The Rural Living Handbook 2009

A guide for rural residential landholders

Produced by Wollondilly Shire Council
November 2008

WOLLONDILLY SHIRE COUNCIL

Disclaimer

This handbook is not a comprehensive guide to managing your land. It is intended to help you find good advice. No legal liability is accepted for the information presented in this booklet.

Acknowledgements

The contents of this Rural Living Handbook were compiled as a template for councils throughout Sydney's drinking water catchments. It is a collaborative project built on the work of Jack Miller, Landscape Planner, Goulburn Mulwaree Council, Wollondilly Shire Council, and contributions by various government and community stakeholders. The Sydney Catchment Authority (SCA) has made a significant contribution to the development and publication of the handbook.

We would like to thank the following organisations for their contributions to the Rural Living Handbook. The expertise of their staff, especially those working locally, has greatly added to the relevance of the handbook.

Goulburn Mulwaree Council
Wollondilly Shire Council
Wollondilly Shire Council Rural Industry Liaison Committee
Department of Environment and Climate Change
Department of Natural Resources
Hawkesbury-Nepean Catchment Management Authority
Sydney Catchment Authority
NSW Farmers Association
Rural Fire Service
NSW Department of Primary Industries
TAFE NSW Illawarra
WIRES
Palerang Council
Department of Lands
Rural Lands Protection Board
Farmsafe
Department of Energy, Utilities and Sustainability
Goulburn Mulwaree Council Environmental Committee.

We would also like to gratefully acknowledge the Upper Murrumbidgee Catchment Coordination Committee (UMCCC) and the Wamboin Landcare Group for allowing information from the publication 'Look after your natural assets' to be reproduced in this publication. `Look after your natural assets' was produced by volunteers, funded by the ACT Government and the Murrumbidgee Catchment Management Board, and is copyright to the UMCCC and the Wamboin Landcare Committee.

ISBN: 978-1-876951-46-7

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SYDNEY CATCHMENT AUTHORITY

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Mayor's message

This Rural Living Handbook has been prepared, with the support of the Sydney Catchment Authority, to help rural property owners and residents understand the responsibilities that come with living in a rural environment.
The handbook will help enhance your experience of a rural Wollondilly lifestyle and to protect our fragile environment. Wollondilly Shire provides the opportunity for residents to live amidst a rural setting of productive farming enterprises, significant areas of biodiversity and spectacular waterways.

The Wollondilly Shire Council area is within the Sydney – Canberra corridor and is a popular location for people seeking a rural living experience and moving to enjoy the convenience of living near the area's many attractive villages.

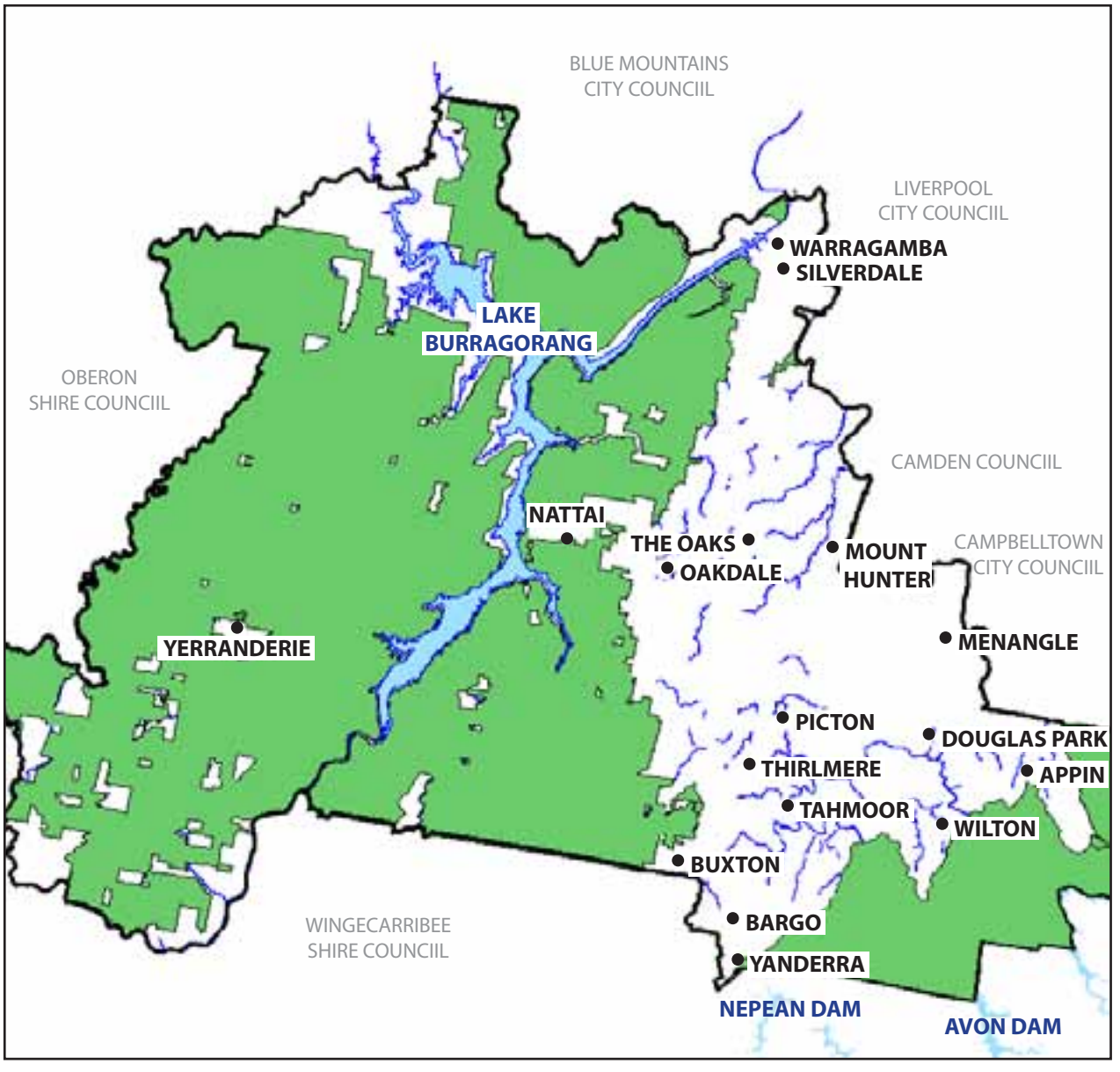
Being a rural resident brings many responsibilities varying from noxious weed control, bushfire protection, animal welfare and protection of the environment.

You are very welcome to the Shire and please use this handbook as a reference and valuable resource. Council staff will be pleased to provide additional advice and information to help you enjoy your rural lifestyle in the Wollondilly Shire Council area.

Yours sincerely

Cr. Michael Banasik (Mayor)

Local map



LEGEND

- **WOLLONDILLY SHIRE BOUNDARY**
- **TOWN**
- **NATIONAL PARK, STATE RECREATION OR WATER CATCHMENT**

Introduction - rural living

'Getting away from it all' is an Australian dream. In our area, getting away from it all often involves buying a rural block. Rural blocks can be productive farmland, a bush block or a combination of both.

For some, getting away from it all means finding a healthy environment to raise children, or a place to retire away from the stress of the city. Others want to commune with nature or find a weekend escape.

The environment is under pressure from our collective lifestyles. All levels of government are pursuing sustainable development to protect our environment for the future.

Local activities have a significant effect on water quality and catchment health. We have a responsibility to ensure that we care for and maintain healthy rivers, streams and bushland.

We also need to get along well with our neighbours so that we can all achieve our individual goals without affecting the pleasure of others. However, the rural landscape is a productive farming and resource area, and some of the legitimate activities carried out in the area may have unavoidable impacts.

Be aware that some rural activities might affect you, and the level of services here may not be the same as in more built up areas.

Various levels of government have management requirements and information available to help landowners and managers.

Different people will want to manage their land in different ways. Some will want to keep and enhance the existing bush. Others will want to run stock and cultivate crops. Whatever your goals as a landowner or manager, you need to be aware of your rights and responsibilities.

The Rural Living Handbook brings together some of the significant issues that you will face as a rural landowner or land manager in our community. It also provides contact details of people and organisations who provide support to rural landowners.

- Before you buy
- Living in the region
- Planning and managing your property

BUYING YOUR PROPERTY

The Rural Living Handbook - A guide for rural residential landholders

Moving out of the city

Before you decide to buy a rural property, take a few moments to answer the following questions. You should also get legal advice before buying any property.

- Do you know the history of the property? Request a property search from the Rural Lands Protection Board (RLPB) to ensure there are no outstanding RLPB rates, levies, known chemical residues or animal health issues on the property. What stock did the previous owner have? Did they sow pastures and use fertilisers? Are there any rubbish dumps on the property that you will need to remediate? Are there pest animals (eg rabbits, foxes) on the property?
- Is the activity that you plan for the property suited to the landscape and capability of the land?
- Is there enough water to carry out the activity that you have in mind and is it of suitable quality?
- Are all required services provided to the property? If not, can they be provided economically? Or is it an area that will always have limited services? Services include phone, gas, water, sewer and electricity.
- Do you know what the regulations and conditions are for building dams or sinking bores? Do you know that digging near to a watercourse requires a permit?
- Are you aware that in most instances you require approval to remove native vegetation? How might this affect your activities?
- Does the zoning of the land allow your proposed use, or will you need to apply for a change of land use or any other permit?
- Are there good quality pastures? Are they dominated by native or introduced species?
- What weeds are on the property? Are any of them declared as noxious weeds? Is there a Noxious Weed Notice (Section 18) on the property?
- Is there soil erosion on the property that will be time consuming and expensive to fix?
- Is the soil fertile and the pH appropriate for growing pasture, crops and any other produce that you want to grow?
- Are the fences in good repair and suitable for confining stock and the grazing management of the property?

- Are there any derelict mine shafts on the property? If so, are they fenced to ensure your safety?
- If there is no existing dwelling and you want one, does the land have a building entitlement?
- Are there existing or proposed adjacent land uses that will affect your enjoyment of the property? For example, are there legitimate rural uses nearby such as agriculture, quarries, mines and forestry that produce dust, odours or noise?
- Is there a Property Vegetation Plan (PVP) agreement over part of the property that requires you to undertake specified management actions, and limits the land uses on part of the property?
- Will the amount of time and money required to control weeds, erosion and pest animals be excessive?
- Ask Council if there are:
    - any development applications current for the nearby area
    - other developments that have been approved but not commenced
    - any restrictions on developing certain desired land uses.
- Have you examined the Section 149 planning certificate from Council closely and discussed any potential constraints with Council and your conveyancer or solicitor?
- Is the land prone to flood or bushfire? Will you need to undertake any management activities to minimise these impacts?
- Are there any rights-of-carriageway or other easements on the property that need to be maintained and/or which may allow neighbours' access?
- Are there any covenants or agreements on the property that protect certain areas?
- Is there enough shade and water for stock?
- Are any threatened species of flora and fauna known to live on the property?

After considering all these questions, will the property provide the rural lifestyle that you are looking for?

Living in the region

The Wollondilly region

The beautiful landscape of Wollondilly Shire varies between river gorges, rich, rolling agricultural lands, vast stretches of bushland and mountain ranges with quaint villages dotted throughout. In 2006 the Shire was home to 42,300 people.

The Wollondilly Local Government Area's 2,560 square kilometres extends from Yanderra in the south, Appin and Menangle in the east, to Warragamba in the north, and the Nattai Wilderness and Burragorang Valley in the west. The area is south of Sydney between the Camden and Wingecarribee local government areas (see map on page 3).

Wollondilly is rich in natural resources, namely coal, water catchment and agricultural lands. The Shire is custodian of Sydney's drinking water supplies including catchments lands and the reservoirs Cordeaux and Cataract dams to the east, Avon and Nepean Dams to the south, and Lake Burragorang to the west.

Average temperature during the region's cool winters is about 17 degrees Celsius. On average the mercury dips below zero degrees Celsius on 32 days a year. Summers are warm with an average temperature of about 29 degrees Celsius. The average annual rainfall for the region is 754 millimetres.

Agricultural lands within the Shire support a wide range of industries including beef and dairy cattle production, chicken and turkey meat, goats, sheep, alpacas, egg producers, orchards, hydroponic and market garden establishments. A number of tourism-based industries now support the agricultural sector through farm gate sales and on-farm accommodation. The Shire hosts a number of light engineering and manufacturing firms that support the broader agricultural and extractive industries.

Playing your part in the region

Good practices on your rural residential property will benefit you, the environment, and the prosperity of the region. By looking after water, soil, plants and animals, you will benefit not only the natural environment, but also your stock, other agricultural activities and other landholders in the local area and downstream. Good practices will also help to ensure your safety.

This handbook will help you find out about good environmental and safety practices. Neighbours and other landholders in the region can also help you. Talk to them, join groups such as Landcare or local bushfire brigades, and contact local authorities such as Council and state government agencies for advice.

Get to know the local agricultural, business, tourism and industry activities. These activities combine to support the society and economy of the region.

You can play your part in the local region as a rural landholder.

More information

You can find more information about the region on the Wollondilly Shire Council's website at www.wollondilly.nsw.gov.au and in the Local Information section of this handbook (from page 43).

Planning and managing your rural property

Property plans can help you to achieve your rural living goals by setting up the basis for efficient and sustainable property management. This will help you to play a part in supporting a healthy landscape and prosperous region.

Property plans take a whole-of-property approach and are useful for both farmers and rural residential landholders.

Beginning your property plan

There are a number of methods and documents or, if you prefer, property planning consultancies that can help you to develop a property plan. A basic property plan guide is provided below to help get you started.

Property plan guide

1. What to do you want to achieve on your property? What is your vision?

2. Obtain a good map of your property. Aerial photographs are very useful, as well as surveyor's boundary plans, topographic and cadastral plans. The map will need to be to a metric scale of a large enough size to clearly show the features of the property.

3. You will need to identify the following:

    - soil types and soil characteristics (eg pH, salinity, erodibility, phosphorus and nitrogen content)
    - slope
    - areas of natural vegetation and vegetation type
    - streams, gullies, drainage lines and dams
    - flood liable land
    - erosion and salinity prone areas
    - water and shade areas for stock
    - rock outcrops
    - water supply
    - climate, rainfall and seasonality
    - landscape types and physical features
    - current land uses.

4. Carry out a SWOT analysis of the property's capabilities as follows:

    - What **Strengths** does the property have that you can take advantage of (eg areas of high quality soils)?
    - What **Weaknesses** will need attention before they cause problems (eg existing weed infested areas)?
    - What **Opportunities** are there to develop your resources further (eg moving fence lines to improve management)?
    - What **Threats** exist that could affect the property (eg potential erosion areas)?

5. On an overlay of the map, illustrate the permanent features such as the property boundary, waterways, bushland, structures and land types (ie the most productive soils to the least) and contours.

6. Use this information as a base. On another layer, sketch where features are wanted, eg fences, productive paddocks, shelterbelts, woodlots, dams, troughs, lanes and gates. Rearranging fences according to land features can help you to use the land more efficiently. Work out where planting needs to go to achieve maximum effectiveness for windbreaks, erosion control and repair, shelter, salinity reduction, and to provide habitat for native birds and animals.

7. Write notes about:

    - proposed land use
    - planning for houses, sheds, stockyards, windbreaks, dams, roads and fence alignments
    - methods to control and prevent weeds and pest animals
    - methods to sustain or improve water quality for stock and downstream users
    - methods to control stormwater movement and prevent erosion
    - reducing bushfire hazard, conserving soil, preserving trees
    - treating and disposing of effluent and rural rubbish
    - legal and planning requirements
    - methods to improve stock or alternative water sources for stock
    - methods and timing for proposed revegetation of disturbed areas.

