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It's your land —
be sure it's in good hands



Introduction

Many of Western Australia's farms and pastoral stations rank among the largest in the world, some reaching hundreds of thousands of hectares.

But at the same time, growing numbers of Western Australians are choosing to purchase smaller rural properties—many to enjoy a more tranquil lifestyle, others to build a small, but profitable business on the land.

Today there are more than 53,000 small rural landholders (defined as owners of properties between 1 hectare and 100 hectares in size), and it is expected that this number will continue to grow.

Whether a property is 1 ha or 2,000 ha, the rural landholder has many responsibilities. The way you manage your own land can have a major impact on the people, properties and rural environment beyond your fenceline.

Buying a rural property is probably one of the biggest investments you'll ever make.

Treat it with care - just as you would any residence. Your rural property may have large expanses of paddocks that appear 'empty' of assets. But the reality is, every square metre of your land is important.

A patch of eroded soil, a mild weed infestation or insects in the fruit trees may not seem very serious - but these problems can be insidious. If left unchecked, they can devalue your property, spread to adjacent smallholdings and commercial properties and even leave you in breach of the law.

On the other hand, a well managed, well maintained property can be more productive, more profitable and more pleasurable to own and occupy.

The Land is in your hands is an information resource developed especially for owners of small rural landholdings in Western Australia. It covers all the critical topics you need to consider, from landcare to water supply, weeds, pests, livestock and smart property design.

In large towns and cities, life can be somewhat anonymous. Not so in the country. Rural communities have a strong spirit of community-mindedness and cooperation. As a member of a rural community, you'll likely be caught up in this way of life. You'll soon realise the importance of being a good neighbour, and the value of having good neighbours living near you.

The information in **The Land is in your hands** is intended to help you be a good neighbour, by caring for your property—and hence, caring for those around you—in a responsible and considerate way.

We hope you find this guide useful, and encourage you to seek further information from the many references provided throughout its pages.

Acknowledgements

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How the Department of Agriculture and Food, Western Australia can assist you



Department of Agriculture and Food, Western Australia (DAFWA) is responsible for implementing many Acts of Parliament (or laws) which protect agriculture and ensure that threats to agricultural areas are managed or eradicated.

These Acts cover exotic disease, quarantine, animal pests, weed infestation, soil and land degradation and a number of other issues.

In order to implement these Acts, DAFWA has staff in offices around the State. From time to time, owners of small rural landholdings may need the assistance of agriculture protection officers, stock inspectors and land conservation officers.

You can contact these officers through your local DAFWA office. A directory of offices around the State is included at the back of this booklet.

Specialist veterinarians and industry development officers will normally be involved in industry development activities concerning a range of commercial agricultural businesses. The veterinarians will normally become involved only when a herd problem occurs, or if called in by a private veterinarian. For day-to-day animal health care issues, your private veterinarian is your best first point of contact. A wide range of other specialist consultants also provides services to agricultural producers and rural communities.



Making the most of your land



What are your hopes and aspirations as a small rural landholder? Do you plan to turn your land into a profit-making enterprise, or is it simply to be a country retreat for the family?

Either way, some basic guidelines will help develop your land to maximise its potential, whether as a business or as a lifestyle-enhancing asset.

Introduction

If you've purchased a 'greenfields' site, with no buildings on it, you can create your property from the ground up, applying the tried-and-true principles of smart planning. Here are some of the key guidelines to consider:

1. Location of the house

Ideally, it should be:

- close to sheds and work areas far enough from the road to minimise the impact of traffic noise;
- sheltered by trees;
- accessible to water supply, electricity and telephone services;
- designed to maximise solar efficiency;
- in a well-drained location;
- positioned to minimise fire danger.

2. Location of sheds and yards

These should be:

- close to the house;
- oriented so openings face away from prevailing rain-bearing wind;
- positioned for easy vehicle access.

3. Location and types of fences

Site your fences in order to:

- divide land allocated for different purposes;
- create the appropriate number and size of paddocks;
- provide watering points and shelter for animals;
- provide access for stock and vehicles;
- minimise erosion on slopes and contours;
- allow similar types of land to be contained in one paddock.

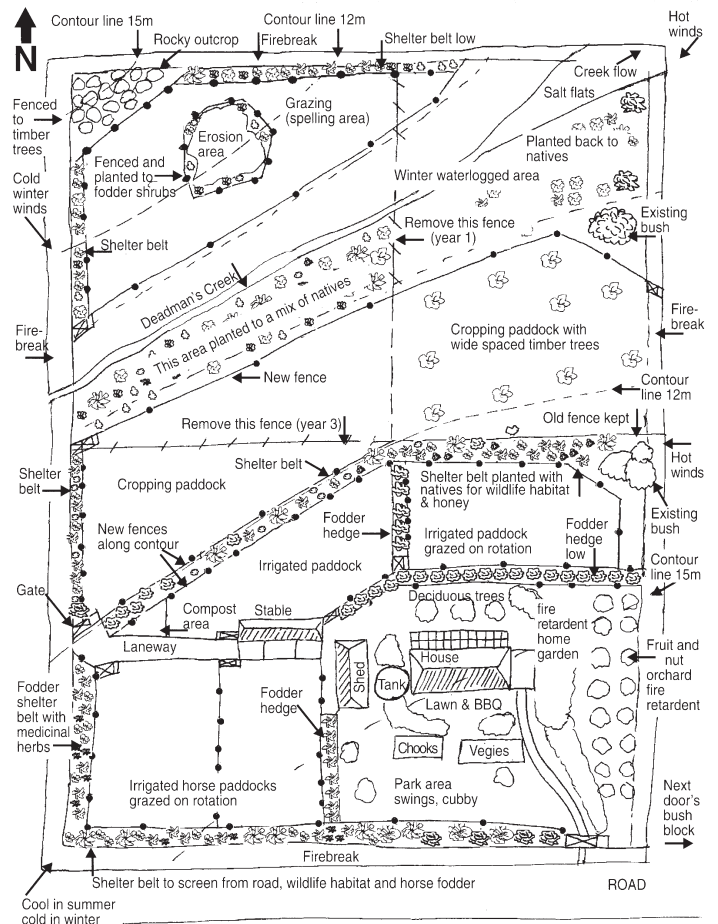
Choose your fencing types carefully, for example:

- avoid low and barbed wire fences if you are keeping horses; instead use high wooden fences;
- use barbed or electrified wire to contain cattle;
- use square mesh fences for sheep;
- goats, alpacas and other livestock may require specialised fencing.

4. Water sources

Ensure that your plan addresses the need to source water for domestic and agricultural purposes. Water sources, quality and conservation are covered in the section 'Water: A scarce resource' beginning on page 16.

It is possible to estimate the amount of water you will need for both purposes. For example, each occupant of a home needs about 132 kL a year for personal use. Formulae are available from the Water Corporation and Department of Water to help estimate water demands for garden irrigation, crop irrigation and livestock and fire fighting.



FOR MORE INFORMATION

Contact officers at
Department of Agriculture and Food
Small Landholder Information Service
Telephone: (08) 9733 7777
Website:
www.agric.wa.gov.au/small_landholder
or attend a Property Planning Workshop
available through DAFWA in your area.

5. Trees and vegetation

Does your property have areas that appear desolate and treeless? If so, planting additional vegetation could greatly enhance the visual appearance of your property. It may also aid in controlling salinity and erosion (see 'Caring for your land, beginning on page 9).

On your property plan, plot details such as land contours, soil types, location and types of existing vegetation, buildings, fences, vehicle access and power lines.

Consider planting trees and shrubs along the natural contours of the land, and creating shelter belts along ridges to help reduce erosion. The location, purpose, soil type, prevailing wind and rainfall conditions will determine your choice of plants.

6. Surface water management

As it moves over the land, surface water will carry soil particles and organic matter with it. In general, exposed soils, steep inclines and long slopes will be most affected by water run-off, with these areas prone to soil erosion.

Planning your property to minimise erosion should involve techniques for preventing water from gathering too much momentum. Contour bank, spur drains, cut-off drains and grassed waterways all help prevent erosion.

Drains can help remove surface water from valley floors. Before putting in a drain, you may need to obtain approval. Any drain you install should be of an appropriate design - otherwise it may increase erosion, or cause flooding onto a neighbour's property.

7. Thorough planning

Do you have a vision to make your property productive or self-sufficient? If so, you should plan your business thoroughly and do as much research as you can. These tips will help you develop a viable property:

- develop a market study for the crop or enterprise you intend to engage in;
- develop a business plan that covers economics and production systems;
- talk to other landholders engaged in a similar venture;
- attend field days targeted at commercial growers.

YOUR LEGAL RESPONSIBILITIES

Planning approvals

Before you carry out modifications to your buildings, construct new buildings or other structures, you may need development approval from your local council. Councils are given the responsibility under planning and local government Acts for the decisions. Generally the conditions are similar across all parts of the State but individual councils may have special requirements.

Some councils require approval for dams, fences, removal of trees, construction of retaining walls and roads. Most have a requirement for approval before the establishment of intensive agricultural activity such as horticulture, plantations, feedlots or piggeries.

Approach your local shire council early in your planning to ensure you have obtained all the requirements likely to be needed.

Sale of produce

As a landholder you also have responsibilities regarding produce you wish to sell. For example, with hay, there is a requirement that it be free from declared plant seeds. Fruit and vegetables may need special packaging or to meet minimum maturity or health and safety standards. In some industries, a 'fee for service' is deducted from the proceeds to cover industry services such as exotic pest surveillance or product promotion. A licence is needed to grow potatoes for sale and there may be restrictions on where in the State produce can be sold. Further details can be obtained from DAFWA or produce market agents.

Caring for your land



Land degradation: What you can do to help

More than 100 years ago, when our forefathers undertook to clear thousands of hectares of the State's native forest and bush, they had no idea what the consequences would be.

Today, we have inherited the legacy of extensive land clearing. Vast expanses of Western Australia are suffering from severe land degradation. The situation is challenging - but as a result of scientific research and landholder commitment, we are developing strategies to tackle the problem - and, we hope, to reverse it in many areas already affected.

To understand how you can help combat land degradation, it's important to know what the problem is. You can avoid problems by planning your property carefully (see previous section).

There are several types of land degradation and sometimes more than one type will affect the same parcel of land.

Water erosion

This occurs when soil is 'worn away' by the action of water, often when rain falls faster than it can soak into the ground. Water erosion causes a two-fold problem:

- it leaves a gully where the soil has been washed away; and
- deposits soil elsewhere, sometimes causing the transferred soil to smother plants, block drains, cause flooding and other damage.

Water erosion manifests itself in different ways. These are some of the types of water erosion you may experience on your land, and some suggestions on how to prevent it from occurring in the future.

Gully erosion

Gully erosion occurs when a natural drainage line is disturbed in some way, causing the water that previously flowed safely over a stable ground cover to flow over bare or disturbed ground.

SOLUTION: Install gully head sills and fill gullies by using a road grader. Plan and install a contour bank water management system. Carefully manage natural drainage lines by avoiding any soil disturbance and maximising vegetation cover.

Rill erosion

This occurs where numerous small channels are cut into a slope, often after rain falls on newly disturbed ground. Rills are not as obvious as gullies, but the resulting loss of topsoil is still a problem.

SOLUTION: Plan and install a contour water management system on cropping land. Use minimum tillage.

