Local Land Services

Hunter Small Property Landholder Guide

NSW Environmental TRUST

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New South Wales Government through its Environmental Trust

NSW GOVERNMENT

Small Property Landholder Guide

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Acknowledgements

The Hunter Every Bit Counts Self-Assessment Tool and Small Property Landholder Guide builds on the Property Management Checklist published by Hunter Local Land Services (LLS) in 2018, with contributions from staff, landholders, Landcare networks, local government officers and project partner, Soil Land Food.

The authors also acknowledge other sources of extension information that have contributed to these publications and programs: the Rapid Assessment of Soil Health (RASH) Manual (NQ Dry Tropics); Bullseye: Targeting your rangeland health objectives (Quivira Coalition); Healthy Hectares (Green Gecko Publications); and the Small Farm Living Program (NRM Northern Tasmania).

Disclaimer

This publication is intended as a general guide for small landholders in the Hunter region. The advice contained is general in nature and is based on knowledge and understanding current at the time of writing.

The information and links within this guide will direct readers to more comprehensive information appropriate to their situation and needs.

Contents

Glossary

Biodiversity: The diversity of all forms of life, people, plants and animals, and the ecosystems that sustain them.

Biosecurity: Protecting our environment, communities and economy against pests, weeds and agricultural disease threats.

Buffer zone: An area adjacent to an area in need of protection. For example, a strip of land alongside a stream where disturbances are minimised to avoid bank erosion.

Diversity: The number of species in a given area. Species richness is an indication of diversity. For example, there was a great diversity of grasses in the pasture.

Rehabilitation: The process of repairing and restoring land back to a former state following a form of disturbance.

Remnant Vegetation: Communities of plants that are indigenous to the local area. It may include bushland, forest, woodlands, grasslands and coastal heathlands.

Resilience: Is the capacity to recover quickly, like elastic snaps back into shape. Ecological resilience refers to an ecosystem or ecological community's ability to keep performing ecological functions following shocks and disturbances.

Revegetation: Can be a natural process. Most commonly used to refer to the replanting of trees, shrubs and grasses for an environmental outcome such as preventing soil erosion or providing habitat for wildlife.

Riparian: Land which adjoins, influences or is influenced by a body of water is called a riparian zone. Commonly, this refers to banks and buffers alongside rivers and creeks. Farm dams, drainage lines, floodplains, estuaries and tidal zones are also riparian zones.

Run-off: Water transported across the land surface and into water bodies.

List of abbreviations

ALSR: Annual Land and Stock Return

EBC: Every Bit Counts

LLS: Local Land Services

LPA: Livestock Production Assurance program

NLIS: National Livestock Identification System

NRM: Natural Resource Management

NVD: National Vendor Declaration

PIC: Property Identification Code

RFS: Rural Fire Service

SES: State Emergency Service

Every Bit Counts

The Hunter Local Land Services region is diverse. It encompasses 33,000 square kilometres east of the Great Dividing Range to the coast and includes the major population centres of Newcastle and Lake Macquarie. Barrington Tops World Heritage Area, and the internationally significant Ramsar-listed wetland sites of the Hunter Estuary and Myall Lakes systems are significant natural assets in the region. Traditional owners of the region have a rich cultural heritage and hold a deep and important cultural connection to Country.

Why every bit counts

Small acreages make up a large proportion of properties in the Hunter region. Small farms and small property landholders are often referred to by lots of different names, including rural lifestyle blocks, blockies, hobby farmers and tree-changers. Some small property landholders are considered absentee landholders meaning they are not present full-time at the property and may divide their time between the property and another primary residence.

No matter how you describe yourself, you all play an important part in managing our rural landscapes, improving the sustainability of practices and dealing with issues such as pests and weeds. Small property landholders are also part of local communities and have important contributions to make to their social health.

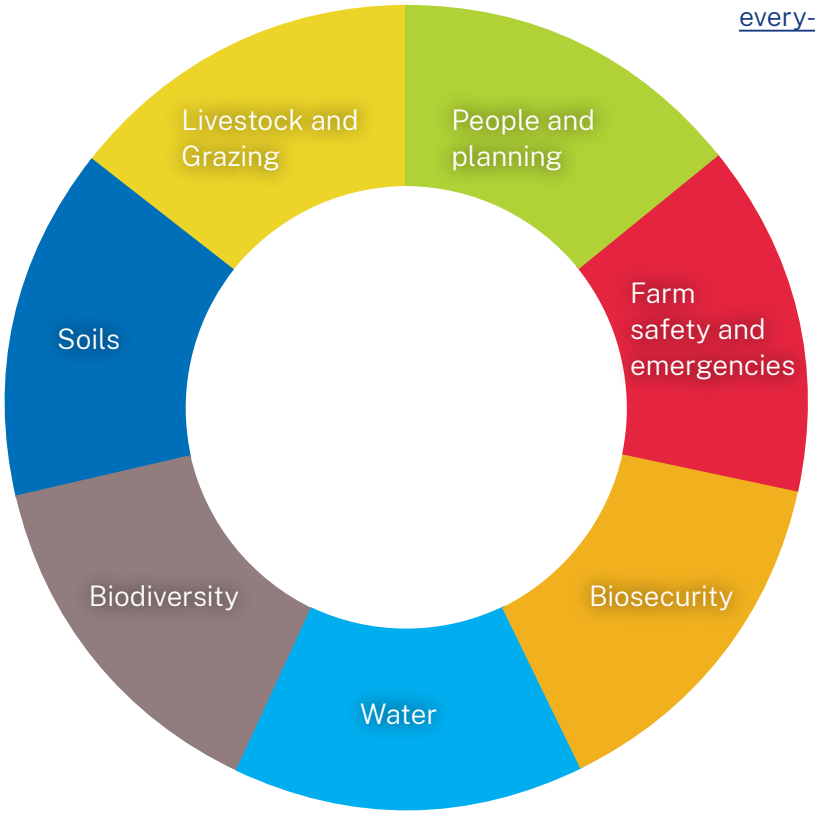
Hunter Local Land Service Region incorporating 10 local government areas (LGA)

The Small Property Landholder Guide

This guide is part of a suite of resources developed by Hunter Local Land Services (LLS) to help small property landholders maximise the enjoyment of their small landholding and better understand their obligations and responsibilities in managing the land. It is a companion to the Hunter Every Bit Counts Self-Assessment Tool (SAT), but can also be read independently.

It contains:

- information on seven key issues relevant to small property management
- relevant resources and information for each topic collated in one place at the end of each section
- case studies from local farmers and landholders (people like you!)
- links to community and environmental networks
- detail about obligations, requirements and expectations for small property landholders.



Every Bit Counts – seven key topics
Note: While this guide and the seven identified topic areas are targeted to small property landholders, the information is also relevant to larger holdings with commercial enterprises.

Every Bit Counts self-assessment tool

The simple self-assessment tool that accompanies this guide helps small property owners to:

- Assess their current property management under seven key themes
- Identify key land management opportunities and constraints
- Review existing management options to improve agricultural activity or to protect and maintain biodiversity values
- Determine priorities and next steps to effective property management

Every Bit Counts website

The Every Bit Counts website connects landholders to advice, news and events relevant to land management, agricultural production and the natural environment.

www.lls.nsw.gov.au/what-we-do/our-major-projects/every-bit-counts

Blockies Bootcamp Newsletter

This free weekly newsletter series highlights land management fundamentals for small property landholders.

www.lls.nsw.gov.au/what-we-do/our-major-projects/every-bit-counts/blockies-bootcamp

PEOPLE AND PLANNING

So, you have a small property.

What next?

Managing a small property for production, the environment and/or lifestyle can bring a range of complexities and opportunities. There are many resources to help you make decisions about how you manage your land, such as getting relevant advice and having a property plan.

Taking stock

How you manage your property affects the wider environment and community. It is important that you view your property as a whole, taking stock of the many relationships between different issues and within its wider landscape context.

Things to consider include:

- Understanding a little about ecological function
- Cultural heritage – both Aboriginal and settler
- Diversity and resilience in the landscape
- Property planning
- Staying connected with your neighbours and wider community

Ecological function

The more you know about the ecological characteristics and functions of your property the better decisions you can make for production, the environment and landscape resilience. Aspect, slope, soil type and climate will impact what you can and cannot do on your property.

Ask questions like:

- Which way does my land face?
- Do I have steep slopes that are prone to erosion?
- Where does the water go that runs off my property? Is there a major river, lake or estuary nearby?
- The birds that I see, where do they nest? Do they feed on my property and nest elsewhere?
- What plants do I have? Are they native or introduced? Do I have weeds or pest animals?
- What soil types do we have? How do my soils affect what I grow?

Real life example...

"I observed my property for 12 months to get an insight into what was happening, identify different land capabilities, water movement across the landscape, and possible areas prone to erosion, before I started any works." Andrew Yeo, Yeo Farm.

Cultural heritage

First Nations people have had strong and ongoing social, spiritual and cultural connection to their traditional lands and waters for many thousands of years. Evidence of Aboriginal occupation and connection to Country is found across the landscape. This can be quite obvious and subtle. Visible signs could be scar trees, tools, grinding grooves and flints. Other highly significance sites can include hearths (historic firepits), ochre quarries and unique landscape forms.

Under *the National Parks and Wildlife Act 1974,* Aboriginal objects or places must not be harmed. This includes not moving an object from the land on which it is situated.

Signs of Aboriginal cultural heritage on the farm

Real life example...