    Use the information in this handbook to help you understand issues and best practices in these areas.

8. Use the map, your notes, and information in this handbook, to set goals and actions. Make a plan for how you can achieve these goals.

9. Prioritise your actions and then do them. Remember that certain activities (tree planting) should be timed to take into account seasonal conditions.

10. Constantly monitor, improve and reshape your goals as necessary along the way.

11. Make sure you regularly monitor and maintain the areas where you have worked to address any issues quickly.

More information

To purchase or view aerial photographs of your property visit the NSW Department of Lands website at www.lands.nsw.gov.au

For more information about property planning, contact your local catchment management authority or visit the NSW Department of Primary Industries website at www.dpi.nsw.gov.au
Further references can be found in the Property Management section of this handbook (from page 25).

Case study

John Weatherstone's account of managing his local property 'Lyndfield Park' is a good example of what successful property planning can achieve.

Here is an extract from his book:

"Traditional farming practices have placed stress on the land limiting its ability to cope with environmental stress such as drought. We wanted to reduce the pressure we were placing on the land so that it would become more resilient to stress, while at the same time caring more for the assets of the farm upon which our enterprises were based: the soil, the nutrients it contained, the vegetation that held it in place and the native life that was part of its natural cycle.

Our major changes included:

- reducing the stocking rates to allow the land to heal following drought
- managing the level of grazing to increase soil organic matter
- initiating a tree planting program to protect both livestock and soils
- reducing the amount of cropping
- reducing the amount of cultivation during crop and pasture establishment
- retaining (ie not burning) crop stubble and finding ways to incorporate them back into the soil
- planting a diversity of trees and shrubs to encourage the return of as many native birds as possible
- reducing the use of toxic chemicals wherever practical
- continuing to treat existing erosion areas and prevent further erosion
- increasing the establishment and use of perennial pasture for better water use, soil protection and livestock productivity
- seeking ways to replace livestock income with income from trees and shrubs.

Not only did we believe that these steps would help make the farm a healthier and more pleasant place to work and live, we also hoped it would improve the long-term productivity of the property as well as increase its capital value. I may have looked like a 'greenie' to some people but at heart I was still a farmer looking to work the land.

The benefit of all our strategies over time, however, has been a significant lifting in the carrying capacity of the land. Indeed, our stocking rate is now nearly double what it was 20 years ago.

Advice from a local real estate agent is that the property, "…could realistically make 25-50 percent more at auction", as a result of the tree planting and other Landcare activities we've undertaken. Although we didn't undertake our changes because we thought we could sell the property at a higher price, it is nice to know that our efforts to care for the land, to improve things for ourselves and our children, are also being rewarded through a substantial increase in capital value.

In these times when we all face many stresses, having a home and work environment that fosters a positive feeling of achievement and wellbeing, can be a worthwhile antidote in helping to counteract those stresses."

- Water
- Soil
- Native plants and animals
- Fire
- Weeds
- Pest animals

NATURAL RESOURCES

The Rural Living Handbook - A guide for rural residential landholders

Water

Managing water is a vital part of successfully managing your property.

You want to use water efficiently to minimise costs and maximise water quality to benefit you, your property, your stock and downstream users.

Water law

The NSW Department of Water and Energy manages surface and groundwater in NSW under the *Water Act 1912* and the *Water Management Act 2000*. Section 52 of the *Water Management Act 2000* defines basic domestic and stock rights including the Farm Dams Policy.

Streams and rivers

All landholders in NSW with property frontage to any river, estuary or lake have a basic right to take water for domestic use and to water stock. This basic right does not apply where the property frontage is Crown Land, or where there is a reserve between the property frontage and rivers or creeks (you may need a licence from the Department of Water and Energy to extract water in these situations).

Many activities can impact on water quality in nearby rivers and creeks, and on other water users. Many of the responsibilities discussed in this handbook come from the need to protect water quality.

Any excavation or work in or within 40 metres of the bed or bank of a watercourse generally requires a prior approval (Part 34 permit) from the Department of Water and Energy.

Riparian zones

The riparian zone is the area directly influenced by a river (the river bank), creek, watercourse or drainage line. The zone generally extends from the normal water level to the floodplain.

Healthy riparian vegetation – trees, shrubs and groundcovers along waterways - will make your creek banks more stable and help prevent erosion. The vegetation will also filter out nutrients from surrounding paddocks, and support and create habitat for native wildlife.

Native riparian vegetation is declining leaving some stream and river banks vulnerable to erosion and weed infestation. This can affect your property. Where stock rely on streams and rivers to access water, disturbance to the soil and vegetation can be avoided by actions such as limiting stock access areas and pumping water to troughs.

You need approval to clear native vegetation in riparian zones (contact your local catchment management authority in the first instance). In addition, clearing exotic trees within 20 metres of major streams and rivers may also require approval. Your local catchment management authority is the consent authority to clear exotic or native vegetation on state and protected riparian land.

Causes of riparian zone degradation include:

- recreational activities
- invasion and competition from pest species (eg rabbits) and weed species (eg willows and blackberries)
- land management practices such as grazing and cropping
- erosion channel realignment.

Effects of riparian zone degradation include:

- flow restriction
- weed invasion
- loss of topsoil
- reduced water quality
- reduced biodiversity, both aquatic and terrestrial flora and fauna
- reduced aesthetic value
- loss of windbreak and shelter
- unstable banks.

Some methods to control degradation and loss of riparian vegetation are the same as those outlined below for farm dams. Other methods include:

- encouraging the growth of a native vegetation/buffer along the riparian zone
- minimising the number of tracks and trails leading to your riparian area
- minimising ground disturbance during weed removal activities in the riparian zone
- minimising herbicide and pesticide use in the riparian zone - ensure that pesticides and herbicides are registered for use in these areas
- protecting riparian areas from stock by fencing and providing alternative water sources and shade areas
- revegetating degraded and eroded riparian areas with native vegetation.

Farm dams

Landholders use farm dams to provide water for stock and domestic purposes. If not properly managed, farm dams can impact on the water quality on your property and downstream.

Under the NSW Farm Dams Policy, landholders have a harvestable right. This allows landholders to capture 10 percent of the rainfall runoff from their properties and use it for any purpose without needing a licence from the Department of Water and Energy. The amount that you are entitled to, in megalitres or dam capacity, is calculated by a formula known as the Maximum Harvestable Rights Dam Capacity (MHRDC). This formula involves your property size,

area specific rainfall and run-off calculations. Any existing dams have to be factored into your overall entitlement. You can calculate your own specific MHRDC by visiting www.naturalresources.nsw.gov.au/water/dams.shtml

Farm dam licensing

Dams that conform to previous legislation and were built before January 1999 do not need to be licensed. Building a new farm dam in excess of the MHRDC or located on a larger (3rd order or higher) stream do need a license. Dams built on smaller (1st or 2nd order) streams only need a licence if the stream is perennial flowing or if the dams are in excess of the MHRDC.

There are five special classes of farm dams that are exempt from the calculation of MHRDC. You can find out about these at www.naturalresources.nsw.gov.au/water/dams.shtml or by contacting the water licencing officer at the Department of Water and Energy (DWE) on 1800 353 104.

Groundwater

You need to get a licence before drilling a bore in NSW. Licences are issued by the DWE with conditions that specify how much water you can use and for what purpose.

Managing farm dams

All dams, new and existing, should be managed to maximise the benefits to stock safety and health and minimise the impacts on the environment. Some hints to improve dam health are listed below.

- Wherever possible, use fencing to limit stock to one or two locations at the dam. Better still, fence stock out of dams, and use troughs to water them. This prevents stock from fouling the water and minimises erosion to maximise water quality and the longevity of the dam.
- Prevent nutrients from entering the dam by leaving an unfertilised strip where water flows into the dam. This will help minimise the chances of blue-green algae.
- Avoid using fertilisers, herbicides and pesticides in areas around dams and waterways.
- Encourage native plants to grow in the dam and along the water's edge - reeds, sedges and rushes at the water's edge and grasses and shrubs on the banks. Vegetation filters out sediments and nutrients.
- Encourage grass to grow on the spillway to prevent erosion.
- Don't plant trees along the dam wall as their roots may weaken it. Trees can also drop leaves in the water and release tannins that degrade water quality.
- Plant shade trees, but plant them away from dams so that stock do not rely on dam water to keep cool in summer.
- Dam spillways are crucial to the stability of dam walls and stock access to the spillway should be limited.

Reducing household water use

Saving water in and around your home saves you money and helps the environment. There are many ways to use less water at home. People who live in rural areas have developed water saving methods through necessity and experience. Some methods require a development application consent if you are building a new house or commercial venture.

You can use the following tips to use less water in existing houses.

- Install dual flush toilets with a high star rating.
- Use water saving shower heads with a high star rating.
- Only use washing machines and dishwashers when full or if they can be adjusted for part loads.
- Buy water efficient washing machines and dishwashers with a high star rating.
- Ensure that there are no leaks in your plumbing system and repair any dripping taps promptly.
- Install water efficient taps and tap aerators.

Outside water use

Outside water use for gardens, lawn and stock for an average rural residential block (eg two hectares) can be 125,000–250,000 litres per year. Before you purchase stock, it is important to know how much water they will need, and to ensure that you have appropriate water sources in place so that your stock do not suffer from dehydration.

Stock requirements

Stock usually need the following amounts of water:

- horse – 12,000 litres per year
- sheep – 1,230 litres per year
- beef cattle - 13,500 litres per year
- dog – 3,000 litres per year
- pig – 9,000 litres per year.

These amounts may vary depending on factors such as the life stage of the animal (eg a lactating cow on grass may need up to 100 litres per day), the time of the year, the moisture in the pasture, and water quality (eg animals drink more water if it is salty).

Garden requirements

Gardens can potentially use a lot of water. There are many ways to conserve water in the garden.

- Mulch all garden areas to a depth of 75 millimetres.
- Compost household and garden waste and use it to improve soil.
- Keep garden and lawn areas to a minimum.
- Consider allowing lawn to brown off in summer - this needs to be considered in association with your fire protection regime.
- Lawn kept at around five centimetres in height reduces evaporation as the blades shade each other.
- Plant drought tolerant species - use local natives where possible.
- When watering improve the drought resistance of your plants by encouraging deep roots - to do this, water less often, but for longer periods at slow rates.
- Install a drip irrigation system.
- Use greywater in the garden. Greywater is the wastewater from baths, showers, hand basins and washing machines – final rinse. Do not use water from toilets or kitchen wastewater. Use greywater in a controlled manner to avoid adverse health impacts - greywater should not be stored for more than 24 hours. Contact your local council for guidelines on the use of greywater.
- Install a rainwater tank.

More information

For more information about water law, farm dams and licensing, visit the Department of Water and Energy website at www.dwe.nsw.gov.au

For more information on water saving visit the Sydney Water website at www.sydneywater.com.au

For information and advice on funding available to landholders for river restoration work and on seeking approval to clear riparian vegetation contact your local catchment management authority.

You can calculate your own specific MHRDC by visiting www.naturalresources.nsw.gov.au/water/dams.shtml or your local Department of Water and Energy office.

Soil

Your top soil is a valuable resource containing nutrients for your pastures, crops, and for the growth of native species. Soil erosion caused by wind and water can be exacerbated by animals, vehicles and vegetation removal. Erosion strips valuable top soil from your property. It reduces the productivity of your land, and pollutes creeks and dams with muddy water that is full of nutrients.

The best protection against erosion is adequate ground cover vegetation. Native grasses often provide the most durable protection for your soil. Carefully consider the need for cultivation and pasture improvement that can permanently kill areas of native grasses. Herbicides can be used to control weeds and maintain grass cover.

Erosion

There are various forms of erosion including sheet, rill, gully, streambank, in-stream and wind erosion. The main forms of erosion on your property are likely to be hillslope erosion, gully erosion and streambank erosion.

Some soils are very susceptible to erosion. Factors such as slope, rainfall intensities, and natural groundcover can all influence natural erosion rates. Over-stocking or over-cultivating paddocks also leads to erosion.

You can help to minimise erosion and retain topsoil on your property by using the following good land management practices.

- Provide adequate vegetation cover, particularly at ground level. Ground vegetation should provide at least 70 percent ground cover.
- Rotate your activities to spell the land, and maintain continuous grass cover in grazing paddocks.

- Plant windbreaks and establish native plants along creeks and farm roads to help filter out sediment and nutrients.
- Protect and enhance existing native bushland. When choosing plants, consider species that are native to your area. It is worth joining the local Landcare group. Propagate plants from locally collected seed.
- Cultivate and plant along contour lines, not up slopes. Don't cultivate steeply sloping land.
- Construct access roads along the contour on gentle slopes wherever possible and avoid wet areas.
- Find out about your land's capabilities. There are eight classes defined by the Department of Environment and Climate Change that outline the capability of the land to undertake particular activities. It is recommended that you don't plough land that is in Classes 5–8.

You can also prevent soil loss and erosion by controlling water runoff with devices such as contour banks, sediment traps, flumes, straw bales and mulches.

It is important to obtain technical advice from the relevant authorities before constructing any works. There may be erosion control structures already on your property. If so, these structures should be maintained and not disturbed to ensure their continuing operation. Contact your local catchment management authority for more assistance.

Soil acidity

Many of our soils are naturally acid. The pH of the soil is a measure of its relative acidity or alkalinity. Some effects of soil acidity are:

- reduced agricultural viability and production rates
- increased production costs, ie need to add lime
- groundcover decline, increasing the likelihood of erosion and declining water quality
- reduced water use by vegetation contributing to salinity.

Some causes of soil acidity include the following:

- natural pH decline through leaching
- past and present land use
- removal of alkaline plant and animal produce and waste products
- nitrate leaching - lack of deep rooted grasses to catch nitrogen produced before it leaches
- continuous application of ammonium fertilisers.

There are three basic strategies to manage acid soils:

1. Use deep-rooted perennial pastures to improve nitrogen recycling and slow the rate of acidification.
2. Use lime to raise soil pH (most useful if only the topsoil is acid).
3. Use plants that are tolerant of acid soil conditions.

It is important to get technical advice from the relevant authorities such as the NSW Department of Primary Industries before treating your soil.

Dryland salinity

Dryland salinity occurs naturally when groundwater discharges or seeps to the surface bringing soil salts with it. Salt can also be drawn to the surface by capillary action. When the water balance is disturbed by the removal of deep-rooted perennial vegetation, dryland salinity is accelerated. Dryland salinity can cause vegetation loss and stream salinisation and can be a precursor to soil erosion.

In the last 40 years, the area in Sydney's drinking water catchments affected by dryland salinity has increased rapidly. Some properties are particularly prone due to natural factors such as:

- rock/sediments containing high levels of salt
- salt in rainfall
- landform and hydrogeology characteristics.

Causes of dryland salinity in these areas include:

- removing deep-rooted perennial vegetation and replacing it with shallow rooted pastures and crops - this raises the water table, which brings salt to the surface
- blocking natural groundwater flow, eg by roads or dams.

Some effects of dryland salinity include:

- loss of desirable vegetation
- growth of salt-tolerant species
- reduced crop and pasture production
- water logged soil
- soil erosion
- increased salt loads in rivers and streams
- reduced surface and groundwater quality
- declining soil structure
- damage to buildings, roads, septics and pipes.

These impacts of dryland salinity can affect your property. It is important to get technical advice from the relevant authorities when considering methods to manage dryland salinity.

Sodicity

Sodic soils are soils that contain enough exchangeable sodium to adversely effect soil stability and plant growth. As a result, clay particles in the soil lose their tendency to stick together when wet. This leads to unstable soils that may erode or become impermeable to both water and plant roots. Local landholders sometimes use the term 'spewy' to describe sodic soils.

