

Tenterfield Park

Biodiversity Education and Excursion Package

Compiled by Wendy Hawes
The Envirofactor



**Catchment Management
Authority**
Border Rivers-Gwydir



theenvirofactor
email. theenvirofactor@hotmail.com



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OUR
COUNTRY



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Hawes, W. (2012) *Tenterfield Park: Biodiversity Education and Excursion Package*. Border Rivers-Gwydir Catchment Management Authority, NSW.

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About the Biodiversity Education and Excursion Package

This environmental education resource has been developed by the Border Rivers-Gwydir Catchment Management Authority and The Envirofactor Pty Ltd.

The Biodiversity Education Package has been designed to provide a variety of subject matter in relation to specific field sites across the Border Rivers and Gwydir catchments. The objective is to provide teachers with up-to-date environmental information relevant to sites commonly used for school excursions. Information within the package has been compiled from a variety of sources (refer Information Sources section) the authors of which are gratefully acknowledged.

This resource will assist students achieve many of the objectives of the Geography Years 7-10 syllabus, but also has relevance to the Science and Aboriginal Studies Years 7-10 syllabi.

Outline of the resource

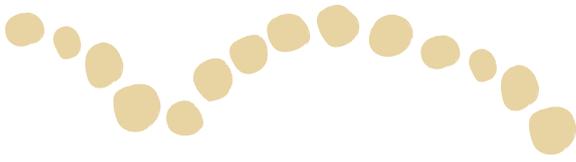
This package provides specific environmental information for 9 field sites across the Border Rivers and Gwydir catchments.

For each excursion site the package provides:

- Map of the field site
- A description of the site within the context of the catchment and surrounding landscape
- A brief history of human influence
- Indigenous and European cultural heritage values of the area
- Community involvement in the management of the site
- Descriptions of the natural values of the site including vegetation communities, flora and fauna, habitat values and the presence of threatened species and communities
- Impacts of weeds and feral animal pests on the site
- Student activities

Additionally the package provides basic logistic information to assist teachers in organising excursions including:

- Distance of site to major centers
- Quality of access roads
- Site facilities include toilets, picnic/bbq areas and rubbish bins
- Accessibility limitations and potential hazards.



Location of field sites

Excursion packages are available for the following locations in the catchment:

Ashford	Kwiambal National Park
Armidale	Mount Yarrowyck Nature Reserve
Boggabilla	Boobera Lagoon
Glen Innes	Beardy Waters Woodlands
Inverell	Lake Inverell
	Goonoowigall State Conservation Area
	Copeton Dam & Copeton Waters State Recreation Area
Moree	Moree Common
Tenterfield	Tenterfield Park

Relevance to NSW School Years 7-10 Syllabus

This package will assist students to achieve the following outcomes:

Geography

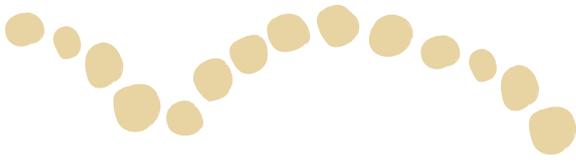
Stage 4		Stage 5	
4.1	identify and gather geographical information	5.1	identify, gather and evaluate geographical information
4.2	organise and interpret geographical information	5.2	analyse, organise and synthesize geographical information
4.4	use a range of geographical tools	5.4	select and apply appropriate geographical tools
4.5	demonstrates a sense of place about global environments	5.5	demonstrates a sense of place about Australian environments
4.6	describe the geographical processes that form and transform environments	5.6	explain the geographical processes that form and transform Australian environments
4.8	describe the interrelationships between people and environments		

Science

Stage 4		Stage 5	
Knowledge and Understanding			
4.8	describe features of living things	5.8	relate the structure and function of living things to models theories and laws
4.10	identify factors affecting survival of organisms in an ecosystem	5.10	assess human impacts on the interaction of biotic and abiotic features of the environment
4.11	identify where resources are found, and describe ways in which they are used by humans	5.11	analyse the impact of human resource use on the biosphere to evaluate methods of conserving, protecting and maintaining Earth's resources
Skills			
4.14	follow a sequence of instructions to undertake a first-hand investigation	5.14	undertakes first-hand investigations independently with safety and competence
4.15	use given criteria to gather first-hand data	5.15	gather first-hand data accurately

Aboriginal Studies

Stage 4		Stage 5	
4.1	identify and gather geographical information	5.1	describe the factors that contribute to an Aboriginal person's identity
4.3	recognise the changing nature of Aboriginal cultures	5.3	describe the dynamic nature of Aboriginal cultures
4.4	outline the changes in Aboriginal cultural expression across time and location	5.4	explain adaptations in, and the changing nature of, Australian cultural expression across time and location
4.8	describe the interaction of the wider Australian community with Aboriginal Peoples and cultures	5.8	analyse the interaction of the wider Australian community with Aboriginal Peoples and cultures



Site Information

Location

Tenterfield Park lies on the outskirts of the township of Tenterfield, 2 km south-east of the CBD. Turn east into Derby Street, 1 km south of the CBD on the New England Highway. Pedestrian access to the lower park (western section) is via a self-closing gate at Derby Street. Access to the top park (eastern section) is via East Street. All main access roads are bitumen. Visitor parking is available on the road verge of Derby and Bulwer Streets and at the East Street entrance.

Opening Times

Accessible at all times.

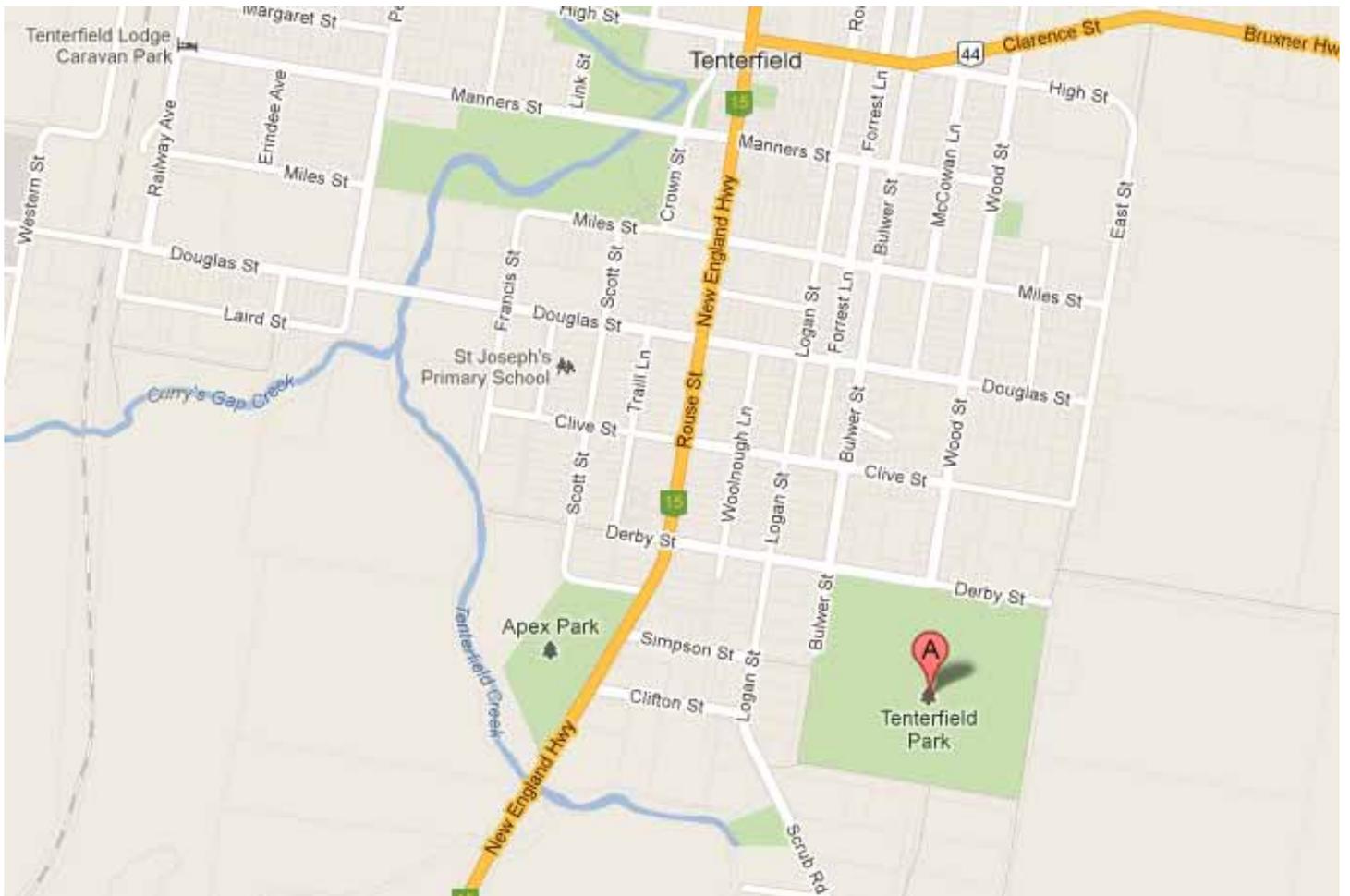
Entry Fee

Entry is free.

