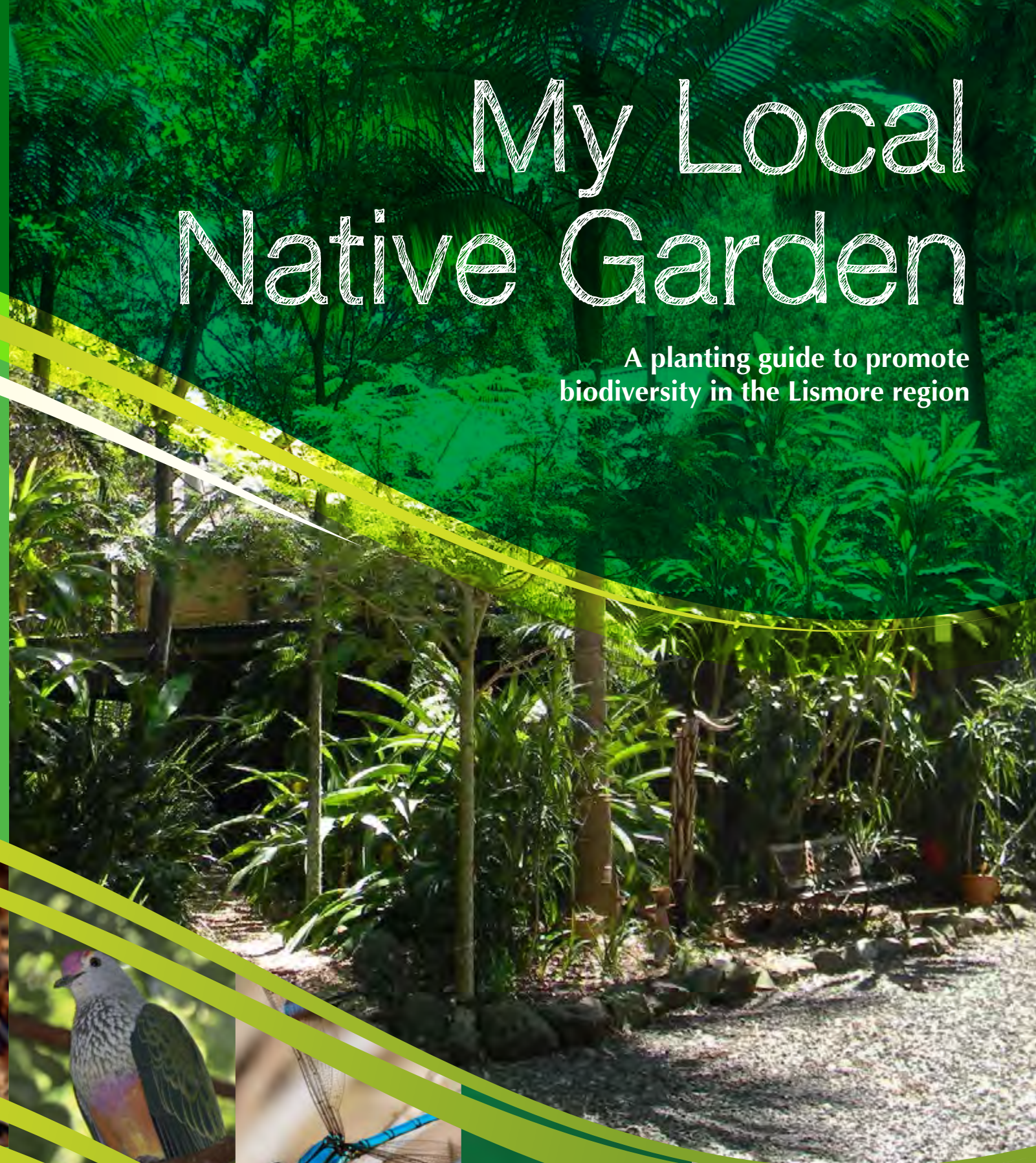


# My Local Native Garden

A planting guide to promote biodiversity in the Lismore region





# Acknowledgements

Rous County Council and Lismore City Council acknowledge Brunswick Valley Landcare for granting Rous County Council and Lismore City Council permission to utilise the information within the above publication.