Compared to salinity, sodicity is a more widespread form of land degradation. Sodicity affects nearly one third of all soils in Australia causing poor water infiltration, surface crusting, erosion and water logging. Runoff from sodic soils carries clay particles into waterways causing environmental problems in rivers and wetlands. Runoff from sodic soils is more likely to carry higher levels of nitrogen and phosphate contributing to algal blooms in waterways.

Applying gypsum to the affected soil can treat sodicity of topsoil. You may need large quantities of gypsum to have more than a short-term affect. The best way to treat sodic subsoil is to stop the subsoil from being exposed. It is important to get technical advice from the relevant authorities before treating your soil.

More information

For more information on soil management, visit the NSW Department of Primary Industries website at www.dpi.nsw.gov.au and the NSW Government natural resouces website at www.dnr.nsw.gov.au/soils.

The NSW Department of Primary Industries also conducts a workshop series called LANDSCAN (Landscape and Soil Test Interpretation for Sustainable Farm Management) which teaches you how to understand soil tests, landscape limitation, soil fertility, acidity, salinity, and to match livestock to landscape.

For more information on funding available to landholders for erosion control work contact your local catchment management authority.

Native plants and animals

Remnant native vegetation – what can you do?

Remnant native vegetation is the area's remaining indigenous vegetation, including forests, woodlands and native grasslands. During the past 180 years much of the original native vegetation in the local area was cleared for agriculture. In some instances, this has resulted in problems such as soil erosion, loss of soil structure, weed invasion, salinity, reduced water quality, and loss of biodiversity.

Trees can enhance the value of your farm and increase productivity by providing shade and shelter for stock, windbreaks for crops and pasture, habitat for native wildlife, and by stabilising soils to reduce erosion. Thick strips of native trees and shrubs can also improve the survival of lambs and ewes, provide protection against drying winds, moderate temperature extremes, prevent pollution of streams by nutrient runoff, and provide effective barriers against windblown weed seeds such as those of serrated tussock.

Remnant vegetation can protect an area from rising water tables and salinity, and provide a home for native animals, including threatened species. Native trees, shrubs and most native grasses are deep-rooted perennials that keep saline groundwater well below the surface. They provide a source of seed for revegetation and offer a landscape that is pleasing to many people.

Your rural block may still be entirely forested or still have areas of remnant woodland or forest, isolated paddock trees and native grasslands. This vegetation should be left intact as it may be part of a vegetation community that is now extensively cleared, and be part of a corridor connecting two larger areas of native vegetation.

Re-establishing native vegetation helps to restore and link remnant patches of native vegetation on private and public lands, enhancing their value as wildlife corridors and biological reserves. Fence the remnants to protect them from livestock grazing.

Set aside a section or sections of your property for native plant regeneration.

When planning a re-planting program, always try to:

- use seed that is sourced locally wherever possible
- use plants that have been grown locally to ensure they acclimatise to local conditions
- choose species that reflect the vegetation community or communities at the site.

The Local Information section (from page 43) has some planting lists as a starting point.

The main options for revegetation are:

- encouraging natural regeneration
- planting seedlings
- direct seeding.

Join your local Landcare group, or if there isn't one talk to your neighbours about forming one to tackle vegetation and soil management issues.

How good is that piece of bush?

Rule of thumb: Any patch of native vegetation is valuable. Across a rural residential development or farm, a minimum of 30 percent cover of native vegetation will help productivity and maintain ecosystems. Together with your neighbour's bush and others nearby, there may also be a viable local core habitat area or 'corridor' of vegetation for native animals.

Most native plant diversity is in the groundcover layer. Spring is the best time to appreciate the diversity of native wildflowers that may be dormant for much of the year.

Remember to:

- avoid fragmenting existing areas of native vegetation, including remnant grasslands - if you are building new fence lines, roads or services, build them around areas of native vegetation rather than through them
- ensure that plant species are correctly identified when spraying weeds (many native grasses such as Poa species are easily confused with noxious weeds such as Serrated Tussock)

Native Vegetation Act 2003 and Regulations

The *Native Vegetation Act 2003* and Regulations commenced on 1 December 2005. The legislation balances the needs of farmers and the environment, and is responsive to local conditions.

The regulations put an end to clearing native vegetation unless the overall effect is to improve or maintain the environment. You need to be aware of the following:

- Regrowth (other than protected regrowth) that has grown since 1990 can be cleared without approval.
- Landholders may have a range of Routine Agricultural Management Activities (RAMAs) under which you can clear without approval. You may only undertake clearing associated with the RAMAs to the minimum extent or within prescribed limits for carrying out the activity. RAMAs have many conditions and landholders should refer to sources suggested on page 19.
- Most other clearing on land covered by the Act needs assessment and approval through a Property Vegetation Plan process.

The Act does not apply to land zoned as urban or industrial. Clearing vegetation in rural and urban areas may also require Council approval.

Once farmers have been issued with a Property Vegetation Plan they will not need to obtain further threatened species approvals for activities they want to undertake on their land, as long as the activity is in keeping with the specifications of

the Property Vegetation Plan. You should contact the local catchment management authority before clearing any native vegetation to determine what approvals may be required.

Native animals

All native animals in NSW are protected. This means that it is illegal to trap, kill or harm them unless licensed otherwise. Although we would like to live in unison with native animals, sometimes they can pose a threat to our safety or activities. It is important to understand how to manage these situations on your property.

A few native animals can become a nuisance if not managed appropriately. For instance, swamp wallabies can often show a strong liking for garden plants. It is wise to fence off prized plants, such as roses and vegetables, in rural areas.

Brush-tail possums can sometimes become nuisances in roofs. In such cases, it is best to provide nest boxes for the possums away from the house, remove them from the roof and seal possible entrance holes. Possums are strongly territorial. Removing them from your property can result in death of the possum and injury to others. In any case, new possums may simply take their place.

Several species of venomous snake may live in your area. Most snake bites recorded in NSW happen to people who try to catch or kill them. Give snakes some space and they will generally leave the area.

The snake season usually lasts from about late October to early March. The following actions can reduce the chance of snake bite:

- Remove loose sheets of tin and other cover from around the house.
- Keep frequently trafficked areas and those around buildings mown.
- Wear enclosed leather shoes when walking in long grass or near creeks or farm dams.
- Do not walk outside in thongs or bare feet on warm nights.
- Let snakes pass through and away from your house or paddock, but if they decide to take up residence call WIRES (NSW Wildlife Information and Rescue Service) on 1300 094 737 to have them relocated.
- Avoid taking dogs for walks near long grass or river sides in the warmer months when snakes are likely to be breeding.

Providing a fauna-friendly home

If you would like to encourage small birds and other wildlife, such as Sugar Gliders, around your home there are some ways to attract them:

- Leave large trees with hollows intact.
- Plant a variety of local native shrubs, especially dense or prickly ones. Use mainly white, pink or yellow flowering shrubs and keep red flowering shrubs in smaller numbers. Large numbers of red flowering shrubs can attract Noisy Mynah birds and larger Honeyeaters that actively exclude other smaller birds from the area.

- Provide bird baths and other watering points.
- Build and maintain nest boxes where few hollow trees remain. Monitor the nest boxes to ensure they are not being taken up by pest species such as the Indian Mynah.
- Leave fallen timber and hollow logs where fire is not a major threat.
- Keep a belt of feathery wattles to connect bushland areas. These have major habitat and food value for small birds and Sugar Gliders.
- Do not remove Mistletoes - they are an excellent source of food and habitat for a range of animals.

Feeding native birds can be an issue as it may make birds dependent on the local resident. If you decide that you would like to feed the native birds, it should only be as a supplement in small quantities. Better still, provide food plant species in strategic viewing spots that seasonally provide food.

Frogs are desirable animals to have living on your property. The following actions will encourage frogs to stay or colonise your property:

- Using ponds or pools as part of your garden landscaping.
- Placing large rocks or boulders around one end of a dam for shelter and over-wintering.
- Putting logs or other large section offcuts around the edge of a few dams with half in the water and half out.

- Planting some emergent vegetation like Eleocharis, Juncus, Baumea or Cyperus species in clumps around a section of a dam's margins (Typha, while suitable from a frog perspective may cause problems around the dam and is less suitable).

- Planting tussock-forming vegetation like Lomandra or Ghania species at a short distance from the dam for sheltering and foraging.

Fish and other aquatic animals can be a desirable addition to rural living. If you are going to stock farm dams with fish, you needs to carefully consider the following:

- Only native fish from the catchment area are generally permitted to be released. Depending on numbers and site specifics, you may need a permit from the NSW Department of Primary Industries (NSW DPI) - Fisheries.

- If your dam or pond is already infested with the introduced pest Plague Minnow Gambusia then it would be best to eradicate it. Contact NSW DPI Fisheries for assistance.

- Yabbies from the local stream system might be another desirable addition. Suppliers or the NSW DPI Fisheries can provide more information.

- Be aware that tortoises and platypus may be local residents and that yabbie traps are illegal in eastern flowing streams as they may drown these air breathing animals.

- Eels and aquatic insect life (eg dragonflies, backswimmers) will colonise on their own if a healthy pond/dam or creek system is established and maintained.

- If there are none available on-site, consider adding round river stones that make it more attractive to aquatic life by creating riffles during flow periods and a variety of habitat values.

A pond, dam or creek full of life not only creates a healthy environment but may provide many peaceful hours for you and your family as you explore this fascinating environment and the animals seasonally attracted to it.

Contact WIRES on 1800 094 737 if you find sick or injured wildlife on your property.

Threatened Species Conservation Act 1995

This Act aims to prevent the extinction and promote the recovery of threatened species, populations and ecological communities in NSW. Under this Act, if you are considering land clearing, subdivisions or other actions that may affect threatened species, you may require local council approval, or, if not, approval from the Department of Environment and Climate Change.

Threatened species may not be obvious to you on your property. If you are considering developing your property or land clearing, you may need to have a threatened species survey and an assessment of significance.

A list of some local threatened plants and animals is found in the Local Information section (from page 43).

More information

For information on Landcare, funding available to protect and enhance remnant native vegetation, and revegetation advice, contact your local catchment management authority. Your local catchment management authority can also arrange free site inspections by native vegetation professionals to help design a vegetation management program.

Information about threatened species can be found on the threatened species part of the Department of Environment and Climate Change website at www.threatenedspecies.environment.nsw.gov.au

For further information on the *Native Vegetation Act 2003* and the regulations, including the routine agricultural management activities applicable to your area, contact the local catchment management authority, or go to www.nativevegetation.nsw.gov.au, email info@nativevegetation.nsw.gov.au, or freecall 1800 237 012.

Fire

Fire is a part of the Australian landscape, and bushfire management in NSW is a cooperative effort by the whole community. Not only does bushfire pose a risk to personal safety and property, it can also have major impacts on biodiversity and water quality.

Effective bushfire management involves fire authorities, landowners, land managers and planning authorities, Council and the local community. The work you do to prepare your own property is a critical component of bushfire management.

Bushfire management involves a risk planning process. You will need to:

- identify the location of bushfire hazards (such as high fuel loads)
- identify the location of community assets (buildings and environmental)
- assess the hazard as a threat to identified community and environmental assets.

As well as consulting publications from the Rural Fire Service, you should also consider joining the local Rural Fire Brigade.

While most older farmhouses are built on cleared farmland there has been an increasing tendency to build on bush blocks, on land which is often too rugged for agricultural use. Probably the most important issue for a house on a bush block is to create an asset protection zone that breaks the continuous canopy of trees. This will probably mean removing some trees and reducing fuel loads of dry undergrowth and dead branches. This should be done with guidance from the local Rural Fire Service.

Since 2002, legal standards have been in place for the safe construction of buildings in bushfire prone areas of NSW. The standards include:

- adequate setbacks from bushland
- inclusion of reduced fuel areas (asset protection zones)
- correct siting
- good access roads for fire fighters and residents.

Strategically planned asset protection zones and regular maintenance to remove fuel greatly enhances the ability of your home to be protected in an emergency.

Wherever possible, new houses and sheds should be located in existing cleared areas to reduce the amount of clearing required for construction.

If you have stock, you should intensively graze pasture near your home during late spring and early summer to reduce fuel levels. Check with the Rural Fire Service.

All land clearance in NSW that is for bushfire hazard reduction and not agricultural purpose will usually require a Bushfire Hazard Reduction Certificate. This certificate is for activities such as burning, land clearing and slashing. The Rural Fire Service will also need to be notified depending on the season.

The Rural Fire Service website makes these suggestions for fire protection measures around your home.

- Clear leaf litter from gutters.
- Firmly fix the roofing so there is less chance for hot embers to enter roof space.
- Install screens or shutters and enclose areas under the floor, if possible.
- Ensure vents into the roof space are screened with fine wire mesh.
- Remove all flammable items from around the house (eg the wood pile and obvious flammable materials such as paper, boxes, crates, hanging baskets and wooden garden furniture).
- Direct the relief valves on LPG tanks away from the house.
- Buy a portable pump to use water from dams and swimming pools.
- Fit a gate valve to water tanks – a 38-millimetre Storz coupling will assist the Rural Fire Service.
- Consider reserving water supplies from tanks, dams or swimming pools as mains water will be in high demand during bushfire.

- Write the emergency 000 telephone number next to the telephone.

The following actions in your garden can also help to protect your property:

- Clear away ground fuels around the house (remove long, dry grass, dead leaves and branches, thick undergrowth) with appropriate certification and notification.
- Take a trip to the tip with garden and general rubbish that could catch fire.
- Prune low tree branches two metres from the ground and separate tree crowns.
- Prepare firebreaks (a well watered lawn can act as a firebreak).
- Ensure vegetation around the house does not provide a path for fire – plant or clear vegetation in clumps, rather than continuous rows.

The Rural Fire Service website has information on the following subjects to help you prepare for bushfire:

- Family fire plan
- Protecting your house and garden
- Water supplies and equipment
- Preparing your property – farms and landholders
- Bushfire hazard reduction certificates
- Safe burning practices
- How the RFS can help
- How you can help.

More information

The Rural Fire Service has valuable information about managing properties in bushfire prone areas on its website at www.bushfire.nsw.gov.au.

The NSW Department of Primary Industries has information on preparing for and responding to bushfires in rural areas on its website at www.dpi.nsw.gov.au.

Weeds

A weed is a plant 'in the wrong place at the wrong time'. Plants are weeds if they cause environmental harm, choke out native vegetation, or harm agricultural production. They often have a high level of seed production with easy dispersal and are highly competitive with a lack of natural controls.

Weeds can be a major problem to rural properties because of the impact they have on pastures, crop and stock.

Weeds and weed seed can be introduced and/or spread to your property in a variety of ways, including:

- seed brought for sowing, stock feed, on stock, machinery, water, wind and garden escapees
- deliberate introduction, eg willows planted for bank stabilisation
- land managers' lack of awareness and inability to identify weeds
- poor land management, eg overgrazing
- herbicide resistance due to over-reliance on particular chemicals.

Landowners need to control declared noxious weeds on their property. 'Noxious weeds' are those weeds that have been declared so by Council and have a detrimental effect on the environment and production.

Council is the local weed control authority and has the right to enter and inspect private properties and, if required, issue notices to carry out weed control work. Fines may also be applied.

You can apply to Council to see if there are any outstanding weed notices on a property before buying. Council employs weed inspectors and inspections by Council are available for a fee.

The aim of weed control is to remove the weed, deplete the weed seed reservoir, and prevent further replenishment of the seed store. You can control weed seed by stopping the weed from growing and removing vegetative plant parts including roots, stems, branches, stolons, tubers or other plant parts that may allow the plant to grow.

Most weeds were introduced from other countries - some arrived by accident while others were brought for various reasons. The natural enemies that kept the plants in control in their native countries are not present in Australia, and their spread has not been restricted by these natural means.