Sheet erosion

This occurs when an even layer of soil is removed from a slope, without creating obvious channels. Sheet erosion removes the productive topsoil, exposing less productive subsoil.

SOLUTION: Plan and install a contour water management system. Retain plant cover during summer and early autumn.

Stock pad erosion

Livestock hooves can create tracks in the soil. Water flows down the bare tracks, causing erosion. This is common where stock track down slopes to dams or to gates at lower levels of paddocks.

SOLUTION: Locate watering points as far upslope in paddocks as possible. Construct a grade bank system on slopes above dams. Relocate fences along ridge crests or contours.

Road and firebreak erosion

This type of erosion occurs where water collects and runs along wheel ruts or firebreak furrows. It is common where farm tracks and firebreaks are poorly positioned.

SOLUTION: Plan your firebreak system. Locate as many breaks as possible along ridge crests or across slopes, preferably just downslope of contour banks. Consider using herbicides for firebreaks rather than cultivation.

Headland erosion in cropping areas

Headland erosion is caused by inappropriate cultivation patterns. It is most common on sloping ground, where the corners of the crop seeding runs collect and concentrate paddock run-off, washing the soil away.

SOLUTION: Consider realigning paddocks according to the contour. Use minimum tillage techniques.

Wind erosion

This occurs when ground cover is insufficient and soils are exposed to wind. Soil particles begin to move in wind speeds of 8 km/hr. The fine particles containing valuable nutrients become airborne as dust. Commonly, the infertile larger sand particles are left behind.

SOLUTION: Do not bare paddocks through overgrazing. Plant suitable windbreaks and consider an 'alley' farm system and retain plant cover or stubble at all times.

Salinity

Salinity is a very serious form of land degradation. It occurs where natural salts in the soil profile are concentrated within the surface soil layers (often by subsurface water movement). Salts may also accumulate in certain parts of the landscape, such as valleys or behind rock barriers.

Plants cannot survive abnormally high concentrations of salt around their roots. Salinity may range from mild (where particularly sensitive pastures die out first) to severe (bare white salt encrusted ground). Often the problem originates beyond the boundary fence higher in the landscape.

Generally, the clearing of trees and/or water run-off in the past has meant that more water enters the soil. Water can also accumulate in low parts of the landscape and recharge locally. This causes waterlogging and salt accumulation through evaporation. The salt is then brought to the surface when the subsurface water meets a barrier or enters a point of reduced soil depth.

SOLUTION: Salinity control requires planning on a subcatchment basis. It may include a change of land use, such as the introduction of deep-rooted perennials on identified recharge areas, and the design of special water management systems.

Acid sulfate soils

Acid sulfate soils contain a high proportion of pyrite and other sulfide minerals and occur where there are anaerobic waterlogged conditions. These soils may be found around estuaries, and near rivers, lakes, wetlands, swamps and low-lying areas. Such soils are harmless when undisturbed; however when exposed, the pyrite and other sulfide minerals react with the air and generate sulfuric acid.

Disturbing acid sulfate soils can lead to loss of pasture and crop production; death of garden plants, decline in livestock condition, damage to infrastructure through corrosion of concrete and metal, and other impacts such as fish kills.

Potential indicators of disturbed acid sulfate soils are: the presence of jarosite (a straw-coloured mineral); bare ground or poor quality pasture and other vegetation; red or yellow-brown scums in water and/or extremely clear or blue-green coloured water.

SOLUTION: Acid sulfate soils should be left undisturbed. Disturbed soils can be treated with agricultural lime to restore productivity. Wide, shallow drains (designed to prevent erosion) that allow surface water to drain away quickly without exposing pyrites should be used instead of deep drains.

Soil acidity

Although a natural process, soil acidity is often accelerated by normal farm practices, such as adding nitrogen fertilisers and growing legumes. Different species have different pH requirements. It is important to maintain correct pH level for the species you are growing.

SOLUTION: Soil test for pH (in CaCl₂ solution). If the soil test indicates that the acidity is below the critical pH of the desired species (e.g. sub. clover < 4.5), apply Grade I agricultural lime to raise the soil pH and make it more alkaline.

FOR MORE INFORMATION

Farm monitoring handbook: a practical down to earth manual for farmers and other land user. N Hunt, 1992 University of Western Australia.

Soil Guide. Edited by G Moore, Agriculture Western Australia, 1998.

Your local Community Landcare Technician or Community Landcare Coordinator.

DAFWA Farmnotes relate to various aspects of soils and landcare. Check with your local office or visit the website at www.agric.wa.gov.au

Water repellence

This form of land degradation often occurs on sandy soils, where water may not readily soak into dry sand, but tends to 'sit' on the top. Scratching beneath the ponding water often shows dry sand. Water repellent soils are caused by a build-up of waxy material on the soil particles.

SOLUTION: The addition of soil wetting agents or incorporating clay into the soil may help.

Soil compaction

This occurs when soil is compacted by the weight of stock or machinery. Over time a 'hard pan' develops below the surface, sometimes hard enough to act as a barrier to plant roots and water penetration.

SOLUTION: In light soils rip deeply to break up the compacted soil. On loam and clay soils, avoid stocking during the dry to wetting-up period.

Soil structure decline

This occurs when the clods (soil aggregates) that make up many loams and clays are broken down by over-cultivation of the soil. The existence of clods normally allows a path for roots to grow between them, helping water infiltrate down to the roots and removing waste product gases. Soils with poor structure may tend to accumulate water in pools, killing plants and restricting root growth. They can also seal the surface, resulting in a very hard layer which seeds cannot penetrate.

SOLUTION: Gypsum applications may help some soils in the short term, but organic matter must also be increased. It also helps to reduce tillage of the soil. Heavy stocking of some wet clay soils should be avoided.

Drainage and soil quality

Since the earliest days of farming in Western Australia, drainage has been a part of establishing agricultural crops in certain areas e.g. the Swan Coastal Plain.

Drainage has been used to remove excess water which can cause waterlogging, often leading to stressed plants and loss of nutrients.

However, drainage can lead to the export of soil nutrients into waterways, causing eutrophication (pollution of waterways by excessive nutrients). It may also deprive shallow-rooted plants of the water they need during spring.

Inland, where secondary salinity is a serious problem, drainage is used to reduce the effects of salinity and relieve waterlogging. However, this practice can transfer salinity to other peoples' properties downstream, as well as affecting roads and native vegetation.

For these and other reasons, drainage must be done with care and only after proper approvals have been obtained.

Landcare and you

Every region has a community-based catchment council that accesses Commonwealth, State and corporate funding for landcare and other projects. These councils identify and coordinate opportunities for sustainable natural resource management, by implementing regional strategies that identify regional priorities. Catchment councils also support local groups and Landcare District Committees and employ staff that can provide technical advice on key land degradation problems. For contact details see page 43.

For wide-ranging assistance to deal with all types of land degradation, why not join your local Landcare group? With the support of your neighbours and community, you can help tackle the problem in a constructive and coordinated way.

YOUR LEGAL RESPONSIBILITIES

Landholders are required to notify the Commissioner of Soil and Land Conservation in writing at least 90 days before draining or pumping commences if it is proposed to drain or pump water from under the land surface because of the salinity of the land or water. A penalty of up to \$3000 applies to a person who fails to notify. Telephone (08) 9368 3282.

Check with your local shire council before undertaking any drainage activities.

Vegetation: A green framework



FOR MORE INFORMATION

DAFWA Farmnotes

47/1998 Weed control for successful revegetation, for agricultural regions with less than 600 mm rainfall.

37/1998 Site preparation for successful revegetation, for agricultural regions with less than 600 mm rainfall.

40/1998 Direct Seeding of Native Plants for successful revegetation.

The Austrafloora A-Z of Australian plants. B Molyneux, 2002 Reed New Holland.

A field guide to the mammals of Australia. P Menkhorst, 2004, Oxford University Press.

Field guide to Australian Birds. M Morcombe, 2004, Steve Parish Publishing.

Pocket Field Books, published by CALM on various topics.

Managing your bushland. BMJ Hussey and KJ Wallace, 1993, Reprinted 2003, Department of Environment and Conservation

Wildlife Branch
Locked Bag 104
Bentley Delivery Centre WA 6983
(08) 9334 0530

Urban Nature/ Ecoplan
Department of Environment and Conservation.

Land for Wildlife program
Wildlife Branch
PO Box 1167 Bentley Delivery Centre
WA 6983, (08) 9368 4399
urbannature@calm.wa.gov.au

For further information visit the websites at www.naturebase.net or florabase.calm.wa.gov.au

In Western Australia, humans have made many changes to the natural landscape. Where once there was an unbroken expanse of forest, woodland, wetland and heath, there is now a mosaic of farmland, towns, industries, roads and railways, with patches of remnant vegetation scattered among them. These remnants are often the only places where many species of native plants and animals are able to survive.

The value of remnants will vary depending on viewpoint. A farmer may see them as important to minimise soil erosion, watertable rise or the spread of salinity; provide shade and shelter for stock or as a source of firewood and fencing posts. Other people may value the remnants for the flora and fauna they contain, or because of their possibilities for recreation or as a resource for ecotourism. They also add to the beauty of the land, and provide that 'sense of place' which makes the landscape uniquely Western Australian.

A single remnant will have many values at the same time. For example, it may contain habitat for the beautiful blue splendid fairy-wrens, and they in turn assist the landholder by providing free insect control, including eating the blowflies that can do so much damage to sheep. This sort of mutual benefit is seldom included in cost calculations! Thus it makes sense for land managers to include in their property plans best-practice management actions to at least maintain, and at best improve, their remnant vegetation.

Properties may be made more sustainable in the long-term through revegetation with perennial native species e.g. along a creekline to improve water quality, and this may also act as a bush corridor to allow native animals, such as the wrens mentioned above, move around the landscape between remnants. Planting can be designed for multiple uses such as windbreak, preventing eutrophication of water, and movement for small birds. Everyone benefits!

Smart practices in vegetation management have an important role in controlling and reversing land degradation, and maintaining ecosystem biodiversity.

It may not be necessary to revegetate from scratch. In some cases, it can be cheaper and faster to retain or regenerate existing native vegetation.

There are a number of important guidelines to follow, whether you are planting new vegetation or regenerating old. You will need to take into account factors such as soil types, drainage conditions, slope of the terrain and existing and future fencelines.

You will have to complete the necessary earthworks, soil preparation, pre-season weed and pest control and other chores that will give your revegetation project the best possible chance of success.

Protecting native vegetation: What you need to know

The clearing provisions of the *Environmental Protection Act 1986* (EP Act) commenced on 8 July 2004 and replaced Regulation 4 of the *Soil and Land Conservation Regulations 1992*. The clearing provisions of the EP Act ensure that all impacts of clearing can be assessed in an integrated way and that important biodiversity values are maintained, soil resources protected, and our water resources are not compromised.

'Native vegetation' and 'clearing'

Clearing is defined to mean the killing, destruction or doing any other substantial damage to some or all of the native vegetation in an area and covers severing or ringbarking of trunks or stems, flooding, draining, grazing and burning.

Native vegetation includes all types, including those found in aquatic and marine environments. It includes all native grasses, shrubs and trees. The definition generally does not include intentionally sown native vegetation (such as that found in a garden, plantation or other crop).