Vacy dairy farmer David Williams did find something. Mr William's asked Local Land Services for advice on tree removal for an irrigation project. Through this process, a significant tree was found with not one, but two scars. Read more about Mr Williams experience and this interesting discovery HERE.

Local Land Services have great resources to help when an Aboriginal site is recorded on private property to:

- understand what cultural values there are in the landscape
- explain legislative requirements
- seek support

Find answers to common questions about Aboriginal Cultural Heritage HERE.

Diversity and resilience

In natural ecosystems, species diversity helps create a resilient system which can recover more quickly from disturbances like fire or disease. When species are lost from an area, there are flow-on effects to other species through predator-prey relationships. There may also be wider landscape disturbance when the role of that species is removed, such as seed dispersal by birds or loss of pollination. Ecosystems can change permanently when pressures become too great and diversity is limited.

Property planning

A good property plan will focus your resources, time, and effort in line with your vision and goals for your property. Your goals may relate to lifestyle, making a financial profit or other outcomes such as improving the environment for a designated outcome. A plan will help you to understand what management and resources (both financial and human) you need to put in place to get there. It will help uncover unknown issues, find solutions to those issues, and understand and prepare for emergencies. You can refer back to it over time to see how you're tracking and it is likely to evolve with you and the time you spend on your land.

Example: my vision

- more shade and shelter in valley paddock
- create a wildlife corridor for biodiversity
- put water points for livestock in every paddock

Property planning involves assessing and putting together the various features and characteristics of your property and considering how you will use the natural resources sustainably. You can create your own plan or do a property management planning course.

Start with an aerial photograph of your property.

Your plan should include:

- Existing natural resources and features (trees, waterways, soil types etc).
- Existing infrastructure (buildings, shed, fences etc).
- Notes about climate, water and biodiversity.
- Notes about what will work (or not work) based on the property's characteristics
- Future plans for fencing, water, and other improvements.
- Future plans for shade, shelter, and biodiversity.

Once you have a plan, you can keep updating and modifying it, as necessary.

Understand your land

The physical characteristics of your property's land and soil will determine many of your land management decisions. For example:

- Slope: a steep slope will be more prone to erosion and can dry out more quickly than moderate slopes, leading to a lower ability to sustain production.
- Soil type: wind and water erosion affect some soil types more than others. Also, water absorption capacity can affect overall production.
- Aspect: north facing slopes will generally be hotter and drier than south facing slopes.

Understanding and mapping these characteristics can help you determine the suitability of areas for specific agricultural enterprises. For example:

- avocados: deep, fertile soils
- grape vines: well-drained soils and frost-free areas
- farm forestry: maximum slope of 35%
- grazing: show where you can or cannot graze, and how much land is available
- strawberries: avoid saline soils
- biodiversity patches

CASE STUDY PEOPLE & PLANNING

Name: **Brett and Nici Cooper**

Farm: **Limestone Permaculture Farm**

Location: **Karuah Valley, Stroud Road, NSW**

Enterprise: 480 fruit and nut trees, 130+ animals and a range of market gardens and orchards. Organic market garden and farmgate sales. Permaculture education courses, workshops and farm tours.

Big or small, you need a plan

As a permaculture educator, Brett reflects that he has had the opportunity of seeing the benefits of good planning from both sides of the coin. "Thoughtful farm and homestead planning can result in a much higher rate of production, whilst applying regenerative processes back to the land and its ecology."

Brett is also an advocate for property planning regardless of property size. Good property design has made intensive farming on one acre a possibility at Limestone Permaculture Farm. The philosophy behind the Coopers' permaculture design includes:

- Working with, rather than against the landscape.
- Protracted and thoughtful observation.
- Looking at systems in all their possible functions.
- Leaving the land healthy and fertile for generations to come.

Advice for getting started

Brett says that one of the best ways to get started is with a property plan for your farm and farm business. "This will assist in prioritising projects, actions, tasks, contractors, etc. and make it easier to apply for grants if required," he says.

Top tips from the Coopers

- Start now: Get connected with people who can help you achieve your vision, such as your local Landcare group, chemical-free farming, holistic farming, permaculture educators and groups.
- Upskill: Learn how to design and plan out your property. Attend courses and workshops that focus on your vision and goals.
- Find and visit the farmers: Seek out farmers, farmer groups and others who have planned well and are succeeding.

Legal bits

You'll find there are some things you have to do when you own a small property! Here is some general information about your responsibilities and where to get further advice.

Take all reasonable steps to prevent degradation of the land. For example, water and wind erosion can be serious issues. Maintaining groundcover as much as possible is key to avoiding erosion - aim for 100% groundcover all year around, minimising the time the soil is bare. Ensuring adequate groundcover will also assist with weed management. Some pest plants and animals are "declared" for a particular region under the *Biosecurity Act 2015*. This means that you have a legal responsibility to control or destroy them. Check out Hunter Regional Weeds to learn more about invasive plant species, and the PestSmart website for more information about pest animals in Australia.

In some cases, you may also be responsible for the cost of controlling pests on the road verge adjoining your land. If local authorised officers have to do the work, they will bill you as the owner of the land.

Pay Local Land Service rates. These rates are separate to local government rates and are levied on rural land over 10ha. They help pay for pest animal control work, animal health management, exotic disease monitoring and management, and travelling stock reserve management.

Lodge a Land and Stock Return by 31 August each year. Your return information is invaluable in the event of an emergency animal or plant disease outbreak.

Water: you'll need permits and approvals for water use, water storage and activities such as use of bores, constructing dams and irrigating; See DPIE water https://water.dpie.nsw.gov.au/home and Water NSW https://www.waternsw.com.au/

Conserving Aboriginal heritage: the Local Land Services' Supporting Aboriginal Land Management guide https://www.lls.nsw.gov.au/__data/assets/pdf_file/0010/1286632/Supporting-Aboriginal-Land-Management-web-final-1.pdf helps you learn about local Aboriginal culture and protecting cultural values and significant areas.

Farm safety – see next section of this guide

Protecting endangered species

Local government regulations

Fire and emergency services requirements

Animal welfare

To find out more about the legal bits of owning a small property, check out the Hunter Regional Contacts

Staying connected

Hunter Local Land Services

Hunter Local Land Services runs workshops, field days, webinars and other activities for small property landholders, covering land management, weed and pest animal control, pasture management, managing drought, native animals, native plants and protecting habitat for wildlife.

Find out more about Hunter Local Land Services

Tocal College

Tocal College offers skills-based training, short courses, online courses and formalised traineeships and diplomas. Popular courses include:

- Beekeeping
- Machinery safety and hygiene
- Business management
- Farm skills training e.g., chainsaw operation

Tocal College also has a range of fact sheets and publications for download or purchase.

Landcare

You can join your local Landcare group, environmental group or other community group. These groups often run events including conferences, and have regular working bees and field days.

Find a Landcare group near you.

Check out Hunter Landcare and follow them on Facebook.

More info

Find your local Landcare group

Contact your nearest Local Land Services office on 1300 795 299

Check out the Hunter Local Land Services Facebook page

Sign up for the Blockie's Bootcamp Newsletter

Check out the Every Bit Counts Quick Guide to Property Planning

Use the FREE NSW spatial mapping tool Sixmaps to get a close-up satellite image of your property

Know your responsibilities:

Local Land Services Rates

Annual Land and Stock Return

Check out the section on cultural heritage in the Rural Living Handbook

EBC Directory with contacts and links

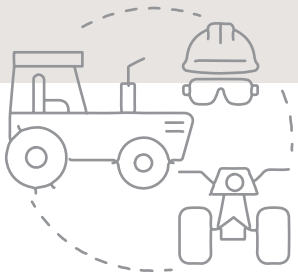
FARM SAFETY & EMERGENCIES

Farm Safety and Emergencies

Do you know what to do to keep safe? Are you prepared in the event of an emergency?

Preparing for emergencies and being safe on your property is important for everyone! Get prepared, know your responsibilities, have a good emergency plan in place and get advice if you are unsure before any emergency occurs.

Complete a farm emergency plan for flood and bushfire, and get to know your neighbours. If you are often away from your property, talk to them about whether they are prepared to move, care for or relocate your animals or possessions in the event of an emergency.



Emergency phone numbers NSW

Life threatening emergency
Triple Zero (000)

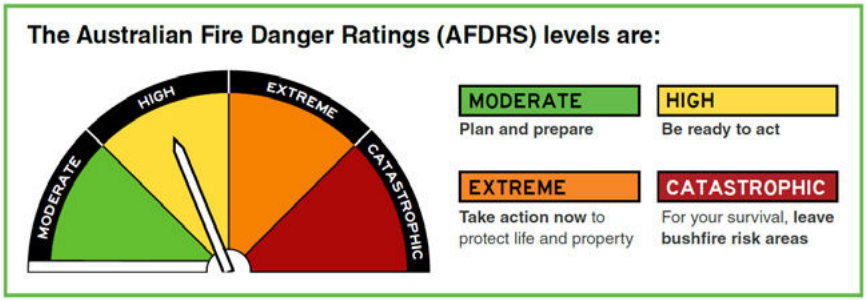
Bushfire
NSW Rural Fire Service
1800 679 737

Flood, storm and tsunami
NSW State Emergency Service
132 500

Police assistance
Police Assistance Line
131 444

Taking stock

A key responsibility of being a small property landholder is preparing for emergencies and keeping your family, animals and property safe on an ongoing basis. Let's have a look at some of the things you might need to consider.