Some effects of poor weed management are:

- loss of native species and their habitat
- reduced land productivity
- increased control costs as weeds spread
- soil degradation and erosion.

Herbicides have added a new dimension to weed control. Herbicides are often an important part of an integrated plan to control weeds – not the sole control technique. An integrated approach to weed management may include strategic grazing, pasture improvement, herbicides, biological control agents, cultivation, slashing, mulching and hand pulling.

More information

Contact the weeds officer at your local council for advice on how to manage weeds. General information about managing weeds and a noxious weed list for the local area, can found at the NSW Department of Primary Industries website at www.dpi.nsw.gov.au A noxious weed list is also available at www.dpi.nsw.gov.au/agriculture/pests-weeds/weeds/noxweed.

The NSW Department of Primary Industries also provides a pasture identification course which helps landholders to identify pasture weeds.

Pest animals

Pest animals and insects cause serious economic losses to agricultural production, unacceptable risk of exotic disease, threaten the survival of many native species, and cause environmental degradation including erosion.

Landholders (both public and private) have a legal obligation under the *Rural Lands Protection Act 1998* to eradicate noxious pest animals on land they own, occupy or manage.

Pests such as wild dogs, rabbits, feral pigs, foxes, feral cats and feral goats can introduce disease and out-compete native animals for food and shelter, as well as injuring or killing livestock and damaging crops and pastures.

Rural Lands Protection Boards can provide advice and help you to eradicate declared pest species from your property by providing poisoned baits, hiring equipment such as traps, and initiating education programs. They also work with private and government stakeholders to develop vertebrate pest management plans and co-operative management programs.

Current species declared as noxious pests in NSW include rabbits, feral pigs, wild dogs and a number of locust species. You have a legal obligation to control these pests. Foxes and mice are presently classed as nuisance animals in NSW and you are not obliged to control these species, although Rural Lands Protection Boards can provide advice and/or help to control them if required.

Contact your nearest Rural Lands Protection Board office if there is any evidence of wild dog attacks on stock on your property or to report sightings of pest species.

Domestic dogs and cats

Domestic dogs and cats can also have negative affects on the environment and farming practices. Dogs and cats kill and maim many native animals, and dogs may injure or kill livestock. To reduce this risk, put a bell around your cat's neck and keep it indoors, and keep dogs chained up or within a secure yard.

You must register dogs and cats through your local council. Unwanted animals should not be dumped in the bush, but should be taken to the Royal Society for the Prevention of Cruelty to Animals (RSPCA) or your veterinarian.

Pets and other stock must be kept within your property boundaries. Wandering animals can cause conflict with neighbours and you are liable for any damage or stock losses they may cause. In public areas, dogs and cats must be kept on a leash. Bury dead animals promptly and away from watercourses so that they do not cause pollution.

Feral pigs cause significant land damage

More information

For more information and for fact sheets about the control of rabbits, feral pigs, wild dogs, locusts and foxes, visit the Rural Lands Protection Board website at www.rlpb.org.au

Notes

- Waste management
- Effluent management
- Chemicals
- Wood smoke and heating
- Stock
- Fences
- Farm safety
- Safety on rural roads
- Rates
- Absentee landholders
- Developing your property
- Improving your skills
- Further reading

PROPERTY MANAGEMENT

The Rural Living Handbook - A guide for rural residential landholders

Waste management

It is important to dispose of waste in an environmentally sustainable way. Dumping waste in eroded gullies is not acceptable. Rural properties produce a wide range and significant amount of waste and its successful and environmentally-friendly disposal requires good management.

Rural waste typically includes domestic waste, solid waste (eg wire or old white goods), farm chemicals and dead stock.

Domestic waste

Details of local domestic waste removal arrangements are found in the Local Information section (from page 43).

Composting

Almost half of our domestic waste consists of kitchen and garden waste. Most of this material can be composted. Composting returns nutrients to the soil that would otherwise be lost, improves soil structure, and increases the water holding capacity of the soil.

Composting is nature's own recycling program. In time, organisms will break down the waste into a rich, dark, crumbly compost that is nature's own nutrient rich fertiliser.

Home composting generally takes two months or more. The more you turn and mix the contents, adding air in the process, the more rapidly the composting action will happen. The compost can then be added to the garden to increase productivity.

What can be composted?

- 'Greens' including grass cuttings, non woody garden prunings, weeds that have not gone to seed, leaves, flowers and vegetable remains, kitchen wastes (including egg shells and bread), herbivore animal manure – horse, chicken and cow (avoid other animal droppings).

- 'Browns' including paper and cardboard, wood fire ash, sawdust and wood shavings, vacuum dust and hair.

You can make compost either in a heap or a bin, depending on quantity. Minimum dimensions for a heap are one metre by one metre by one metre. You can enclose the heap using bricks, timber or metal, such as corrugated iron. Cover with a lid or piece of carpet to retain heat and provide protection from rain.

A compost bin is better for small gardens. Your compost heap or bin should be placed in contact with the soil to allow worms and decomposing insects and micro-organisms to enter the compost. More information is available from your local council or from the Department of Environment and Climate Change.

Recycling and reuse

Contact your local council for details of recycling services.

You can recycle a large number of materials, including:

- paper
- cardboard
- plastic bottles (types 1, 2, 3, 4 and 5)
- steel cans (including aerosol cans and paint tins)
- aluminium cans
- glass jars and bottles
- juice and milk cartons
- aluminium foil.

Constructive ideas for living with less waste include:

- Collect all liquid waste in your kitchen as well as your food scraps. Your compost 'soup' will provide some of the water necessary for the composting process. Rain will provide further water, so take the cover off your compost bin while it's raining. If you have a compost 'heap' you may need to cover it during heavy rain to prevent it from being flooded.
- Be creative with juices and fruits and reduce your dependence on store bought alternatives.
- Much household waste begins at the shop. There has been a lot of promotion about taking your own carry bag/s to the shopping centre. Now it's time to ask yourself 'what's in the bag'? Become a conscious consumer and only buy what you need.
- Repair and reuse items.
- Clean out your cupboards and gather all those things still in working condition that you no longer want or need. Take them to a local charity.
- Collect tea bags and coffee grains at work in a sealable plastic container and take them home to your compost heap. Share this resource (and the responsibility for collecting it) with your work colleagues.
- Replace plastic/foil-wrapped sweets with fruit. It's healthier and the waste can go into the compost.
- If you have enough yard space, keep chickens to eat food scraps and produce fresh eggs.
- Spend less time in the shower. Being conscious of the time will help you to save water, energy and money.
- Save coloured paper or children's drawings throughout the year and use them to wrap presents.
- Give your compost a read by putting food-soiled newspapers into the compost.

Landfill

A landfill site should be the last resort for waste disposal on rural properties. Waste management facilities should be used wherever possible. If you think a landfill site is appropriate contact your local council or the Department of Environment and Climate Change for advice.

If a landfill site is required, items that can be placed in a properly constructed site include domestic garbage, glass, plastic, metal, compostable material, tree loppings, small cans or containers of acids or alkalies (one litre or less), and car bodies.

Council can provide details of chemical collection and drumMUSTER opportunities.

Burning

Burning waste, such as household rubbish and garden clippings, has a negative impact on air quality. Measures have been introduced over time to control backyard burning and other open air burning. These have been successful in reducing average levels of particle pollution.

The laws are different for burning for fire hazard reduction and burning for the disposal of waste.

Burning is prohibited in and around towns in many areas (contact your local council for details). The fire ban season generally runs from October to March but can vary according to conditions. You should carry out any burning in a way that prevents or minimises air pollution.

You need a permit from the Rural Fire Service for pile burning. You also need a permit from local council to light other household waste fires such as bonfires and incinerators.

Dead stock disposal

If the cause of death of an agricultural livestock animal is unknown, the Rural Lands Protection Boards may offer services to diagnose the carcass if you make contact in a reasonable timeframe.

Whether one or more animals are to be disposed of, disposing of dead stock carries the risk of polluting watercourses, producing odours, spreading disease and interfering with community amenity.

If possible, carcasses should be used or rendered. If the animals are to be slaughtered, local abattoirs and knackeries should be contacted to find out the cost of getting them to do the work.

If you have to dispose of carcasses on the farm it is important to do the job quickly and thoroughly. Burning is rarely satisfactory - burying is better. However, with certain exotic diseases burning may be mandatory. Contact the Rural Lands Protection Board if you are unsure of what to do.

To reduce swelling during decomposition the abdomens and paunches of the carcasses should be opened to allow gases to escape. The carcasses should be sprayed with sump oil if immediate burial or burning is impractical. They should be heaped up in a secluded spot away from watercourses and sump oil should be spread liberally over the heap. The oil discourages flies and scavengers. The heap can then be buried or burned later.

More information

Details of the Protection of the Environment Operations (Control of Burning) Regulation 2000 and the *Rural Fires Act 1997*, are available at the Department of Environment and Climate Change website at www.environment.nsw.gov.au.

For information about the Rural Lands Protection Board animal health services visit www.rlpb.org.au.

Contact your local council for advice about waste management on your property.

The recommended method to dispose of dead stock can be found at the Department of Environment and Climate Change website at www.environment.nsw.gov.au/mao/deadstockdisposal.htm.

Effluent management

Failing on-site effluent management systems release dangerous levels of sewage pollution to the environment. Sewage pollution can contaminate water, spread disease, and lead to environmental degradation. There are approximately 300,000 on-site effluent management systems across NSW and the cumulative impact of effluent, sometimes from thousands of systems is a critical problem. Sewage pollution is evident in different areas across the state often near waterways and in drinking water catchments.

Small domestic sewage management facilities or on-site effluent management systems include all types of human waste storage facilities. There are a number of different types.

With advances in the performance of on-site effluent management systems, there is no reason for the community to accept failing systems. Research shows that many people don't know how to manage their systems and around 70 percent of systems fail to meet environmental and health protection standards.

Septic Safe

The NSW Government has introduced local government reforms and guidelines for efficient management of small domestic sewage facilities.

Septic Safe is a state-wide partnership between the NSW Government and councils to address the issue. Councils regulate the installation and operation of on-site effluent management systems under the *Local Government Act 1993*. Regulations under the Act specify performance standards and require councils to supervise the operation of on-site effluent management systems.

If you have an on-site effluent management system you must obtain an approval to operate from Council. You must maintain and manage the system in accordance with health and environmental performance standards.

The performance standards are necessary to:

- prevent the spread of disease by micro-organisms
- discourage insects and vermin
- prevent sewage contamination of waterways and ground water
- prevent degradation of soil and vegetation
- prevent the spread of foul odours
- minimise adverse impacts on neighbours and the amenity of the land
- ensure good water conservation practice and appropriate re-use of natural resources (including nutrients, organic matter and water).

To support these performance standards landholders must ensure that:

- people do not come into contact with sewage or effluent (whether treated or not) in their ordinary activities on the premises concerned
- effluent is not discharged into any watercourse or onto any land other than a designated effluent application area
- whatever system of effluent management is used, it is well maintained and operated in a sanitary condition
- relevant information is provided to the Council when requested
- you have lodged an application for approval to operate, and paid the scheduled fee for registration and assessment costs.

Within the drinking water catchments, the Sydney Catchment Authority requires effluent management areas to have buffer distances of 40 metres from a drainage depression, 100 metres from a watercourse and 150 metres from the Wollondilly or Shoalhaven rivers. A drainage depression is defined as a low point that carries water during rainfall events but dries out quickly once rainfall has ceased. A watercourse has defined beds or banks, or remains wet for considerable periods after rainfall, and so supports water tolerant vegetation.

How to maintain a healthy effluent management system - some easy tips

Many of these suggestions help reduce the volume of wastewater going into the effluent management system and help avoid the use of chemicals that interfere with how well the effluent management system works.

- In the laundry, if you have a number of loads of washing spread them over a couple of days. This will avoid flooding the system with large amounts of water at one time.
- Use low phosphorous, or better still phosphorous-free, detergent. Phosphorous is a major pollutant of waterways and contributes to the growth of algal blooms.
- Repair leaking taps and cisterns and install a lint filter on the washing machine – a stocking over the outlet hose will do. Make sure to clean it regularly.
- If you've got a blocked drain, use boiling water or a drain eel to clear the line. Don't use caustic soda or drain cleaners in a septic tank.
- Use front loading washing machines for households on effluent management systems because they use less water and detergent.
- In the kitchen, use a sink strainer. Food scraps slow down the digestion process and make solids build up more quickly. Don't pour oils and fats down the sink as they can block the system.
- In the bathroom, install a low-flow shower head to save water.
- Repair leaking taps and minimise the use of commercial cleaners and bleaches – these interfere with the bacterial breakdown in the tank. Try using baking soda, vinegar or a mild soap.
- Don't flush anything down the toilet that could block the system. Don't leave taps running unnecessarily, for instance when cleaning teeth. Install a dual flush toilet cistern.
- Around the tank and trench area, keep water from the roof downpipes and paved areas away from the absorption field.
- Have a plumber fit an effluent filter to the septic tank outlet to keep solids in the tank and extend the life of your trenches.
- Only plant grass near the absorption field – roots from larger plants such as trees and shrubs are likely to damage the trench. Mow regularly.
- Don't drive or park on any part of the absorption area. This will compact the soil and may crush the pipes and trench domes.
- Grow plants with high nutrient requirements near the drain fields and irrigation areas.

Landscaping and irrigation

How the area around an effluent management system is managed is just as important as how the system itself is maintained. Planting the right kind of vegetation can help keep your effluent management system in top condition. Contact Council's environmental health officer for advice before installing an irrigation system or doing landscaping around your trench area.

When choosing what to plant, consider which plants will do best in the local area and soil type, and which ones will best cope with regular doses of nutrient rich wastewater. The plants must be able to cope with nutrients such as sodium, chloride, nitrogen and phosphorous. Many Australian natives can't cope with high levels of these nutrients. Visit your local nursery for advice.

Generally speaking, it is best to grow a mix of summer and winter grasses on absorption areas. If treated effluent is being used to water landscaped areas, nutrient tolerant trees and shrubs should be planted. A list of locally suitable plants for effluent management areas is found in the Local Information section (from page 43).

More information

Contact Council's environmental health officer for advice about how to install and maintain an effluent management system. Also see the Department of Local Government website at www.dlg.nsw.gov.au and the Sydney Catchment Authority website at www.sca.nsw.gov.au.

Chemicals

Chemicals such as fuel, fertiliser and pesticides are commonly used to help run rural properties. These chemicals are often dangerous, some are flammable, most are poisonous, and all can be harmful to the environment if used incorrectly. For example, they can pollute waterways, particularly if they are stored or used near creeks and rivers.

There is a legal requirement to read the label and follow all directions on the container. This is necessary to ensure the safety of you, your family and your stock. Considerable fines can be imposed for failure to transport, store, apply and dispose of chemicals and containers properly. There are also requirements under the *Pesticides Act 1999* to keep records of pesticide use and for pesticide users to undergo training.

Advice is available from the Department of Environment and Climate Change (transport and disposal training), WorkCover NSW (use and storage), and local council (general information).

Storing chemicals

Keep all chemicals in an area specially designed for this purpose. Safe storage maximises the life of pesticides and protects people, animals and the environment.

A farm chemical store needs to have the following features:

- a separate, well-ventilated cupboard or building used only for this purpose - located away from houses, pumps, tanks, waterways and animals and preferably fireproof
- a manifest, copies of labels and a Material Safety Data Sheet (MSDS)
- storage in a cool dry place
- some form of spillage containment or bunding
- shelving made of impervious materials - for small quantities of chemicals place containers in drip trays
- liquids should not be stored above solids
- a locked storage area
- clearly sign-posted storage area, eg 'Chemical Store – Keep Out' and a no smoking sign.

Transporting farm chemicals

Everyone transporting farm chemicals has a duty of care and a responsibility to carry out tasks in a manner that will not cause harm or injury to themselves, other people, their property, animals, and the environment.