Facilities

Toilets	<input checked="" type="checkbox"/>
Picnic Area	<input checked="" type="checkbox"/>
Car Parking	<input checked="" type="checkbox"/>
Bus Parking	<input checked="" type="checkbox"/>
Interpretive Signage	<input checked="" type="checkbox"/>

Visitors need to bring their own drinking water. Nearest public toilets are located at the Tenterfield Tourist Centre.

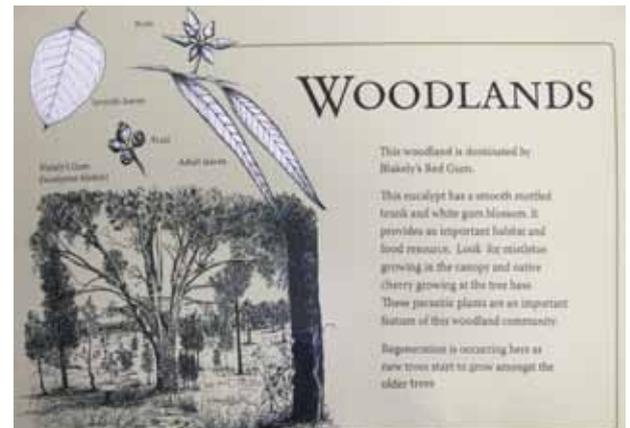


Accessibility

Walking tracks allow visitors to undertake 1-2 hour walks around the park. Tracks are not suitable for wheelchairs.

Points of Interest

- Old quarry sites that have been transformed into a network of freshwater ponds providing habitat for a range of aquatic animals and plants.
- Good examples of Threatened Ecological Communities - Box Gum Woodlands and New England Peppermint Woodlands.
- Restoration works to restore and improve habitat values including; weed removal, native plantings and installation of nest boxes for hollow-dwelling animals.



Potential Hazards

- Areas of open water
- Snakes
- Biting insects (wasps, mosquitoes)
- Sunburn
- Uneven ground surface
- Tripping Hazards (e.g. off-track fallen logs and rocks)

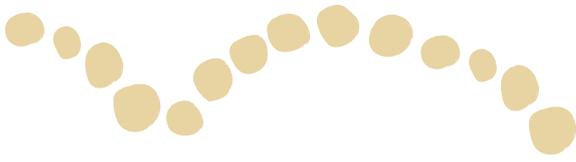


Responsible Agency

- Tenterfield Shire Council
- Tenterfield Naturalists Inc. (lessees)

Visitor Responsibilities

- Rubbish must be taken home and disposed of responsibly.
- Only gas barbeques or cookers should be used. Fires must not be lit.



Catchment Context

Landscape Setting

Tenterfield Park lies on the southern outskirts of Tenterfield on the Northern Tablelands of NSW.

Tenterfield Park, with its westerly and south-westerly aspects, is located in the upper catchment of Tenterfield Creek approximately 500 m northeast of Tenterfield Dam. Flowing north-west, Tenterfield Creek joins the Dumaresq River on the NSW-Queensland border, 55 km from Tenterfield. The Dumaresq River is part of the Border Rivers catchment which in turn is part of the Murray-Darling Basin. Water which falls at Tenterfield Park will eventually end up in the ocean south of Adelaide.

The low rolling hills and fertile basalt soils of this area of the Northern Tablelands make it ideal for agriculture. This has resulted in the almost complete clearing of native vegetation for cropping and grazing. Tree cover generally only remains along Travelling Stock Routes and the grassy groundcover has been significantly changed by cultivation, stock grazing and the addition of introduced species (grasses and clovers) for pasture improvement. Today, most of the native vegetation that can be seen along the North Tablelands of NSW is that which naturally occurs on relatively infertile soils and the steeper slopes of hills, ridges and gorges.

The grassy box woodlands at Tenterfield Park are now rare examples of the native vegetation communities which existed on the more fertile soils of this region prior to European settlement.

Landscape Connectivity

How well any given area is connected depends upon how good a species is at crossing gaps in their habitat. Some, such as large birds (eagles, large owls) or mammals (e.g. grey kangaroos), can readily cross large open areas. Others such as small lizards, wrens and marsupial mice can only cross small gaps or need unbroken native vegetation to protect them from predators.

Vegetation at Tenterfield Park forms part of an important east-west vegetation linkage which connects large patches of native vegetation to the east of the park with Curry's Gap State Conservation Area to the west of Tenterfield Creek.



History and Human Influence

Aboriginal Occupation

Tenterfield Park lies within the traditional lands of the Jukumbal (aka Nugumbal) people whose territory extended from near Bundarra in the south, Pinadari and Bukkulla to Wallangarra in the north and east to Drake.

Little is known of the earliest occupation of this area by these people. It is however, likely that Tenterfield Park and its surrounds, was an important and productive site for these people, particularly in the warmer months, given the fertile soils and proximity to Tenterfield Creek. The native vegetation would have provided a rich source of food items including grass seeds for flour, bulbs and yams for roasting, fruit and nectar. Vegetation would also have provided wood and fibre for tools and weaving and important medicines. A diversity of native animals would have made good hunting and the nearby waters of Tenterfield Creek would have teemed with native fish, freshwater shrimps and yabbies.

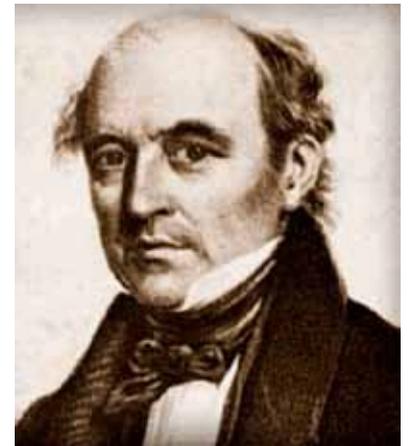


The arrival of European settlers around 1840 ended the traditional life of the Jukumbal people. Within a decade, introduced diseases and frontier battles had drastically reduced their population causing serious disruption to tribal boundaries and traditional culture. It wasn't long before many Jukumbal people were living near station homesteads trading game and working on stations as maids, shepherds, shearers and station-hands.

Post-European Settlement

The explorer Allan Cunningham (right) is believed to have passed approximately 15 miles west of Tenterfield in 1827. In 1842, the first title for Tenterfield Station was granted. Running 18,000 sheep and covering an area of 100,000 acres, the property was named after Sir Stuart Donaldson's family home in Scotland. The town of Tenterfield was gazetted in 1851.

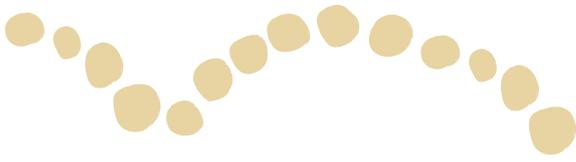
With the arrival of European settlers came the introduction of domestic livestock (sheep, cattle, horses, pigs and goats) and intensive agriculture. The rolling hills, fertile soils, open grassy woodlands and available water made the Tenterfield district ideal for agricultural development. The grassy woodlands and open forests were cleared for cropping and grazing, groundcover not removed by cropping was significantly altered by the introduction of exotic plants and fertiliser application to improve grazing. What areas of native vegetation remained were also altered by tree and shrub clearing and changed fire patterns.