This document is also available in PDF format on the internet at: [www.rous.nsw.gov.au](http://www.rous.nsw.gov.au) and [www.lismore.nsw.gov.au](http://www.lismore.nsw.gov.au)

## My Local Native Garden Guide: A planting guide to promote biodiversity in the Lismore Region (2016).

Adapted by Rous County Council and Lismore City Council based upon the publication.

My Local Native Garden Guide: A planting guide to promote biodiversity in the Byron Shire (Brunswick Valley Landcare 2011).

The Byron Shire guide is available in PDF format on the internet at: [www.brunswickvalleylandcare.org.au](http://www.brunswickvalleylandcare.org.au)

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### And the following people and organisations for their invaluable input:

Byron Shire Council & Scott Hetherington  
Bush Futures Project & Angus Underwood

Rous County Council and Lismore City Council acknowledge Darren Bailey’s invaluable input into the Lismore Region edition of the My Local Native Garden guide.

### Authorised by Lismore City Council

Printed on Carbon Neutral and FSC (Forest Stewardship Council) mixed sources certified paper, Lismore City Printery, Lismore, NSW.

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Black Bean  
Illustration: A Erskine



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# Introduction

## WELCOME TO MY LOCAL NATIVE GARDEN – A PLANTING GUIDE TO PROMOTE BIODIVERSITY IN THE LISMORE REGION.

### MESSAGE FROM ROUS COUNTY COUNCIL

Have you ever stopped to think how we've inherited clean water to drink, fresh air to breathe or how our soils continue to grow healthy food? The answer is biodiversity – literally the variety of plants and animals, their genetics and the ecosystems they live in. These plants and animals, soils and microorganisms all help to 'filter' our water, generate our oxygen and provide the gift of healthy soils. We need to protect biodiversity for our own health as well as play our part in looking after the earth.

When we turn on our taps, the quality of the water that flows out has been influenced by these natural processes. Rous County Council is the bulk water supply authority with a primary responsibility to 'supply high quality safe drinking water.' And so how is biodiversity and our local native gardens involved in this function?

All of the key water sources of Rous County Council (Rocky Creek Dam, Emigrant Creek Dam and the Wilsons River source) are located within the Big Scrub landscape. In this way, Rous water represents 'water from the Big Scrub rainforest.' The quality of these water sources is dependent upon the prevailing conditions in these water catchment areas. Management of catchments is important for improving the quality of water flowing from the hillsides and into our streams. Protecting and restoring native vegetation serves a range of functions that improve the quality of the catchment, and have a beneficial effect on water quality, one of the key management goals of Rous County Council.

Rous County Council encourages all landholders in our water catchment areas – whether at an the individual lot level in an urban setting or at a larger scale in our rural areas – to create a native garden or other natural habitat area to positively influence water



sources within our catchments. In this way you will be helping to manage water in partnership with nature by helping to protect the health of our waterways, for the benefit of our local drinking water supply and the enhancement of biodiversity in the Big Scrub landscape.

Scrambling Lily  
Illustration: A Erskine



### MESSAGE FROM LISMORE CITY COUNCIL

The Lismore Local Government Area (LGA) is located within the Northern Rivers Region and is recognised for its amazing biodiversity – one of the richest and most diverse regions for flora and fauna and their associated habitats in Australia. The LGA borders onto the World Heritage listed Border Ranges National Park and is within the Border Ranges rainforest region. The LGA also contains fragments of the Big Scrub rainforest, which was once Australia's largest expanse of lowland subtropical rainforest. The Big Scrub was extensively cleared following European settlement and now less than 1% of its original extent remains. The high biodiversity is a result of the regions position in the Macleay-McPherson Overlap, where the southernmost limit of many tropical species and the northernmost limit of many temperate species coincide.

Within the LGA the biodiversity values include over 1000 vascular plants, 60 species of mammal, 236 species of bird, 33 species of amphibian and 55 species of reptile. The Northern Rivers Region contains a large number of endemic species and whilst the region occupies just 6.3% of NSW, it supports over 40% of the state's threatened species, including around 70% of threatened frogs, 75% of threatened birds, 60% of threatened mammals and 40% of threatened plants. In addition, one fifth of the State's threatened ecological communities are known to occur in the Northern Rivers Region.