Bushfires

Bushfire survival plan and seasonal checklist

A bushfire survival plan will help you understand the risks around you and how to respond in the event of a bushfire emergency. Everyone in your household should know your bushfire survival plan and how to follow it.

Got five minutes? Complete your Five-minute Bushfire Survival Plan now.

Included in the Five-minute Bushfire Survival Plan is a seasonal checklist to prepare your home or farm. Some basics are:

- clean leaves and twigs out of the gutters
- keep the grass short and gardens well maintained
- cut back trees and shrubs overhanging buildings.

Other top tips:

- check that hoses are long enough to reach around your house
- put a Static Water Supply (SWS) sign on your property entrance if you have a pool, tank or dam, so firefighters know where they can get water
- check your home and contents insurance and ensure it is up to date and adequate for your needs.
- Prepare your Home HERE
- Prepare your Farm HERE

Bushfire warning and information

Familiarise yourself daily with the bush fire danger rating system, which indicates the possible consequences of a potential bushfire. Temperature, humidity, wind and the dryness of the landscape will affect the bushfire rating. Check the **current** fire danger ratings for your area HERE.

Make sure you understand the ALERT LEVELS for bushfires - the level of threat from an active fire. You may hear these warning messages over the TV or radio, or you may receive an Emergency Alert text message or phone call. Remember that some fires start quickly and there may not be time for any warning at all.

Protecting livestock

Identify a safe paddock or containment area on your property or an easy-to-access neighbouring property where you can protect your livestock in an emergency. Look for an area with:

- a reliable water supply
- clear access
- minimal fuel load (well grazed or built-up? area)
- appropriate fencing

Determine *when* you will move your stock into the safe paddock. You may consider the catastrophic bushfire danger or total fire ban days to determine when to move stock to be as prepared as possible. Check with your local council for safe areas for pets and livestock in the event of an emergency.

Firefighting equipment

You may already have fire-fighting equipment or determine that you need to upgrade equipment while working through your Bushfire Survival Plan and preparation checklists. Make sure you test your equipment, pumps and hoses before bushfire season. If you have a farm fire unit make sure it is working, safe and legal. Your local Rural Fire Service (RFS) is a good place to start.

Floods

Planning and prep

Manage the impacts of floods by *being prepared*. You must be aware of your local area conditions and its susceptibility to flooding so you can properly protect yourself, your family, your pets and livestock, and your property against the risk of floods.

The NSW State Emergency Service (SES) has several resources to keep you Floodsafe at home, at work and on the farm.

For up-to-date and localised information about flooding contact NSW SES on 132 500.

Hunter Local Land Services' Farm Flood Readiness Kit includes a Flood Readiness Checklist and Flood Readiness Plan to help you.

Farm safety

It's a fact that farming and its associated activities can be dangerous. FarmSafe Australia statistics show that there are around 80 farming-related fatalities in Australia every year, and many more injuries. Small properties have safety issues and hazards just like large properties, so it's critical that you are aware of and mitigate risk as much as possible on your property including, but not limited to, using personal protective equipment (PPE) and appropriate (manual) handling techniques, and having applicable licences/ certification. Examples of risk and considerations include:

- specialised equipment (e.g. chainsaws)
- vehicles and machinery (e.g. quad bikes, tractors)
- hazardous chemicals
- animal handling (e.g. horses and cattle)
- water storage areas (dams, tanks, creeks)
- heat stress and exposure
- Children and visitors

Safety on farms also applies to everyone on your property, including children and visitors.

Around half of fatalities from quad bike accidents are visitors, and a quarter of all farm-related fatalities in the last 10 years were children. Water storages, such as farm dams, are especially dangerous, with drowning accounting for around 35-40% of child farm deaths.

Take farm safety seriously with some simple ways to reduce risk:

- supervise children closely, especially around water including dams and troughs and around machinery and livestock.
- create a safe place for children to play, such as a securely fenced house yard
- wear seat belts in vehicles at all times
- prevent children from riding in the back of utes, trailers or on tractors
- wear helmets when riding bikes and horses
- make sure everyone knows and follows the rules for your property

Hazardous chemicals

Pesticides (herbicides, fungicides and insecticides) are used in agriculture to protect plants, animals and products from harmful pests and diseases. Pesticides may have short-term and long-term health effects if the risks are not managed safely. Make sure you know how to handle, store and transport chemicals correctly – and what to do in a potentially dangerous situation. More information

CASE STUDY Farm Safety & Emergencies

Name:	**Greg and Gabi Hale**
Property Name:	**Wild Honey Farm**
Property Size:	**69 Ha**
Location:	**Killabakh, Mid North Coast, NSW**

Gabi and Greg experienced firsthand the impact of bushfires, not only with Greg's role as Deputy Captain of their local brigade, but impacts of recent bushfires in 2019, which effected 100% of their property. "We managed to save the houses, yards and some infrastructure and the rest was burnt out," said Gabi.

Greg and Gabi are very safety conscientious and understand the risks that their farm and the terrain can create. Their property incorporates steep hills, ridges and gullies that can be a risk when operating machinery as well as spots of poor to no phone reception.

At Wild Honey Farm:

- no one else is allowed to operate the tractor or quad bikes on their property. Visitors are not allowed in the paddock with their livestock, unless supervised
- no visitor vehicle movement is allowed across their property, to reduce biosecurity threats of pest weeds and diseases
- they always notify someone about where they are going and when they intend to be back.

Greg and Gabi can see the benefits of having a farm safety emergency plan to deal with situations such as bushfire, flood, chemical spill, or a biosecurity issue.

Greg says,

"Know your safe place on your property. Other businesses have evacuation plans and a safe muster point, so why not do the same on your property."

He suggests that having good neighbourhood relationships is essential. "You never know when you may need their help to move stock in case of a fire or flood. Also, if you develop those good bonds with your neighbours, then they may be able to keep an eye on things when you are away and vice versa."

Legal bits

Bushfire emergencies

Check with your local council and Rural Fire Service (RFS) whether there are any bushfire planning requirements in your area. For example:

- Permit requirements for burning
- Notifying neighbours of burning
- Options for brigade assistance with burns
- Minimum amount of emergency water on hand for firefighting

Your local RFS may also advise and outline expectations for access to your property and water resources for firefighting.

Farm safety

Farm owners and managers must provide a safe workspace and safe work systems for all family members, employees, visitors and contractors. This is outlined in the *Workplace Health and Safety Act 2011*.

Farmsafe and SafeWorkNSW are good resources for safe machinery operation, children on farms and advice for older land managers.

Check out Safe Work NSW's Farm Safety Self-Assessment for an easy-to-follow checklist for identifying potential farm hazards and ways to help you control hazards and prevent the risk of serious injury.

Keep a copy of the A-Z Farm Safety Guide on hand for quick reference and more detail on common farm hazards.

EBC Directory with contacts and links

More info

Contact numbers for Emergency Services handy

Do you need first aid training or first aid kits?

St John's

TAFE NSW

Red Cross

Undertake the five-minute Bushfire Survival Plan

Reduce bushfire risk and prepare your property:

Prepare you Home HERE

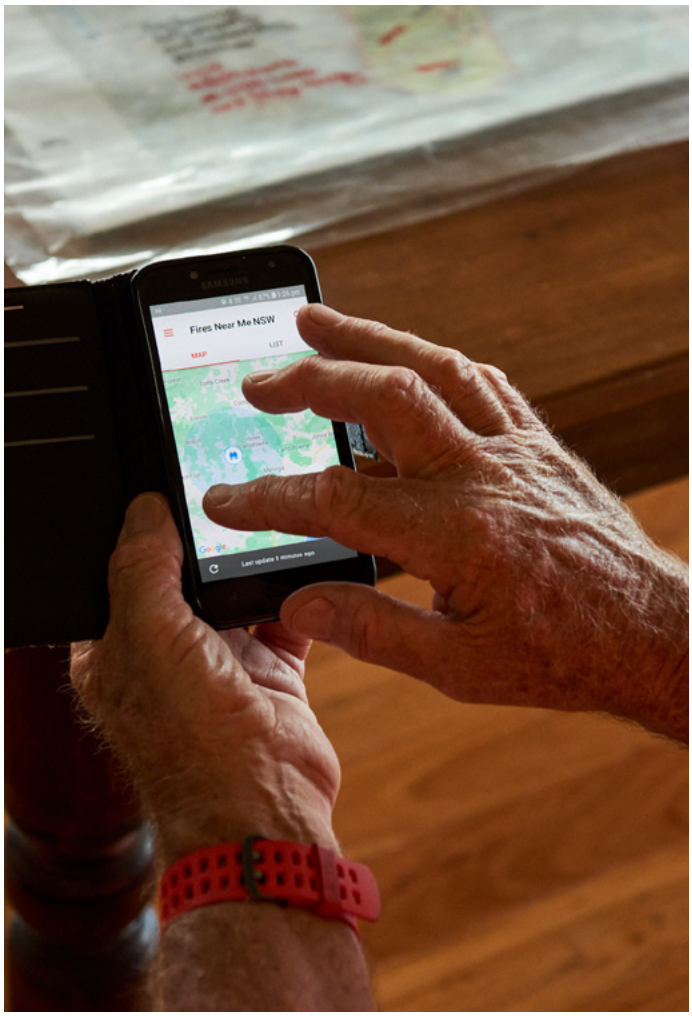
Prepare your Farm HERE

Undertake a Farm Safety Assessment

Get Farm Safety advice from Farmsafe

Know your responsibilities for Farm Safety

Prepare for floods with the Farm Flood Readiness Kit



BIOSECURITY

What is biosecurity?