Allan Cunningham (Source: Wikipedia)

Tenterfield Park

One of Tenterfield's oldest and largest public parks, Tenterfield Park was proclaimed in 1888, and comprises an area of 20 ha. In 1913, Tenterfield Golf Club established a golf course on the site and with assistance from the then Municipal Council cleared vegetation for fairways and levelled areas for greens. The greens were fenced to exclude stock, but stock was grazed on the balance of the Park under grazing rights from about 1913. Between 1928 and 1934 the area lost its status as a public park and was managed by trustees of the Golf Club.



From 1934 until 2004 the area was used predominantly for stock grazing, although it was used by the Army during the Second World War. Excavations in the area originate from this time, with the Park area used as a training camp and weapons range. Over the years Tenterfield Park has also been used as a gravel quarry and rubbish dump. In 2004, the Tenterfield Naturalists Inc. was formed and members took on the challenge of developing the top section (eastern section) of the Park (3.4 ha) as a focal point for local woodland flora and fauna. At this time the lower section (western section) of the Park (16.6 ha) was fenced by the Tenterfield Trail Riders Club, leased to the Tenterfield Pony Club and grazed by horses.

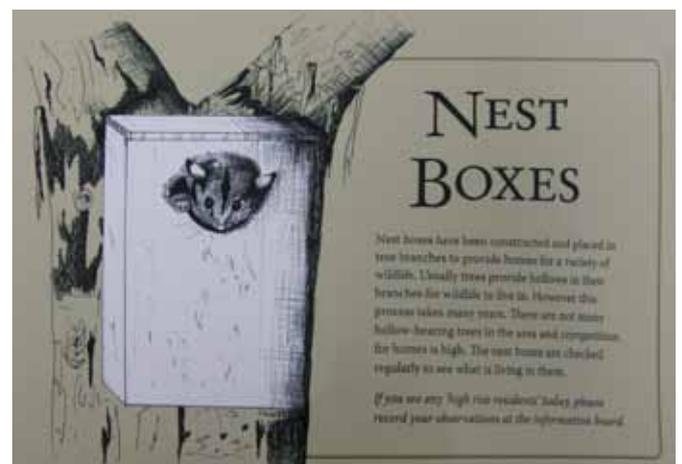
In 2006, the Tenterfield Pony Club relinquished their lease over the lower section and the Tenterfield Naturalists took over the lease and management of the whole park area. In 2007, the grazing of all domestic stock ceased on Tenterfield Park.

The aim of the Tenterfield Naturalist's is to assist natural regeneration, improve the habitat value of the area and provide an attractive setting in which visitors can learn about the local natural environment. Working in loose collaboration with the Tenterfield Shire Council, NSW Land and Property Management Authority, Granite Borders Landcare and Border Rivers-Gwydir Catchment Management Authority, funds for the project have been provided to help rehabilitate the area.

Rehabilitation works which have been carried out by this community group include:

- Construction of rabbit proof fencing around the entire Park area.
- Removal of most of the woody weeds and control of African Lovegrass infestations.
- Removal of rabbits and warrens.
- Enhancement of the original stock watering dam as a larger and more secure source of water for wildlife including a small island refuge.
- Revegetation of three specific areas with appropriate local native plants.
- Installation of nesting boxes for hollow dependent animals in mature trees with few or no hollows.
- Installation of interpretive signage.

A management plan for the area has also been produced. A photographic record and professionally conducted flora and fauna surveys have shown an increase in wildlife using Tenterfield Park and natural regeneration of native grasses and small plants..



Plant Communities

The natural vegetation at Tenterfield Park is grassy woodlands including Blakely's Red Gum and New England Peppermint Woodland.

At the time of European settlement these woodlands covered several million hectares along the slopes and tablelands from central Queensland through to southern Victoria. This area is known as the 'wheat-sheep belt'.

Gentle slopes, fertile soils and a diverse grassy groundcover made these woodlands ideal for agriculture and large areas were rapidly cleared for cropping. Remaining areas were altered by tree clearing, changed fire patterns, introduction of exotic species and fertiliser application to improve grazing.



*Blakely's Red Gum flowers
(Photo: G. Steenbeeke)*

Today many of these woodlands only exist as small patches in cropping and grazing paddocks, on areas of crown land or as narrow remnants on travelling stock routes. Additionally, fragmentation and surrounding agricultural practices has triggered 'rural dieback', an insidious threat to the long-term survival of these woodland communities. Widespread eucalypt death from 'rural dieback' occurred on the Northern Tablelands in the mid to late 1970s and New England Peppermint is particularly susceptible.

As a result of these on-going threats to their long-term survival grassy woodlands on more fertile soils, including Blakely's Red Gum Woodland and New England Peppermint Woodlands are listed under both NSW and Commonwealth legislation as Threatened Ecological Communities.

Despite its landuse history, the vegetation at Tenterfield Park is a good example of these rare woodlands.

Woodland Structure

Plant communities are named according to their structure (i.e. how the plants are arranged). Look at any patch of vegetation and you will see the plants form a series of layers (see Figure 1). From tallest to smallest these layers are the overstorey, understorey, shrub layer and groundcover.

The tallest plants (the overstorey) in woodland and open forest are typically eucalypt trees. In woodland the canopies (branches and leaves) of these tallest trees are for the most part not touching one another. Vegetation where the canopies are very widely spaced is called open woodland. If however, the canopies were mostly touching or even overlapping then the vegetation is open forest or forest.

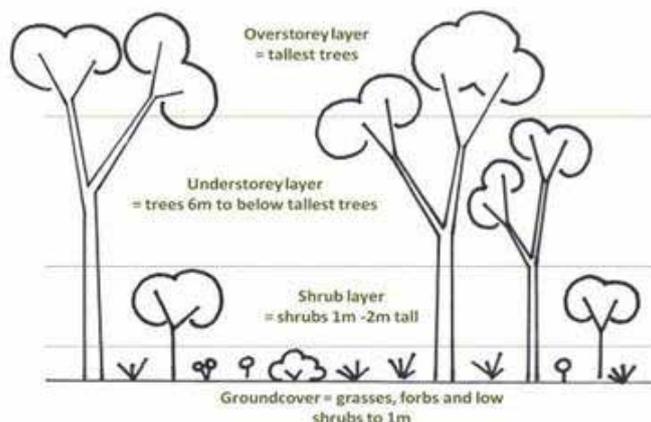
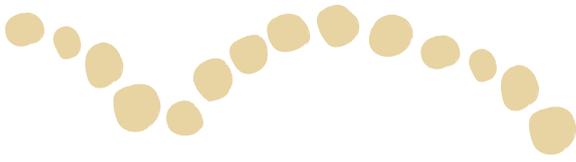


Figure 1: Vegetation layers in Woodland.

At Tenterfield Park the woodland overstorey is made up of Blakely's Red Gum and/or Yellow Box, on the higher elevations towards on the eastern boundary, grading into New England Peppermint on the lower slopes towards the western boundary.

The understorey layer is taller than 2 m but shorter than the overstorey. This layer may or may not be present in woodland communities. At Tenterfield Park this layer comprises scattered individuals of Native Cherry, Ferny-leaf Wattle and Mountain Hickory.



