for aesthetic reasons, but to reduce dust movement from round yard use & form part of a wind break around saddling up areas
- Have stable yard “rules” about using pathways and designated grooming, saddling and riding areas. This is especially important in busy riding & agistment centres

2. STABLE & YARD WASTE STORAGE

Horse manure and soiled bedding is stored in a manner that prevents water runoff entering or escaping the storage site

Stored manure and soiled bedding from stables and yards can pollute watercourses via water run-off, if the waste storage site is not well sited and designed. Poor management of a storage area may also lead to odour and an unsightly mess which could cause neighbours tocomplain.

Local Councils may also have requirements about how manure needs to be managed. This will be found in their Development Plan under horse keeping. Some councils may require all manure to be stored in a sealed container and removed from site each week. This is most common in urban stable yards.

Composting and reusing on the property or donating to a community garden is a sustainable and cost effective option.

Well-designed storage bays should

- Be designed to suit the storage purpose i.e. for removal or for composting
- Have a roof or temporary covering that prevents rain falling on the waste and creating run off
- Have a berm (raised ridge) that helps keep run off within the storage site
- Be sited well away from water courses
- Be convenient to access from the stable yard, either directly with a wheelbarrow or with a trailer used for manure collection
- Have good access for machinery or vehicles to aid in handling and removal of the manure
- Consider any workplace safety issues (lighting, lifting, slip & trip)
- Have garden beds, trees or other screening which helps with neighbourhood relations
- Removable large waste bins under shelter in a busy urban stable complex

Steps to achieve good practice

- Plan to manage manure from clean-up & storage through to regular disposal or into a composting program
- Conveniently located, well designed manure bays are more likely to be used
- Keep the areas around the manure storage bay clean & tidy. Install a hardened surface if required
- Screen the manure bay from neighbours
- Stable waste from new horses in quarantine or sick horses should be stored separately (and as part of biosecurity practices, handle healthy horses first, then sick horses before cleaning your tools and yourself)

3. CLEANING AND DISPOSAL OF WASTE IN INTENSIVE HORSE KEEPING AREAS

Intensive horse keeping areas are regularly cleaned and waste disposed of appropriately

Manure can quickly build up in intensive horse keeping areas such as stables, yards and small paddocks. A build-up of manure can lead to pollution of watercourses through run off, uneven pasture growth and health issues such as a build-up of internal parasites.

Urine residue can also build up. Urine contains ammonia and if allowed to build up causes odour and health problems for horses, including airway disease. Neighbours may also complain.

Some local councils may have requirements for the regular disposal of manure. Check your council's Development Plan for any requirements, which are likely to apply to urban stable yards. Storage sites must be easy to access in all weather as manure will need regular removal.

Horse property managers can become over-whelmed with a large pile of stable waste if plans are not in place for regular, scheduled removal or composting on site. There are some key disposal options for horse owners to consider.

Recycle on site

- Use manure around household gardens, which is only practicable for one or two horses (as many trees & plants do not like too much manure around their base)
- Compost manure for re-use around house garden and paddocks

Remove from site

- Engage a company to remove the manure on a regular schedule, usually this involved an industrial bin
- Place signage on busy roadways inviting motorists to come and help themselves
- Bag up the manure for sale on roadsides (check local council by-laws) or at farmer's markets
- Advertise the manure or compost for collection or sale in bags through online sites and gardening networks
- Invite a community garden or gardening group to regularly access your property for manure
- Stable waste from new horses in quarantine or sick horses may need to be disposed of separately/ differently. No medical waste e.g. wound dressings, should be mixed up with the stable waste

Steps to good practice

- Arrange to have manure regularly removed from storage areas to composting or off-site options
- Investigate options to reduce urine odour in stable yards, this may include treatments such as lime or commercial products designed for stables. Equine rubber floor mats combined with some bedding types will facilitate higher absorption of urine which can then all be removed.
- Consider planting sweet smelling gardens around the manure storage areas both for aesthetics and to mask some odour
- Keep manure cleaning utensils clean, dry and stored safely when not in use
- Consider workplace safety (lighting, lifting, slip & trip) when selecting waste disposal methods

Lily Hirsch

Idea | Nearly there | Just beginning | Haven't thought about it

4. STORAGE OF FEED

Feed is stored in dry, sealed containers and is not accessible to vermin

Feed storage areas can attract vermin and pests due to the availability of food, leading to convenient nesting and breeding areas. Vermin (rats, mice, foxes, starlings) and other pests can carry disease, spoil feed and damage storage areas, including electrical wiring. The presence of rodents will attract snakes and foxes.

Hay & many feeds will spoil if not kept in a dry environment, it is also a fire hazard, and therefore storage in a separate building to the stables is recommended.

Steps to good practice

- Select feed storage containers that will keep feed dry and prevent entry of vermin
- Use a range of control methods for vermin including chemical control, closing small gaps in the building with fly wire to prevent entry and erecting cut outs of barn owls.
- Store feed away from stables and other primary buildings to reduce fire risk
- Consider workplace safety in feed handling & storage areas

5. CLEANING OUT HORSE FLOATS & TRUCKS

Horse transport vehicles are cleaned out with waste collected and contained for disposal or recycling

Horse transport is a collection point for manure, urine and uneaten feed which needs to be regularly cleaned out as part of caring for the vehicle. When cleaning out transport is not appropriate to hose out and let run off go down streets and enter the stormwater system.

Establish an area on your property to clean out floats, which will also form part of a biosecurity plan. Wheels can bring in weed seeds, contaminated soil (including plant diseases such as phytophora) and the waste inside the transport may be from a horse that is going into quarantine or not associated with your property. There may also be requirements to disinfect.

- Commercial vehicle DIY washes are a good option to consider.

Steps to good practice

- Clean out transport initially by sweeping then using a minimal amount of water if needed
- Dispose of residue waste appropriately. Refer to Cleaning and Disposal of Waste in Horse Keeping Areas
- Wastewater should be either directed to a suitable surface soakage area or directed into a waste pit

6. WASH-DOWN AREAS

Waste water from wash down areas does not enter watercourses or stormwater drains

Water from wash down areas may contain pollutants, including horse cleaning or residues from veterinary products. Waste water should not enter the stormwater systems or watercourses.

Wash down areas are hoof traffic areas which break down soil structure, creating mud during washing which turns to dust when dried out if not managed.

Wash down areas can be made of hardened surfaces e.g. cement, featuring a berm (raised ridge) which prevents water leaving the wash bay and flowing into stormwater drains. A slight slope and drainage point can be included to ensure that waste water is dispersed over a garden bed or into a waste pit. These wash areas may be walled and have a roof. This type of design suits a busier stable yard or racecourse.

A simple design for smaller properties may consist of hardened surface e.g. compacted rubble which flows out onto Kikuyu directly or indirectly via a drain system.

Steps to achieve good practice

- Locate wash down areas where waste water cannot enter the stormwater system or watercourses
- Design wash down areas to either disperse water across grass or into a waste pit.
- Consider using biodegradable products to wash horses