Clearing native vegetation

As a landholder you may wish to clear native vegetation on your land at some stage. Clearing of native vegetation requires a permit unless a valid exemption applies. Further information relating to applying for a clearing permit and application forms are available on the Department of Environment and Conservation website

(nvp.environment.wa.gov.au). You may also wish to contact native vegetation officers in a Department of Environment and Conservation regional office for advice.

Exemptions for day-to-day activities with low impact are contained in the *Environmental Protection of Native Vegetation Regulations 2004*. For more details refer to the guide to the exemptions and regulations for clearing native vegetation on the Department of Environment and Conservation website or contact a native vegetation officer.

Exemptions do not apply within environmentally sensitive areas declared by the Minister for the Environment; information on the areas can be found on the website described above.

Land in a controlled catchment

In order to protect current and future drinking water supplies, additional controls on clearing vegetation apply to six catchments in the South West: Warren River Water Reserve, Kent River Water Reserve, Mundaring Weir Catchment Area, Wellington Dam Catchment Area, Denmark River Catchment Area, Harris River Dam Catchment Area.

Clearing in these catchments has been controlled since the mid-1970s. This was implemented to protect the quality of existing and potential water supply catchments that were prone to salinisation.

If you propose to clear in these special areas, you will need to check with your local Department of Water office about what clearing activities require a *Country Areas Water Supply Act* licence.

Clearing permits under the *Environmental Protection Act 1986* may also apply and if a permit has been obtained it may not be necessary to also obtain a licence under the *Country Areas Water Supply Act*, unless compensation for the refusal of a licence has been paid to a previous applicant.

How your notice of intention to clear land is assessed

Assessment of clearing addresses all the values of native vegetation, including biodiversity, wetlands and water courses, land degradation, important remnant vegetation, conservation areas, water quality, and flooding. Land owners may need to provide additional information on these issues at the request of the Department of Environment and Conservation. Specialist advice is sought where necessary from other departments including the Commissioner of Soil and Land Conservation (for land degradation) or the Department of Water for water quality.

There is a legal requirement that information about applications for clearing permits must be published and submissions invited within a specified time (usually 21 days). In addition, the Chief Executive Officer (CEO) of the Department of Environment and Conservation must invite submissions from people or organisations with a direct interest, for consideration.

The CEO's decision is advertised and appeals may be lodged within 28 days by the applicant or a third party, if they are aggrieved by refusal to grant a permit or the conditions placed on the permit. A person who disagrees with the decision to grant a clearing permit may lodge an appeal within 21 days.

An appeal must be lodged with the Minister for the Environment, in writing, setting out the grounds of that appeal. The Office of the Appeals Convenor will administer the appeal and conduct an inquiry, recommending appropriate action to the Minister. Further information is available from www.wa.gov.au/appeals/ or by contacting the Office of the Appeals Convenor on (08) 9221 8711.

FOR MORE INFORMATION

A Guide to Clearing Permits – June 2005.

A Guide to the Exemptions and Regulations for Clearing Native Vegetation – June 2005
Available from Department of Environment and Conservation website
nvp.environment.wa.gov.au

YOUR LEGAL RESPONSIBILITIES

Clearing land without obtaining the necessary approvals is a serious breach of the *Environmental Protection Act 1986* and subject to substantial penalties. If you are unsure as to how the Act relates to your proposed vegetation clearing, check with the Department of Environment and Conservation on (08) 6364 6500.

Local councils may have specific condition on subdivisions—check for requirements on clearing any trees.

Water: A scarce resource



A reliable and adequate supply of water is essential for all landholdings, however large or small. Water is needed for domestic use, as well as for agricultural purposes.

Sources of water

Roof catchment

Most people in rural areas use their roofs to collect rainwater. Storage tanks must be kept clean if the water is to be used for domestic purposes.

Aquifers

Any underground geological formation which can yield a useful supply of water is called an aquifer. Aquifers may be unconfined (containing non-pressure water) or confined (containing pressure water). In unconfined aquifers, groundwater will stand in a bore or well at the level at which it is struck (watertable).

In confined aquifers, groundwater will rise up inside the bore to a level dependent upon the hydrostatic pressure in the aquifer. This level may be above the surface of the ground, in which case the bore will flow.

Springs and soaks

These are formed where the watertable is at ground level, or where the confined water can escape to the surface.

A common belief is that a spring should not be dug out, or the water will be lost. This is true in some cases, but some springs may be improved, rather than damaged, by digging.

Lakes and swamps

Lakes and swamps are formed where the watertable is higher than ground level. They may be perched (that is, held above the true watertable by an impervious layer of material). In this case, they are usually seasonal.

Rivers or streams

Sometimes rivers and streams are connected to the watertable. If so, they may either receive contributions of flow from groundwater or, conversely, may lose part of their flow as recharge to the watertable.

Bores

Bores may be drilled into confined or unconfined aquifers. If you are considering drilling for water, advice on the groundwater and any licensing requirements for your property can be obtained from the Department of Water.

Wells

Wells are dug down to the existing watertable. This task is best carried out when the watertable is at its lowest e.g. during summer.

Dams

Dams fall into the following categories:

- Excavated earth tanks
This is the common 'farm dam' where most water is stored below the original ground level.
- Gully dams
A gully dam is a single wall dam built across a water course to hold back the flow. Damming creeks or gullies needs to be carried out carefully. A spillway must be provided for overflow water to return to the creek without causing erosion. In many locations, gully dams may turn saline. Take advice before locating dams on gullies.
- Turkey nest tanks
A 'turkey nest' tank is a completely enclosed earth embankment. It is usually filled by pumping or by piped entry from a roaded catchment.

Never introduce exotic plants or fish to waterways. The natural balance of the ecosystem can be upset when exotic species displace natives. Do not use chemicals in or near waterways without first carefully reading the labels or seeking expert advice.

Failure of a dam wall could release a large volume of water. This could cause severe damage to property, roads and stock, and threaten human life. Prior to the damming of flow lines in 'proclaimed' water catchments, proposed works should be referred to the Department of Water.

When water supplies are limited

Many small rural landholdings have limited stream flow and groundwater supplies—but there are some clever ways to increase the amount of rainwater you collect during the wet months:

- Lay plastic membrane on sloping terrain and install a sump at the base of the slope. Instead of soaking into the ground, rainwater will be directed into the sump.
- Create earth catchments to cause rainfall to run off into dams. It may be necessary to create steeper slopes and grades to increase the speed of run-off.
- Increase the number and size of your storage tanks. For instance, instead of having just one roof catchment on your house, build another roof structure with a storage tank beneath.

Another solution may be to drill a bore on your property. This is a relatively expensive exercise, and there is no guarantee that the bore will yield a large quantity of water. Before you proceed, contact the Department of Water to find out about permit requirements and any restrictions that may apply to water extraction in your area.

If your property does not have a dam, you may consider having one built. Use a qualified contractor with experience in this work. It can be a complex project, and a faulty dam can result in serious flooding and destruction. When deciding on the size and volume of the dam, allow for a loss of 50 per cent of dam water to evaporation or seepage.

Maintaining water quality

Living in the country, where population density is low, you may think that your water is less likely to become polluted or contaminated. Unfortunately this may not be the case. There are two main causes of water pollution in rural areas:

Plant nutrients, nitrogen and phosphorus

Fertilisers and animal manures are important sources of nitrogen and phosphorus entering waterways. When these nutrients wash into water courses, dams and reservoirs, they can cause algae to grow. Blue-green algae create a visible 'bloom' on the water and some varieties are highly poisonous. This phenomenon occurs mainly in summer.

If you suspect an infestation of blue-green algae, submit a sample of fresh healthy algae to DAFWA's Animal Health Laboratory at South Perth. For a small fee, the sample will be analysed and you will know exactly which type of algae you are dealing with.

A number of chemicals are available to kill algal blooms, but prevention is better than cure. A simple way to inhibit the growth of algae is to spread straw (ideally, barley straw) in the water at a rate of 100 grams of straw per 100 litres of water. Do this in the spring, before the algal bloom is expected.

You can also prevent pollution of dams by installing piped inlets or grass filter strips immediately upslope from the dam mouth.

Before you fertilise, make sure that it is really necessary by undertaking soil testing and seeking agronomic advice to ensure that you choose an appropriate product. If you decide to use fertiliser; ensure that application type and timing are appropriate and that you do not exceed the recommended application rate.



Bacteria from human and animal waste

This type of contamination can be extremely dangerous. Ensure that your septic system is large enough to prevent excess effluent from entering nearby drainage lines. Manure can be prevented from washing into dams by installing filtration devices at the inlet end of the dam.

Salinity

The salinity of a water source may change over time. Stream salinity fluctuates seasonally because of rainfall and the salinity of dams, soaks and tanks may increase during the summer because of evaporation.

If salinity levels become too high, the water may become unsuitable for livestock. A Total Soluble Salts test will determine the milligrams of salt per litre.

The table below indicates the safe upper limits of total salts in water for various livestock:

Livestock	mg/L
Human drinking - desirable	500
World Health Organisation - maximum permissible	1,500
Hot water systems	900
Laundry use	2,000
Showers and baths	3,500
Septic tanks	9,000
Poultry	3,000
Dairy cattle (milking)	3,500
Pigs	4,500
Horses	6,500
Dairy cattle (dry)	7,000
Sheep (lambs, weaners, lactating ewes)	7,000
Beef cattle	10,000
Sheep (adult dry)	10,500-14,000

Acid sulfate soils and water quality

Acid sulfate soils when exposed to air, generate sulfuric acid and this can cause groundwater and surface water to become acidic. Under acidic conditions, metals such as aluminium, iron and manganese become more soluble and can increase in concentration to toxic levels. Waters, where acid sulfate soils have been exposed can have a pH as low as 2 and have concentrations of metals at toxic levels. These waters pose a risk to human health and livestock, as well if used for irrigation can result in the death of plants.

Soaks, wells and bores that draw from surficial aquifers, in areas where acid sulfate soils are suspected should be tested for pH and if the waters have a pH of less than 6 should not be used for water supply for domestic purposes or livestock.

FOR MORE INFORMATION

Water Management of Dryland Agriculture Kits #1, 2 and 3,
farmwaterinfo@agric.wa.gov.au

DAFWA Farmnotes

52/2004 Toxic algal blooms.
43/2004 Water quality for farm domestic and livestock use.
Website: www.agric.wa.gov.au

Animal Health Laboratories

South Perth Laboratory
Telephone: (08) 9368 3351
Fax: (08) 9474 1881
Locked Bag 4,
Bentley Delivery Centre WA 6983

Albany Laboratory
Telephone: (08) 9892 8444
Fax: (08) 9892 8564
444 Albany Highway
Albany WA 6330

YOUR LEGAL RESPONSIBILITIES

Matters concerning the sourcing and use of water are under control of the Department of Water. Wetlands in the South West are protected under Environmental Protection Authority policy. Refer to the Department of Environment and Conservation on telephone (08) 6364 6500 if you plan activities associated with wetlands. It is wise to seek advice from these agencies.

Controlling unwanted intruders



Coddling Moth



Weeds need everyone's attention

Weed management is a 'must' for all landholders, whatever the size of their property. If one landholder diligently controls their weed problems but the adjoining neighbour does not, re-infestation can occur on the property which was previously cleared of weeds. Many garden plants have weedy tendencies, so landholders should take care when purchasing new plants and disposing of garden rubbish. Care should also be taken when purchasing hay and other fodder that might contain weed seeds or toxic plants.