Vertebrate pests (animals), weeds (plants), and diseases (micro-organisms) are biosecurity threats. When we manage these threats, we protect our economy, environment, health and communities. Biosecurity is a collective responsibility. Whether your property is 2ha, 20ha or 200ha, it's important that we all play our part.

Taking stock

Small property landholders play an important part in minimising and eliminating the impacts of weeds, pests and diseases on our agricultural industries and natural environments. Good biosecurity planning and practices:

- Keep livestock and animals safe
- Encourage healthy and productive pastures
- Reduce damage to natural environments and agricultural production caused by pest animals
- Help protect our timber, wine grapes, horticulture, and aquaculture industries

Weeds

A weed (or pest plant) is a plant that invades and thrives in an area where it does not naturally occur. Weeds do not comply with boundary fences. They may be quick to establish and dominate in a wide range of environments, competing with native plants or pasture species.

Weeds are usually exotic species that have spread either accidentally (e.g., through stock feed) or purposely, such as plants that have escaped from ornamental gardens and naturalised in the surrounding areas (e.g., Mother of Millions (*Bryophyllum delagoens*).

Native Australian plants can also be weeds if they have spread outside their natural range and are threatening local natural vegetation (e.g., Cadaghi Gum (*Corymbia torelliana*)).

Threats to production

Weeds growing in farming areas can encroach on pastures, reducing the quality of feed available to stock and the overall carrying capacity of land and its values. Some weeds are poisonous to stock or may contaminate fleece or harvested produce (e.g., Bathurst burr (*Xanthium spinosum*)).

Threats to biodiversity

Weeds compete with native plants for resources, such as light, space, water, nutrients in the soil, and even access to pollinators. They can replace naturally occurring plants and disturb ecosystems, reducing food and habitat available for local wildlife, or by enhancing habitat for pest animals. For example, blackberry (*Rubus fruiticosus*) provides great protection for rabbits and foxes. Weeds like broom (*Genista spp.*), taking hold in bushland, can alter fuel loads and fire risk.

Threats to water quality

Aquatic weeds compete for nutrients, space and light in lakes, wetlands, estuaries and rivers. They can disrupt the aquatic environment by blanketing the surface and impeding light affecting the health of native flora and fauna in the waterways (e.g., Alligator Weed (*Alternanthera philoxeroides*)).

Top tips for controlling weeds

A small amount of effort in the short term can save time and money in the long term, even if it seems daunting at first! Here are some top tips to help you prioritise and get ahead of weeds:

Knowledge: learn what weeds are common in your area and what threat they might pose to agriculture, waterways or the natural environment. Keep up to date on outbreaks to prevent new weed incursions before they have a chance to establish.

Prevention: stop them at the gate. Weeds can enter your property via machinery, vehicles or animal movement. Clean off tyres, quarantine new stock, and check feed and hay that you bring onto your property, or buy from reputable sellers.

Protection: keep your most valuable environmental and agricultural land protected with fencing, good groundcover and good agricultural practices.

Containment: limit the spread of any outbreaks on your own property by containing problem areas. Work with neighbours to manage weeds effectively.

Planning: create your own biosecurity plan tailored to your livestock enterprise or specific production needs. Make sure you know how to control biosecurity threats and comply with legal requirements.

See More info below

CASE STUDY Biosecurity

Name:	**Bruce and Belinda Robertson**
Property Size:	**220 acres**
Location:	**Burrell Creek, just west of Wingham**

Bruce and Belinda Robertson run a herd of 50 breeding Murray Greys and progeny on their 220-acre property, which is bounded by the Burrell Creek and Manning River. Occasional flood waters from these river systems present a risk for weed entry onto the Robertsons' property. "After a flood we can get an influx of cats claw onto our river flat country," says Bruce. Cat's claw creeper is an invasive woody vine. It is classified as a weed of national significance (WONS) and therefore must be controlled under the *Biosecurity Act 2015* (NSW).

As biodynamic farmers, biosecurity is especially important to the Robertsons. They do not use chemicals or fertilisers on their property and therefore have to get creative with weed control and be vigilant in addressing outbreaks. The Robertsons find that maintaining 100% ground cover is the best preventative measure, as it increases competition and reduces opportunities for weed establishment.

"We need to control weeds and have found that one of the best ways to do that is with groundcover. We also use hand control methods for small patches of weeds, **such as chipping out,"** says Belinda.

More recently they have used biocontrol options available through the NSW Department of Primary Industries (DPI).

The Robertsons have been using a combination of techniques to control Giant Parramatta Grass including:

- increasing competition through maintaining groundcover and increasing numbers of desirable pasture species
- manual removal of small patches
- biocontrol via application of a naturally occurring fungus *Nigrospora oryzae*

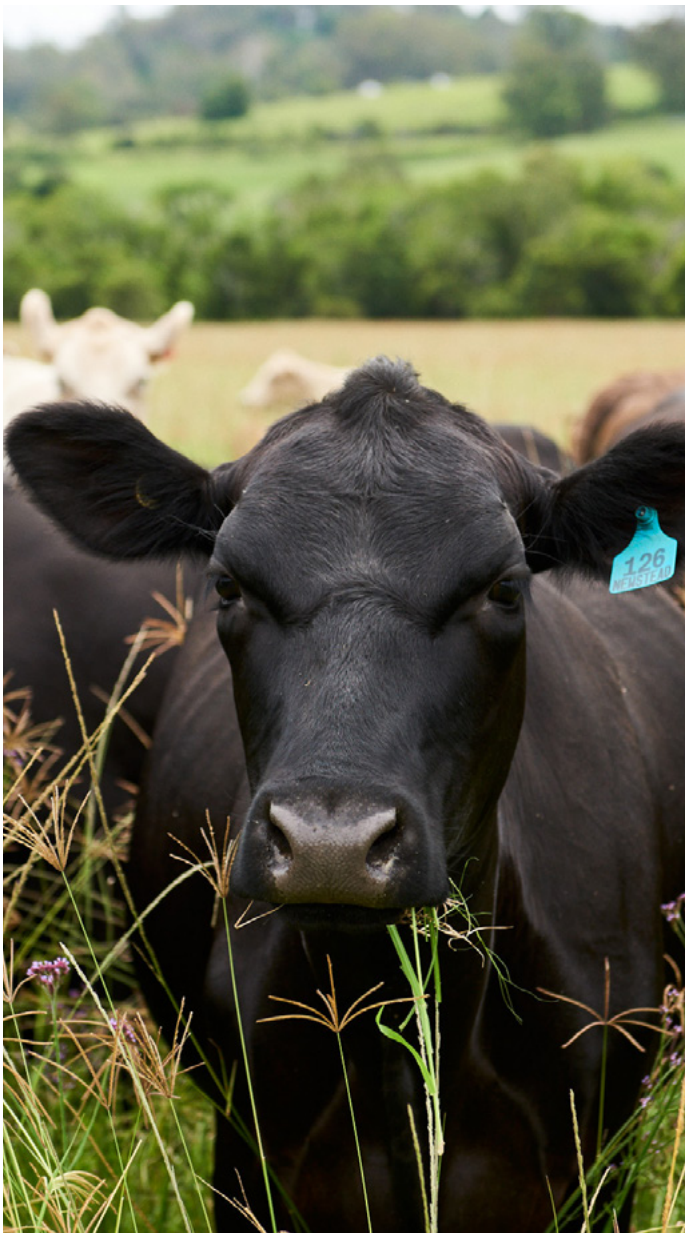
Weed control can be overwhelming, so being able to prioritise is important. Bruce says, "We have weeds on our property, and it wouldn't be feasible to remove them all. I like to ask myself: are they dominating my pasture or is it only a few? Also, by identifying the weed and knowing its lifecycle, you can employ the best control option at the right time. I learned the most from talking to other farmers. I formed some really great networks with other like-minded farmers and found some great mentors," says Bruce.

Overall, the Robertsons stress the importance of maintaining groundcover, not just for weed control, but whole of farm benefits. "You can get a win-win, as it is better for me as a farmer to maintain groundcover. I get more growth, maintain nutrients on my farm, reduce erosion and nutrient runoff into waterways, improve soil health, whilst reducing weed issues. If you build the health of your land, then you reduce the severity of problems," says Bruce.

Pests

A pest can be any animal (including an insect) that causes environmental or economic damage. It is generally an introduced species, good at adapting across different environments, with high reproductive rates, preys on or competes with native wildlife for food and resources, and can predate on, or compete with livestock for pasture. Some common examples of problem pest animals:

- Wild dogs, feral cats and foxes: excellent hunters that prey on livestock such as lambs, calves and poultry, and small native mammals.
- Feral pigs: disturb soil, damaging soil health, and may spread disease, cause erosion and destroy habitat for native birds and animals.
- Rabbits, deer, hares: damage soil health through overgrazing (removing groundcover) and compete with native wildlife and livestock for resources.



Diseases

All landholders can help control the spread of diseases in plants and animals. This protects agricultural productivity as well as our natural environment and human health.

Diseases may include plant diseases, like grapevine trunk diseases, which can affect primary industries, or animal diseases such as Hendra virus, which can be lethal to horses and humans.