Before moving chemicals, read information on the transport requirements of individual chemicals which are often found on the label or Materials Safety Data Sheet. When collecting new containers of chemicals, check them carefully for damage and tighten lids to prevent leaks.

Make sure your vehicle is roadworthy and can safely transport chemicals. Put chemicals inside a tray of some kind that will contain any spillage. Do not put chemicals in the same compartment as the driver and passengers, food, drinks, or animals. Vapours and spills can cause illness.

Do not transport items classified as Dangerous Goods in large quantities. Private vehicles should transport less than 100 kilograms or 100 litres of farm chemicals at a time. Pack the load securely so items can't move or fall over and store different classes of chemicals apart. Take the most direct route back.

If any spills occur clear the vehicle immediately. The main steps for dealing with a spill are to isolate, contain, decontaminate and dispose. Make sure you use appropriate clothing and gear to protect your skin and face, and to avoid inhaling vapours.

On arrival, put the containers straight into the chemical store. Make sure containers are not damaged.

Safe disposal of non-returnable containers and on-farm chemicals

Disposal of non-returnable crop production and on-farm animal health chemical containers is a significant problem for farmers. If you use agricultural chemicals you are legally responsible for ensuring that empty containers and unwanted chemicals are disposed of safely.

National programs called drumMUSTER and ChemClear have been set up to help farmers safely manage their farm chemicals. The drumMUSTER program collects and recycles cleaned eligible containers.

The ChemClear service collects and disposes unwanted currently registered rural chemicals. This program features a web based booking system and free call number 1800 008 182. More information can be found at www.chemclear.com.au

Agsafe, which is a subsidiary of CropLife Australia, manages the drumMUSTER and ChemClear programs. These initiatives were developed by the National Farmers Federation, the agricultural industry peak body CropLife Australia, Animal Health Alliance (Australia), Veterinary Manufacturers and Distributors Association and the Australian Local Government Association.

You can store rinsed containers in a safe location until the next drumMUSTER collection is advertised in your area. The rinsed containers can also be taken to some council landfill depots (see Local Information section from page 43 for website and contact details).

Cleaning containers for disposal

You should rinse containers on fallow ground away from drains and waterways, and always wear personal protective equipment as specified on the label for applying, mixing and loading the pesticide.

To ensure your containers are suitable for delivery to a collection centre always follow these procedures:

- Triple or pressure rinse your containers immediately after use and pour the rinse water back into the spray tank.
- Thoroughly clean the container thread and outside surfaces with a hose into the spray tank. Rinse all caps separately into a bucket of clean water and pour rinsate into the spray tank.
- Inspect the container, thread and screw neck to ensure all chemical residue has been removed.
- Puncture metal containers through the neck/pouring opening and through the base of the container.
- Allow containers to drain completely and air dry them over a number of days.

You should store rinsed containers in a safe location until the next drumMUSTER collection is advertised in your area. The rinsed containers can also be taken to participating collection agency delivery sites (visit drumMUSTER's website collection calendar for information on local collection sites and details). For more information about drumMUSTER call 1800 008 707 or go to www.drummuster.com.au

Disposal of rinsate or diluted chemicals

Labels and state environmental legislation prohibit disposing of chemical concentrate on-site or on a farm. You need to dilute unused chemicals. If you are not applying chemicals according to the label use pattern, you must dispose of them in an environmentally responsible manner, such as an evaporation pit.

An evaporation pit should be one metre deep and lined with plastic sheeting sprayed with hydrated lime. Any wastes must be covered with at least half a metre of soil. Disposal pits are suited only to small volumes and diluted chemicals. Evaporation pits should be located well away from drainage depressions, creeks and rivers. The same buffers for landfills and Sydney Catchment Authority buffers for effluent management areas should be applied.

DO NOT DISPOSE OF CHEMICALS IN ANY FORM DOWN DRAINS, GULLIES OR WATERCOURSES.

More information

The NSW Department of Primary Industries has leaflets and booklets available to guide farmers in the safe handling of chemicals. The Spray Sense leaflets, for example, offer advice on reading pesticide labels, transporting and storing chemicals, and disposing empty containers. These documents are also available online by going to www.agric.nsw.gov.au/reader/spray-sense.

Training

Training courses are available through ChemCert NSW. For example, the two day Accreditation (AQF 3) course for farm chemical users covers topics such as integrated pest management, the product label, chemical formulations and residues, personal safety, transport, storage and handling, environmental safety, legislation, risk management and record keeping. More information is available at www.chemcert.org.au and by calling 02 9387 4714.

TAFE NSW offers Smartrain Certification courses which cover storage, transportation, mixing and use of chemicals in accordance with the Code of Practice for the Safe Use and Storage of Chemicals in Agriculture (which can be downloaded from www.workcover.nsw.gov.au). For more information contact TAFE NSW on 131 601. Information about training for the safe handling of chemicals is also available at www.environment.nsw.gov.au.

Wood smoke and heating

Smoke from wood heaters adds to air pollution. The following measures will help to minimise pollution, improve local air quality, care for your health, and save money.

Tips for efficient wood burning and minimising pollution include the following:

- Always burn small logs of aged, dry hardwood. Unseasoned wood (green wood) has more moisture which makes a heater smoke.
- Store wood under cover in a dry ventilated area and away from buildings.
- Freshly cut wood needs to be stored for 8–12 months before burning.
- Never burn rubbish, driftwood or treated or painted wood - it can pollute the air and be poisonous.
- When lighting a cold heater, use plenty of dry kindling to establish a good fire quickly.
- Stack wood loosely in your firebox so air can circulate - don't cram the firebox full.
- Keep the flame lively and bright. Your fire should only smoke for a few minutes when you light it and when you add extra fuel. Open the air controls fully for five minutes before and 15–20 minutes after reloading.
- Do not let your heater smoulder overnight. Keep enough air in the fire to maintain a flame.
- Check your chimney regularly. If there is smoke coming from the chimney, increase the air supply to your fire.
- Clean the chimney every year to prevent creosote build-up.
- If you are buying a new heater check the compliance plate on the back to ensure that it meets the current Australian Standard AS/NZS 4013:1999.

Here are some more tips to reduce your heating bills and saving money.

- Insulate ceilings, walls and floors.
- Seal out drafts.
- Cover your windows with curtains or blinds, use double glazing and place pelmets above curtains.
- Install doors between different areas of the house so that sections can be closed off to retain heat.
- Open curtains on north facing windows on sunny winter days.
- Use ceiling fans to circulate heat that has risen to the ceiling.
- Wear warm clothing.
- Close off chimneys when not in use to stop heat escaping up the chimney.

You could also use solar power, green power (electricity produced from renewable energy sources) and gas, as they are cleaner alternatives to wood heating.

More information

For more information about wood smoke, visit the Department of Environment and Climate Change website at www.environment.nsw.gov.au.

Visit the NSW Department of Water and Energy for more information about cleaner heating at www.dwe.nsw.gov.au.

Stock

Stocking rates

Overstocking can be a quick route to destroying your pastures and bushland, and depleting the health of your own animals. When starting out, seek advice from the NSW Department of Primary Industries and consider the whole environment on your block.

Always keep at least 70 percent vegetation cover to avoid erosion and degradation. If feed is scarce then fence your trees so that stock don't ringbark them.

The NSW Department of Primary Industries recommends the stocking rates below as a rough guide. The figures assume no supplementary feeding and are subject to the quality and productivity of your pasture.

	Introduced pasture	Native pasture
Sheep	8 per ha	3 per ha
Cattle	1 per 2 ha	1 per 6 ha
Horses	1 per 2 ha	1 per 6 ha
Alpacas	5 per ha	-
Llamas	5 per ha	-
Goats	8 per ha	3 per ha
Camels	1 per 2 ha	1 per 6 ha

Animal welfare

The RSPCA promotes 'Five Freedoms of Animal Welfare', as follows:

- freedom from hunger and thirst
- freedom from discomfort
- freedom from pain, injury or disease
- freedom to express normal behaviour
- freedom from fear and distress.

Owners can be prosecuted by the RSPCA if they don't meet the needs of their animals.

Rural Lands Protection Board

The Rural Lands Protection Board is the front line in management of animal health, noxious pest animal and insect control, travelling stock reserves, stock movement, stock identification, livestock disease management, impounding livestock on private rural land, and natural disaster relief.

Rural landholders have responsibilities under both the *Rural Lands Protection Act 1998* and the *Stock Diseases Act 1923*. It is your responsibility to :

- lodge a Land and Stock Return by 31 July each year
- pay rates which are levied on rural land over a certain number of prescribed hectares - these rates help pay for activities such as pest animal control work, animal health management, exotic disease monitoring and management, and travelling stock reserve management. RLPB rates are separate to Council rates or zoning
- control pest animals and declared pest insects
- identify stock – the Department of Primary Industries provides a national stock identification system
- report notifiable livestock diseases
- document stock movements
- control stock on roads.

NSW Department of Primary Industries

The NSW Department of Primary Industries can provide you with advice and assistance about stock from its local offices. Publications are available on a wide range of topics.

Highly skilled and respected NSW Department of Primary Industries staff run PROfarm short courses in the local area. All courses have been developed in response to industry needs. Some of the courses available include:

- Identification and management of native grass pastures
- Sowing and managing pastures
- Prograze
- LANDSCAN
- Beef-N-Omics
- Better bull buying
- SMARTtrain® chemical course.

Travelling Stock Reserves

Rural Lands Protection Boards manage parcels of Crown land known as Travelling Stock Reserves. Travelling Stock Reserves provide pasture reserves for travelling or grazing stock and cover more than 600,000 hectares of NSW. They are especially beneficial for stock in times of drought, bushfire or flood. They are also important for public recreation, conservation and as apiary sites.

You need to get a permit from the local Rural Lands Protection Board for the following activities in Travelling stock reserves:

- grazing and/or walking stock
- apiary sites
- collecting seeds
- accessing water

- collecting firewood
- camping overnight.

It is illegal to use a travelling stock reserve to:

- ride motorbikes
- dump rubbish
- shoot and/or hunt.

Straying stock

You need a permit from the Rural Lands Protection Board to move your stock along a public road, whether on foot or transported. Routine movements that happen more frequently are covered by an Annual Stock Movement Permit.

Straying stock on public roads may be dealt with by the local council. Straying stock on private lands may be referred to the Rural Lands Protection Board.

More information

The NSW Department of Primary Industries provides a national stock identification system - for more information visit its website at www.dpi.nsw.gov.au

For more information about the RSPCA visit its website at www.rspca.org.au.

For more information about the Rural Lands Protection Board see its website at www.rlpb.nsw.org.au.

Fences

Fences are vital to successfully manage your property. Fences have various functions on rural properties. You should consider the layout of fences in a whole-of-property approach in a property plan.

You can use fences for a range of purposes, including:

- defining the boundaries of your property
- managing stock
- protecting the environment, eg to keep stock out of native vegetation or away from rivers and streams
- controlling pest animals
- increasing property value (by improving its look)
- erosion and vegetation rehabilitation.

There are different fence construction methods depending on what you are building the fence for. For fences to do their job properly, you need to maintain them, and keep gates shut and locked.

Wildlife friendly fences

Fences are used not only for stock control, but also to protect vegetation and sensitive areas. What can you do to make fences more wildlife friendly?

Here are some ways to make sure your fences benefit wildlife and stock:

- Use plain wires instead of ring lock or hinge joint.
- If possible use white horse sighter wire on the top strand and white caps on steel posts, or treated pine posts.
- Leave 30 cm between the top wire and the next one down. This is important to avoid kangaroos catching and trapping their legs between the two top wires.
- Don't use barbed wire. If existing fences have barbed wire consider taking that wire out, particularly the top strand.
- Keep fences at a moderate height, eg approximately 1.2 metres.
- Keep the bottom wire 15 centimetres above the ground level.
- Avoid permanent electric fencing. It can form a significant barrier to wildlife movement, and electrocute native animals on low-level live wires.
- Structures such as wombat gates and pipe underpasses can help wildlife to pass without damaging fences.
- See www.wildlifefriendlyfencing.com/glines.htm.

Stock control near creeks, rivers and streams

As far as possible, you should keep your livestock away from rivers and streams. You can pump water to troughs placed away from the stream to water stock. This will prevent erosion and degradation of the littoral (water's edge) zone vegetation and environment.

Stock should also be kept out of watercourses because they:

- eat, trample and destroy the vegetation that protects banks from erosion
- compact the soil making plant growth difficult
- push soil off steep banks
- make tracks that cause erosion
- stir up mud that can destroy aquatic habitat and reduce water quality
- add excess nutrients with manure
- scare away native fish.

Best practice to provide drinking water for stock involves using:

- a pump and trough in the paddock
- a dam in the paddock
- a bore and tanks in the paddock
- a paved ramp down to the water, preferably on the inside of a bend.

You need to control weeds along watercourses as in the surrounding paddocks.

Flood-prone fencing designs

In flood-prone areas, you should consider the following:

- Design paddocks to avoid fencing across waterways where possible.
- Try to place fences above the floodplain and flood-prone areas.
- Use temporary electric fencing instead of permanent fencing.
- Minimise the use of vertical structures (plain wire fences tend to need less maintenance in flood-prone areas than ring lock (mesh) or hinge joint as debris is less likely to get caught).

Dividing fences

The *Dividing Fences Act 1991* sets out how the cost of a dividing fence is shared between adjoining landowners where an owner wants to erect a dividing fence or wants work done on an existing dividing fence. The Act sets out minimum requirements and owners may agree to arrangements exceeding these requirements.

The Act also sets out the procedure to resolve disputes about the cost, type and position of a fence.

The Department of Lands administers the *Dividing Fences Act 1991*. However, this responsibility is limited to administration matters. The department does not provide advice about fencing disputes and it does not provide specific legal advice about the provisions of the Act. You should seek advice about these matters from other sources including Legal Aid Services, the Chamber Magistrate at the local courthouse, LawAccess NSW, Community Justice Centres or private lawyers.

More information

Grants are available to help with off-stream water provision and fencing. Contact the NSW Department of Lands, Greening Australia, Sydney Catchment Authority, your local catchment management authority or your local Landcare coordinator, for more information.

References for fence building, including the publication 'Fencing', are available on the internet at www.tocal.nsw.edu.au

The National Heritage Trust publication, 'Cost effective feral animal exclusion fencing for areas of high conservation value in Australia' , is available at the NSW Department of Primary Industries website at www.dpi.nsw.gov.au

For more information on dividing fences see the Department of Lands website at www.lands.nsw.gov.au.

Farm safety

Rural properties can be dangerous places to live and work. Potential hazards include vehicles, tractors and attachments, motorcycles and all-terrain vehicles, working from heights and the potential for manual handling injuries.

Farming is the third most dangerous occupation in Australia. Nearly 150 adults die from farming related injuries each year. The number of non-fatal injuries is much greater, numbering several thousand.

Injuries to part-time farmers are a concern. Often these people do not have the skills or equipment of full-time farmers and can be injured as a result.

Children are particularly at risk on farms because of easy access to water/dams and vehicles, including motorbikes and tractors. On average, 30 children under 16 years die on Australian farms each year as a result of a farm accident. Many more children are injured.

Preventing rural injuries

Just like any work environment, there are legal requirements on a farm under the *Occupational Health and Safety Act 2000* to ensure a safe workplace. Be aware that ordinary house and contents insurance does not cover public liability or workers compensation which is compulsory if you employ anyone to work on a property.

Rural injuries can be largely prevented by paying attention to seven major risk areas:

- tractor and machinery safety
- farm vehicle safety
- farm motorcycle safety (including ATVs)
- working from heights safety
- chemical safety
- manual handling safety and strain injury prevention
- farm animal handling.