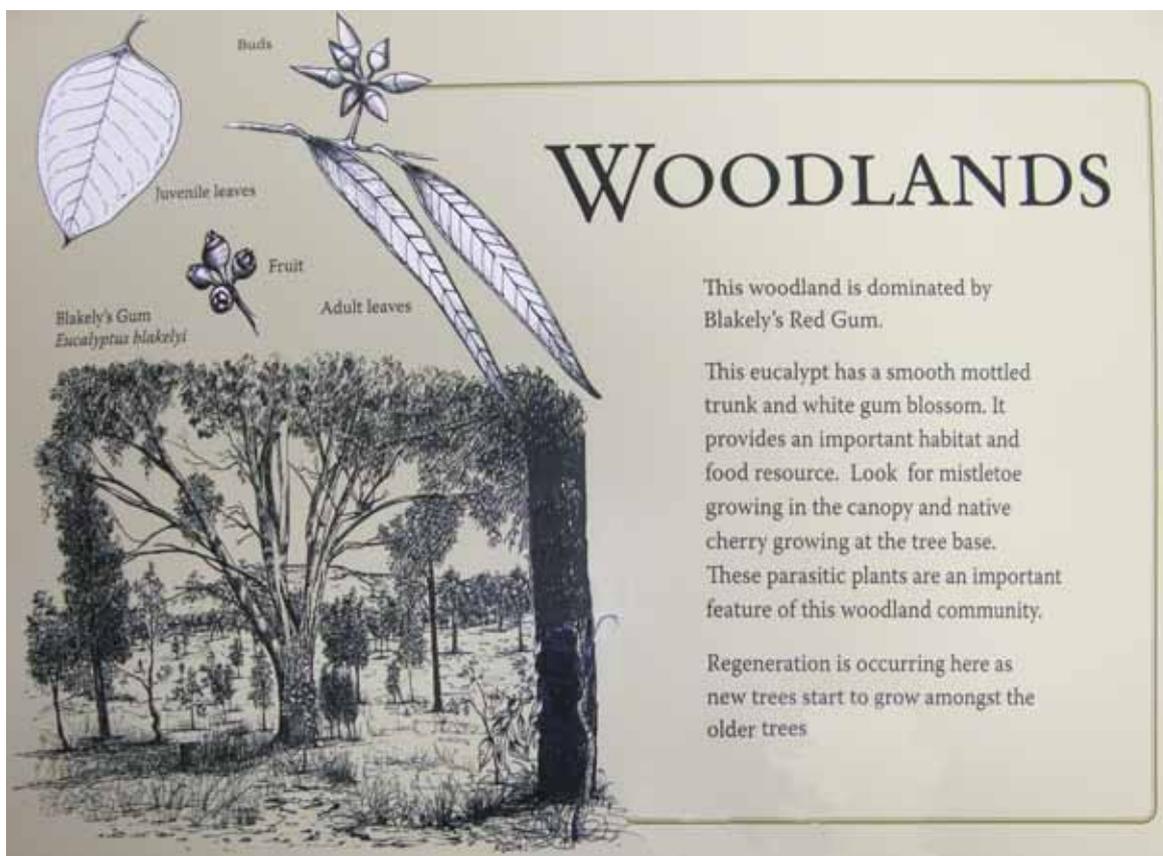
A layer of shrubs, between 1-2 m in height, also may or may not be present in grassy woodland. If it is present it will generally occur in patches or as scattered individual plants. Dogwood and Native Blackthorn can be found within this layer at Tenterfield Park.

The groundcover layer in grassy woodlands is as their name suggests is grassy rather than shrubby. Tall perennial tussock grasses (up to 1 m high) dominate, but with a large variety of smaller grasses and forbs (e.g. lilies, daisies, orchids and sedges) filling the spaces between tussocks. Bare ground and leaf litter (dead leaves, grass and twigs) can also be common between tussocks.

Grasses which can be seen in the groundcover at Tenterfield Park include Kangaroo Grass, Barbed Wire Grass, Red Grass and Weeping Rice Grass.

Common forbs in this community are Blue Flax Lily, Common Everlasting Daisy, Kidneyweed, Everlasting Daisies, Glycines and Bluebells.

In healthy woodland the understorey, shrub and groundcover layers should also have young overstorey trees. These young trees will grow up to form new overstorey as old trees age and die. Their presence will ensure the woodland continues to exist into the future.



Weeds

A weed is any plant growing somewhere it is not wanted.

In terms of the health and habitat value of bushland, weeds are often plants introduced from overseas. They may also be native plants introduced from other parts of Australia that don't naturally occur in an area. Weeds which threaten bushland areas are called "environmental weeds".

In agriculture some native plants, which may naturally occur in an area, are regarded as weeds when they compete with crops or are undesirable for grazing or livestock.

Why are weeds important?

Weeds invade native plant communities. They compete with native plants for space, light, water and soil nutrients. Often they replace native plants. This can reduce food resources (seed and nectar) and shelter for native animals, as well as threaten the functions of natural ecosystems (e.g. soil nutrient recycling).

How do weeds spread?

There are many ways weeds can be introduced to an area including people, vehicles, livestock, water and wildlife.

Weed seeds often attach themselves to people's clothing and animal fur and feathers. They can also be carried in soil on boots, hooves and the tyres of cars and machinery, as well as within the machinery itself (e.g. off-road vehicles, slashers, mowers and harvesters).

Livestock can not only carry weed seed in their fur and on the soil on their hooves but also in their digestive system, spreading weed seed to new areas in their dung. This is an important issue along Travelling Stock Reserves which contain some of our most valuable native vegetation remnants.

Water flows and floods can assist weed spread, often carrying weed seed and plant fragments long distances down rivers and creeks.

Weeds are also spread by the dumping of garden rubbish (lawn and tree cuttings) along roadsides and in bushland.

How to avoid weed spread

Weeds are favoured by changed environments. To prevent their spread we should avoid soil disturbance, the creation of patches of bare soil, addition of fertilisers or changes to surface water drainage.

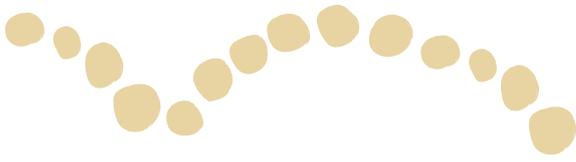
Important environmental weeds in Tenterfield Park include the following species.

African Lovegrass

This South African grass is thought to be accidentally introduced in imported pasture seed. Preferring lighter soils and higher rainfall this grass has invaded large areas of the tablelands and slopes. It is now the dominant groundcover in the Tenterfield area.



African Lovegrass (Photo: G. Steenbeeke)



Firethorn (Pyracantha)

A native of Asia, this spiny evergreen shrub was introduced as an ornamental garden plant. Escaping from gardens there are now at least 5 species of Firethorn considered to be woody weeds in Australia, the most common being Orange Firethorn. Growing to a height of 4 m, Pyracantha has white flowers with 5 petals and numerous stamens. Fruit are red or orange clusters of berries which are an attractive food source for birds. One bush can produce one million seeds per year with an 85% germination rate. However, seeds require cold temperatures before they will germinate.

This shrub is spread by suckers, seed transported by birds or water and dumped garden cuttings, and is now common along the NSW Tablelands.



Firethorn (Source: Wikipedia)

Firethorn competes with native species for nutrients and light, often shading out native shrubs and groundcover. Often forming thorny thickets, Firethorn can restrict fauna and stock movement and human access to areas.

The removal of natural understorey for grazing means these spiny shrubs are often favoured by small birds for nesting. However, the berries have proved to be an attractive winter food source for Pied Currawongs which are also nest predators. This has led to an ecological imbalance. In areas where Firethorn and other introduced berry producing shrubs (e.g. Cotoneaster and Crataegus) are present, Pied Currawong numbers have increased. The berries provide a reliable winter food source which was previously absent in the landscape. In these areas there has also been a recorded decline in populations of many other native bird species. These declines are believed to be the result of increased nest predation caused by the unnaturally large numbers of Pied Currawongs present in these areas in spring and summer.

Other weeds

Privet and Blackberry.

Weed control

The plan of management for Tenterfield Park includes a weed control program to improve and maintain the natural values of the park area. In particular, the weed control program has focused on the removal of woody weeds (including pyracantha and privet) and African Lovegrass from the area.

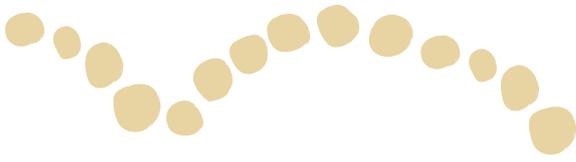
Plant Species List

The following is a selection of plants (flora) which have been recorded at Tenterfield Park.