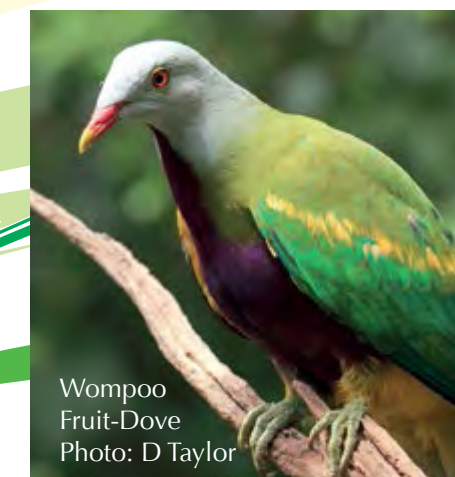


Green Tree Frog (juvenile)  
Photo: W Gibney

Increased population, dated land management practices and pressure from agriculture and development have fragmented the original environment into small 'islands' or remnants where species are vulnerable to weeds, pests and predators. When it comes to flora and fauna, we often think of an individual species being in danger of extinction, but the reality is each individual species depends on a range of other species – a 'community' – for their survival. This is the inter-dependence of ecosystems and why it is important to protect not just one species, but all species – biodiversity.

**BY PLANTING A NATIVE GARDEN FILLED WITH LOCAL PLANTS YOU CAN CONNECT YOUR GARDEN TO THE EXISTING WILDLIFE CORRIDORS AND ENHANCE THE SURVIVAL FOR MANY NATIVE SPECIES AND THEIR ECOSYSTEMS**

This publication hopes to inspire you to invite the natural world into your own backyard. It is an entry point to introduce you to just some of the incredible variety of local native plants. The guide will assist you to design, plant and maintain your own garden with species that are local to your area. By following our basic planting guide, your garden will not only be easier to grow and maintain, but it will integrate into the surrounds, linking



Wompoo  
Fruit-Dove  
Photo: D Taylor



Macadamia  
Illustration: H Bunkers

with a range of natural habitats to help support the great diversity of local wildlife. By creating a backyard native garden you are helping to protect and restore biodiversity; the health of our waterways and drinking water supply; the land, wildlife and people.



Leaf-tailed Gecko  
Photo: R Hartlieb



## My Local Native Garden Sections:

AS THERE ARE MANY FACTORS THAT AFFECT AND INFLUENCE NATIVE VEGETATION, IT IS DIFFICULT TO BE PRECISE ABOUT WHAT TYPE OF VEGETATION COMMUNITY WILL THRIVE AT YOUR PLACE. SO TO HELP YOU IDENTIFY WHICH NATIVE COMMUNITIES BEST SUIT YOUR GARDEN WE HAVE DIVIDED VEGETATION TYPES INTO 3 ZONES:

COASTAL PLAINS RIVERS AND FLOODPLAINS (P 18-21)	MIDLAND HILLS (P 22-25)	ESCARPMENT RANGES (P 26-29)
<p>Bexhill Blakebrook Boatharbour Boorie Creek Booyong Broadwater Buckendoon Coraki Corndale Dungarubba East Coraki Eltham Fernside Green Forest Goolmangar Howards Grass Jiggi Kilgin</p> <p>Koonirigan Lagoon Grass Lismore (South, North, CBD) Loftville Monaltrie Ruthven South Gundurimba Spring Grove Tatham Tuckurimba Tuncester North Woodburn Woodlawn Wyrallah</p>	<p>Bentley Blue Knob Bungabee Caniaba Chilcotts Grass Corndale Clunes Coffee Camp Dorroughby Dunoon East Lismore Girards Hill Goonellabah Georgica Keerrong Larnook Leycester Lindendale Lismore Heights Marom Creek</p> <p>McLeans Ridges McKees Hill Modanville Mountain Top Numulgi Nimbin Pearces Creek Repentance Creek Richmond Hill Rock Valley Rosebank Stoney Chute The Channon Terania Creek Tregeagle Tucki Tucki Tullera Tuntable Creek</p>	<p><b>Along the ridges and the gullies of:</b> Dorroughby Mountain Top Nightcap Nimbin Repentance Creek Terania Creek The Channon Whian Whian</p>



## How to use this book

### 1. Look 2. Check 3. Choose

at the sections opposite (Coastal Plains; Midland Hills; Escarpment Ranges) – which best describes your property? Go to it and view the range of stunning plants that will enrich your garden.

the locations under the section heading– is their one near you? Do the soil and landscape descriptions fit your place? If not, look at some other sections – your garden may draw inspiration from two or more sections\*.

from the list of striking native plants in your section – ring up your local bush friendly nursery and ask them if they have your selection in stock.