Stock management

The National Livestock Identification System helps with biosecurity and creates a paddock-to-plate livestock traceability system. This system relates to sheep, cattle, goats and pigs. Under the Biosecurity (NLIS) Regulation 2017 and Biosecurity Act 2015 (NSW), all livestock owners, managers and occupiers of land that carries cattle, sheep, goats, pigs, bison, buffalo, deer, camelids, equines (horses and donkeys) and poultry (100 or more) must have a PIC (Property Identification Code). See, also, Livestock in this guide.

Waste disposal

Farm and domestic waste, animal carcasses and even disposal of fruit can all be considered biosecurity threats.

Notifiable pests and diseases

The most serious pests are notifiable and the most serious diseases, such as foot and mouth disease and footrot are termed emergency animal diseases. These serious threats can have major consequences for the whole economy, as well as individual farms. The Emergency Animal Disease Watch Hotline is dedicated to animal disease emergencies.

Emergency Animal Disease Watch Hotline
1800 675 888

Staying connected

Communities working together – individuals, neighbours, council and LLS – can manage weeds, pests and diseases effectively with simple coordinated actions:

Reporting: Record weeds, pest animal activity and diseases in your local area to protect farms, biodiversity and communities. Report animals to FeralScan.

Monitoring: Keep an eye on pests and weeds. Sometimes pests and weeds go hand in hand. If you find foxes and rabbits, work out where they are harbouring. Weeds such as boxthorn (*Lycium ferocissimum*), blackberry (*Rubus fruticosus*) or gorse (*Ulex europaeus*) are ideal habitats for foxes and rabbits. Make sure you control these species.

Determine which pests are priorities in your area by looking at the Hunter Regional Strategic Pest Animal Management Plan from Local Land Services.

Controlling: Hunter LLS Biosecurity Officers can help you control pests on your property.

Coordination: Stay in touch with neighbours and share information about potential threats to your properties and work with them to maximise your control efforts.

Planning: The Farm Biosecurity Kit helps you develop a plan to minimise risk and prevent the spread of weeds, pests and diseases.

Legal bits

Under the *Biosecurity Act 2015 (NSW),* the government and community, including any landholder, big or small, has a duty to prevent, eliminate or minimise any biosecurity risk posed by weeds, pests and diseases.

There is also specific legislation regarding property identification and buying or selling livestock. Find out more about the responsibilities of owning stock in the Livestock and Grazing

EBC Directory with contacts and links

More info

More about biosecurity and what it means for small property landholders HERE

Small farms biosecurity guide HERE

Use the NSW Weedwise tool to identify weeds HERE and use the Weed Control Handbook to get tips on control options

Report exotic plant pests via the Exotic Plant Pest Hotline: 1800 084 881

To report a suspected outbreak of animal disease, call your local veterinarian or the Emergency

Animal Disease Watch Hotline: 1800 675 888

Understand your legal obligations when buying, selling and moving livestock:

More on the National Livestock Identification Scheme (NLIS) HERE

Watch a short YouTube video on the National Vendor Declaration System

More on buying, selling and moving livestock in NSW HERE (including private sales)

Check out the Livestock Section

More on transporting stock, including horses, HERE

Emergency Animal Disease Watch Hotline
1800 675 888

Stay up to date with local and regional weeds, pest and disease information:

Visit the Every Bit Counts Website page HERE

Connect with the Peri Urban Biosecurity Network

For comprehensive information on best practice for controlling pest species,

visit www.pestsmart.org.au or get the FeralScan app.

Biosecurity planning:

Create your own Farm Biosecurity Kit

Complete the Farm Biosecurity Action Planner

Meat and Livestock Australia Farm Biosecurity Plan

Let visitors know that you are serious about biosecurity.

Visit your Local Land Services office to purchase a biosecurity sign for your property

WATER

Have I got enough water?

Waterways such as rivers, streams and creeks are living ecosystems and habitat for aquatic plants, insects, fish, frogs, and waterbirds. They carry water from upper catchments into estuaries and oceans. Protecting waterways and managing water use ensures clean, reliable water for yourself, your family, and your stock.

Taking stock

You may have a creek, river, wetland or estuary on your property which is part of your rain catchment. Land along a watercourse, including stream banks and buffers alongside rivers and creeks, is called a riparian zone. Farm dams, drainage lines, floodplains, estuaries and tidal zones are also riparian zones.

Water is precious, limited and marketable, so taking care of this important resource is part of good land management.

Riparian health

Undertake a quick riparian health check HERE and get some tips to improve riparian health on your property.

Tips for protecting riparian zones and waterways

- Control any actively eroding sites on farmland, slopes and streambanks.
- Create vegetation buffers along waterways and riparian areas to help to slow down runoff and protect against pollutants.
- Reduce soil disturbance (no-till), leaving stubble and keeping 100% groundcover on paddocks.
- Design and install stock watering points away from waterways.
- Construct well-designed stock and vehicle water crossings.
- Exclude or limit stock from sensitive areas and along waterways.
- Control aquatic and problem weeds.
- Protect remnant vegetation on watercourses.
- Revegetate where necessary.
- Minimise pollution from chemical use – limit chemical use near waterways, apply chemicals according to the label and store securely away from flood zones

Water use

If you are not connected to a main supply of water, you need to ensure that you have adequate resources on your farm to meet your needs. To calculate your water needs, you need to know:

- Average annual rainfall
- Your water storage capacity (e.g., a dam or rainwater tank)
- Who or what needs water (your animals, your garden or orchard, your family, etc)
- How you plan to distribute your water (e.g. your family will use rainwater, but the stock and garden can use dam water. Do you have access to bore water?)
- Seasonal water use variation (dry feed/green feed, summer/winter)

You should also consider how much to keep in reserve for firefighting and as a rainwater buffer.

CASE STUDY Water

Farm: **Yeo Farm**

Name: **Andrew and Em Yeo**

Region: **Bulahdelah, Hunter Valley, NSW**

Livestock enterprise: **Fat lamb production for niche market**

Issues

Retaining water on steep slopes and managing swampy country with heavy clay soils.

Utilising rainfall

Andrew is passionate about water management and the impacts on the wider environment. Maintaining 100% groundcover to retain water on steep slopes and improve infiltration and water holding capacity of the soil is one of the primary goals at Yeo Farm.

"It doesn't matter how much rainfall you receive if it does not enter your soil," says Andrew.

At Yeo Farm, Andrew has implemented a number of innovative ideas to manage water flow above and below the surface. These approaches include swales, flexible water points restricting stock access to dams and destocking at key times.

Flexible water points

As Yeo Farm has a number of dams where stock access has been restricted or totally excluded, and livestock are watered via mobile water points and a solar pump pipe system. Andrew finds permanent troughs can be expensive. However, the ability to have flexible water points has many benefits to not only his livestock but also the environment, the farm and wider catchment. Some of the biggest advantages of having flexible water points include being able to redistribute manure, manage the impact of stock which reduces pugging, and stock stress. "In hot weather I can move my trough closer to shade for livestock," says Andrew.

Aquatic ecosystems are an integral part of the farm landscape, even at the farm dam level. Excluding stock reduces the effects of trampling and encourages beneficial biodiversity, keeping the water cleaner. The benefits of stock having access to good quality water can be clearly seen in the livestock production, management of worm burden, reducing parasites and diseases, and reducing mineral deposition in water, as well as providing a clean natural ecosystem for native flora and fauna.

Legal bits

Under the *Water Management Act 2000* (NSW), landholders can take water without a water licence or approval in certain circumstances. The three types of basic landholder rights in NSW are:

- Domestic and stock rights
- Harvestable rights
- Native title rights

If you are constructing water storages such as farm dams, you will need to check whether it is within your harvestable water right and obtain the necessary permits and planning approvals.

If you are intending to use groundwater or are using any water to irrigate commercial crops, you will need to hold a water licence.

Find more information on licences, approvals and landholder rights HERE

More info

Ensure your property plan identifies:

- waterways, wetlands, and water points
- areas to enhance, restore, or repair, along waterways
- buffer areas where stock and farming are restricted.

Check out the Every Bit Counts Quick Guide to Property Planning HERE

Find out about water testing for stock, irrigation and domestic use HERE

Tips for maintaining farm dams HERE

Tips for watering system design and watering points (stand alone, in-dam and in-stream) HERE

Tips to be waterwise, manage water through drought and calculate how much water stock require HERE

Undertake the quick riparian health check HERE

Information and designs for riparian fencing and creating riparian buffer strips HERE

Information about chemical application and chemical safety around riparian areas HERE

Information on building farm dams in NSW HERE

Find more information on licences, approvals and landholder rights HERE

Visit the Rural Living Handbook HERE

EBC Directory with contacts and links

BIODIVERSITY

What is biodiversity?

Biodiversity is the diversity of all forms of life, the animals, people, plants, insects, microbes and ecosystems across a landscape. On small properties biodiversity includes remnant vegetation, wildlife and the soil fauna and microorganisms. Managing biodiversity values on multiple small properties helps to conserve and connect the native vegetation, wildlife and ecological communities across the region.

Top tips for protecting biodiversity

- Learn about your local biodiversity. Find out what native vegetation and wildlife might inhabit your property. How can you help provide food and shelter?
- Protect areas of remnant native vegetation. It takes less time and money to protect existing native vegetation than to revegetate (re-plant) areas. Find out about the health of your native vegetation and take steps to protect it, such as fencing out stock and controlling weeds.
- Start planning for revegetation. Your property plan will help you work out whether you want to replant for wildlife habitat, or create a vegetation corridor or a windbreak.