Common Name	Scientific Name
Trees	
Apple Box	<i>Eucalyptus bridgesiana</i>
Blakely's Red Gum	<i>Eucalyptus blakelyi</i>
Broad-leaved Apple	<i>Angophora subvelutina</i>
Bullock	<i>Allocasuarina luehmannii</i>
Cabbage Gum	<i>Eucalyptus amplifolia</i>
Fuzzy Box	<i>Eucalyptus conica</i>
Kurrajong	<i>Brachychiton populneus</i>
New England Peppermint	<i>Eucalyptus nova-anglica</i>
Tenterfield Woolly-butt	<i>Eucalyptus banksii</i>
Ribbon Gum (Manna Gum)	<i>Eucalyptus viminalis</i>
Yellow Box	<i>Eucalyptus melliodora</i>
Shrubs	
Beard Heath	<i>Leucopogon</i> spp
Cough Bush	<i>Cassinia laevis</i>
Dogwood	<i>Jacksonia scoparia</i>
Ferny-leaved Wattle	<i>Acacia filicifolia</i>
Firethorn (Pyracantha) *	<i>Pyracantha</i> spp *
Fringed Wattle	<i>Acacia fimbriata</i>
Frosty Wattle	<i>Acacia pruinosa</i>
Green Wattle	<i>Acacia irrorata</i>
Grey Teatree	<i>Leptospermum brevipes</i>
Guinea Flower	<i>Hibbertia</i> spp
Hickory Wattle	<i>Acacia implexa</i>
Native Blackthorn	<i>Bursaria spinescens</i>
Native Cherry	<i>Exocarpos cupressiformis</i>
Mountain Hickory	<i>Acacia falciformis</i>
Peach Heath	<i>Lissanthe strigosa</i>
Privet	<i>Ligustrum</i> spp
Sticky Daisy Bush	<i>Olearia elliptica</i>
Tantoon	<i>Leptospermum polygalifolium</i>
African Lovegrass *	<i>Eragrostis curvula</i> *
Bahia Grass *	<i>Paspalum notatum</i> *
Barbed Wiregrass	<i>Cymbopogon refractus</i>
Blady Grass	<i>Imperata cylindrica</i>
Kangaroo Grass	<i>Themeda australis</i>
Rats Tail Grass	<i>Sporobolus</i> spp
Red Grass	<i>Bothriochloa</i> spp
Weeping Rice Grass	<i>Microlaena stipoides</i>

Common Name	Scientific Name
Forbs	
Australian Bugle	<i>Ajuga australis</i>
Bluebells	<i>Wahlenbergia communis</i>
Blue Flax Lily	<i>Dianella revoluta</i>
Burr Daisy	<i>Calotis</i> spp
Cockspur Flower	<i>Plectranthus parviflorus</i>
Common Everlasting Daisy	<i>Chrysocephalum apiculatum</i>
Early Nancy	<i>Wurmbea biglandulosa</i>
False Sarsaparilla	<i>Hardenbergia violacea</i>
Fuzzweed	<i>Vittadinia</i> spp
Geranium	<i>Geranium</i> spp
Golden Everlasting Daisy	<i>Xerochrysum bracteatum</i>
Goodenia	<i>Goodenia</i> spp
Kidneyweed	<i>Dichondra repens</i>
Ladies Tresses	<i>Spiranthes australis</i>
Mattrush	<i>Lomandra confertifolia</i>
Native St John's Wort	<i>Hypericum gramineum</i>
Pennyroyal	<i>Mentha</i> spp
Rock Fern	<i>Cheilanthes sieberi</i>
Rough Saw Sedge	<i>Gahnia aspera</i>
Scurvy Weed	<i>Commelina cyanea</i>
Slug Herb	<i>Murdannia graminea</i>
Stackhousia	<i>Stackhousia</i> spp
Tick-trefoil	<i>Desmodium</i> spp
Twining Glycine	<i>Glycine clandestina</i>
Variable Glycine	<i>Glycine tabacina</i>
Wallaby Berry	<i>Eustrephus latifolius</i>
Waxlip Orchid	<i>Glossodia major</i>
Mistletoe	
	<i>Amyema</i> spp
Wetland Plants	
Buttercups	<i>Ranunculus</i> spp
Floating Burr-reed	<i>Sparganium subgobosum</i>
Pinrush	<i>Juncus</i> spp
Primrose	<i>Ludwigia</i> spp
Sedge	<i>Cyperus</i> spp
Spike Sedge	<i>Eleocharis atricha</i>
Star Grass	<i>Hypoxis</i> spp
Swamp Isotome	<i>Isotoma fluviatilis</i>

* introduced species



Habitat and Fauna

Habitat

Habitat is the home of plants (flora) and animals (fauna). It is an area that provides all the things a plant or animal needs to live including space, shelter, food, water, mates and breeding sites.

Habitat for an animal or plant may be a small area. For example, a small lizard may live its whole life in and around a single tree. While for others, such as migratory birds and bats, their habitat may extend over hundreds even thousands of kilometres. Such an animal is the Swift Parrot, which breeds in the blue gum forests of Tasmania during the summer. It then migrates to the woodlands of the eastern mainland (including the Inverell area) to feed on flowering eucalypts over winter, returning to Tasmania in late spring.

Tenterfield Park has a variety of habitats provided by:

- Grassy woodlands
- Patches of shrubby understorey
- Water in ponds



Habitat Elements Present

A wide variety of tree and shrub species ensures there is a good supply of flowers, fruit and nectar throughout the year.

Native grassy groundcover is an important seed source for many birds (e.g. finches) and protects small animals from predators as they move around (e.g. small lizards)

Fallen logs and rocks provide shelter and can be a food source for many animals. The moister soil in and around fallen logs and rocks is often home to a range of different plants that are not found elsewhere.

Hollows in live and dead standing trees give shelter and are important breeding sites for many native animals such as possums, gliders, bats, parrots and owls.

Mistletoe is an important source of flowers, nectar and fruit, as well as providing nesting sites for many birds including the vulnerable Diamond Firetail and the endangered Regent Honeyeater.

Shrub cover gives protection and provides nesting sites for small birds (e.g. Superb Fairy Wren and Speckled Warbler).

Litter (dead grass, leaves and small twigs) give shelter and are a food source for lizards, insects and fungi.

Reed beds and aquatic vegetation provide food, shelter and nesting sites for a range of water birds and Reed Warblers as well as providing a safe home for many juvenile fish and aquatic insects.

Open water of varying depth is home to a variety of water birds, turtles, platypus and fish. Varying water depths also allow a range of aquatic plants to establish.

Threatened Fauna

Threatened fauna are animals listed under NSW or Commonwealth legislation. Species are generally listed as threatened when the loss of large areas of their habitat (due to clearing, grazing and pasture improvement) make it likely they will become extinct in the wild. To date 10 threatened species listed under this legislation have been recorded at Tenterfield Park. These species are the Varied Sittella, Speckled Warbler, Little Eagle, Grey-crowned Babbler, Little Lorikeet, Koala, Spotted-tail Quoll, Eastern Bentwing Bat, Eastern Falsistrelle, Greater Broad-nosed Bat and Large Forest Bat.

Migratory Birds

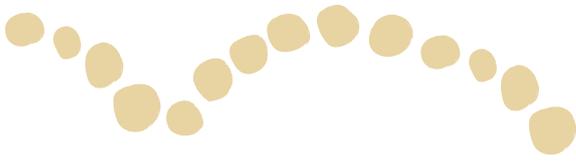
Australia is a signatory to a number of international migratory bird agreements including the China-Australia Migratory Bird Agreement (CAMBA), Japan-Australia Migratory Bird Agreement (JAMBA) and Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA). The aim of these agreements is the protection of migratory birds in danger of extinction and their habitats. These agreements list terrestrial, water and shorebird species which migrate between Australia and the respective countries.

The habitat at Tenterfield Park provides important roosting and feeding habitat for species listed under these agreements including the Great Egret, White-bellied Sea-eagle and Rainbow Bee-eater.

Fauna Species List

The following is a selection of animals (fauna) which have either been recorded at Tenterfield Park or are likely to occur within the habitat provided by the area.