\* Remember – finding a garden type that resembles your property is a ‘best fit’ – this is a general guide and your garden may include sections and plants from one, two or even three zones. If you’re unsure, try visiting your local nursery with a soil sample, get in contact with your local Landcare group or ask advice from an environmental strategies officer at Council.



Birdsnest Fern  
Illustration: H Bunkers

Photo: R Hartlieb



## WHAT IS A 'PLANT COMMUNITY'?

Plant communities are a unique assemblage of flora that have evolved as a result of interactions between a variety of factors such as:

- Geology - underlying rock type and its effect on soils and nutrients
- Soil type - whether the soils are free draining (sand based) or swampy (heavy clay based); fertile or low in organic matter
- Elevation - increased altitude usually leads to cooler, wetter conditions, it can also affect temperature and exposure, (all of which impacts on soil types), and can determine if an area is prone to frost
- Aspect - particularly on slopes where one side has predominantly sun/shade and/or particular winds
- Distance from the coast - exposure to salt laden winds or in tidal zones where only those species that can handle brackish inundation can thrive
- Temperature- the variation in temperature range increases with distance from the moderating influence of the ocean
- Humidity - closer to the coast, sea breezes can moderate the effect of humidity
- Rainfall - across the Lismore Region, high rainfall favors certain species.

Snake Vine  
Illustration: A Erskine

MANY RELATIONSHIPS WITHIN A PLANT COMMUNITY ARE SYMBIOTIC - WHERE THERE IS A RELIANCE OR MUTUAL BENEFIT DERIVED BETWEEN SPECIES - CREATING AN INTERCONNECTED 'WEB'. ADDITIONALLY, OVERLAPPING AREAS OF COMMUNITIES ARE KNOWN AS TRANSITION ZONES OR 'ECOTONES', WHICH SHOW A PARTICULARLY HIGH LEVEL OF SPECIES RICHNESS

Below is a list of just some of the many local ecological communities in the Lismore Region - several of these are listed as threatened under State or Federal legislation.

### EXAMPLES OF NATURAL PLANT COMMUNITIES

#### Mangroves

Swamp sclerophyll forests on coastal floodplains

#### Swamp oak floodplain forests

Freshwater wetlands on coastal floodplains

#### Subtropical coastal floodplain forests

Lowland rainforests on floodplain

#### Dry rainforest

Wet sclerophyll forest (shrub grass formation)

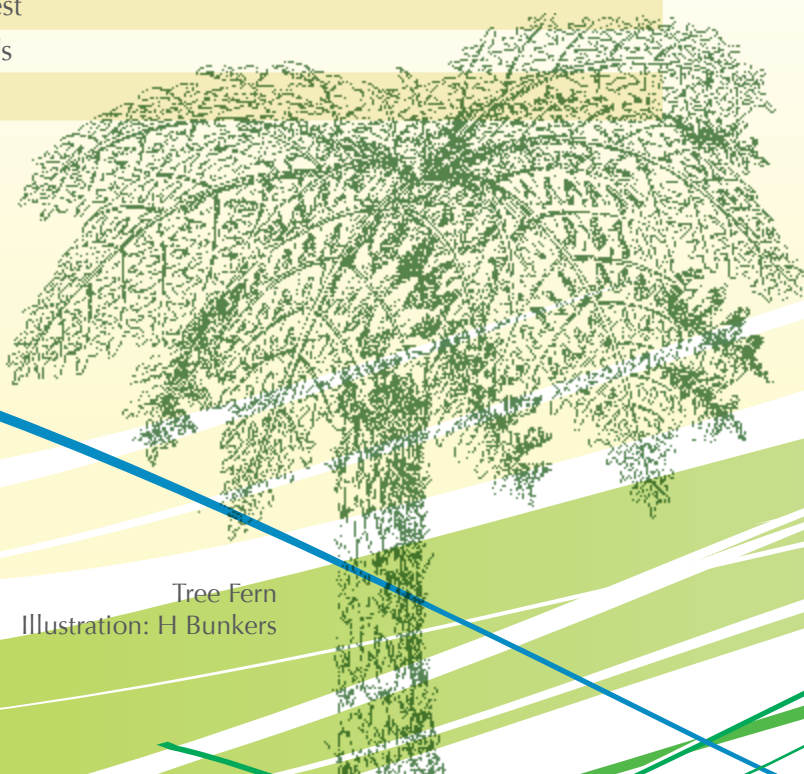
#### Dry sclerophyll forest (shrubby sub formation)