Taking stock

Biodiversity means having a rich variety of plant and animal species that provide 'services' like pollination, water quality and air quality. Biodiversity is important for landscape resilience, helping the environment withstand and recover from drought, pest outbreaks, bushfire and climate variability.

Protecting biodiversity

There are many threats to biodiversity such as landscape fragmentation, land use pressures, climate change, and invasive pests and weeds. Even though your property may be small, it can play an important role in protecting and enhancing biodiversity across our region.

Your contribution in managing biodiversity helps address some of our challenging environmental problems. For example, protecting and planting trees, shrubs and grasses can:

- Control erosion and stabilise streambanks.
- Improve and protect water quality.
- Provide food, shelter and habitat for native wildlife.
- Create windbreaks and shelter belts for stock and crops.
- Store carbon to combat climate change.
- Grow timber

Think ‘wildlife friendly’

- Leave large trees with hollows intact.
- Plant a variety of local native species, including understorey plants.
- Provide habitat around watering points.
- Use wildlife friendly fencing on your property
- Build and erect nest boxes in areas with few natural tree hollows.
- Check and maintain nest boxes to ensure pest species have not taken up residence.
- Leave fallen timber on the ground for habitat, provided it is not a threat.
- Connect bushland areas via corridors and stepping stone planting design.

Threatened species of the Hunter region

Many of the threatened species and endangered ecological communities in the Hunter region occur on small properties ranging between two and 80 hectares.

Australasian bittern

Watch the Hunter Local Land Services YouTube video about the Australasian bittern HERE

Regent honeyeater

Learn about what you can do to help protect the regent honeyeater HERE

Brush-tailed rock wallaby

Check the Brush-tailed rock wallaby distribution HERE


Australasian bittern


Regent honeyeater


Brush-tailed rock wallaby

CASE STUDY Biodiversity

Name: **The Wootton Tree Project**

Property Size: **Four neighbouring properties 100+ ha**

Location: **Wootton Valley, Great Lakes Region NSW**

The Coolongolook River is located within the Wootton Valley, in the Great Lakes Region of NSW and flows into the Wallis Lake. Here a group of four neighbours began The Wootton Tree Project in 2013. This was an ambitious undertaking which to date has seen 40,000 trees planted, connecting areas of native vegetation along the Coolongolook River.

Working together across the landscape

For the landholders involved, The Wootton Tree Project has highlighted what can be achieved when you look over your boundary fence. One of the primary goals of this conservation project was to improve tree species diversity. Historical logging and clearing for agriculture had depleted native forest stands of the valued timber species. By working together, receiving funding grants and advice along the way, this group of neighbours has increased their impact on restoring local biodiversity.

Recent fires and droughts have further highlighted the importance of looking beyond the farm gate and taking a landscape approach to biodiversity. The brush-tailed phascogale, or tuan, is an example of a small carnivorous marsupial existing in patches of remnant and revegetated areas around the mid-north coast. The corridors created through tree and shrub revegetation enable native animals, such as the phascogales, to traverse the landscape, linking them with food and shelter, and to translocate if resources are limited during droughts or fires.

Ecological benefits of tree planting

An increase in bird life has been an almost immediate outcome of the project. The landholders have observed nine species of parrots, six cuckoo species, 11 species of honeyeaters, the regent bower bird, finches, wrens, black cockatoos and many more species that were not recorded before planting.

The project's success is demonstrated by key native wildlife now permanently occupying the area. Top predators, including a pair of Pacific bazas and the carnivorous spotted quoll, have been active in the forests. Presence of these species is indicative of a highly biodiverse ecosystem.

The tree plantings and linkages across the landscape have ecological benefits for flora and fauna and further benefits, like:

- Protection from prevailing and cool southerly winds.
- Creating microclimates with less temperature extremes and protection from frost.
- Improvements in soil health, including reduced erosion risk.
- Managing land to its capability, understanding that paddocks with trees are more productive overall than grass alone.
- Improved water quality, slower runoff and reduced turbidity (sightings of platypus and freshwater crayfish).

The project has involved a lot of hard yakka and planning and is still being maintained today long after the grants have been spent. The landholders stress that revegetating is much more than just 'jamming a few trees in the ground'. They have done their homework, researching tree species, planning the layout, and determining the best way to work with local sodic soils, prone to tunnel erosion. Groups such as Landcare and the Hunter Farm Forestry Network have been a great resource, offering peer-to-peer mentoring and training to farmers. Despite the hurdles, the landholders agree that the benefits of The Wootton Tree Project are clearly visible.

Staying connected

Work with your neighbours. Your neighbours may have some local tips, or perhaps you can work across multiple property boundaries.

Ask your local council for a map or list of the local vegetation in your area.

Contact local Landcare and Bushcare groups. The Hunter Region Landcare Network and your local Landcare group may also provide local information and access to training. Such groups and local councils often have free native plants available to residents, and several community nurseries operate in the Hunter Region.

Seek advice and guidance from Hunter LLS If you are intending to remove native vegetation (including native timber for farm forestry) from your property. You may need to apply under the Land Management (Native Vegetation) Code 2018. They can also advise about private native forestry (PNF).

Legal bits

Threatened species

All native birds, reptiles, amphibians and all mammals, except dingoes, are protected in NSW by the *Biodiversity Conservation Act 2016* (NSW).

This legislation also describes the plant and animal species and ecological communities that are listed as threatened in NSW, as well as the key threats to their survival. As a rural landholder, under the Act you need to be aware that activities such as land development or clearing may have an impact on threatened species. In this case, you will need to know how to proceed. See More info, below.

Native vegetation clearing

In NSW, native vegetation clearing on rural land is legislated by the *Local Land Services Act 2013* (NSW) and the *Biodiversity Conservation Act 2016* (NSW).

Clearing can include cutting down, felling, tree thinning, logging, poisoning, ringbarking, uprooting or burning native vegetation. Not all clearing requires approval, and some clearing activities can proceed following assessment. However, be aware that native vegetation clearing and resulting habitat loss is a key threat to many endangered plants and animals. Substantial fines can be issued when clearing is undertaken without approval.

Find out more about your obligations regarding protecting and clearing native vegetation, and threatened species HERE.

More info

Find out more about biodiversity and why it is important to small property landholders:

Native Vegetation

Wildlife

Search BioNET Atlas to find species lists of:

- native wildlife (including animals and birds)
- native vegetation (trees, shrubs, and grasses)
- threatened and endangered plant or animal species and ecological communities for your local area.

NSW species sightings search HERE

Find threatened and endangered species lists for your region HERE

Find “What Bird is that?” HERE

Get involved. Find out more about local wildlife, vegetation, conservation, and protection programs:

- Contact Hunter LLS
- Contact Landcare NSW.
- Contact Land for Wildlife.

Check the health of your bushland with a quick remnant vegetation assessment

Tips for designing a revegetation project HERE

Find more information on planning a revegetation project in the Rural Property Guide HERE

Find contact details for local wildlife rescue and have them on-hand.

Find your nearest wildlife rescue group HERE or contact WIRES

Find out more about obligations regarding protecting and clearing native vegetation and about threatened species HERE

Find out more about farm forestry through the Hunter Farm Forestry Network

EBC Directory with contacts and links

SOILS

How do I know if my soil is healthy?

A key asset of your property is your soil. Having healthy soils is important for production and environmental health. Understanding the capabilities and limitations of your soils will assist in knowing how to manage them in the best way.

Taking stock

Soil is a key hub in any landscape, where water, plants, animals, air and the earth all meet, exchanging energy and nutrients and enabling life. It is a living ecosystem, containing habitats and food for a multitude of soil organisms.

Soil is formed through the weathering of the rock that forms the geology of the area. The type of parent rock, landform, age and climate all contribute to topsoil features including colour, texture, depth and structure. The formation of soil is incredibly slow. We need to protect soils, as remediating soils is expensive and soil lost is very hard to replace.

Soil health

Soil health is not the same as soil fertility – the level of nutrients. A soil may have a high level of fertility, but it may still be in poor health. When a soil is in poor health, then plant roots cannot grow well and the soil's nutrients will not be available for plant growth.

Understanding the characteristics of your soil such as soil type, soil structure and texture will help you determine the capabilities and limitations of your soils and guide your land management decisions.

About soil

Soil type

You may know the local names for some of the different soil types in your district. For example, heavy floodplain soils, sandy ridges, red soils, peat soils and gravelly soils are just some of them. Soil types vary across regions and even across properties. Knowing your different soil types is important because they influence every land management decision you will ever make on your property.

Soil texture

As soil minerals weather through time, not only do they supply nutrient elements, they also break down physically into different sized particles: sand, silt and clay. Texture influences soil structure, water infiltration, water holding capacity and the ease with which a soil can be tilled.

- Sandy soils cannot hold onto nutrients well but drain freely.
- Silty soils have small particles, with less aeration and higher water retention, but are poor at absorbing water and holding nutrients.

Clay soils have very fine particles. They can absorb water and hold nutrients well, but they do not drain easily, leading to waterlogging.

Loamy soils are a mix of sand, silt and clay. These soils are the easiest to work with as they exhibit good drainage, and water and nutrient holding capacity.

You can work out your soil's texture by the "ribbon test". Add link to DPI factsheet https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0005/164615/determining_soil_texture_using_-ribboning_technique.pdf

A ribbon test to determine soil texture

Soil structure

Soil structure describes how soil particles clump together and how much space there is between particles. A soil has good structure when it has a good mix of large and small air pockets that can hold and release water, air, and provide spaces for large and small organisms, and plant roots, to thrive.