Common Name	Scientific Name	Common Name	Scientific Name
Arboreal (tree dwelling) Mammals		Birds of Prey	
Common Brushtail Possum	<i>Trichosurus vulpecula</i>	Australian Hobby	<i>Falco longipennis</i>
Koala ^	<i>Phascolarctos cinereus</i> ^	Australian Kestrel	<i>Falco cenchroides</i>
Sugar Glider	<i>Petaurus breviceps</i>	Brown Falcon	<i>Falco berigora</i>
Terrestrial (land dwelling) Mammals		Brown Goshawk	<i>Accipiter fasciatus</i>
Short-beaked Echidna	<i>Tachyglossus aculeatus</i>	Collared Sparrowhawk	<i>Accipiter cirrocephalus</i>
Spotted-tail Quoll ^	<i>Dasyurus maculatus</i> ^	Little Eagle ^	<i>Hieraaetus morphnoides</i> ^
Bats		Wedge-tailed Eagle	<i>Aquila audax</i>
Eastern Bent-wing Bat ^	<i>Miniopterus schreibersii oceanensis</i> ^	Whistling Kite	<i>Haliastur sphenurus</i>
Eastern Broad-nosed Bat	<i>Scotorepens orion</i>	White-bellied Sea-Eagle §	<i>Haliaeetus leucogaster</i> §
Eastern Falsistrelle ^	<i>Falsistrellus tasmaniensis</i> ^	Woodland Birds	
Eastern Forest Bat	<i>Vespadelus pumilus</i>	Apostlebird	<i>Struthidea cinerea</i>
Greater Broad-nosed Bat ^	<i>Scoteanax rueppellii</i> ^	Australian Crow	<i>Corvus</i> spp
Gould's Wattle Bat	<i>Chalinolobus gouldi</i>	Australian King Parrot	<i>Alisterus scapularis</i>
Large Forest Bat ^	<i>Vespadelus darlingtoni</i> ^	Australian Magpie	<i>Cracticus tibicen</i>
Little Forest Bat	<i>Vespadelus vulturinus</i>	Australian Raven	<i>Corvus coronoides</i>
Long-eared Bat	<i>Nyctophilus</i> spp	Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>
White-striped Freetail Bat	<i>Nyctinomus australis</i>	Brown Flycatcher	<i>Microeca fascinans</i>
		Brown Thornbill	<i>Acanthiza pusilla</i>



Common Name	Scientific Name
Brush Cuckoo	<i>Cacomantis variolosus</i>
Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>
Crested Pigeon	<i>Ocyphaps lophotes</i>
Crimson Rosella	<i>Platycercus elegans elegans</i>
Dollarbird	<i>Eurystomus orientalis</i>
Double-barred Finch	<i>Taeniopygia bichenovii</i>
Eastern Koel	<i>Eudynamys scolopacea</i>
Eastern Rosella	<i>Platycercus eximius</i>
Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>
Fan-tailed Cuckoo	<i>Cacomantis flabelliformis</i>
Galah	<i>Cacatua roseicapilla</i>
Golden Whistler	<i>Pachycephala pectoralis</i>
Grey-crowned Babbler ^	<i>Pomatostomus temporalis</i> ^
Grey Butcherbird	<i>Cracticus torquatus</i>
Grey Fantail	<i>Rhipidura fuliginosa</i>
Grey Shrike-thrush	<i>Colluricincla harmonica</i>
Jacky Winter (Brown Flycatcher)	<i>Microeca fascians</i>
Laughing Kookaburra	<i>Dacelo novaeguineae</i>
Leaden Flycatcher	<i>Myiagra rubecula</i>
Little Corella	<i>Cacatua sanguinea</i>
Little Friarbird	<i>Philemon citreogularis</i>
Little Lorikeet ^	<i>Glossopsitta pusilla</i> ^
Magpie-lark	<i>Grallina cyanoleuca</i>
Mistletoebird	<i>Dicaeum hirundinaceum</i>
Musk Lorikeet	<i>Glossopsitta concinna</i>
Noisy Friarbird	<i>Philemon corniculatus</i>
Noisy Miner	<i>Manorina melanocephala</i>
Olive-backed Oriole	<i>Oriolus sagittatus</i>
Pied Butcherbird	<i>Cracticus nigrogularis</i>
Pied Currawong	<i>Strepera graculina</i>
Rainbow Bee-eater §	<i>Merops ornatus</i> §
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>
Red-browed Finch	<i>Neochmia temporalis</i>
Red-rumped Parrot	<i>Psephotus haematonotus</i>
Red Wattlebird	<i>Anthochaera carunculata</i>
Red-winged Parrot	<i>Aprosmictus erythropterus</i>
Restless Flycatcher	<i>Myiagra inquieta</i>
Rufous Whistler	<i>Pachycephala rufiventris</i>

Common Name	Scientific Name
Sacred Kingfisher	<i>Todiramphus sanctus</i>
Satin Bowerbird	<i>Ptilonorhynchus violaceus</i>
Scaly-breasted Lorikeet	<i>Trichoglossus chlorolepidotus</i>
Scarlet Honeyeater	<i>Myzomela sanguinolenta</i>
Shining Bronze-Cuckoo	<i>Chrysococcyx lucidus</i>
Silveryeye	<i>Zosterops lateralis</i>
Spangled Drongo	<i>Dicrurus bracteatus</i>
Speckled Warbler ^	<i>Pyrrholaemus sagittatus</i> ^
Spotted Pardalote	<i>Pardalotus punctatus</i>
Striated Pardalote	<i>Pardalotus striatus</i>
Striated Thornbill	<i>Acanthiza lineate</i>
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>
Superb Fairy-wren	<i>Malurus cyaneus</i>
Torresian Crow	<i>Corvus orru</i>
Tree Martin	<i>Petrochelidon nigricans</i>
Varied Sittella ^	<i>Daphoenositta chrysoptera</i> ^
Welcome Swallow	<i>Hirundo neoxena</i>
White-throated Treecreeper	<i>Cormobates leucophaeus</i>
Weebill	<i>Smicrornis brevirostris</i>
Western Gerygone	<i>Gerygone fusca</i>
White-eared Honeyeater	<i>Lichenostomus leucotis</i>
White-naped Honeyeater	<i>Melithreptus lanatus</i>
White-plumed Honeyeater	<i>Lichenostomus penicillatus</i>
White-throated Gerygone	<i>Gerygone olivacea</i>
White-winged Chough	<i>Corcorax melanorhamphos</i>
White-winged Triller	<i>Lalage tricolor</i>
Willie Wagtail	<i>Rhipidura leucophrys</i>
Yellow-faced Honeyeater	<i>Lichenostomus chrysops</i>
Yellow-tailed Black-cockatoo	<i>Calyptorhynchus funereus</i>
Yellow Thornbill	<i>Acanthiza nana</i>
Yellow-rumped Thornbill	<i>Acanthiza chysorrhoa</i>
Grassland Birds	
Brown Quail	<i>Coturnix ypsilophora</i>
Masked Lapwing	<i>Vanellus miles</i>
Night Birds	
Australian Owlet-nightjar	<i>Aegotheles cristatus</i>
Tawny Frogmouth	<i>Podargus strigoides</i>

Common Name	Scientific Name
Water Birds	
Australasian Grebe	<i>Tachybaptus novaehollandiae</i>
Australian Pelican	<i>Pelecanus conspicillatus</i>
Australian Darter	<i>Anhinga novaehollandiae</i>
Australian White Ibis	<i>Threskiornis molucca</i>
Australian Wood Duck	<i>Chenonetta jubata</i>
Black Swan	<i>Cygnus atratus</i>
Black-fronted Dotterel	<i>Elseyornis melanops</i>
Buff-banded Rail	<i>Gallirallus philippensis</i>
Great Cormorant	<i>Phalacrocorax carbo</i>
Great Egret §	<i>Ardea alba</i> §
Little Pied Cormorant	<i>Microcarbo melanoleucos</i>
Nankeen Night Heron	<i>Nycticorax caledonicus</i>
Pacific Black Duck	<i>Anas superciliosa</i>
Straw-necked Ibis	<i>Threskiornis spinicollis</i>
White-faced Heron	<i>Egretta novaehollandiae</i>
Frogs	
Bleating Tree Frog	<i>Litoria dentata</i>
Broad-palmed Frog	<i>Litoria latopalmata</i>
Brown-striped Frog	<i>Limnodynastes peronii</i>
Eastern Dwarf Tree Frog	<i>Litoria fallax</i>
Green Tree Frog	<i>Litoria caerulea</i>
Peron's Tree Frog	<i>Litoria peronii</i>
Beeping Froglet	<i>Crinia parinsignifera</i>