The WorkCover website at www.workcover.nsw.gov.au has information on preventing injuries on rural properties. Two key documents of interest that you can get from their website are:

- Farm Safety - Starter Guide
- 15-minute Farm Safety Checklist.

Here are some of the tips from the Farm Safety - Starter Guide.

- Map the hazards on your property. This involves drawing an outline of your property and mapping features. You can use the map as an induction tool for new employees and casual workers or contractors who come to the property.
- Identify the dangers on your property. Use this four step approach:
    1. Identify the dangers (identifying the hazards)
    2. Work out what harm the hazard can cause (assess the risks)
    3. Get rid of the hazard or control it (control the risks)
    4. Review your risk assessment on a regular basis.

It is important that all workers and all family members are included in the process. When something on the property changes, repeat the four steps.

Is your farm safe for kids?

Farms are great places for kids when we create the right environment, but safety for children on farms is a major concern. On average, one child under 16 years is fatally injured on an Australian farm every 10 days and many more are injured across rural Australia. The major causes of child deaths and injuries on farms are dams, farm vehicles, machinery, motorcycles and horses.

You need to identify hazards and risks specific to the farm for children as well as visitors. As well as safety behaviours, you should reduce hazards and design for safety wherever possible.

Key recommendations for child safety on farms include:

- Create a securely fenced house yard for children to play.

- Have safety rules that everyone knows and follows.
- Children should stay in the safe play area unless an adult can closely supervise them on the farm.
- Wear seatbelts and restraints when in cars, utes and trucks.
- Children should not ride on tractors, all-terrain vehicles or in the back of utes.
- Always wear helmets when riding bikes and horses.

More information

Further information and resources can be found at the Farmsafe NSW website at www.farmsafe.org.au

Further information about farm safety can be found on the NSW Department of Primary Industries website at www.dpi.nsw.gov.au

Safety on rural roads

Road condition

Road surfaces in rural areas are often less predictable than highways and city streets. Be alert at all times as the road surface may change without warning, sharp corners may not always be sign-posted, and the crests of hills may reduce visibility. Always be on the look-out for stock and native animals.

Scan the road ahead. You are likely to have shorter lines of sight and therefore will require shorter reaction times to evade unexpected situations.

Be aware that the tyres of other vehicles may throw up stones that crack your windscreen.

Drivers need to use different skills on gravel and unsealed roads. Dust can reduce visibility and it takes longer to stop when braking. Bends and curves can have a build up of loose dirt or stones, and roads are often narrow. Slow down and be on the look out for other vehicles.

Anti-lock braking systems are not as effective on loose surfaces and it is recommended that on rural roads you turn off the cruise control, reduce your speed and give yourself a lot more stopping space.

Keep left, slow down, and take extra care on crests and corners to avoid collisions.

Other road users

School buses, cyclists, trucks, slow moving farm machinery and animals use rural roads. All are legitimate road users so be patient when you come across them. Most drivers will recognise when they are holding traffic up and pull over when safe to do so for vehicles to pass.

Take care when approaching rail crossings. Not all crossings are fitted with safety lights and boom gates.

Livestock on roads

It is legal with a permit for livestock to walk along roads and graze on roadside vegetation, provided they are not left unattended and the stretch of road where they are grazing is sign-posted at each end. Livestock need to be moved so you can expect to be sharing the road with farm animals from time to time.

All rural landowners who own even just a few livestock must ensure that their roadside fences are kept in good condition. Domestic livestock are not allowed to roam unattended. Straying stock on public roads may be dealt with by Council.

Roadside vegetation and wildlife

There are many large trees located close to rural roads, which are easily hit when drivers lose control of their vehicle. Remember to slow down and drive to the conditions - the speed limit is the maximum and NOT a must.

Native vegetation adjacent to many rural roads often acts as a wildlife habitat and refuge. This can be a problem for drivers from dusk to dawn when native animals, such as kangaroos and wombats, are out looking for food.

Remember, if you can't avoid a collision with an animal it is often safer to hit them than swerve and lose control of your vehicle. If you hit an animal, check if it is alive and if it has any young. Contact an animal care organisation such as WIRES if the animal/s can be rehabilitated or euthanised. If the animal is dead, move it to the side of the road if you can. Be careful of your own safety with traffic while moving the animal.

You need helmets and seatbelts in the bush - even if you are just going between paddocks. Remember to always wear a seatbelt and a helmet.

Alcohol – how are you going to manage the morning after?

There is no alternative transport in the bush, unless you're lucky enough to have a local publican with a mini-bus, so you will need to plan how you get home after a few alcoholic drinks. It is a good idea to take turns with family, friends or neighbours to stay sober and be the designated driver. Don't forget that you might still be over the limit the morning after a big celebration. It takes about an hour for your body to process each standard drink consumed. Check bottles and cans for details.

Local information

More information about rural road safety can be found at the Roads and Traffic Authority NSW website at www.rta.nsw.gov.au.

Rates

Rates are a tax levied on a community to meet the cost of services provided by the Council. Rates are not a charge for individual services supplied. In this way they are similar to income tax, as well as in the way they are determined.

Income tax depends on how much you earn and on the tax rate per dollar set by the Federal Government in the annual budget. Council rates depend on the valuation assessed on your property and on the rate per dollar set by the Council when it finalises its annual budget. Tax and rates payments are not directly related to services that you may personally receive but instead to the needs of the whole community.

There are two big differences between income tax and rates. Income tax is usually taken from your salary each pay and you never see it - rate notices arrive four times a year and so are more obvious. The other difference is that income tax is usually far greater than rates.

The valuation process

The Valuer General's Department regularly values all houses, shops, factories and rural properties in NSW. The basis for valuation is the same for all properties. The valuation is made at a common date, for instance 30 June 2008. This means that the values determined are based on prices, rents and conditions that prevail on that date.

The valuation does not create value and it does not create rates. The valuation is a way to equitably share Council's rate requirements among all ratepayers based on the value of their property. If all valuations were reduced by half, Council would have to double the rate per dollar to raise the same total rate income to pay for services.

Valuations are updated every four years, as required by state legislation. Other supplementary valuations take place between those dates where some change has occurred to the property that affects its value, such as extensions or subdivision of land.

The valuation

On your rate notice you will see a valuation. The Valuer General's office supplies the valuation, and it is from this value that your rates are calculated. This happens regardless of whether the land is vacant or has a dwelling or improvements.

Any problems

If you have any questions about what appears on your rate notice call your local council. You also have the right to object to the valuation and ultimately appeal. The Valuer General's office can explain this process to you.

Rural Lands Protection Board rates

Besides Council rates, some owners of rural holdings must pay Rural Lands Protection Board rate levies. A rate notice is sent to rural landholders of 10 or more hectares or those having an assessed carrying capacity upon the holding of 50 DSE (Dry Sheep Equivalent) or more every year.

If you own or occupy rateable land you must advise the relevant Board if you change your postal address. You must also lodge an annual Land and Stock Return with the Board in your area by 31 July every year.

More information

Contact Council for more information about your council rates. For more information about land valuation see the Department of Lands website at www.lands.nsw.gov.au.

For more information regarding the Rural Lands Protection Board levies visit www.rlpb.org.au.

- fuel build up causing a potential bushfire hazard
- straying stock
- inadequate care of stock.

These problems can affect neighbouring properties and cause land degradation and tension between neighbours. Council may also place notices and fines on such properties.

If you are an absentee landlord, to avoid these potential problems, consider some of the following options:

- visit your property on a regular basis
- make arrangements with farm contractors
- make arrangements with a farm manager
- negotiate with surrounding landholders to carry out work on your property, perhaps in return for agistment rights.

More information

Contact Council about absentee landholders issues.

Absentee landholders

As a landholder you are responsible for looking after the environment of your property and making sure that you don't contribute to problems on your land and the land of others. People often come to properties not understanding what land management involves and they may over-extend themselves and end up damaging the land and environment.

Many rural properties do not have permanent residents. These properties may have been purchased as retreats for the owners to get away from the city and can be left vacant for large portions of the year. This absence raises potential management problems, including:

- weeds and pest animal control
- erosion control
- boundary fencing maintenance
- failure of the effluent management system due to lack of use

Developing your property

The local area is facing development pressure due to its location near to Sydney and other large centres. The development pressure is affecting urban and rural land. Rural land is increasingly being used for purposes other than traditional farming, such as rural residential developments, mining, intensive agriculture such as chicken and turkey farms, and even manufacturing. Conflicts can arise between adjacent land uses.

Development and planning issues such as development applications are considered by applying the controls set out in Council's Local Environmental Plans. More details about local planning strategies and Local Environmental Plans can be found in the Local Information section (page 43).

Council's role in development

Councils are responsible for determining land use zones, in consultation with government agencies and their communities. While not everyone might agree with the final outcome, everyone has the opportunity to have their say. There are rigorous procedures to evaluate land before approval is given to change land use.

When you purchase your rural block you should ask Council a number of questions about the land uses of your block and those surrounding it.

- Are there any development applications current for the nearby area?
- Have other developments been approved but not commenced?
- Are there any restrictions on obtaining approval to build a house or other buildings on your block, or to develop certain desired land uses?
- Are there any Property Vegetation Plan agreements, or other forms of covenants and easements that apply to the land?

You have the right to view any current development applications at the Council. Where an application is currently advertised you can make a submission to Council about your concerns.

While you might have purchased a block of land in a rural area, further subdivision of adjacent land could be possible. Your rural outlook could change if such subdivision is approved.

Detailed information about how a property can be used and restrictions on development is found in the Section149 Planning Certificate for the property. When you buy or sell land the *Conveyancing Act 1919* requires a Section 149 Planning Certificate to be attached to the contract of sale. You can apply for a Section 149 Planning Certificate by contacting your local council.

Building

Council assesses building and development proposals against development regulations, including the Local Environment Plans, the Building Code of Australia and the Drinking Water Catchments Regional Environmental Plan No 1. If you are preparing a development application contact Council to ensure that documentation meets Council's standards and for any other help.

Why submit a development application?

You are legally bound to submit a development application to Council for any building, demolition and subdivision works and for any development requiring consent under the Local Environmental Plans.

Development applications are required so that Council can assess your plans and information, inspect your property and determine whether your proposal is appropriate. Remember - if you are in doubt, please ask Council as time spent early may avoid delays later.

Complying development

Complying development is another form of development approval that you can seek from Council. Complying development does not apply to all land and is subject to the application meeting pre-set development standards.

Proposals that may be Complying Development include the following:

- dwelling houses (new, alterations and additions) - this includes structures such as carports and garages
- swimming pools
- industrial uses (change of use and internal alterations)
- commercial uses (change of use and internal alterations)
- bed and breakfast accommodation
- subdivision
- boundary adjustment
- temporary buildings.

Contact Council for more details about Complying Development.

Exempt development

Some minor development may be exempt from Council approval. Each development must meet certain criteria in order to be exempt. Examples of work that may be exempt include the following:

- garden sheds
- rainwater tanks
- building alterations
- different use of a building.

Contact Council for more details of exempt developments.

More information

Contact your local council for advice about developments on your property.

Improving your skills

Knowledge about sustainable land management is growing rapidly. Getting up-to-date, accurate information will help you enjoy your land. Landcare and producer groups provide a good way of building knowledge and sharing experience, and there are many quality publications available. Government departments are also an excellent source of information.

Think about what training you need to manage your land appropriately. Many courses are available covering animal and horticultural production, farm and environment management, chemical use, property management planning and fencing techniques.

TAFE conducts rural studies courses, including courses on:

- wool classing
- sheep shearing
- horticulture
- viticulture
- agriculture (including crop and livestock management)
- aquaculture
- natural resources and environmental management
- forestry.

The Rural Lands Protection Boards also run regular one-day courses and practical field days on a variety of rural topics.

The NSW Department of Primary Industries offers a large range of courses including the following:

- Identification and management of native grass pastures
- Sowing and managing pastures
- Prograze
- LANDSCAN
- Beef-N-Omics
- Better bull buying
- Horse care and handling
- Beekeeping
- SMARTtrain® chemical courses.

The NSW Department of Primary Industries also conducts field days and workshops on various topics.

More information

For more information about TAFE courses call the TAFE information centre on 131 601.

For more information about Rural Lands Protection Board training and field days visit their website at www.rlpb.org.au.

For more information about Department of Primary Industries courses visit their website at www.dpi.nsw.gov.au.

Further reading

Wildlife in the Home Paddock: nature conservation for Australian farmers, Breckwoldt, R. 1983, Angus & Robertson.

Building in bushfire prone areas – Guidelines for single dwelling Development Applications, Rural Fire Service, 2004.

Potter Plan revitalises farms, Landline, Courtney.P 2002, www.abc.net.au

Dividing Fences, www.lands.nsw.gov.au/crown_land/dividing_fences

Noxious and Environmental weed control handbook. A guide to weed control in non-crop, aquatic and Bushland situations, Ensbey.R 2004-5, Department of Primary Industries.

Farming For the Future. Farm ecology for physical property plans, Hawkesbury-Nepean Catchment Management Authority.

Wildlife on Farms – how to conserve native animals, Lindenmayer, D., Claridge, A., Hazell, D. et al 2003, CSIRO.

Living together in rural Victoria 2004, Department of Primary Industries, Victoria, www.dpi.vic.gov.au

Cost Effective Feral Animal Exclusion Fencing for areas of high conservation value in Australia, Long, K. & Robley, A. 2004, Commonwealth of Australia.

Land care - Rural Property Planning, Matheson, W.

Physical Property Planning, NSW Department of Primary Industries – Agriculture, www.dpi.nsw.gov.au

Rural Landholder's Guide to Environmental Law, Environmental Defender's Office, www.edo.org.au/edonsw/site/publications.php#landholder

Rural Living a Resource Book, 1990, Shire of Bulla.

Septic Safe, The easy septic guide, NSW Department of Local Government, www.dlg.nsw.gov.au

Look after your natural assets – revised edition 2003, Taylor, M., Lowe, F., Curtis, J., Cotsell, G., Perkins, J. & Daly, J. editors, Upper Murrumbidgee Catchment Management Committee and Geary's Gap Wamboin Landcare Group.

Lyndfield Park – Looking Back, Moving Forward, Weatherstone, J. 2003, Greening Australia.

Buying your bush block – for farming, leisure, profit, Windust, A. 1994, Allscape Publishing, Mandurang Victoria.

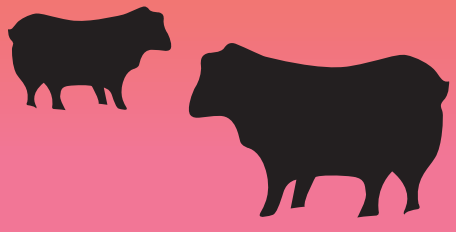
Yeomans Keyline Designs 2005, Yeomans, K.B., www.keyline.com.au

Future Harvest: Case Studies (Examples of farms that have applied the Potter system and others), www.museum.vic.gov.au/futureharvest/fffuture.html

Farming in a Small Way, NSW Department of Primary Industries, www.dpi.nsw.gov.au

Physical Property Planning, CB Alexander Agricultural College 'Tocal' Paterson, NSW, 1999, www.tocal.nsw.edu.au (available from Department of Primary Industries).

- What is the regional plan?
- Rural Living - the Wollondilly Vision 2025 and Strategic Plan
- The Draft Wollondilly Local Environmental Plan 2009
- Steps towards a sustainable Wollondilly Shire
- Recommended planting species for the shire
- Noxious weeds
- Fauna and flora in the Wollondilly district
- Local references
- Local contacts
- Local domestic waste services



LOCAL INFORMATION

The Rural Living Handbook - A guide for rural residential landholders

What is the regional plan?