Riparian rainforest

#### Eastern riverine forest

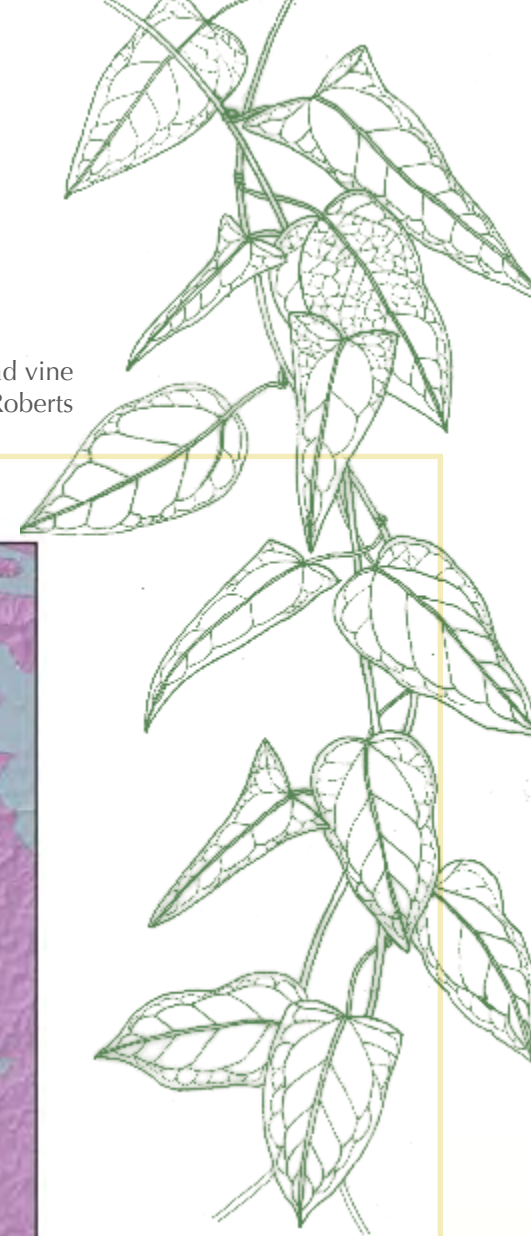
Heath & shrub-lands

#### Open forests

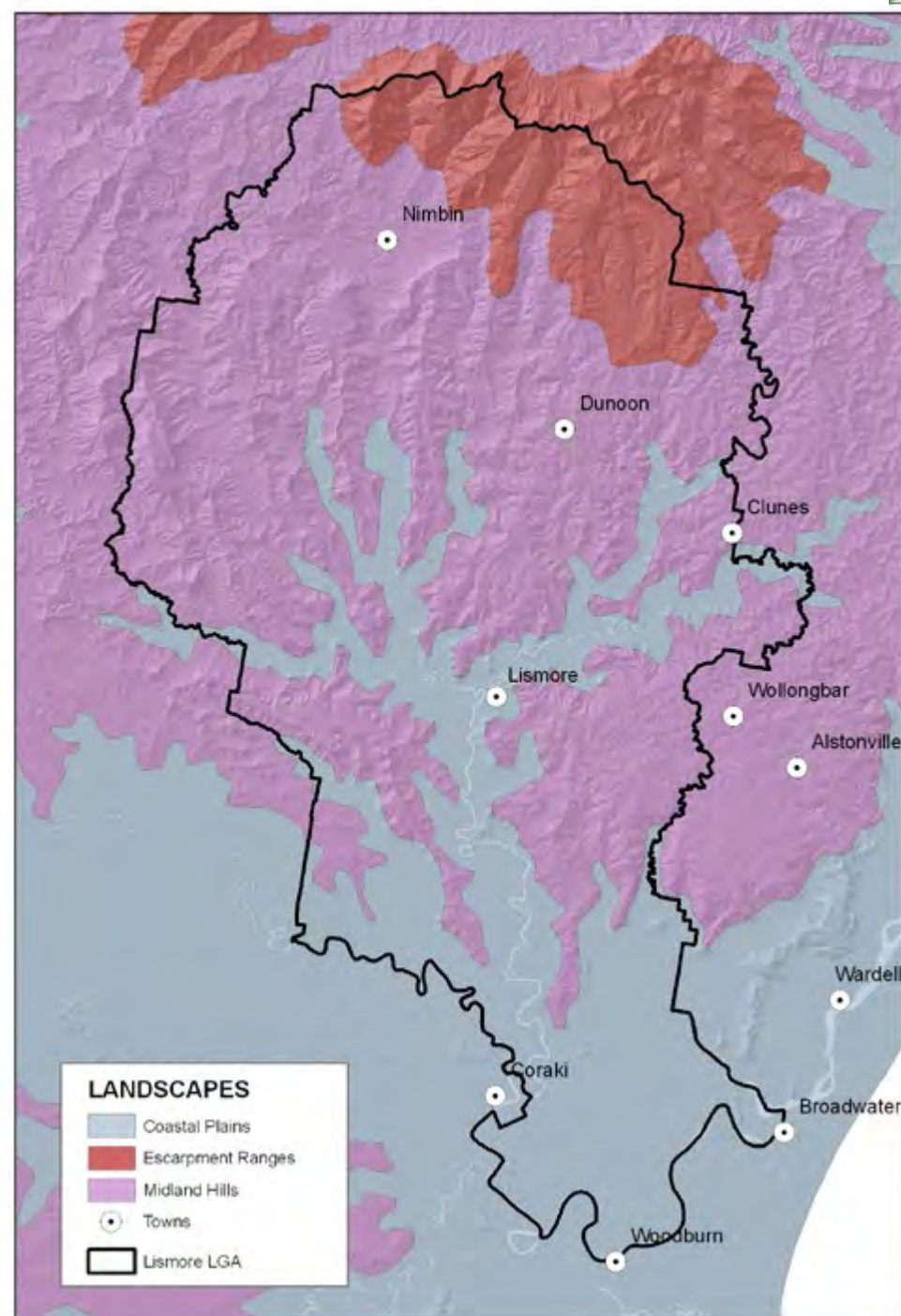


Tree Fern  
Illustration: H Bunkers

Arrowhead vine  
Illustration: T Roberts



### Landscapes of Lismore





# Landscaping for Water Quality

## DID YOU KNOW THAT LISMORE AND ITS SURROUNDING VILLAGES LIE WITHIN A DRINKING WATER CATCHMENT?

A catchment is an area of land that feeds water to a particular creek, river or other water body. In Lismore, water is pumped directly from the Wilsons River to the Nightcap Water Treatment Plant, for treatment before it is distributed across the region as drinking water.



## WHAT WE DO IN OUR CATCHMENT AFFECTS THE QUALITY OF OUR REGIONS DRINKING WATER

In Lismore and our surrounding villages, stormwater flows either directly across the landscape into creeks and rivers, or it travels through a network of drains and underground pipes before it empties into our waterways, carrying with it a range of pollutants and increasing the potential for erosion. When this happens within a drinking water catchment it affects river health and drinking water quality by introducing:



- Sediments from erosion and runoff that harms aquatic life, clogs streams and burdens the drinking water treatment process;
- Pathogens from pet waste and inadequate septic systems;
- Nutrients from lawn and garden fertilisers that can promote the growth of aquatic plants and cause toxic algal blooms; and
- Chemicals from garden pesticides, herbicides, automotive fluids or car washing detergents.

improve the quality and quantity of water entering our local waterways.