Common Name	Scientific Name
Smooth Toadlet	<i>Uperoleia laevigata</i>
Spotted Grass Frog	<i>Limnodynastes tasmaniensis</i>
Reptiles	
Copper-tailed Skink	<i>Ctenotus taeniolatus</i>
Dark-flecked Garden Skink	<i>Lampropholis delicata</i>
Eastern Bearded Dragon	<i>Pogona barbata</i>
Eastern Blue-tongue Lizard	<i>Tiliqua scincoides</i>
Eastern Brown Snake	<i>Pseudonaja textilis</i>
Eastern Tiger Snake	<i>Notechis scutatus</i>
Garden Skink	<i>Lampropholis guichenoti</i>
Jacky Lizard	<i>Amphibolurus muricatus</i>
Legless Lizard	<i>Anomalopus leuckartii</i>
Red-bellied Black Snake	<i>Pseudochis porphyriacus</i>
Red-throated Skink	<i>Acritoscincus platynotum</i>
Southern Rainbow Skink	<i>Carlia tetradactyla</i>
Three-toed Lerista	<i>Lerista muelleri</i>
Tree Skink	<i>Egernia striolata</i>

^ threatened species

§ migratory species



Animals found at Tenterfield Park include (from left to right) the Brown Falcon (Photo: I. Taylor), Beeping Froglet (Photo: A. Dudley) and the Striated Pardalote (Photo: I. Taylor)



Feral animals

Feral animals are animals that have been brought into Australia from somewhere else in the world. Released into the wild either accidentally or on purpose, these animals now live and breed in the Australian bush.

Why were they introduced?

Domesticated animals (sheep, cattle, pigs, goats and horses) arrived in Australia with the First Fleet. Some of these animals escaped into the wild where they not only survived but bred, quickly spreading across the country side. More recent escapees that have established wild populations include honeybees, carp, cats, dogs, camels, deer, ostriches and donkeys.

Early European settlers also introduced a number of species (e.g. starlings, blackbirds and sparrows) to make the Australian environment feel more like home. While others such as rabbits, hares, foxes and trout were purposely released into the Australian environment for hunting or fishing. The cane toad was also deliberately released as a biological control for the cane beetle. It failed as a control method but has been a highly successful and invasive feral animal. Still other species such as rats, mice and fire ants have been accidentally introduced, brought into Australia on ships and with imported produce.

Why are they a problem?

Feral animals introduced to Australia generally have few natural predators or fatal diseases, and often successfully produce large numbers of offspring. This allows them to spread rapidly.

Australian native animals lived and evolved in relative isolation for millions of years. Since European settlement they have had to compete with feral animals for food, water, shelter and nesting sites. Predation from introduced cats, dogs and foxes has had a significant and detrimental impact on many native animal populations that previously had few large predators.



Feral goats occur across Australia (Photo: W Hawes)

Feral animals often degrade native fauna habitat e.g. pigs dig up soil causing soil erosion and grazing by rabbits and hares removes food sources and shelter for other small mammals like bandicoots. For native animals the impact of feral animals is often made worse by the loss of habitat resulting from land clearing and degradation.

Feral animals also have the potential to spread disease to wildlife and livestock. The risk feral animals pose on native flora and fauna has been recognised by the listing of many of these species as a key threatening process under State and Commonwealth legislation.

Controlling feral animals

While it would be desirable to remove feral animals from the Australian environment, in most cases it is not achievable. Often the vast numbers of animals involved or the remoteness and inaccessibility of the area they inhabit make eradication expensive and ineffective.

A number of control methods are however available to control feral animal numbers or exclude them from particular areas, thereby reducing their impact on native flora and fauna. These methods include conventional control techniques and biological controls.

Conventional control methods are used to reduce feral animal populations or exclude animals from an area. Methods include trapping, baiting, fencing and shooting.

Biological controls generally involve using species specific diseases and or predators to reduce feral animal populations. For example, myxomatosis and calicivirus have been successful in reducing rabbit populations.

Important feral animals at Tenterfield Park include:

European Red Fox (*Vulpes vulpes*)

Introduced from Europe into Victoria in 1871 for recreational hunting the fox rapidly spread across the Australian mainland. Tasmania remained fox free until 2001, when it was deliberately and unlawfully introduced to the island state.

The fox is considered responsible for the decline and extinction of many native ground dwelling mammals in the weight range 35 to 5,500 grams. Foxes carry many diseases that can infect both native wildlife and domestic animals (and particularly dogs), including hydatids, distemper, parvovirus, canine hepatitis, heartworm and sarcoptic mange.

The fox has been successful in Australia because it has a wide-ranging diet that includes mammals, birds, reptiles, frogs, insects and fruit. It is generally not restricted by climate or landscape type and can be found in all environments except the tropical north. Although litters are small and females only breed once a year, a lack of any serious diseases or major predators means cub survival rates are high. All these factors allow for unchecked population growth, although dingoes are thought to control fox numbers where they occur.

Historically bounty systems (hunters paid for each animal killed) were used to reduce fox numbers together with a range of control techniques e.g. shooting, poisoning and trapping. Bounties have had limited success mainly because control actions generally occur where foxes are easiest to collect rather than where they are causing most damage. In more recent years the use of poisons such as 1080 are recommended to reduce fox populations, with other options including shooting, trapping and fumigation.

Cat (*Felis catus*)

Cats were introduced to Australia with European settlers although they may have arrived earlier from the shipwrecks of Dutch explorers. By the 1850s wild populations of feral cats were well established. Deliberate releases of cats occurred in the 1800s in the misguided belief they would control populations of rats, mice and rabbits.

Feral cats have had a devastating impact on island fauna, having caused the extinction of a subspecies of the red-fronted parakeet on Macquarie Island. On the mainland it is likely cats have contributed to the extinction of many small to medium sized mammals and ground-nesting birds. Cats carry diseases such as toxoplasmosis and sarcosporidiosis, which can cause illness and death in native animals, domestic livestock and humans.

Attributes which have allowed feral cats to successfully establish in the wild are a wide-ranging diet which includes; small mammals, birds, reptiles, frogs, fish and insects. Obtaining much of their water needs from their prey feral cats can survive with limited access to water. Cats are not restricted by climate or landscape and are found in all Australian environments except wet rainforests. Able to breed from one year of age cats



*1080 poisoning is the recommended control method for foxes
(Photo: W Hawes)*



Desexing domestic cats and keeping them in at night helps protect native fauna



can produce 2 to 3 litters of about 4 kittens a year, although only a few young survive. It is thought dingoes and foxes control cat numbers through direct predation and competition. Wedge-tailed Eagles are also known to prey on cats.

Conventional control methods have successfully eradicated feral cats from Macquarie Island, protecting important sea-bird nesting colonies. On the mainland control is difficult and expensive. Feral cats are often trap-shy, avoid baits and keep away from humans, making them hard to shoot. Control is made more difficult as techniques must also not harm domestic cats.

Barrier fencing, combined with eradication inside the fences, has proved to be effective for protecting endangered species that are being reintroduced. For example, fences are now used to exclude feral cats and other predators from bilby colonies in Queensland.

Cats are an issue for wildlife at Tenterfield Park due to the close proximity of residential houses. People can help protect the fauna at Tenterfield Park by desexing their domestic cats and keeping them in at night.

Other Feral Animals

English Starling, Rabbits and Hares.

Student Activity

Looking at Groundcover

Teacher's Notes

Much of the biodiversity within Grassy Box Woodland lies within the groundcover layer. In healthy woodland this vegetation layer supports a wide variety of native plants and animals. Tall grass tussocks provide shelter for small mammals, reptiles and ground-nesting birds. Native grasses and forbs are also an important food source (forage, seeds, fruit and nectar) for a wide range of animals (kangaroos, finches and insects). Between the grass tussocks dead plant material (litter) is recycled by invertebrates, fungi and bacteria to provide soil nutrients and maintain soil structure.