Weeds can spread easily, and can have widespread impacts. Protecting agriculture and the environment is everyone's business, so do your bit to help.

Weed identification should commence before you purchase your land. What may look like lush green grass may really be a toxic weed such as cape tulip. Those pretty 'wildflowers' may also be toxic weeds such as Paterson's curse, soursob or four o'clocks. If you are unsure of the plant species present on your land, obtain advice from the Small Landholder Information Service or agronomist from your local agricultural supply company.

Some types of weeds impact on pasture or crop production. Paterson's curse, capeweed, wild radish and dock are common examples.

Weeds such as bridal creeper, Paterson's curse and arum lily can invade bushlands and create problems for animal health.

Control of weeds helps you and your neighbours. Remember, weeds can be spread in many ways—in hay, on animals and machinery, to name a few. Good hygiene around the farm can help prevent this spread.

The Agriculture Protection Board has developed a list of declared plants which are currently considered to be, or have the potential to become, a serious threat. Under the *Agriculture and Related Resources Protection Act 1976* you are responsible for controlling declared plants. Each plant is assigned to one of five categories, indicating what action you need to take to manage that species. For more information about declared plants, contact the biosecurity officer at your local DAFWA office or visit our website at www.agric.wa.gov.au.

Which weed?

You will find it quite easy to identify many common weeds. DAFWA has free publications such as *Farmnotes* and *Gardennotes* that include clear, full-colour photos and descriptions of weeds.

Other government agencies, councils and community groups also publish brochures and posters on weeds of concern. Your local library or council office is a good place to start looking for publications of this kind.

Common weeds can be identified by sending a sample to the nearest DAFWA office, or the Pest and Disease Information Service (PaDIS) within the South Perth office. Nurseries, garden centres and agricultural chemical suppliers may also be able to identify weed specimens for customers.

Samples of suspected exotic weeds and declared plants (noxious weeds) should be taken to the biosecurity officer at your nearest DAFWA office or posted to AGWEST Plant Laboratories. Collect fresh samples, wrap them in paper or press between sheets of cardboard and post immediately. Do not put fresh plant material in plastic bags as it rots very quickly. Sampling kits are available from all DAFWA offices.

You can also post in dried, pressed material. To be positively identified, the plant must have flowers and/or fruits. It is usually impossible to identify plants from seedlings or leaves alone. Send the sample to:

AGWEST Plant Laboratories
Locked Bag 4
BENTLEY Delivery Centre WA 6983

This service may attract fees unless the plant, seed, disease or insect is suspected of being a new threat to agricultural industries. In those cases, fees will be waived.



Doublegee



Cape tulip



Paterson's curse



Narrow leaf cotton bush



Arum lily



Blackberry nightshade

Abridged list of declared plants

For a full list contact your local DAFWA office or visit our website at www.agric.wa.gov.au Please note, this is not an inclusive list of Declared Plants and may be subject to change. All plants listed below are also declared category P1. The declared status of certain weeds may vary from one region of the State to another.

Common name	Scientific name
Apple of Sodom	<i>Solanum linnaeanum</i>
Arum lily	<i>Zantedeschia aethiopica</i>
Bathurst burr	<i>Xanthium spinosum</i>
Blackberry	<i>Rubus fruticosus</i> agg
Cape tulip	<i>Homeria flaccida</i> – one leaf <i>Homeria miniata</i> – two leaf
Doublegee	<i>Emex australis</i> & <i>Emex spinosa</i>
Gorse	<i>Ulex europaeus</i>
Horsetails, scouring rush	All species of the genus <i>Equisteum</i>
Hydroclyte	<i>Hydroclyte ranunculoides</i>
Narrow leaf cotton bush	<i>Gomphocarpus fruticosus</i>
Noogoora burr	<i>Xanthium occidentale</i> <i>Xanthium cavanillesii</i> <i>Xanthium italicum</i> <i>Xanthium orientale</i>
Paterson's curse	<i>Echium plantagineum</i>
Purple flower devil's claw	<i>Proboscidea louisianica</i>
Saffron thistle	<i>Carthamus lanatus</i>
Salvinia	<i>Salvinia molesta</i>
Senegal tea	<i>Gymnocoronis spilanthoides</i>
Skeleton weed	<i>Chondrilla juncea</i>
Stemless thistle	<i>Onopordum acaulon</i>
St John's wort	<i>Hypericum perforatum</i>
Thornapple	<i>Datura stramonium</i> (common) <i>Datura ferox</i> (fierce) <i>Datura leichhardtii</i> (Leichhardt's or Mexican) <i>Datura wrightii</i> (hairy) <i>Datura inoxia</i> (downy) <i>Datura metel</i>
Variiegated thistle	<i>Silybum marianum</i>
Water hyacinth	<i>Eichhornia crassipes</i>

Categories

P1: Prohibited: Introduction into an area and movement within an area is prohibited.

P2: Eradication: Those plants found in the area must be eradicated.

This category refers mainly to serious weeds which are not yet widely established in Western Australia.

P3: Control: The numbers and/or distribution of these plants must be reduced (i.e. this category refers to serious weeds which cannot be eradicated in the short term, but must be kept under control).

P4: Containment: These plants must be prevented from spreading beyond the place in which they occur in a particular area. This category refers to established plants where reducing the infestation is either impractical or uneconomical.

P5: Management: A particular action must be taken in relation to plants in an area of public land or under the control of a local government authority.

FOR MORE INFORMATION

Western Weeds – a guide to the weeds of Western Australia. B M J Hussey, G J Keighery, R D Cousens, J Dodd, S G Lloyd 1997. This is available for purchase plus postage and handling from DAFWA, Telephone: (08) 9368 3333

DAFWA Farmnotes

81/2004 Cape tulip control in pastures

33/2005 Paterson's Curse

75/2005 Blanket wipers for tall weed control

Inquiries on weeds in gardens, lawns and turf should be directed to PaDIS on (08) 9368 3666.

Your local catchment council has many resources relating to landcare, bush/and rehabilitation and weeds.

The Environmental Weeds Action Network (EWAN) is a community group tackling weeds in bushland and waterways. For more information, see the EWAN website www.iinet.net.au/~ewan

If your property has remnant bushland, you may wish to join the Land for Wildlife scheme. Contact the Coordinator, Department of Environment and Conservation, Wildlife Branch, Locked Bag 104, Bentley Delivery Centre WA 6983, Telephone: (08) 9334 0530, Fax: (08) 9334 0199

Two useful websites for weed information are the Cooperative Research Centre for Australian Weed Management (Weeds CRC) at www.weeds.crc.org.au and Weeds Australia at www.weeds.org.au

Controlling weeds

There are several effective forms of weed control, including crop rotation, pasture topping, grazing manipulation, herbicides, biological control, scalping and mulching. You may be able to use more than one of these methods simultaneously for an integrated solution.

Herbicides should only be used once you have obtained the correct information and advice. If misused, herbicides can damage and kill the very plants you are trying to protect. Before you apply any chemicals read the labels. Make sure you use the appropriate safety equipment or protective clothing.

It is important to plan ahead for weed control and this should be the first step in any revegetation or windbreak projects you may have. For best control you must make sure all spraying equipment is clean and in good working order, have the correct chemicals and wetting agents. When using herbicides there are several application methods, including blanket weed wiper systems, backpacks, wands and traditional spray rigs. Discuss with your local agronomist which system would be most suitable for your situation.

Weed control, step-by-step

1. Obtain a positive identification of your weed (see 'Which weed?' above).
2. Determine whether you have legal responsibility to control the weed.
3. Find out if your neighbours have a problem with the same weed. If so, talk to them about a combined weed control strategy.
4. Obtain advice from the Small Landholder Information Service or suppliers of agricultural chemicals and/or local herbicide suppliers.
5. Consider your options and then implement management that will provide the most effective control.
6. Inspect the area frequently to monitor the success of the treatment and any incidence of re-infestation. It will take time for weed seed banks to deplete. Persistence will pay off.
7. If you don't wish to do the spraying yourself, book spray contractors in advance and make sure they are licensed and insured (see 'Pest Control' in the Yellow Pages).
8. Remember to replace weeds with useful plants.

YOUR LEGAL RESPONSIBILITIES

Weed control is more than a discretionary activity for landholders. There are legal requirements governing the control of weeds. Your responsibility in this regard is stated in the *Agriculture and Related Resources Protection Act 1976*.

Insect pests

Many insects are pests, however some insects benefit the environment by feeding on other insects that can become pests. These beneficial insects may be predators, i.e. they attack and eat other insects; or they may be parasites, i.e. lay eggs on or in other insects or their eggs.

Small properties suffer the same range of insects that plague large farms. Any commercial enterprise can be at risk from infestations such as caterpillars on vegetables, aphids and mites on trees, or weevils in crops and vines.

Managing serious breakouts can help you and your neighbours. Specialised biological or chemical control may be needed. Often, some of the more serious problems occur in neglected or abandoned orchards.

Good management of orchards and vineyards

Some landholders are attracted by the idea of having a few fruit trees at home to produce fresh fruit. If you have an orchard on your property, or are considering establishing one, you could be in for a surprise. It can actually be more expensive to grow fruit than to buy it. Orchards take a lot of work to keep healthy and productive.

Neglected orchards are a breeding ground for pests and diseases. If you do not intend to develop your orchard, you will still need to manage it properly, or remove the trees or vines - otherwise, any infestations on your property could spread beyond your boundaries.

If you elect to maintain or develop an orchard, here are some guidelines to be aware of:

- **The foundation of good pest control is observation.** Walk through your orchard regularly to see if any pests are increasing in number. Some pests such as scale insects can be readily observed on the fruit, branches or leaves. Other pest numbers are best estimated by means of traps. Apply control measures as required. It is your choice whether to use organic methods such as cultural controls, biological control agents and organic sprays, or commercial pesticides.
- **The second tenet of good pest control is hygiene.** Pick up fallen fruit or dispose of it. Do not leave unpicked fruit on the trees as it will just breed pests. If you have unwanted trees: remove them. It will save time and money in the long-term and keep you on speaking terms with the neighbours, especially if they are commercial orchardists. If you choose to keep your trees, correct pruning can reduce the areas where pests and diseases can build up. Running poultry and guinea fowl is useful.
- **Neglected apple and pear orchards may harbour codling moth.** The absence of codling moth from WA means that world quality fruit can be grown with greatly reduced pesticide application. The fruit industry takes very seriously its freedom from codling moth and the fruit industry has spent millions of dollars eradicating and monitoring outbreaks. An early warning trapping grid is used to detect any codling moth infestations at an early stage and enable cost effective eradication.
- **Mediterranean fruit fly (Medfly) is by far the worst pest of fruit tree crops in WA.** If growers do not apply appropriate control measures, such as bait sprays or cover sprays, then heavy damage is to be expected. Fruit often looks fine on the outside, but contains maggots on the inside. Unfortunately, there are no effective organic controls for Medfly, but use of protein and insecticide baits weekly from early in the season, and twice weekly at peak times can give good control with minimal use of pesticide. Community baiting schemes can prevent numbers building up in towns and hobby farms and moving into orchard areas. It is a requirement under the *Plant Diseases Act* for both commercial and backyard orchardists to control Medfly.