Incorporating WSUD in backyard design can:

- Filter pollutants from stormwater before it enters our waterways;
- Reduce the volume of stormwater entering our waterways;
- Improve the health of our waterways and our local water supply;
- Minimise demand on the reticulated town water supply system;
- Incorporate collection, treatment and/or reuse of stormwater;
- Mitigate the impacts of floods;
- Enhance the beauty of your property;
- Filter sediment, pathogens, nutrients and chemicals; and
- Maintain healthy waterways for future generations to enjoy.

## TECHNIQUES TO HELP PROTECT WATERWAYS

Water Sensitive Urban Design (WSUD) seeks to minimise these impacts by using a holistic approach to town planning and development, which embraces the management and conservation of water.

WSUD can be incorporated in your property design to capture, treat and reuse stormwater. By utilising WSUD at your place, you can help to significantly

## Water Sensitive Urban Design - What you can do!

There are a number of simple and effective ways you can implement WSUD in your backyard such as:

- Build a raingarden
- Install a rainwater tank
- Use landscaping materials for water quality





# Design

LISMORE AND ITS SURROUNDING VILLAGES HAVE AN OUTSTANDING PALETTE OF INDIGENOUS PLANTS TO CHOOSE FROM. A GARDEN THAT UTILISES LOCAL SPECIES WILL LOOK MORE IN PLACE WITH ITS SURROUNDS AND LINK UP WITH EXISTING HABITAT TO 'INVITE' THE NATIVE WILDLIFE TO YOUR PLACE.

SUCCESSFUL GARDEN DESIGN BEGINS WITH A SITE PLAN - A SCALE DRAWING THAT INCLUDES ANY SIGNIFICANT FEATURES OF THE SITE SUCH AS EXISTING TREES, SHEDS AND PATHS ETC.

## SITE ANALYSIS

Site Analysis is a pivotal stage that lists an inventory of existing and desirable features of the garden that guide the design. Typical features include:

- Direction of cooling summer breezes and warm winter sun (typically north east) – best to leave free of obstructions and keep plantings low.
- Direction of cold winter winds (typically south west) – best for larger trees and wind block plantings to shelter the property
- Desirable views to retain and areas in the garden or rooms of the house where you wish to create privacy
- Undesirable views to obscure
- Pedestrian and vehicle access
- Trees & plants to be retained

- Problem areas to address such as soil quality & drainage
- Fences, overhead power lines & underground cables
- Water outlets

Sadly... we've all done it... excited by a surge of plant impulse buys, we give little thought to an overall layout. The result: a garden that doesn't function with the surrounding environment. Creating an initial design for a new garden or even renovating an existing garden will give you an overview of what to aim for, even if funds only allow realising the design gradually over time.