The aim of this activity is to give students an appreciation of the components of the groundcover layer and the variety of plants it supports.

Skills Required

- Basic counting
- Ability to visually identify differences in plant types
- Ability to record numbers

Equipment Required

- 1 hoola-hoop between two–three Pencil
- Activity Recording Sheet for each group
- Plant identification guides or resources (optional)

Time Needed

10-20 minutes

Activity

Students should select a site within a natural area of Grassy Box Woodland or Derived Grassland. When selecting their site it is important they avoid disturbed areas ie near tracks, roads, car parks, play equipment and park furniture. These areas will generally have more weeds, less native species and litter and therefore be of poorer habitat quality.

Having selected a site, students should toss or drop their hoola-hoop onto the ground while avoiding throwing it over large shrubs and young trees. Looking closely at what lies within the hoop they should use the Activity Recording Sheet to identify and record:

- How many different types of plants are present.
- Are the plants grasses, forbs or low shrubs.
- Is litter (dead grass, leaves and small twigs) present.
- Are larger fallen branches or logs present.
- Any animals (e.g. insects or lizards) they see.



Students should count how many different plants they found in their hoop.

Having completed their activity sheet the group should come together to compare results. Are the results the same? If not, what are the differences and why do they exist? For example, often the number and types of groundcover plants will be different under a tree than in an open area. These variations result from differences in nutrient, water and light availability and are important in adding to the diversity of the woodland ecosystem. Ask student's to consider if there is anything that could be done to improve the habitat value of the groundcover.

If time allows a second site in a more highly disturbed area can be undertaken to provide a comparison of different management regimes. Degraded sites can be found adjacent to tracks or within the mown picnic area. Students can compare their findings, identify differences and discuss the relative habitat values of the two areas, i.e. would they be able to support the same animal species? If not, why not?



Looking at Groundcover

Activity Recording Sheet

Toss or drop your hoop onto the ground and look at what is inside your hoop.

For each different type of plant you can see fill in a row in the table below, circling the most fitting plant type and plant height.

Plant Number	Plant Type* (Circle the best fit)	Plant Height (Circle the best fit)	Number of these plants present
1	Grass Forb Low Shrub	0-30cm / 30-100cm	
2	Grass Forb Low Shrub	0-30cm / 30-100cm	
3	Grass Forb Low Shrub	0-30cm / 30-100cm	
4	Grass Forb Low Shrub	0-30cm / 30-100cm	
5	Grass Forb Low Shrub	0-30cm / 30-100cm	
6	Grass Forb Low Shrub	0-30cm / 30-100cm	
7	Grass Forb Low Shrub	0-30cm / 30-100cm	
8	Grass Forb Low Shrub	0-30cm / 30-100cm	
9	Grass Forb Low Shrub	0-30cm / 30-100cm	
10	Grass Forb Low Shrub	0-30cm / 30-100cm	
11	Grass Forb Low Shrub	0-30cm / 30-100cm	
12	Grass Forb Low Shrub	0-30cm / 30-100cm	

Is there litter (dead grass, leaves and twigs) between the plants? Yes / No

Are there larger fallen logs present? Yes / No

Did you see any animals in your hoop? Yes / No

If yes, list the animals you saw:

.....

How many different types of plants did you see in your hoop?

Do you think the groundcover in your hoop is good habitat? Yes / No

Give two reasons for your answer to the last question

1.

2.

*Plant Types:

Grass: long narrow leaves often forming tussocks or clumps with no obvious flowers

Forb: soft plants with a variety of leaf shapes that during spring and summer have obvious flowers e.g. dandelions

Low Shrub: a plant with a woody stem less than 1 m tall that during spring and summer will have obvious flowers

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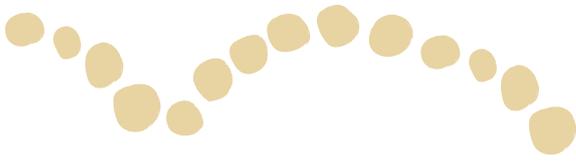
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Glossary

Arboreal: Living in trees.

Aquatic: Living in water.

Biodiversity: The variety of all living things. It includes animals, plants, fungi, bacteria and viruses, the genes they contain and the ecosystems they form.

Canopy: The leaves and branches of trees and shrubs.

Derived Grassland: Is grassland created by the removal of the tree and shrub layers of a woodland or forest.

Domesticated: Animals that live with and are dependent upon humans e.g. livestock and pets.

Dominant: The most common plant species.

Ecosystem: Is the combination of plants, animals and micro-organisms that depend on each other and the non-living environment (soils, geology, climate) they need to live.

Erosion: Is the movement of soil and rocks by water or wind. The roots of plants (trees, shrubs and grasses) hold soil and rocks in place. If there are large areas of bare dirt and only a few plants then erosion can happen very fast.

Feral animals: Animals brought to Australia from elsewhere in the world that have been released or escaped into the bush where they survive and breed independently of humans.

Forb: A small non-woody plant that is not a grass e.g. lilies, orchids, daisies, sedges.

Forest: Vegetation where the canopies of the tallest trees mostly touch or overlap.

Fragmentation: The process whereby native vegetation or habitat is cleared across most of the land so that only small patches of native vegetation remain. The large areas of cleared land between patches make it hard for lots of plants and animals to move across the land to find food, shelter, nesting sites and mates.

Grassland: A plant community that has a grassy groundcover but no tree or shrub layers.

Groundcover: Plants up to 1 m tall which cover the ground.

Habitat: The home of plants or animals. It provides plants or animals with space, shelter, food, water and breeding sites.

Introduced species: Plants and animals brought to Australia from elsewhere.

Landscape Connectivity: Describes how connected habitat is for plants and animals. For example, is native vegetation in isolated patches or are there large patches of vegetation remaining and are these patches connected by corridors of native vegetation? Good connectivity allows plants and animals to move across the landscape to find food, shelter and breeding sites. Good connectivity is important in maintaining the health of our natural ecosystems.

Litter: Dead grass, leaves and small twigs found on the ground.

Mistletoe: Partially parasitic plants which live on the branches of trees and shrubs.

Native: Plants or animals present in Australia at the time of European settlement.

Organism: A living being.

Overstorey: The layer of tallest trees.

Parasite: A plant or animal that lives and feeds off another.

Predators: Animals which hunt other animals for food.

Riparian: Any land or vegetation which adjoins or is directly influenced by a body of water (river, lake, creek).

Species: Types of plants or animals.

Spp: More than one type of plant or animal species.

Terrestrial: Living on land.

Threatened Ecological Community: A plant community listed under the *NSW Threatened Species Conservation Act 1995* (TSC Act) or *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). These listings, also known as Endangered Ecological Communities, protect all parts of the community (trees, shrubs, grasses, forbs) as well as any habitat elements (fallen logs, rocks, leaf litter, standing dead trees).

Understorey: The plant layer below the canopy but taller than 2 m in height.

Vegetation: Another term for plants.

Weeds: In environmental terms (and in this document) weeds are introduced plants which invade and often replace native plant species threatening the functions of natural ecosystems. In agriculture, some native plants are regarded as weeds when they compete with crops or are undesirable for grazing or livestock.

Woodland: Vegetation where the canopies of the tallest trees are mostly not touching. If the canopies of the tallest trees are very widely spaced then the vegetation is open woodland.



**Catchment Management
Authority**
Border Rivers-Gwydir

Inverell

15 Vivian Street | PO Box 411
Inverell NSW 2360
T: 02 6728 8020
F: 02 6728 8098

Moree

66-68 Frome Street | PO Box
569 Moree NSW 2400
T: 02 6757 2550
F: 02 6757 2570

Glen Innes

68 Church Street | PO Box 380
Glen Innes NSW 2370
T: 02 6732 2992
F: 02 6732 5995

Armidale

UNE Trevenna Road | PO Box
U245 Armidale NSW 2351
T: 02 6773 5269
F: 02 6773 5288

Goondiwindi

Waggamba Square, Brook
Street Goondiwindi QLD 4390
T: 07 4671 7960
F: 07 4671 2966

W: www.brg.cma.nsw.gov.au

E: brg@cma.nsw.gov.au

We work to help people in our communities look after
their land for future generations.