A neglected orchard.

Examples of beneficial insects:

Dung beetles

Bury animal droppings

Bees

Pollinate flowers and produce honey

Clearwing moths

Help control dock weed

Ladybird beetles

Feed on aphids

Examples of pest insects:

Redlegged earth mite

May damage seedlings in lupins, cereals, peas, canola, linseed, faba beans, pasture legumes

Cutworm

May damage seedlings in lupins, cereals, faba beans, pastures

Aphid

May be present in advanced lupins, cereal, faba beans, pastures

Budworm

May be present in lupins, peas, canola, linseed, faba beans at the time of seed/pod production and also in pasture, trees

Wingless grasshoppers

May be present in trees and fodder shrubs

Stable fly

May breed in animal manure. They can cause discomfort to animals and humans. Keeping manure covered or tilled into the soil helps to control stable fly



A well-managed orchard.

FOR MORE INFORMATION

Many DAFWA Farmnotes deal with specific pests and diseases including:

39/2005 Fruit growing for the Small Landholder

Citrus pests and their natural enemies
Smith, D, Beattie GAC and Broadley, R, 1997, The State of Queensland (Department of Primary Industries and Fisheries).

Crop insects – the ute guide –
Western Grain Belt edition 2005 DAFWA

Inquiries on control and identification of insect pests should be directed to PaDIS on (08) 9368 3666 or email info@agric.wa.gov.au

DAFWA's protection officers are responsible for inspecting properties with fruit trees and vines, and may require the removal of neglected orchards and vineyards or the use of appropriate management methods.

Pest And Disease Information Service (PaDIS)

PaDIS has a series of *Gardennotes* that helps to identify, manage and report pests of biosecurity 'quarantine' concern, such as Mediterranean fruit fly, West Indian drywood termites, European wasp, Red Imported Fire Ant, salvinia, water hyacinth, codling moth, European starling, European house borer, tree and house sparrow.

Gardennotes also cover common pests, weeds and diseases in and around the home and garden. Topics include the control of the prickly lawn weed, bindii; snails and slugs; azalea lace bug; white cedar moth; whitefly; avoiding trouble with bees and bee swarms; Portuguese millipedes; identifying European wasps; and suckering trees and plants that become a nuisance.

Garden plants that become bushland weeds is particularly relevant to small rural landholders as it gives examples of invasive species such as lantana, fountain grass and taro which crowd out and seriously damage bushland and native habitat.

If you discover an unusual animal or plant pest, disease or weed, you may have a sample identified free of charge. *Sending specimens for identification* offers helpful tips to ensure specimens are presented and posted correctly.

DAFWA invites us to enjoy nature's beauty and bounty, while being those valuable 'extra eyes and ears' which could help avert a potential pest threat before it takes hold and affects our agriculture, the environment, and our quality of life.

YOUR LEGAL RESPONSIBILITIES

The *Plant Diseases Act* was enacted to prevent the introduction into Western Australia of disease affecting plants; to provide for the eradication of such diseases; and to prevent their spread. Under Section 11(1) of the *Plant Diseases Act* you are obliged as a landholder to take measure to eradicate or prevent the spread of a disease. Section 22(1) provides powers enabling authorities to destroy neglected orchards. You are required to abide by these laws.



Cutworm



Mediterranean Fruit Fly

Animal pests

Many animals cause damage to agriculture, the environment and/or social amenity. Some of these animals are present, and others could adapt to the environment if allowed into the State. Many pest animals have specific management requirements determined by the Department of Agriculture and Food or Department of Environment and Conservation, and include:

RABBITS	Eat/damage vegetation/pasture, crops, cause erosion
KANGAROOS	Eat/damage vegetation, crops, damage fences, compete with stock for feed
NATIVE BIRDS	Eat/damage trees and crops, damage fences
EXOTIC BIRDS	Eat/damage crops/feed, compete with wildlife, spread disease, cause damage to buildings
GOATS	Eat/damage vegetation, cause erosion, compete with other animals
DEER	Eat and damage vegetation/crops, spread disease, damage fences
FOXES	Predator of native wildlife, domestic poultry, lambs.

Declared and pest animals

Categories assigned to declared pest animals indicate how DAFWA requires particular species to be introduced, controlled/managed or kept. An abbreviated list of animals and their categories is at the end of this section. Other information is available in publications produced by the Department (see later) and on the website at www.agric.wa.gov.au. Information on other pests that are not declared, such as mice and pigeons, is also available.

Landholder responsibilities

It is the private landholder's responsibility to:

- Control declared animals at large on your property even if you are not growing crops or raising livestock (e.g. control rabbits). State and local government also have obligations to control declared animals on their land.
- Introduce and keep declared animals according to conditions set by DAFWA and sometimes other agencies (e.g. in the case of deer).
- Report declared animals at large on your land to DAFWA (e.g. escaped deer, exotic birds).

Control/management of declared animals

Relevant points regarding control of declared animals are listed below:

- Maximum effectiveness can only be achieved by combining appropriate control methods.
- The key to successful control is persistence. One-off efforts produce only short-term results.
- A district-wide campaign, using a combination of techniques over a large area can reduce the problem of pest re-infestation.
- Sometimes it will not be possible to use baits, as the risks to humans and other animals will be too high.

Common control methods include:

<i>Baiting</i>	The most cost-effective way to reduce rabbit and fox populations, particularly over large areas.
<i>Fencing/netting</i>	Well-maintained fences/netting enclosures can provide a permanent solution to pest problems, but are only viable if the area to be protected is relatively small or a high-value crop is protected.
<i>Trapping/shooting</i>	Only appropriate for low pest numbers and often not suitable in built-up areas.

- To inquire about control of declared exotic animals contact the Department of Agriculture and Food.
- To inquire about control of declared native animals contact the Department of Environment and Conservation.

FOR MORE INFORMATION

DAFWA Farmnotes and other publications on animal pests on the website at www.agric.wa.gov.au, including:

89/2001 Options for Rabbit Control

91/2001 Options for Fox Control

Information may also be available from other institutions, including the Department of the Environment and Heritage, GPO Box 787, Canberra ACT 2601.

Introduction and keeping of declared animals

Declared animals desired for introduction and private keeping in Western Australia are subject to conditions and usually, permits issued by DAFWA or Department of Environment and Conservation (e.g. deer, exotic birds). Failure to hold permits or comply with permit conditions would be considered offences. Controls are in place at the State's borders to ensure that only permitted animals are imported. There may also be local government laws that apply to some animals, and there are additional requirements when animals are imported from overseas.

Some animals cannot be introduced or privately kept in WA because they are considered to be severe pests (e.g. exotic reptiles, many exotic birds and unusual exotic mammals).

- To inquire about introducing or keeping a declared exotic animal or to apply to do so, contact DAFWA;
- To inquire about introducing or keeping a native animal, contact the Department of Environment and Conservation.

Reporting/identification of unusual animals

Many pest animals are not permitted in WA. Declared animals that have escaped from their enclosures may also be able to adapt to life in the wild and cause damage to your property and your neighbours (e.g. Indian ringneck parakeets, which are commonly kept but keep turning up in the wild and surviving for many months.) Suspect animals should be immediately reported to DAFWA.

What to look for:

- An animal that looks unfamiliar or that you think should not be running wild;
- An animal (e.g. bird) being attacked by other animals in the area;
- An unfamiliar footprint or unusual call;
- Unusual nests often located in odd places like roof cavities;

If you can't identify the animal from available publications or field guides take a digital photograph or some notes of its general appearance and a sketch if possible. Often the local DAFWA office will be able to identify the animal immediately, but at other times further investigation will be required.

YOUR LEGAL RESPONSIBILITIES

The *Agriculture and Related Resources Protection Act 1976 (Part V)* deals with the control of declared plants and declared animals. Part VI of the Act covers the prevention of the introduction and spread of declared plants and declared animals. As a landholder, it is wise to become familiar with your responsibilities under this Act.

You should also be aware of the *Stock (Identification and Movement) Act 1970*, which provides for the registration and use of brands and earmarks for stock, and which regulates the movement of stock (see page 35).



Abridged list of declared animals

For a full list contact your local DAFWA office or our website (www.agric.wa.gov.au).

Common name	Category
Alpaca	-
Birds, aviary	A2, A4, A6 or A1, A2, A3 or exempt
Birds, game (quail, pheasant, partridge)	A2, A4, A6
Blackbird	A1, A2, A3
Buffalo, water	A4, A5, A6
Cat, domestic or feral	-
Cockatoo, sulphur-crested	A2, A4, A6
Cockatoo, white-tailed black	A7
Corellas	A7
Crow, house	A1, A2, A3
Red and fallow deer	A5, A6
All other deer	A1, A2, A3
Duck, wood and mountain	A7
Eagle, wedge-tailed	A7
Emu	A7
Fox	A4, A5, A6
Galah	A7
Goat, feral	A4, A5, A6
Kangaroo, western grey	A7
Livestock (goats, pigs, sheep, cattle)	-
Llama	-
Mouse, house	-
Ostrich	A5
Parrot, red-capped	A7
Parrot, 28 or Port Lincoln ringneck	A7
Pig, feral	A4, A5, A6
Pigeon, domestic	-
Poultry, domestic (chickens, ducks, geese)	-
Quail, bobwhite	A1, A2, A3
Rabbit, domestic and commercial breeds NOT EUROPEAN WILD RABBIT	A4, A6 (in captivity), A5 (at large)
Rabbit, European wild	A1, A3, A5
Rat, black and brown	-
Raven, Australian	A7
Reptiles, exotic	A1, A2, A3
Silvereye	A7
Sparrow, tree and house	A1, A2, A3
Squirrel, Indian palm	A1, A3, A5
Starling, common	A1, A2, A3
Toad, cane	A1, A2, A3

Categories

- A1: Introduction prohibited.
- A2: Subject to eradication in the wild.
- A3: Keeping prohibited.
- A4: Introduction subject to permits and/or conditions.
- A5: Numbers will be reduced/controlled.
- A6: Keeping subject to permits and/or conditions
- A7: Managed native animals
 - For information on introduction, keeping and control of animals in categories A1-A6, contact DAFWA
 - For information on introduction and keeping of animals in category A7, contact Department of Environment and Conservation
 - For information on control of animals in category A7, contact DAFWA or Department of Environment and Conservation.

Livestock on your land



Being a responsible livestock owner

You may wish to own livestock as an enterprise, or merely as pets. Whatever animals you acquire, and for what purpose, you will need to ensure their welfare and health.

Before you acquire livestock, be sure you can provide all of the following:

- Food and water;
- Protection from predators;
- Protection from diseases;
- Protection from inclement weather.

Before you buy stock, check with your local council. There may be some restrictions as to which types of animals you may keep, and how many.

It's wise to talk to neighbours who own the same types of livestock you hope to buy. Their experiences can save you valuable time and money.

Your decision to buy livestock may be based on personal preferences e.g. you may be a horse rider. Horses can be run in most areas of Western Australia.

If you are planning to run cattle, you will have best results if you are in an area of higher rainfall. Sheep do not need as much rainfall, nor do goats.

More and more small rural landholders are raising exotic and specialised animals such as emu, ostrich, alpaca and llama. Again, do your research, check with your local council, compare notes with neighbours and be sure you are fully prepared before you bring these animals onto your property.

How many animals?