Sustaining the Catchments – the regional plan for the drinking water catchments of Sydney and adjacent regional centres has been developed to ensure the environmental, social and economic future of Sydney's drinking water catchments. The regional plan applies to all developments in rural and urban areas and is about protecting drinking water quality and improving the health of the catchments for everyone's benefit.

You can get further information about the regional plan, the associated legal instruments, fact sheets and brochures from the Sydney Catchment Authority website at www.sca.nsw.gov.au.

Rural Living - the Wollondilly Vision 2025 and Strategic Plan

Wollondilly Shire's *Vision 2025* identifies the kind of place the community wishes Wollondilly to be in 2025.

Vision 2025 covers all aspects of the Shire's future, from the lifestyle needs of residents through to the uniqueness of the rural countryside and various towns and villages. The document was prepared by the people of Wollondilly during 2003 with many individuals, community groups, businesses, state agencies and Council.

There are nine vision statements for the Shire as a whole:

Vision 1: A wealth of native flora and fauna

Vision 2: Healthy waterways

Vision 3: Protected rural character and environmental heritage

Vision 4: Working sustainable farms

Vision 5: Well designed towns and villages

Vision 6: Invigorated main streets

Vision 7: Green space and recreational networks

Vision 8: Integrated transport network

Vision 9: An integrated community

The Community Strategic Plan 2030 has been prepared to help Wollondilly Shire realise its vision of rural living. It is a 20-year plan primarily for the community, which aims to provide a valuable reference tool for individuals, organisations and businesses in planning for the future.

Steps towards a sustainable Wollondilly

Council has adopted a Sustainable Wollondilly Plan which sets out actions to guide the Council and the community towards sustainability.

The Council's actions were determined after many of its staff worked through the NSW Local Government Sustainability Health Check. The community actions were determined in consultation with the community at sustainability sessions held throughout the Shire. The implementation of the plan will be staged over the next three years, beginning in the 2008-2009 Financial Year, after which a review will be undertaken.

Draft Wollondilly Local Environmental Plan 2009

The Wollondilly Local Environmental Plan (LEP), 1991, has been reviewed in line with the changes to the NSW Planning System reforms governing the preparation of LEPs. The LEP is the principal legal planning document for controlling development at the council level. The zoning provisions establish the permissibility of land uses and standards regulate the extent of development across the Shire. In general terms, an LEP sets out how people can use their land and what they can build.

The following table establishes the current timetable for the LEP review process.

Planning reform process and projected timeframes	
NSW Government gazetted the Standard Instrument (Local Environmental Plans) Order 2006, standardising the preparation of LEPs across the State.	31 March 2006
Preparation of Draft Wollondilly Local Environmental Plan (LEP), draft LEP Maps and Development Control Plans (DCPs).	Mid 2006 to Mid 2008
Draft Wollondilly Local Environmental Plan to an Ordinary Meeting of Council seeking endorsement of the draft document to send to the State Department of Planning for a section 65 certificate to enable public exhibition.	December 2007
Standard Instrument (Local Environmental Plans) Order 2006 amended.	December 2007
Review of the draft Wollondilly LEP & Maps in line with the amended Standard Instrument (Local Environmental Plan) Order 2006.	January 2008 – July 2008
Re-table Draft Wollondilly Local Environmental Plan to an Ordinary Meeting of Council seeking endorsement of the draft document to send to the State Department of Planning for a section 65 certificate to enable public exhibition.	August 2008
Section 65 certificate issued by the State Department of Planning enabling public exhibition of the draft LEP and DCPs.	Early 2009
Place Draft Wollondilly Local Environment Plan (LEP) and associated Development Control Plans (DCPs) on public exhibition.	Early to mid 2009
Consider submissions from public exhibition process and make amendments as required.	Mid 2009
Adopt LEP and associated Development Control Plans and forward to Minister of Planning for approval/gazettal.	Late 2009

The LEP becomes a legally binding and enforceable planning instrument after approval/gazettal. A statutory review of the Strategy and LEP occurs every five years.

Contacts

To find out more about the review of the Wollondilly Local Environmental Plan and associated Development Control Plans or information about the Vision 2025, contact Council's Strategic Planning team on 02 4677 1173. You can also obtain more information from the Council's website www.wollondilly.nsw.gov.au - search for 'strategic plan' or 'sustainable Wollondilly'.

Recommended planting species for the shire

When considering planting species for enjoyment in home gardens or when landscaping new developments, the following lists provide recommended plant species that may be used in various settings. The lists are generally spilt into growth habitats for each tree, shrub, or groundcover species and approximate mature height. Look for the locality or suburb closest to your property and refer to the corresponding planting list.

Recommended groundcover and small shrub species (under 1 metre)

Botanical name	Common name	Comments
Acacia myrtifolia	Myrtle Wattle	Most well drained soils
Clematis glycinoides	Old Man's Beard	Well drained soils
Dillwynia retrota	Healthy Parrot Pea	Sandy and clay soils
Hardenbergia violaceae	Purple Twining-pea	Sandy, clay and rocky soils
Indigophora australis	Native Indigo	Grows on derived soils
Kennedia rubicunda	Dusky Coral Pea	Tolerates dry conditions
Lomandra logifolia	Spiny-head Mat Rush	Requires moist soil
Patersonia sericea	Silky Purple Flag	Sandy soils
Pimelia linifolia	Rice Flower	Tolerates dry soils
Rubus parvifolius	Native Raspberry	Very hardy, most soils
Stypandra glauca	Nodding Blue Lily	Most soils, good drainage
Viola hederaceae	Native Violet	Needs moist soil

Recommended shrub species (1 to 5 metres)

Botanical name	Common name	Comments
Acacia binervata	Two-veined Hickory	Favours moist sites
Acacia floribunda	White Sallow or Sally Wattle	Sandy alluvial soil
Acacia linfolia	Flax-leaved Wattle	Sandy, clay soils
Acacia longifolia	Sydney Golden Wattle	Sandy soils
Acacia terminalis	Sunshine Wattle	Well drained soils
Banksia serrata	Old Man Banksia	Prefers sandy, well drained soil
Banksia spinolusa	Hairpin Banksia	Light to moderately heavy soils
Bursaria spinosa	Blackthorn	Dry to wet sclerophyll forest
Callistemon salignus	Willow Bottlebrush	Tolerates wet conditions
Grevillea mucronulata	Green Spider-flower	Sandy to clay soils
Grevillea sericea	Pink Spider-flower	Sandy soils
Hakea dactyloides	Finger Hakea	Mostly sandy soils
Kunzea ambigua	Tick Bush	Well drained soils
Leptospermum polygalifolium	Yellow Tea-tree	Frost hardy, well drained soils
Ozothamnus diosmifolius	Everlasting Paper Daisy	Variety of soils
Persoonia levis	Broad-leaf Geebung	Well drained soils
Persoonia pinifolia	Pine-leaf Geebung	Hardy, most well drained soils

Additional shrub species

Oakdale, Werombi and Theresa Park area		
Botanical name	**Common name**	**Comments**
Callistemon citrinus	Crimson Bottlebrush	Most soils
Dodonaea triquetra	Common Hop bush	Well drained sandy soils
Hakea sericea	Silky Hakea	Well drained soils
Douglas Park, Wilton and Appin area		
Botanical name	**Common name**	**Comments**
Hakea sericea	Silky Hakea	Well drained soils

Recommended tree species by locality

Southern area: Bargo, Buxton, Tahmoor and Thirlmere		
Botanical name	**Common name**	**Comments**
Acacia elata	Cedar Wattle	Sand, loam or clay soils
Acacia mearnsii	Black Wattle	Does not tolerate dry or poor soils
Angophora floribunda	Rough-barked Apple	Tolerates most soil types
Angophora subvelutina	Broad-leaved Apple	Woodland tree
Casuarina cunninghamiana	River She-oak	Will survive heavy clay or sandy soils
Allocasuarina littoralis	Black She-oak	Woodland tree
Eucalyptus baueriana	Blue Box	Prefers well drained soil
Eucalyptus crebra	Narrow-leaved Ironbark	Shallow and sandy soils
Eucalyptus globoidea	White Stringybark	Well watered sandy or alluvial soils
Eucalyptus haemastoma	Scribbly Gum	Skeletal sandstone soils
Eucalyptus moluccana	Grey Box	Loamy soils
Eucalyptus punctata	Grey Gum	Soils of low to medium fertility
Eucalyptus tereticornis	Forest Red Gum	Soils of medium to high fertility
Eucalyptus viminalis	Ribbon or Manna Gum	Fertile loamy soils
Melaleuca linearifolia	Snow in summer	Very hardy, clay or shale soils
Melaleuca styphelioides	Prickly leaved Paperbark	Drought tolerant, sandstone and shale soils
Central area: Douglas Park, Appin, Wilton, Picton, The Oaks, Razorback, Mt Hunter, Cawdor and Menangle		
Botanical name	**Common name**	**Comments**
Acacia decurrens	Sydney Green Wattle	Heavy soils
Acacia elata	Cedar Wattle	Sand, loam or clay soils
Acacia mearnsii	Black Wattle	Does not tolerate dry or poor soils
Acacia parramattensis	Parramatta Wattle	Very frost hardy
Angophora floribunda	Rough-barked Apple	Tolerates most soil types
Angophora subvelutina	Broad-leaved Apple	Woodland tree
Brachyciton populneus	Bottle tree	Needs good drainage
Casuarina cunninghamiana	River She-oak	Will survive heavy clay or sandy soils
Allocasuarina littoralis	Black She-oak	Woodland tree
Eucalyptus amplifolia	Cabbage Gum	Loamy soils
Eucalyptus creba	Narrow-leaved Ironbark	Shallow and sandy soils
Eucalyptus eugenoides	Thin-leaved Stringybark	Clay soils

Central area: Douglas Park, Appin, Wilton, Picton, The Oaks, Razorback, Mt Hunter, Cawdor and Menangle		
Botanical name	**Common name**	**Comments**
Eucalyptus globoidea	White Stringybark	Well watered sandy or alluvial soils
Eucalyptus haemastoma	Scribbly Gum	Skeletal sandstone soils
Eucalyptus maculata	Spotted Gum	Sandy and clay soils
Eucalyptus molucanna	Grey Box	Loamy soils
Eucalyptus punctata	Grey Gum	Soils of low to medium fertility
Eucalyptus tereticornis	Forest Red Gum	Soils of medium to high fertility
Melaleuca linearifolia	Snow in Summer	Very hardy, clay or shale soils
Melaleuca stypheloides	Prickly-leaved Paperbark	Drought tolerant, sandstone and shale soils
Northern area: Oakdale, Werombi, Theresa Park, Warragamba and Silverdale Trees over five metres (not for roadsides with over-head power lines)		
Botanical name	**Common name**	**Comments**
Acacia parramattensis	Parramatta Wattle	Very frost hardy
Angophora costata	Smooth-barked Apple	Sandy soils
Callitris rhomboidea	Port Jackson Pine	Drought tolerant
Allocasuarina torulosa	Forest Oak	Well drained soils
Eucalyptus creba	Narrow-leaved Ironbark	Shallow and sandy soils
Eucalyptus eximia	Yellow Bloodwood	Drought tolerant
Eucalyptus longifolia	Woollybutt	Heavy moist soils
Eucalyptus maculata	Spotted Gum	Sandy and clay soils
Eucalyptus moluccana	Grey Box	Loamy soils
Eucalyptus pilularis	Blackbutt	Clay and sandy soils
Eucalyptus punctata	Grey Gum	Soils of low to medium fertility
Eucalyptus tereticornis	Forest Red Gum	Soils of medium to high fertility
Melaleuca linariifolia	Snow in Summer	Very hardy, clay or shale soils
Syncarpia glomulifera	Turpentine	Most soils

Noxious weeds

The *Noxious Weeds Act 1993* (NSW) requires the Wollondilly Shire Council to stipulate and enforce control measures for Class 4 – Locally Controlled Weeds. These weeds are a threat to primary production, the environment and human health.

To provide guidance and structure to weed management in Wollondilly Shire, the Wollondilly Weed Management Strategy has been developed along with management plans for Class 4 weeds. Generally the control measures aim to reduce the weed infestation by 25 percent to 50 percent, prevent the weed from producing seed and spreading, and to prohibit the sale, propagation and knowing distribution of the Class 4 weed. More information is available at the Council's website www.wollondilly.nsw.gov.au

The following table lists the Class 4 weeds for Wollondilly Shire and the actions required to control and suppress them.

Botanical name	Common name	Known area	Action required
Lycium ferocissimum	African Boxthorn	Throughout Shire	Combination of measures: mechanical (stickraking, dozing and blade ploughing), competition through pasture management and native plant regeneration, and herbicide treatment (foliar, basal bark, stump and root)
Alternathera philoxeroides	Alligator Weed	Nepean River, Eagle Creek, Thirlmere, Tahmoor, The Oaks	Recognise and take action where infestations are known, including chemical control
Xanthium species	Bathurst/ Noogoora/ Californian/Cockle Burrs	Isolated infestations throughout Shire	Combination of methods including biological / ecological control, mechanical control (cutting and hand chipping) and chemical control.
Rubus fruticosus aggregate species	Blackberry	Throughout Shire	Combination of methods including prevention of spread through mechanical control (slashing, competitive grazing), pasture competition using vigorous perennials, and chemical control on actively growing plants
Nasella neesiana	Chilean Needle Grass	Maldon through to Warragamba	Combination of measures including crop rotation, sowing competitive pasture, chemical control and grazing
Sorghum x almum	Columbus Grass	Not known	Combination of measures to control and exhaust weed seed levels through pasture and crop competition / rotation, cultivation, herbicide application, and hygiene practices (clean vehicles and machinery before leaving infested properties)
Cuscuta campestris	Golden Dodder	Not known	Same action as Columbus Grass
Harrisia species	Harrisia Cactus	Not known	Combination of methods including mechanical (ploughing, burning), biological and chemical control
Sorghum halepense	Johnson Grass	Not known	Same action as Columbus Grass
Pennisetum villosum	Long Style Feather Grass	Racecourse & Stonequarry Creeks	Chemical treatment applied through a rope wick indicator
Echium species	Paterson's Curse, Vipers Bugloss, Italian Bugloss	Throughout Shire	Combination of methods including mechanical (burning, cultivation), biological control, grazing and chemical treatment

Botanical name	Common name	Known area	Action required
Cylindropuntia species and Opuntia species except O. ficus-indica	Prickly Pear	Throughout Shire, west of Warragamba Dam (catchment lands)	Combination of measures including biological control (cactoblastis moth and cochineal beetle), mechanical removal of plants, and chemical control
Toxicodendron succedanea	Rhus Tree	Not known	Same action as Columbus Grass
Nasella trichotoma	Serrated Tussock	Nepean and Bargo River catchments, Navigation and Racecourse creek catchments	Combination of measures including preventative (certified seed, farm machinery hygiene, weed free stock), mechanical (hand chipping, ploughing and pasture competition), and chemical control (spot spraying boom and aerial spraying)
Cenchrus incertus, Cenchrus longispinus	Spiny Burgrass	Not known	Same action as Columbus Grass
Hypercium perforatum	St Johns Wort	Nepean River catchment, Racecourse and Flaggy creek catchments	Combination of preventative measures (early identification and control along boundary fences, roadsides, and known areas), and eradication via burning, hand weeding, and herbicide control
Rosa rubiginosa	Sweet Briar	Nepean River catchment, Cawdor, Menangle	Chemical control and mechanical removal via grubbing and grazing methods

Fauna and flora in the Wollondilly district

Many people enjoy the presence of native wildlife on their property, waking up to the birds singing in the morning, wallabies grazing on the back paddock at dusk and the unique characteristics of native vegetation that gives the Shire its beauty. Developing an understanding of why native flora and fauna species occur in particular areas and habitats will help rural landowners to better manage native plants and animals in the Shire.