Poor soil structure may be evident in a hard surface which does not allow water to infiltrate, and leading to erosion. Working soils when they are wet, or driving heavy machinery over them constantly can lead to loss of structure and result in compaction. Living plant roots are the best way to protect and improve structure. Once again, groundcover is key!

Top tips to improve soil structure

- Maintain 100% groundcover to protect soils from erosion and to increase organic matter.
- Encourage soil organisms by limiting pesticide and herbicide use and reducing soil disturbance as much as possible.
- Retain stubble.
- Prevent compaction in wet areas by restricting stock, vehicles access and working the soil when wet.

Soil organic matter

Soil organic matter is the remains of plants and animals that use the soil, air, water, and living organisms that reside in the soil. It provides energy and nutrients for the soil community and helps maintain soil structure and function.

Groundcover, groundcover, groundcover

One of the most basic steps that land managers can take to protect soils is to maintain 100% groundcover. Groundcover:

- Holds the soil together
- Reduces the risk of erosion, compaction, and weeds.
- Feeds organic matter to the soil.

Find a short video on why you need groundcover HERE.

Managing grazing animals for soil health is the best way to maintain groundcover while also having benefits for pasture and animal health. This involves destocking or rotating stock to allow pastures to recover from grazing. Find out about grazing or soil workshops by staying in touch with your Local Land Services.

Soil health assessment and monitoring

You can undertake a basic field assessment of your soil health Keep records of your observations:

Do the ribbon test for texture

- Observe your land when it rains. Does the water disappear into the soil or run off?
- Where are the boggy parts? Where is it always dry?
- How hard is it to dig?
- How deep are your plant roots? Can you see earthworms and other critters?

A professional soil test can tell you more about:

- its acidity or alkalinity (pH)
- nutrient availability, including trace elements
- soil organic carbon

Regular soil testing also helps you make decisions about fertiliser or other applications needed to reach your goals. Anything that is produced and removed from paddocks such as stock feed, grain, milk, meat, wool, etc, also removes nutrients. Keeping an eye on nutrient levels will assist in keeping soils productive.

The Hunter Soil Moisture Network Project supports farmers to make management decisions, such as stocking rates and pasture renovation, by providing access to real-time soil moisture data. Soil moisture information across the Hunter region is accessible all year round, providing insight into seasonal rainfall trends, climate variability and soil moisture conditions.

Typical soil problems in the Hunter region:

- Acid sulphate soil risk HERE
- Dryland salinity
- Sodicity
- Soil erosion

Top tips for erosion control

- Maintain 100% groundcover.
- Protect remnant vegetation.
- Revegetate areas with native plants and perennial pasture species.
- Exclude stock from areas prone to erosion such as:
  - Waterways.
  - Riparian zones.
  - Waterlogged and wet areas.
- Plant windbreaks to slow damaging winds and protect paddocks and stock.
- Practice conservation tillage or no-till farming to reduce soil disturbance.
- Plant vegetation in strips along contour lines to slow down water flow and increase infiltration in undulating country.
- Manage land according to its land capability.
- Limit pesticide and herbicide use to encourage soil microbes.
- Retain stubble and prevent overgrazing.
- Prevent compaction in wet areas by restricting stock and vehicles access.
- Use your property plant to manage erosion-prone areas, and modify practices where needed.

CASE STUDY Soil

Farm: **"Ticoba"**

Name: **Ernst and Penny Tideman**

Region: **Comboyne, north of Port Macquarie**

Property Size: **185 Ha**

Livestock/enterprise: **Avocados and Blueberries**

Soil health is important

Maintaining and improving soil health is an essential part of agricultural production at 'Ticoba'. Ernst and Penny monitor and test soils regularly, including monitoring changes in soil organic matter levels. Soil organic matter is plant and animal material that eventually decomposes into humus, a complex substance that holds nutrients and moisture and improves soil structure – essential elements of soil health and agricultural productivity.

"Soil health is important," says Ernst. "As a healthy tree produces a good product, a poor soil produces poor avocadoes."

By maintaining groundcover throughout the year, the Tideman's have seen a variety of soil health benefits. Erosion potential on the property has reduced, witnessed in improved recovery after hailstorms.

Integrating biodiversity

Riparian zones along the creeks and rivers on the property are protected by existing remnant forest and trees that Ernst and Penny have planted. Shade, shelter, biodiversity and habitat for beneficial insects and pest controlling predators have been the benefits of the revegetation program at 'Ticoba'. To improve soil biology and as a weed reduction strategy, all trees have compost and mulch applied to the base.

Keep monitoring

Ernst says that one of the best ways to find out what is happening with your soils is to get your hands dirty. "We always have a spade in the back of the vehicle to check our soil health and worm activity."

More info

Find out more about soil types, capabilities, and limitations HERE

Undertake a DIY field soil test or soil health assessment to understand the soils on your property

For more, check out the Rapid Assessment of Soil Health (RASH) Manual and accompanying HOW TO videos

Find out about soil testing through the Department of Primary Industries Soil Testing Service HERE

Check out the Every Bit Counts Quick Guide to Property Planning HERE

Find out more about:

- Soil erosion and factors that increase soil erosion risk
- Salinity
- Acidity
- Sodicity
- Acid sulphate soils
- HERE

Find out how to assess groundcover and set your targets. Check out the RASH Manual and video on groundcover assessment HERE

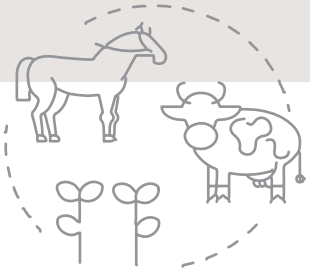
Contact Hunter LLS and local Landcare to sign up for a grazing management or soils workshop Contact Hunter Local Land Services

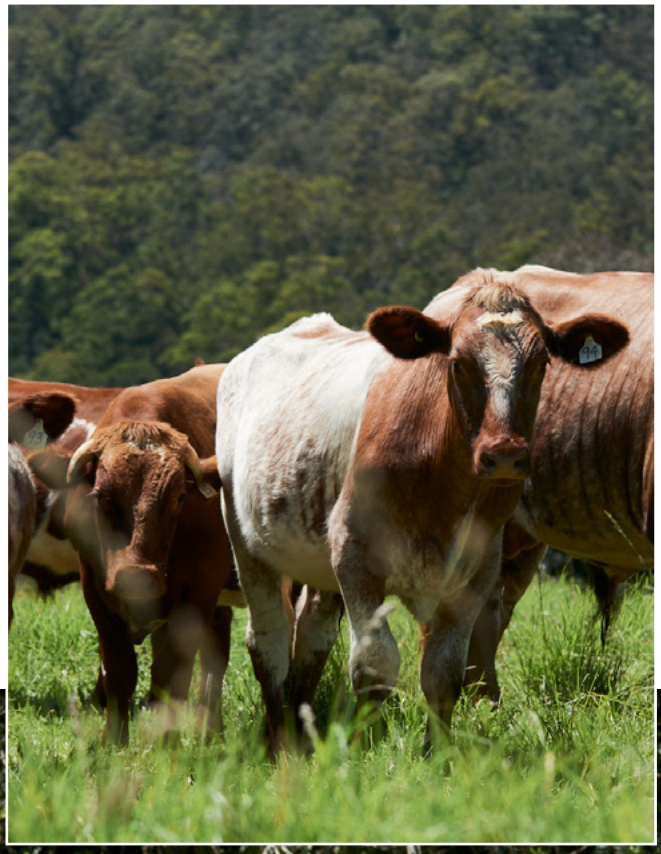
EBC Directory with contacts and links

LIVESTOCK AND GRAZING

Keeping livestock

Livestock are farm animals. Livestock, such as sheep, cattle, pigs and goats are mostly kept for their commercial production value. However, you may also have livestock for your own use and enjoyment such as horses to ride, chickens for eggs and even bees for honey. If you do keep livestock on your property, you need to know your responsibilities for animal welfare, buying, selling, and moving livestock.





Taking stock

When considering keeping livestock, first ensure your property is up to the task. Check it has secure fencing, adequate pasture, and access to feed and water to support your animals. If not, you may need to consider buying in feed and water. There are also legal responsibilities when keeping stock.

Livestock health

Welfare and nutrition

Regularly monitor and inspect your animals' general health and behaviour to identify any changes or issues with their health. Animals need:

- access to clean water
- adequate feed to maintain nutrition
- shelter from wind and rain and shade to protect them from the hot sun.

Make sure you understand what your animals and livestock need to thrive. Your vet, stock agents and rural supplies store can advise.