You need to be sure your land can sustain the number of animals you plan to run on it. There is a guide, based on a measurement which refers to the animal's food consumption. This measurement is called a dry sheep equivalent (DSE). Each animal is given a rating, as follows:

1 large wether	1 DSE
1 breeding ewe	1.5 DSE
1 pony	8 DSE
1 large horse	10 DSE
1 heifer	8 DSE
1 dairy goat	2 DSE
1 cashmere goat	1 DSE
1 angora goat	0.7 DSE
1 deer	1.2 DSE
1 alpaca (60-70 kg)	0.8 DSE

You can calculate how many animals can be run on your land, depending on the type of pasture you have on your property.

Pasture type	Rate per hectare
Irrigated pasture (loams)	20-25 DSE
Subterranean clover pasture on clays, loams	10 DSE
Subterranean clover pasture on wet sandy soils	6-10 DSE
Subterranean clover pasture on dry sands	2-5 DSE
Non-clover pasture on dry sands	1-2 DSE

Please note that these stock rates can vary depending on soil conditions, location and land management. Refer to the DAFWA publication *Stocking rate guidelines for rural small holdings* available at www.agric.wa.gov.au.

Identification and movement regulation

To assist in the identification of ownership of stock, you are required to identify your stock as specified under the *Stock (Identification and Movement) Act and Regulations*.

You must apply for a registered brand and re-register that brand every five years. Applications are made to DAFWA offices that will issue a brand, earmark and a Property Identification Code (PIC).

You will then need to brand and/or earmark your stock as specified by the legislation. Information on the requirements for each species is available from DAFWA offices.

A waybill must accompany any cattle, sheep, pigs, goats, buffalo, deer, ostriches or camelids moved off your property regardless of the destination. Waybill books can be purchased from DAFWA offices.

Saleyards, abattoirs and exporters will usually require a combined waybill/National Vendor Declaration (NVD) when purchasing cattle, sheep or goats or accepting them for sale in the case of a saleyard. These combined NVD/Waybills are available, pre-printed with the seller's PIC, from Meat and Livestock Australia (MLA) via their website (www.mla.com.au) or by telephone (1800 683 111). You should order them at least 28 days before they are required.

To assist in disease and residue control, and to enable free export market access for Australian beef, the *Enzootic Diseases Regulations* require stock owners to apply a National Livestock Identification System (NLIS) tag to any cattle, sheep or goats moved off their property. Tags must be pre-printed with the owner's PIC (cattle) or brand (sheep and goats). Your local stock agent or rural merchandise store will be able to assist you with your individual requirements and with the purchase of the tags. You should order them at least 14 days before they are required.

Straying stock

As a stock owner, you are responsible for keeping your stock on your own property and preventing them from straying. You may be liable for damages arising from stock which stray from their property.

In cases where straying stock is causing a nuisance this should be reported to the local government ranger.

Moving stock into Western Australia

If you plan to import livestock from interstate or overseas, you should check on the requirements and approvals you will need to obtain. Restrictions on stock movement are in place for a good reason—to help prevent the spread or introduction of diseases such as liver fluke, footrot and Johne's disease.

The section 'Animal pests' beginning on page 27 identifies which declared animals you can own, and what conditions apply.

Consult the Inspector in Charge (Stock), Department of Agriculture and Food, South Perth, Telephone: (08) 9368 3370, Fax: (08) 9474 2479 for the latest movement conditions. The conditions are reviewed and updated regularly.

Minimising risk of animal diseases

You should not allow any practices on your property which involve the risk of your animals acquiring infections from outside sources or accessing toxic chemicals. The following are some practices that must be avoided. Some are prohibited by law:

- Do not keep poultry in such a way that wild birds may contaminate their feed or water.
- Do not feed swill (food or food waste that contains meat or has been in contact with meat) to pigs.
- Do not feed pig or poultry feed to ruminants (e.g. sheep, cattle, goats, deer).
- Do not allow stock to graze any areas on your property which may have persistent chemical residues e.g. DDT, dieldrin, arsenic.

Where possible newly purchased animals should be kept isolated from existing animals on the property for up to 30 days until it can be determined that they are healthy and disease free and any required vaccinations have been given.

When buying in feed, ensure you buy clean feed and get a vendor declaration stating that the feed is free of weeds, seeds and any diseases.

For further information contact your local DAFWA office.



A guide to the most common livestock diseases

As a stock manager, you should be on the alert for signs of disease. Some diseases are known to occur in Western Australia (endemic diseases). Others such as foot and mouth disease, sheep pox and rabies are exotic to Australia.

Information on exotic animal diseases can be obtained from the internet at the Australian Government - Department of Agriculture, Fisheries and Forestry website home page (www.brs.gov.au) clicking on the Product Integrity/Animal and Plant Health.

The following tables show the most common diseases in livestock in Western Australia or diseases of particular importance. The list is by no means exhaustive.

INFECTIOUS DISEASES					
Disease	Animals affected	Signs	Transmission	Treatment	Prevention
Scouring	Calves	Diarrhoea, weakness	Contaminated feed and water Incorrect feed	Consult veterinary practitioner	Ensure new-born calves receive sufficient colostrum to build up immunity
Paratyphoid	Calves	Fever, weakness	Adult cattle carriers	Consult veterinary practitioner	Keep feeding utensils and yard drains clean
Enterotoxaemia	Calves, sheep	Convulsions	Most likely in calves and sheep recently introduced to improved pastures or energy-rich foods	Consult veterinary practitioner	Routine vaccination
Coccidiosis	Calves	Diarrhoea, blood in faeces Dehydration	Contaminated feed and water	Consult veterinary practitioner	Avoid overstocking and ground feeding
Bacterial pneumonia	Cattle, sheep	Fever, decreased appetite, coughing, breathing difficulty, nasal discharge	Exposure to cold, drafty sheds	Consult veterinary practitioner	Proper environment and hygiene
Pink-eye	Cattle	Watery discharge from eye Clear part becomes blue and may become opaque	Crowded, dusty conditions Grass seeds	Treat with ointment In severe cases, a vet may inject antibiotics and cortisones into the eyelid	
Leptospirosis	Cattle, pigs	Red urine or jaundice	Calves may be infected at 2-4 weeks of age from infected pigs	Consult veterinary practitioner	Proper hygiene
Navel ill	Calves	Swollen, inflamed navel Infection can spread throughout the body	Bacteria enters navel at birth	Consult veterinary practitioner	Proper hygiene
Footrot	Sheep, goats	Separation of the hard horn of the inside wall, sole and toes Varying degrees of lameness Moisture, reddening and loss of hair between toes Loss of body condition, decreased wool production	Spread by infected animals and occasionally boots and transport trucks. Most common in warm, wet conditions	Complete destocking or summer eradication inspection program may be appropriate Check with DAFWA	Check status of stock before purchase

PARASITIC DISEASES

Disease	Animals affected	Signs	Transmission	Treatment	Prevention
Roundworm	Cattle, sheep	Rapid loss of weight, watery faeces, anaemia	Common in heavily stocked paddocks	Drench or pour-on	Strategic drenches during and after weaning
Lungworm	Cattle, sheep	Chronic cough	Most likely in wet, crowded conditions	Drench or pour-on	Broad spectrum worm drenches
Ringworm	Cattle, sheep, humans	Small, hairless patches around head and neck	Direct contact with infected animals	Treat with dressings	Use gloves to prevent contact
Lice	All animal species	Rubbing, rough coat or fleece	Direct contact with infected animals	Dig, spray or pour-on	Isolate introduced animals and treat if infected
Cattle tick	Cattle in Kimberley	Loss of condition	Contact with ground	Dip or pour-on	Isolate and treat

NUTRITIONAL DISEASES

Disease	Animals affected	Signs	Associated with	Treatment	Prevention
Cobalt deficiency	Cattle, sheep	Slow growth, listlessness, loss of appetite, rough coat, dandruff	Most likely to occur in sandy coastal area	Cobalt bullets	Topdress paddocks or cobalt bullets
Selenium deficiency and/or Vitamin E deficiency	Cattle, sheep	Muscles in heart and limbs affected	Most likely to occur in south west	Selenium and vitamin E supplements	Selenium and vitamin E supplements
Vitamin A deficiency	Cattle, sheep	Slow growth, blindness, nervous disorders	Insufficient green feed supply	Vitamin A supplements	Not usually required except in long term feedlot or shed situation
Feed deficiency	All	Loss of condition	Most common in summer/autumn	Provide additional feed	Adequate feed
Salt water poisoning	All	Death, scours	Most common in summer	Move animals to fresher water	Measure salt levels in drinking water

GENETIC DISEASES

Disease	Animals affected	Signs	Transmission	Treatment	Prevention
Muscular dystrophy	Sheep	Stiff gait, hunched posture, difficulty rising, kneeling	Inherited	No treatment	Selenium or vitamin E

TOXIC DISEASES					
Disease	Animals affected	Signs	Cause	Treatment	Prevention
Annual ryegrass toxicity	All	Staggering, stiff legged gait. "Rocking horse" gait. Collapse and convulsions. Death.	Toxic ryegrass in pasture, hay and other feeds	None	Control ryegrass or development of toxicity of ryegrass. Plant Safeguard, apply twist fungus.
Lupinosis	Sheep, cattle	Lethargic, weak	Lupins plants infected with fungus become toxic in summer and autumn.	Remove from lupin plants, keep in shade with water and feed good quality hay. Don't feed lupin seed or high protein ration.	Grow Phomopsis-resistant lupin varieties. Observe stock while grazing lupin plants in summer, autumn. Remove stock grazing sandplain lupins after summer rainfall events.
Toxic algae	All	Sudden deaths	Bloom of toxic algae in water supply. Sometimes occurs following summer rainfall events.	Remove from water source. Treat survivors as for lupinosis.	Keep water sources clean. Check water sources for algal blooms. Treat blooms.
Poisonous plants	All	Variable, depending on the plant.	Toxic plant.	Depends on the plant.	Be aware of the toxic plants on your property. Be wary of grazing bush areas.

If you see any unusual signs, contact your local veterinarian, DAFWA office or phone the Disease Watch Hotline on 1800 675 888.

By contacting your local vet, you will receive expert help to determine the nature of the disease. Remember, it is better to seek help immediately, rather than take the risk of spreading a disease.

As the stock manager, you should also be aware of the need to treat all animals humanely, and not to neglect them. Codes of Practice outline the responsibilities of owners and stock handlers to ensure that animals are well cared for. Copies can be obtained from the DAFWA website at www.agric.wa.gov.au.

If you are not sure of the correct way to house and manage your livestock so that the welfare of the animals is not compromised make sure you consult your local veterinarian or a person who is experienced in keeping animals of the same kind.

When a disease is notifiable

Whilst Western Australia is relatively free of significant infectious diseases, a number of diseases are notifiable under the State's stock diseases legislation.

Notifiable stock diseases include diseases of camelids, cattle, deer, goats, horses, pigs, poultry and sheep. They also include about 30 diseases of crustaceans, fish and molluscs.

About 170 diseases of stock are notifiable listed under the *Exotic Diseases of Animals Act* or the *Stock Diseases (Regulations) Act*. About 100 of these diseases are not known to be present in Australia. You can obtain a full list of notifiable diseases from DAFWA.

It is your legal responsibility as an owner to report a notifiable disease to a stock inspector at a DAFWA office as soon as possible. You should also keep the affected stock isolated from others until they have been examined by a veterinarian or an inspector.