Threatened Species

Wollondilly Shire provides valuable habitat for many threatened flora and fauna species, predominantly due to large areas of the Shire covered by remnant bushland. This occurs on privately owned land, land under the management of Council, the Crown, the NSW National Parks and Wildlife Service and the Sydney Catchment Authority. The Wollondilly Biodiversity Strategy (2004) identifies 655 species of flora and 408 species of terrestrial vertebrate fauna that are known to occur within the Shire.

There are a number of threatened flora and fauna species (either identified as vulnerable or endangered) identified under the *Threatened Species Conservation Act 1995* that are known to occur within the Shire.

More information is available from the Council or go to www. threatenedspecies.environment.nsw.gov.au and search the site for 'Wollondilly'.

The following tables give examples of the threatened species known to occur within Wollondilly Shire.

Examples of Threatened Fauna known to occur in Wollondilly Shire

Scientific name	Common name	Type of species	Legal status
Chalinolobus dwyeri	Large-eared Pied Bat	Bat	Vulnerable species
Grantiella picta	Painted Honeyeater	Bird	Endangered species
Isoodon obesulus obesulus	Southern Brown Bandicoot	Marsupial	Endangered species
Macquaria australasica	Macquarie Perch	Fish	Vulnerable species
Mixophyes balbus	Stuttering Barred Frog	Amphibian	Endangered species
Paralucia spinifera	Purple Copper Butterfly	Invertebrate	Endangered species
Petrogale penicillata	Brush-tailed Rock-wallaby	Marsupial	Vulnerable species
Phascolarctos cinereus	Koala	Marsupial	Vulnerable species
Varanus rosenbergi	Rosenberg's Goanna	Reptile	Vulnerable species
Xanthomyza phrygia	Regent Honeyeater	Bird	Endangered species

Examples of Threatened Flora known to occur in Wollondilly Shire

Scientific name	Common name	Growth habit	Last record	Legal status
Boronia deanei	Deane's Boronia	Shrub		Vulnerable species
Eucalyptus benthamii	Camden White Gum	Tree	1995	Vulnerable species
Hakea dohertyi	Kowmung Hakea	Shrub	1995	Endangered species
Persoonia bargoensis	Bargo Geebung	Shrub	1999	Vulnerable species
Persoonia glaucescens	Mittagong Geebung	Shrub	1999	Vulnerable species
Persoonia hirsute	Hairy Geebung	Shrub	1999	Endangered species
Persoonia mollis subsp. maxima	Persoonia mollis subsp. maxima	Shrub		Endangered species
Rulingia prostrata	Dwarf Kerrawang	Shrub	1911	Endangered species

Local references

Eddy, Garden, Johnston, Keys, Langford, Rehwinkel and Simpson (2004)
'Managing Native Pastures for Agriculture and Conservation'
NSW Department of Primary Industries,
ISBN 0 7347 1620 6

Ensbey and Johnson (2007)
'Noxious & Environmental Weed Control Handbook' (3rd Edition)
NSW Department of Primary Industries,
ISSN 1443-0622

Fairley and Moore (2000)
'Native Plants of the Sydney District – An Identification Guide' (2nd Edition)
Kangaroo Press Pty Ltd,
ISBN 0 7318 1031 7

Havilah, Warren, Lawrie, Senn and Milham (2005)
'Fertilisers for Pastures' (1st Edition)
NSW Department of Primary Industries,
ISBN 0 7347 1646 X

Henry (2006)
'Best Management Practices for Temperate Perennial Pastures in NSW' (2nd Edition)
NSW Department of Primary Industries,
ISBN 0 7347 1726 1

Henry (2004)
'Best Management Practices for Graziers in the Tablelands of NSW' (1st Edition)
NSW Agriculture, Department of Infrastructure, Planning and Natural Resources (DIPNR) and the Hawkesbury-Nepean Catchment Management Authority,
ISBN 0 7347 1595 1

Lamp and Collet (1996)
'Field Guide to Weeds in Australia' (3rd Edition)
Inkata Press,
ISBN 0 909605 53 X

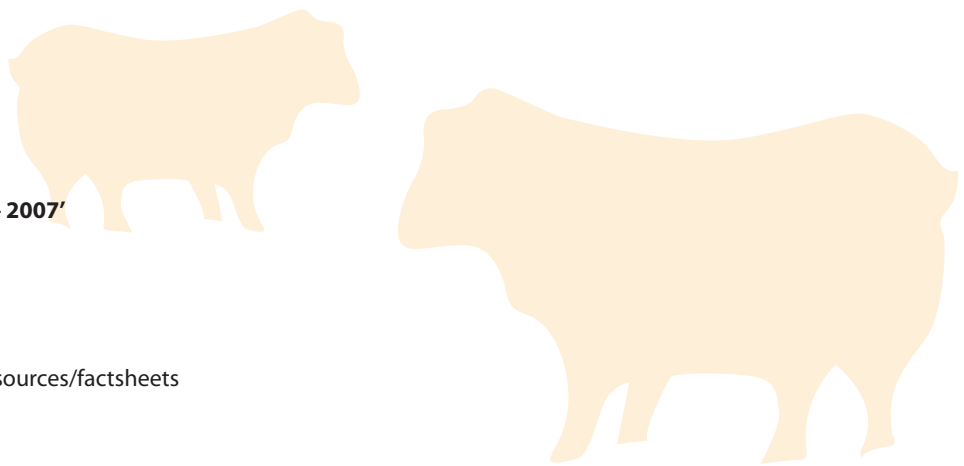
Parsons and Cuthbertson (2001)
'Noxious Weeds of Australia' (2nd Edition)
CSIRO Publishing,
ISBN 0 643 06514 8

Wollondilly Shire Council (2008)
'Wollondilly Shire Weed Management Strategy and Operations Plan'
Wollondilly Shire Council

Wollondilly Shire Council (2007)
'Living Together in Rural Wollondilly'
Wollondilly Shire Council

Zurbo (2006)
'Pasture Varieties used in NSW 2006 – 2007'
NSW Department of Primary Industries,
ISBN 7347 1724 5

NSW Department of Primary Industries
'Primefacts' and other factsheets
http://www.dpi.nsw.gov.au/aboutus/resources/factsheets



Local contacts

Hawkesbury-Nepean Catchment Managment Authority

Goulburn (Head Of ce)
Locked Bag 2048
Goulburn NSW 2580
Phone: 02 4828 6747
Fax: 02 4828 6750
Website: www.hn.cma.nsw.gov.au

Windsor Of ce
68 Mileham Street
PO BOX 556
WINDSOR NSW 2756
Phone: 02 4587 0050
Fax: 02 4587 0075

Moss Vale Rural Lands Protection Board

61 John Street
PO BOX 141
CAMDEN NSW 2570
Phone: 02 4655 9165
Fax: 02 4655 3054
Website: www.mvrlpb.org.au

NSW Department of Primary Industries

Hawkesbury District Of ce – University of Western Sydney
Locked Bag 4
RICHMOND NSW 2753
Phone: 02 4588 2100
Fax: 02 4588 2159
Website: www.dpi.nsw.gov.au

NSW National Parks & Wildlife Service

Nattai Area
99 Menangle Street
PICTON NSW 2571
Phone: 02 4677 0859
Fax: 02 4677 0854
Website: www.nationalparks.nsw.gov.au

Sydney Catchment Authority

PO BOX 323
PENRITH NSW 2751
Phone: 1300 722 468
Fax: 02 4725 2599
Website: www.sca.nsw.gov.au

Wollondilly Shire Council

62-64 Menangle Street
PO BOX 21
PICTON NSW 2571
Phone: 02 4677 1100
Fax: 02 4677 2339
Website: www.wollondilly.nsw.gov.au

Landcare groups

There are a number of established Landcare Groups (listed below) undertaking land rehabilitation and environmental restoration projects within Wollondilly Shire.
Most weekends there are Landcare groups out there weeding, digging, potting and planting all in the name of conservation. The work they do is invaluable in helping protect and enhance the environmentally significant areas of land and waterways within Wollondilly.

Currently there are approximately 10 groups active within the Wollondilly Shire, comprised of around 115 volunteers.

- Appin Village Landcare Group
- Barragal Landcare Group
- Cataract Scout Park Landcare Group
- Koori's on the Move Inc Landcare Group
- Razorback Environmental Protection Society
- Redbank Landcare Group
- Stonequarry Creek Landcare Group
- Thirlmere Wetlands Landcare Group
- Werri Berri Creek Landcare Group
- Wirrimbirra Landcare Group

If you are interested in joining a Landcare Group or are considering establishing a new group, please contact the Council for further information.

Local domestic waste services

General waste

Council provides residents with the choice of an 80 litre or 120 litre weekly general waste collection service (red lidded bin). The general waste collection service enables residents to dispose of materials that can not be recycled or placed in their garden organics bins.

Items that can be placed in your general waste bin include:

- plastic bags
- ceramic crockery
- nappies
- clothes and shoes that cannot be donated to charity
- general waste
- food scraps.

Items that cannot be placed in your general waste bin include:

- recycling (place in yellow lidded bin)
- garden organics (place in your green lidded bin)
- chemicals and fluorescent lights (take to free chemical collection day)
- medicine (return out of date and unwanted medicines to your local chemist)
- building waste (can be taken to Bargo Waste Management Centre)
- car parts or metal (metal can be taken free of charge to one of council's waste management centres).

Recycling

Council provides residents with a 240 litre fortnightly recycling collection service (yellow lidded bin). The recycling collection service enables residents to divert materials from landfill and reduce their impact on our local environment.

Items that can be placed in your recycling bin include:

- glass bottles and jars – clear, green and amber
- paper and cardboard – magazines, envelopes, newspapers, cardboard boxes, etc
- milk and juice containers – tetra packs and liquid paperboard
- aluminium cans
- tins and cans – steel cans and empty aerosol cans
- plastic containers.

Items that cannot be placed in your recycling bin include:

- general waste (place in your red lidded bin)
- garden organics (place in your green lidded bin)
- chemicals and fluorescent lights (take to free chemical collection day)
- medicine (return out of date and unwanted medicines to your local chemist)
- building waste (can be taken to Bargo Waste Management Centre)
- car parts or metal (metal can be taken free of charge to one of council's waste management centres)
- nappies, syringes or medical waste
- window glass.

Garden organics

A fortnightly 240 litre garden organics collection service (green lidded bin) is provided by Council with the bins collected on alternate weeks to your recycling. The garden organics collection service enables you to divert materials from landfill and reduce your impact on the local environment.

Items that can be placed in your garden organics bin include:

- twigs and small branches
- weeds and prunings
- grass clippings
- leaves and cut flowers
- untreated and unpainted timber (maximum 150mm diameter and 1m in length).

Items that cannot be placed in your garden organics bin:

- general waste (place in your red lidded bin)
- garden organics (place in your green lidded bin)
- chemicals and fluorescent lights (take to free chemical collection day)
- medicine (return out of date and unwanted medicines to your local chemist)
- building waste (can be taken to Bargo Waste Management Centre)
- car parts or metal (metal can be taken free of charge to one of council's waste management centres)
- nappies, syringes or medical waste.

For collection you need to:

- space your bins at least 30cm apart
- not over-fill your bins
- place your bins so that the Wollondilly Shire Council logo is facing the road
- check that no cars or trees are obstructing access to the bins
- ensure your bins are out by 6am on your collection day
- remove bins from the roadside the day they have been serviced.

For further details regarding your collection day please check the Waste and Recycling Services Collection Calendar, or call the Thiess Services Waste Hotline on 1300 721 531.

Bargo Waste Management Centre

The Bargo Waste Management Centre is open to Wollondilly Shire Residents and can accept waste that is free of food and putrescible material.

Anthony Avenue, Bargo
Phone: 0419 490 599
Opening Hours 7 Days* (8.30am – 4.30pm)
*Not open Christmas Day or Good Friday

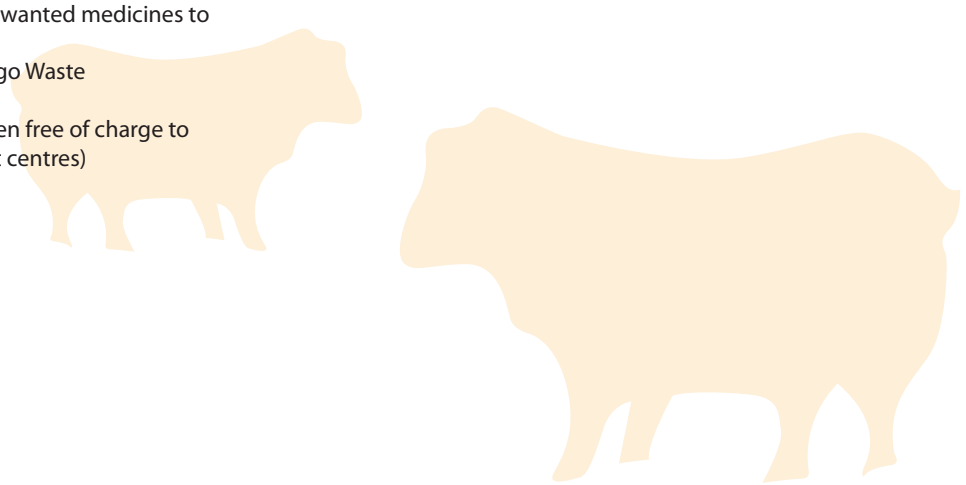
More information

For more information call Wollondilly Shire Council on 02 4677 1100 or visit our website www.wollondilly.nsw.gov.au

Wollondilly Shire Council – Living Together in Rural Wollondilly Information Series
www.wollondilly.nsw.gov.au/about/13502/13503.html

NSW Department of Primary Industries – Online resources and publications
www.dpi.nsw.gov.au/aboutus/resources

Hunter Councils and the Hunter Rivers Catchment Management Authority - A Guide to Rural Residential Living:
www.ruralresidentialliving.com.au



Notes

ACRONYMS

The Rural Living Handbook - A guide for rural residential landholders

ACT	Australian Capital Territory
ATV	All-terrain vehicle
CMA	Catchment management authority
DECC	Department of Environment and Climate Change
DPI	Department of Primary Industries
DWE	Department of Water and Energy
HRC	Hazard Reduction Certificate
LEP	Local Environmental Plan
LGA	Local Government Area
MHRDC	Maximum harvestable right dam capacity
MSDS	Material Safety Data Sheet
NSW	New South Wales
PVP	Property Vegetation Plan
RAMA	Routine agricultural management activity
RFS	Rural Fire Service
RLPB	Rural Lands Protection Board
RSPCA	Royal Society for the Prevention of Cruelty to Animals
SCA	Sydney Catchment Authority
TSR	Travelling stock reserve
WIRES	Wildlife Information and Rescue Service

Notes

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Cover, Pages 2 (top left) and 4

Goulburn Mulwaree Council
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Hawkesbury Nepean Catchment Management Authority
Pages 7, 12, 14, 16, 18, 22, 26, 28, 30, 36, 38 -39 and 40

Sydney Catchment Authority
Pages 2 (bottom), 6 (top left), 17, 20, 21 and 32

The Rural Living Handbook 2009

A guide for rural residential landholders

Becoming a rural resident - even a part-time one - can bring much enjoyment - but it also creates many responsibilities and inevitably raises many questions. Even the smallest rural blocks will provide a challenge if you have never before encountered noxious weeds, prepared for bushfire season or managed an ef uent system.

Wollondilly Shire Council is providing this handbook to let you know about the many resources available as well as your responsibilities (particularly legislative requirements).

Keep this handbook as a helpful reference that you can refer to time and time again.

This handbook provides useful information about:

- Buying your property
- Natural resources
- Property management
- Local information - Wollondilly

Produced by Wollondilly Shire Council
November 2008

WOLLONDILLY SHIRE COUNCIL