Water access

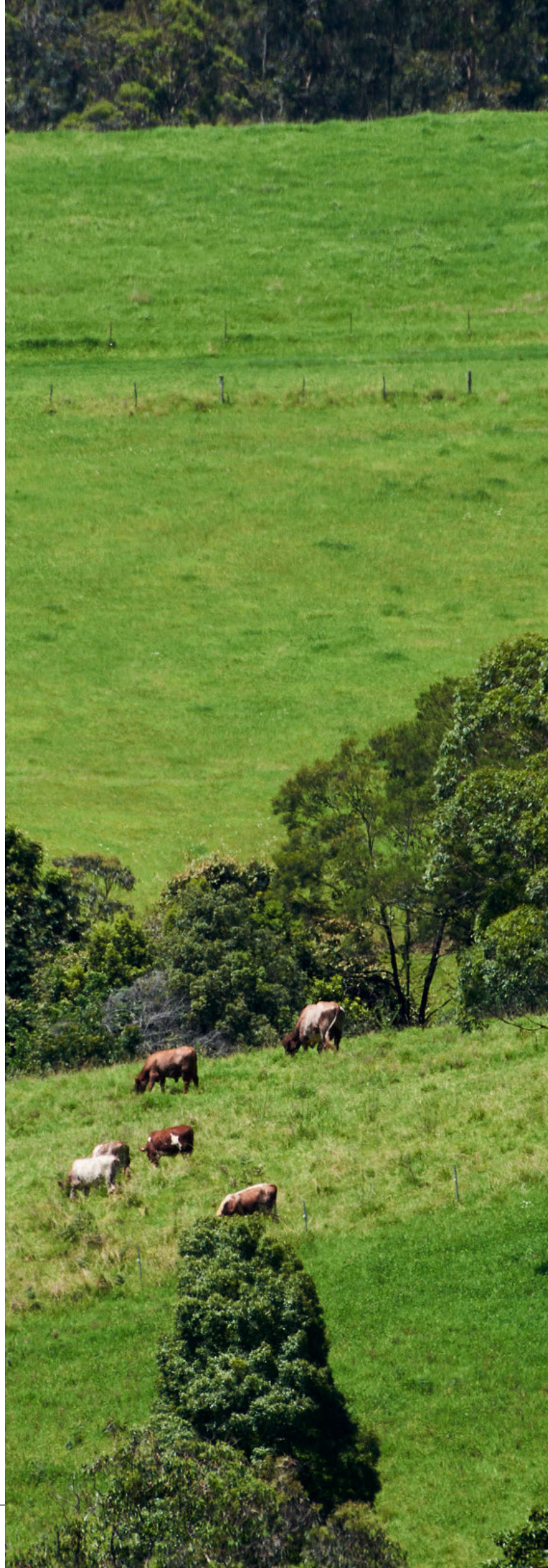
Animals and livestock need a constant supply of clean, fresh, drinking water. The amount required varies, depending on the animals you stock and the weather conditions. Animals will drink more during hot weather, for example.

Your property plan should include stock watering points which will help you provide clean and constant water for your livestock, which keeps them healthy and in good condition. Well positioned water troughs are a good alternative to allowing stock access to dams or waterways, and also protect biodiversity. Check and clean troughs regularly. Spreading gravel alongside troughs helps to protect the area. If your water supply is running low, you may need to purchase water or reduce stock numbers.

For information on calculating water needs see More Info, below.

Livestock management and absentee landholders

If you are not living permanently on your property, consider how you will care for your animals responsibly when you are not there, or in a fire or flood. Perhaps consider leasing land to a nearby farmer if you are not there all the time.



CASE STUDY Livestock and grazing

Farm: **Three Creeks Farm**

Name: **Peter Pfister**

Region: **Craven Plateau, elevation 650 m**

Property Size: **138 hectares**

Livestock/enterprise: **Beef cattle, weaner production, trading**

Monitoring pastures and livestock condition

Peter uses a pasture ruler to help monitor feed and moves stock accordingly. “Listen to what the cattle say. They will tell you,” he says. Speech bubble. About 20ha on Three Creeks Farm have been re-sown with a mix of grasses and herbage to allow for a broader offering throughout the year. Peter limits his chemical use for both pasture and animals and keeps a close eye on his animals.

“We follow closely the guidelines provided by LPA (Livestock Production Assurance) and inspect all cattle two to three times a week, sometimes only weekly, but that would be rarely. We live on the property and thus are always at hand to check on livestock. We are in a windy area, so shelter is essential for stock. All our paddocks have existing trees for shade and shelter, and paddocks without shelter have had trees planted,” says Peter.

Protecting waterways for the environment and stock

Over the years, Peter has redesigned stock water supply, fencing off almost all riparian areas and installing approximately 4.5km of water lines and troughs. The results are seen in animal health. Stock do not have to walk as far to water and excluding stock from the waterways protects the creek banks from erosion. “We make our money by selling cattle by weight. Keeping animals well and content helps in increasing and maintaining good weight. It is in our business interest to monitor their welfare and provide appropriate feed to them,” says Peter.

Legal bits

Livestock can be unpredictable and cannot be 'set and forget'. They often do not acknowledge fences, expire before they are meant to (that is, they die unexpectedly!) and are governed by a range of biosecurity and animal health rules and regulations.

Animal welfare: you must make sure your animals have adequate food and water, are handled properly, protected from extreme weather conditions and are otherwise healthy.

Buying stock: before purchasing stock, you must get a Property Identification Code (PIC). Any NSW property carrying livestock, even if it is just one horse or one poddy calf, is required by law to have a PIC.

Selling stock: when you sell livestock, you will need to have a National Vendor Declaration (NVD).

Transport: You must ensure livestock are correctly identified with a National Livestock Identification System (NLIS) tag or device before loading and transporting. All movements must be recorded on the NLIS database. Your Local Land Services office can help you get the correct paperwork. Also, check out the Livestock Production Assurance Program (LPA) which provides assistance in regard to safe and responsible animal treatments, feeding stock and, livestock transport and movement.

Notifiable diseases: To help protect our agricultural industry and keep markets open, you need to notify Local Land Services if you suspect or are aware of any of livestock diseases.

As a livestock owner, you should also have a solid understanding of pasture management and feeding programs during drought and dry times.

More info

Ensure your property plan identifies:

- Shade and shelter in each paddock
- Stock watering points
- Areas for future tree planting if I need more shelter for stock

See the Every Bit Counts Quick Guide to Property Planning HERE.

Stock Water

Tips for maintaining farm dams HERE.

Tips for watering system design and watering points (stand alone, in-dam and in-stream) HERE.

How much water do stock need?

Make a program to monitor regularly:

- Stock health
- Boundary fencing
- Stock water

Managing stock through emergencies:

Tips for managing stock through drought HERE.

Download the Drought Management Plan HERE.

Check out the Hunter Farm Flood Readiness Kit for landholders, which includes a Flood Readiness Checklist and Flood Plan.

Find out more about your responsibilities and animal welfare HERE.

Buying, selling or moving livestock:

What you should know before buying or selling stock on Facebook and Gumtree HERE.

Understand the National Livestock Identification System (NLIS) HERE.

National Vendor Declaration

Find out if you need a PIC (Property Identification Code) HERE.

Submit your Annual Land and Stock Return (ALSR) HERE.

Find out more about the Livestock Production Assurance Program (LPA) HERE.

Find out more about what you need to know if you have pigs, poultry and/or honey bees HERE.

EBC Directory with contacts and links

WANT MORE?

Every Bit Counts website

Hunter Local Land Services

Rural Living Guide

References

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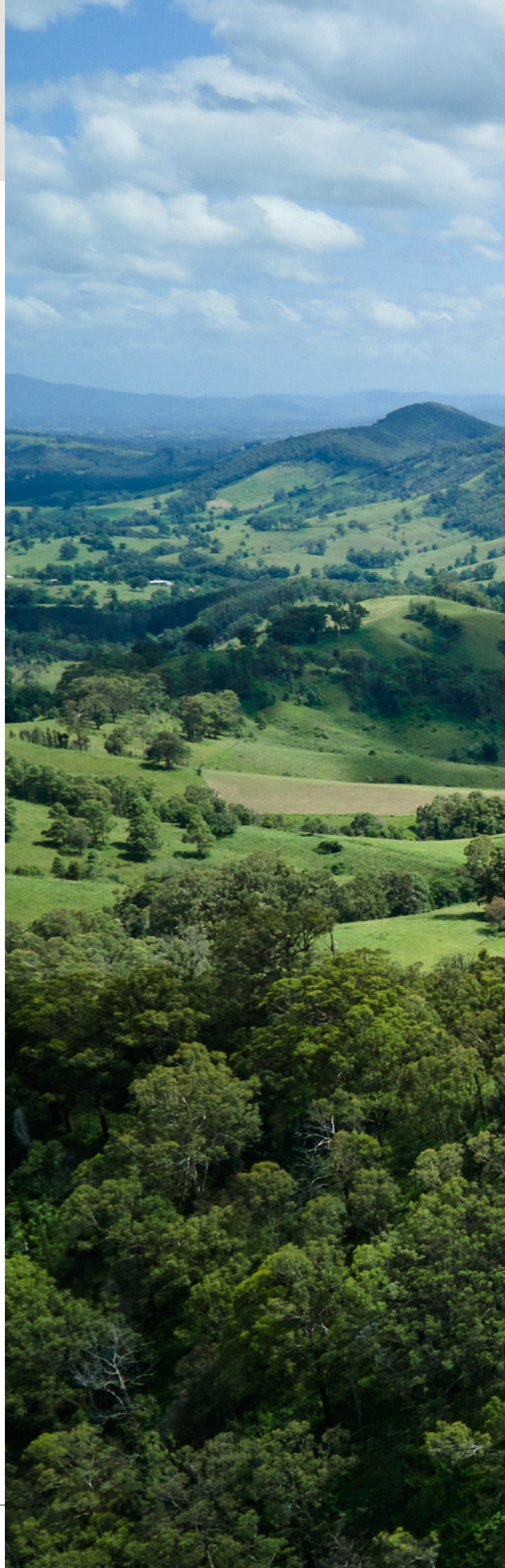
OEH 201. The land and soil capability assessment scheme: second approximation. A general rural land evaluation system for NSW. Office of Environment and Heritage.

EBC Directory with contacts and links



Local Land Services

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NSW GOVERNMENT