YOUR LEGAL RESPONSIBILITIES

If you are keeping livestock, or plan to introduce livestock to your property, you should familiarise yourself with your responsibilities under the *Agriculture and Related Resources Protection Act 1976* and the *Stock (Identification and Movement) Act 1970* and regulations. Be sure to check with your local shire as to any restrictions or management requirements on keeping certain animals in your area. The *Exotic Diseases of Animals Act 1993* and the *Stock Diseases (Regulations) Act 1968* and regulations specify notifiable diseases and the conditions to control and prevent the introduction of disease.

Being a good neighbour



Keeping your farm safe

Farms present special safety issues, associated with equipment and vehicles, use of pesticides, handling of animals, dams and reservoirs and even day-to-day risk of skin cancer and heat stress.

WorkSafe Western Australia recommends that all rural property owners should develop a safety management program. This involves:

- spotting hazards;
- recording injuries and near misses;
- specifying safe procedures for farm tasks;
- using protective clothing and equipment;
- safety training;
- providing safety information.

Child safety on farms

Children who live on farms or who come to visit are often at greater risk of injury than the adults that work there. Parents need to be aware of their child's developmental ability before asking them to perform tasks, and to ensure that children know the rules about safety on the farm.

Do not leave children unsupervised, ensure you maintain a safe work area by storing chemicals correctly, maintaining a tidy work area and always implement Occupational Health and Safety measures.

Parents should explain to children that farms can be dangerous places and that they are not a place to 'muck around'. Explain to them about the dangers and how they can be safe when on the farm.

Safe use of chemicals

Many farms use toxic chemicals to control weeds and pests. It is vital that you should use chemicals, and dispose of empty containers, safely.

Before you use chemicals obtain a Material Safety Data Sheet (MSDS), read the instructions on the label carefully, and follow them. Also check weather forecasts—conditions such as rain and strong wind can reduce effectiveness of chemicals and/or cause them to go off-target.

Keep chemicals locked away from children and animals. Do not transport them inside passenger vehicles. Avoid storing them with seeds, fertilisers, protective clothing and stockfeed.

Only buy as you need—it's not wise to store chemicals for lengthy periods.

When mixing chemicals, be sure you're in a well ventilated area, away from waterways or sewers. Have a washing facility nearby—if there is no tap, place a bucket of clean water nearby.

You usually need to dilute chemicals with water. If this is the case, install a non-return valve onto the water hose or pipe you are using. This will prevent chemicals from siphoning back into your water supply.

Always dispose of empty containers and unused chemicals safely

Be sure to rinse empty containers three times to remove all traces of chemicals. Then uncap the containers, puncture and crush them.

In some instances, you may be able to return containers to the manufacturer or supplier for recycling.

Your shire may have special requirements for chemical waste disposal.

Disposal of waste and animal bodies

If an animal dies on your property, the carcass must be disposed of promptly, and with regard to the environment. The carcass should be removed a safe distance from a high water mark, well, bore or stock feeder. Burning or burial is the normal method of disposal.

The key steps of the Western Australian 'Thinksafe' campaign apply to farming

SPOT THE HAZARD

ASSESS THE RISK

MAKE THE CHANGES

FOR MORE INFORMATION

Resolving Farm Disputes
Agriculture Practices Board
Department of Agriculture and Food
PO Box 483, Northam 6401
Telephone: (08) 9690 2000
Fax: (08) 9622 1181

Further information on farm safety is available from WorkSafe Western Australia on (08) 9327 8777 or their website www.worksafe.wa.gov.au

The Homeowner's Bush Fire Survival Manual, fourth edition, January 2004. Published by the Fire and Emergency Services Authority of WA Community Safety Division
Telephone: (08) 9323 9300
Fax: (08) 9323 9470
Email: fesa@fesa.wa.gov.au
Website: www.fesa.wa.gov.au

DAFWA Farmnotes relate to specific aspects of safety and chemical use on farms.

Health Department of Western Australia publishes a number of environmental health guideline brochures.



Farm safety

In order to prevent injuries property owners need to:

- ensure that all machinery, equipment and workplaces are in safe working condition and that guards are in place;
- for maintenance jobs ensure a checklist procedure to ensure guarding is replaced and that there are procedures to prevent machinery being accidentally started during maintenance;
- avoid making adjustments to headers, hay mowers, balers, augers etc while the machinery is still running;
- tractors should have an approved ROPS (roll-over protection structure) and seatbelt fitted, and the seatbelt should be used; tractor rollovers are a major cause of farm injury and death;
- do not allow passengers on tractors and trailing implements;
- wear suitable clothing and safety equipment such as earplugs, eye protection and/or dust masks when required;
- beware of overhead powerlines when moving augers, balers and headers, and ensure that the intake points are guarded;
- ensure appropriate supervision for all workers, family members and visitors; - everyone's whereabouts must be known; those operating equipment should be adequately informed and trained in its use;
- ensure that children cannot climb into silos, and that the loading/unloading mechanism cannot be started when someone is in the silo; always have an observer outside while someone is inside;
- check that fire extinguishers, first aid kits and emergency numbers are accessible.

Preparing for bush fires

Severe bush fires are a threat every year. You can reduce their impact on property and people by careful planning. Make sure you, your family and property are prepared.

First, if you are building in a bush fire-prone area, make sure you build to standards described in Australian Standard 3959 - Construction of buildings in bush fire prone areas. Your local government authority also has rules and regulations about firebreaks and burning off on rural properties.

Firebreaks may not stop a major fire, but they can reduce its severity and provide safe access to your property while fire fighting. Firebreaks may be installed and maintained by harrowing or chemical sprays. They may also form a system of alleys between and around your paddocks.

The Fire and Emergency Services Authority recommends a building protection zone (circle of safety) around your home and buildings that is as big as possible but has at least a 20-metre radius. Maintain your circles of safety by clearing away trees, dead leaves, twigs and branches, long grass and undergrowth. Avoid locating haystacks or fuel supplies near buildings.

On the outer edge of the circle, plant a row of fire-resistant trees. A green crop between the house and the bush will also create a natural firebreak. Activities close to the house that may function this way include small lawn areas, vegetable patches or frog ponds. Good crops include potato, canola or lucerne. In the event of fire, you can also move your livestock to the green crop for safety.

Weeds create fire hazards—ensure you carry out adequate weed control in winter to prevent a fire hazard in summer.

You should locate at least one dam or other water supply close to the house to aid in fire fighting. Also, be sure there is more than one access road in and out of your property, in the event that one road should become blocked by fire.

If there is a bush fire in your area, you must make an early decision on whether you will stay with the house or relocate. Staying in your own or a neighbour's home could be safer than trying to get away on roads blocked by fire and smoke. **Don't leave the decision to relocate until the fire is so close that you cannot get out safely.**

Remember to prepare ... stay and defend or go early!

Fighting bush fires

Safe fire fighting practices involve teamwork, planning and communication. Essential safety rules should be followed, such as:

- never work alone;
- anticipate changes in the fire patterns due to weather;
- avoid steep slopes above a fire;
- identify escape routes; and
- stay clear of vehicles and machinery.

Make sure you prepare yourself and your family by always having the following on hand:

- woollen blankets;
- buckets, mop, knapsack, ladder, rake;
- torch, battery-powered radio;
- safe storage box for valuables and important documents;
- protective clothing such as cotton or woollen trousers, long-sleeved shirt or jumper, sturdy shoes/boots, hard hat or wide-brimmed hat, goggles and gloves.

You should also be vigilant about your personal health, ensuring you drink sufficient fluids, take a break when you need one.

If you want to upgrade your bush fire control and prevention skills, and serve your community at the same time, you may consider joining your local Volunteer Bush Fire Brigade or a Bushfire Ready Action Group. You will receive regular training on fire fighting, fire prevention and rescue techniques and become part of a close-knit team of community-spirited people.

Consideration for others

When a dispute arises between neighbours in the country, it's often associated with an environmental issue, such as drifting pesticide sprays, odours, dust, smoke, fumes and 'fugitive light' (light reflected from glasshouses, farm buildings and other sources).

A responsible landholder will try to avoid causing any of these problems while running a farm. However, if a problem should arise between neighbours, the Agriculture Practices Board has been set up to bring parties in conflict to the discussion table to try to sort out disputes.

The Board's primary role is to mediate between disputing parties where one party is carrying on a specified action on rural land (an 'agricultural practice') that is creating a nuisance for the other.

The aim of mediation is to give the disputing parties opportunity to see the other side of the argument. Hopefully, this will help them reach a compromise which satisfies both sides.

YOUR LEGAL RESPONSIBILITIES

Part V1A of the *Agriculture and Related Resources Protection Act 1976*, the Commonwealth Agvet Code and the *Agriculture and Veterinary Chemicals (WA) Act 1995* all deal with the use of chemicals on farmlands. You should become familiar with the provisions of these Acts and Codes before you use chemicals.

If you should experience a dispute with a neighbour, the *Agriculture Practices (Disputes) Act 1995* is the relevant legislation governing matters of this nature.

To find out about your legal responsibilities pertaining to bush fire prevention and control, check with your local shire.

You should also be aware of Occupational Safety and Health legislation which covers all industries and workplaces, including farms.

More help for small landholders



Farm business improvement program (FarmBis)

FarmBis is a joint initiative between the Department of Agriculture, Fisheries and Forestry – Australia and the Western Australian Government.

FarmBis makes grants available to the value of half (50%) the cost of eligible programs and training. These may include business skills development, farm business, chemical safety and financial planning, farm performance benchmarking, and so on.

FarmBis is available to individuals and groups of farmers and farm families.

You can contact FarmBis by telephone on 1800 198 231 (within WA) or (08) 9368 3192, Fax: (08) 9367 4265, email: inquiry@farmbis.wa.gov.au or visit the website at www.farmbis.wa.gov.au.

DAFWA Small Landholder Information Service

Department of Agriculture and Food has established an advisory service to assist owners of non-commercial properties, such as farmlets, horse properties and weekend retreats. The aim of the service is to give professional, independent advice on a wide range of topics. Such advice has previously been restricted to commercial growers and farmers only.

The service enables the public to have access to specialist entomology, pathology, weed, horticultural and other information and advice.

DAFWA Small Landholder Information Service can be contacted by telephone (08) 9733 7777 or via email at small_landholder@agric.wa.gov.au. The website with general information relating to property management issues is www.agric.wa.gov.au/small_landholder

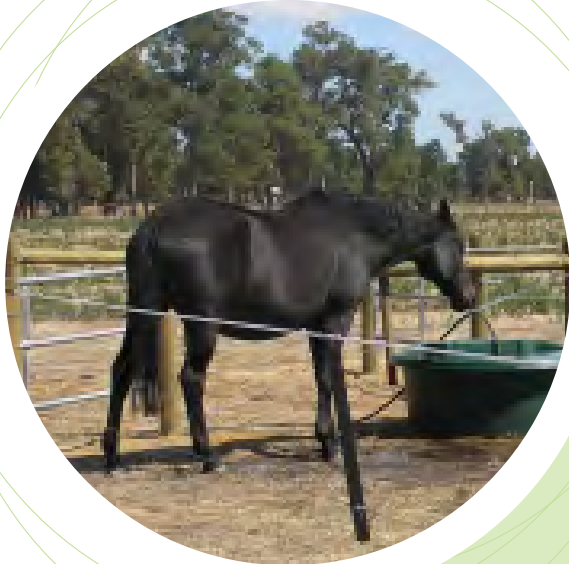
Pest and Disease Information Service

The Pest and Disease Information Service (PaDIS) provides free professional technical advice and identification services on animal and plant pests, diseases and weeds. You can contact staff on (08) 9368 3666 or via email info@agric.wa.gov.au Monday to Friday 8.30 am to 4.30 pm.

Further information can be obtained by phoning PaDIS on 1800 084 881, faxing 9474 2405 or downloading from www.agric.wa.gov.au.

Threatened Species Network

Australian native species are under threat from land clearing, habitat destruction, predation, human impacts and weeds. WWF in partnership with Department of Environment and Conservation, local shires, National Trust of Australia, Northern Agricultural Catchments Council, Avon Catchment Council and Greening Australia have developed a program called Woodland Watch to help rural landholders to protect and conserve natural bushland on their properties. For further information and advice on joining the Woodland Watch program contact WWF during business hours on (08) 9387 6444 or visit their website at www.wwf.org.au/.



Department of Agriculture and Food, Western Australia

Head Office: 3 Baron-Hay Court, South Perth 6151 or by post to Locked Bag 4, Bentley Delivery Centre 6983.
Telephone: (08) 9368 3333, Fax: (08) 9268 1205, Website: www.agric.wa.gov.au

District Offices

Town	Address	Phone	Fax	Email
Albany	444 Albany Highway, Albany 6330	(08) 9892 8444	(08) 9841 2707	albany@agric.wa.gov.au
Broome	27 Hunter Street, Broome 6725	(08) 9194 1400	(08) 9192 2946	broomedo@agric.wa.gov.au
Bunbury	Verschuer Place, Bunbury 6230	(08) 9780 6100	(08) 9780 6136	bunbury@agric.wa.gov.au
Carnarvon	South River Road, Carnarvon 6701	(08) 9956 3333	(08) 9941 8334	carnarvon@agric.wa.gov.au
Derby	28 Loch Street, Derby 6728	(08) 9191 0333	(08) 9191 0334	derbydo@agric.wa.gov.au
Esperance	Melijnup Road, Esperance 6450	(08) 9083 1111	(08) 9083 1100	esperdo@agric.wa.gov.au
Forrestfield	100 Bouganvillea Avenue, Forrestfield 6058	(08) 9366 2300	(08) 9453 1288	forrestfield@agric.wa.gov.au
Geraldton	20 Gregory Street, Geraldton 6530	(08) 9956 8555	(08) 9921 8016	geraldtondo@agric.wa.gov.au
Jerramungup	10 Tobruk Road, Jerramungup 6337	(08) 9835 1177	(08) 9835 1101	agwajerr@agric.wa.gov.au
Kalgoorlie	55 McDonald Street, Kalgoorlie 6430	(08) 9088 6033	(08) 9088 6034	kalgoc@agric.wa.gov.au
Karratha	18 Hedland Place, Karratha 6714	(08) 9144 2065	(08) 9185 3380	karratha@agric.wa.gov.au
Katanning	10 Dore Street, Katanning 6317	(08) 9821 3333	(08) 9821 3336	receptionkat@agric.wa.gov.au
Kununurra	Durack Drive, Kununurra 6743	(08) 9166 4000	(08) 9166 4066	lhartle@agric.wa.gov.au
Lake Grace	50 Stubbs Street, Lake Grace 6353	(08) 9865 1205	(08) 9865 1282	lgdo@agric.wa.gov.au
Manjimup	South West Hwy, Manjimup 6258	(08) 9777 0000	(08) 9777 0001	manjimupdo@agric.wa.gov.au
Margaret River	C/- Dept of Environment and Conservation, Margaret River 6285	(08) 9757 2181	(08) 9757 2181	margaretr@agric.wa.gov.au
Meekatharra	Main Street, Meekatharra 6642	(08) 9981 1105	(08) 9981 1571	meeekatharra@agric.wa.gov.au
Merredin	Great Eastern Highway, Merredin 6415	(08) 9081 3111	(08) 9041 1138	merredin@agric.gov.au
Moora	20 Roberts Street, Moora 6510	(08) 9651 1302	(08) 9651 1008	moora@agric.gov.au
Narrogin	10 Doney Street, Narrogin 6312	(08) 9881 0222	(08) 9881 1950	narrogin@agric.wa.gov.au
Northam	Lot 12 York Road, Northam 6401	(08) 9690 2000	(08) 9622 1902	northam@agric.wa.gov.au
Three Springs	69 Thomas Street, Three Springs 6519	(08) 9954 3333	(08) 9954 1115	shunter@agric.wa.gov.au
Waroona	120 South West Hwy, Waroona 6215	(08) 9733 7777	(08) 9733 2377	waroona@agric.wa.gov.au

Community Agricultural Centres

Town	Address	Phone	Fax	Email
Boddington	101 Banister Road, Boddington 6390	(08) 9883 8230	(08) 9883 8230	
Boyup Brook	Railway Parade, Boyup Brook 6244	(08) 9765 1478	(08) 9765 1511	boyupbrk@agric.wa.gov.au
Bridgetown	150 Hampton Road, Bridgetown 6255	(08) 9761 2280	(08) 9761 2750	
Corrigin	Lot 255-294 Walton Street, Station Square, Corrigin 6375	(08) 9063 2681	(08) 9063 2593	corrigin@agric.wa.gov.au
Cranbrook	Cnr Gordon & Gathorne Streets, Cranbrook 6321	(08) 9826 1285	(08) 9826 1235	cranbrook@agric.wa.gov.au
Denmark	C/- Post Office, Denmark 6333	(08) 9848 1756	(08) 9848 3712	
Donnybrook	Lot 506 Sandhills Road, Donnybrook 6239	(08) 9731 1799	(08) 9731 1799	
Dowerin	12 Stuart Street, Dowerin 6461	(08) 9631 1156	(08) 9631 1156	
Dumbleyung	PO Box 108, Dumbleyung 6350	(08) 9863 4173	(08) 9863 4173	
Eucla	PMB 14 Eyre Hwy, Eucla 6443	(08) 9039 3215	(08) 9039 3228	
Goomalling	Railway Depot, Loc 28460, Northam-Pithera Road, Goomalling 6540	(08) 9629 1120	(08) 9629 1120	
Hyden	Lot 151 Naughton Street, Hyden 6359	(08) 9880 5051	(08) 9880 5051	
Kojonup	97 Albany Highway, Kojonup 6395	(08) 9831 1997	(08) 9831 1990	kojonup@agric.wa.gov.au
Margaret River	C/- Department of Environment and Conservation, Margaret River 6285	(08) 9757 2181	(08) 9757 2181	

Mount Barker	Railway Station PO Box 118, Mount Barker 6324	(08) 9851 1524	(08) 9851 1524	
Mukinbudin	Lot 4 Shadbolt Street, Mukinbudin 6479	(08) 9047 1159	(08) 9047 1159	
Narembeen	Lot 10 Walker Road, Narembeen 6369	(08) 9064 7131	(08) 9064 7131	narembeen@agric.wa.gov.au
Pingelly	21 Park Street Pingelly 6308	(08) 9887 0092	(08) 9887 1254	pingelly@agric.wa.gov.au
Ravensthorpe	Lot 6 Dunn Street, Ravensthorpe 6346	(08) 9838 1054	(08) 9838 1054	ravensth@agric.wa.gov.au
Wagin	62 Tudhoe Street, Wagin 6315	(08) 9861 2022	(08) 9861 2125	cthompson@agric.wa.gov.au
Wickepin	40 Wogalin Road, Wickepin 6370	(08) 9888 1190	(08) 9888 1190	wickepin@agric.wa.gov.au
Williams	Lot 17 Albany Hwy, Williams 6391	(08) 9885 1168	(08) 9885 1168	
Wongan-Ballidu	Northam-Pithara Road, Wongan Hills 6603	(08) 9671 1322	(08) 9671 1664	whrsu@agric.wa.gov.au
Yalgoo	Fence Depot 3 Selwayn Street, Yalgoo 6635	(08) 9962 8023	(08) 9962 8023	

Other important contacts

Organisation	Address	Phone	Fax	Website
Aquaculture Council of Western Australia	Suite 7/41 Walters Drive, Osborne Park 6016	(08) 9492 8888	(08) 9244 2934	www.aquaculturecouncilwa.com/
Australian Quarantine & Inspection Service	280 Bannister Road, Canning Vale 6155	(08) 9334 1555	(08) 9334 1666	www.aqis.gov.au
Department Environment and Conservation	17 Dick Perry Ave, Kensington 6151 141 St George's Terrace, Perth 6000	(08) 9334 0333 (08) 6364 6500	(08) 9334 0498 (08) 6364 6520	www.calm.wa.gov.au www.environment.wa.gov.au
Department of Fisheries	3rd Floor SGIO Atrium, 168-170 St George's Terrace, Perth 6000	(08) 9482 7333	(08) 9482 7389	www.fish.wa.gov.au
Department of Health	189 Royal Street, East Perth 6004	(08) 9222 4222	(08) 9222 4046	www.health.wa.gov.au/home/
Department of Water	168 St George's Terrace, Perth 6000	(08) 6364 7600	(08) 6364 7600	portal.water.wa.gov.au
Environmental Protection Authority	141 St George's Terrace, Perth 6000	(08) 9222 7000	(08) 9222 7155	www.epa.wa.gov.au/
Fire and Emergency Services Authority	480 Hay Street, Perth 6000	(08) 9323 9300	(08) 9323 9384	www.fesa.wa.gov.au
Office of the Commissioner of Soil & Land Conservation	3 Baron-Hay Court, South Perth 6151	(08) 9368 3282	(08) 9368 3654	jdean@agric.wa.gov.au
Sustainable Energy Development Office	Level 9, 197 St George's Terrace Perth 6000	(08) 9420 5642	(08) 9420 5699	www1.sedo.energy.wa.gov.au
WA Local Government Association	15 Altona St West Perth 6015	(08) 9321 5055	(08) 9322 2611	www.walga.asn.au
WA Quarantine & Inspection Service	9 Fricker Rd, Perth Airport 6105	(08) 9334 1800	(08) 9334 1888	
WWF	Flynn St (opp cnr. Selby St) Wembley 6014	(08) 9387 6444	(08) 9387 6180	wwf.org.au/
Catchment Councils	Address	Phone	Fax	Website
Avon Catchment Council (ACC)	Lot 12, York Road Northam 6401	(08) 9690 2250	(08) 9690 2255	www.avonicm.org.au
Northern Agricultural Catchments Council (NACC)	PO Box 95 Perenjori	(08) 9973 1444	(08) 9973 1464	www.nacc.com.au
South Coast Regional Initiative Planning Team (SCRIPT)	444 Albany Highway Albany 6330	(08) 9892 8537	(08) 9841 2707	www.script.asn.au
South West Catchments Council (SWCC)	PO Box 5066 Bunbury 6231	(08) 9780 6193	(08) 9780 6198	www.swcatchmentscouncil.com
Swan Catchment Council	80 Great Northern Highway Midland 6056	(08) 9374 3333	(08) 9374 0685	www.wrc.wa.gov.au/swanavon

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