Pruned Lilly Pilly hedge with Giant Spear Lily. Photo: V Dante

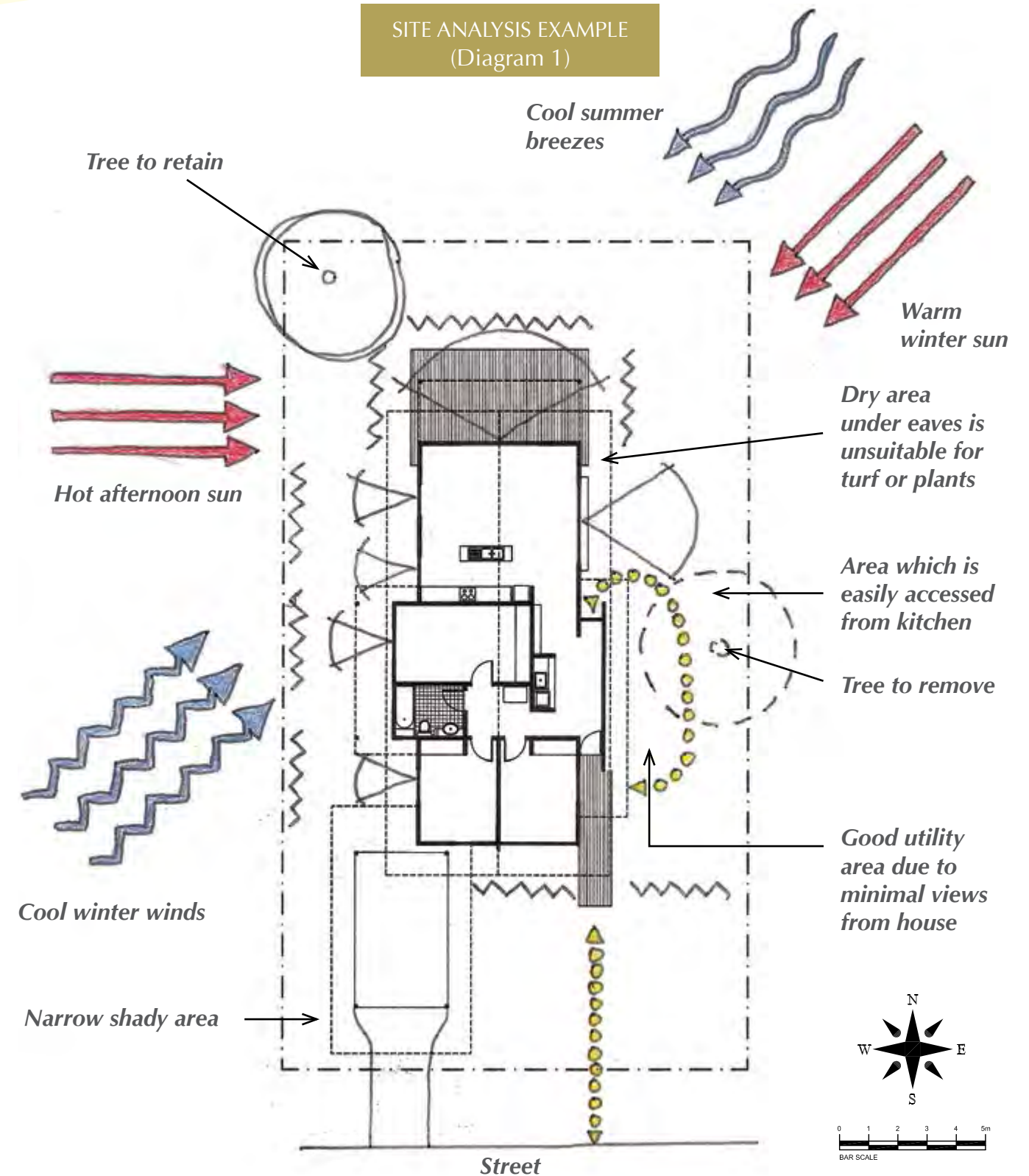


Illustration: M Lisson





Hibiscus Harlequin Bug. Photo: L Koesterke

## DESIGN

Once you have considered your existing site analysis, you can think about your needs and define your objectives, then develop a concept plan. This is a simple bubble diagram that helps you to consider where the different functional areas will be located and how they will connect and relate to one another.

This section is designed to help you plan a simple and effective garden landscape for water quality. Incorporating these techniques can filter out pollutants and soak up excess water on your property influencing water sources within our catchments and helping to protect the health of our waterways, our local drinking water supply, land, wildlife and people.

**ARMED WITH YOUR SITE PLAN AND ANSWERS TO THE FUNCTIONS OF YOUR GARDEN, START DESIGNING WHERE THE FOLLOWING POINTS WILL BE ON YOUR PLAN**

### • BACKYARD BUFFERS

Buffers are gardens of densely planted native species placed between hard surfaces at the location where stormwater leaves your property. While the size of buffers can vary, wider buffers have a greater ability to stabilise soils, filter pollutants, and absorb stormwater.

### • FILTER STRIPS

Filter strips are a type of backyard buffer that can be used in a wide variety of places in order to improve water quality. Examples of filter strips in the backyard include flower beds with ornamental grasses, perennial gardens, and “no-mow” zones. As rainwater passes through a filter strip, the low growing vegetation slows the movement of water, allowing sediment to settle out, and excess nutrients and pollutants to be filtered by the plants. The plants also help absorb some of the rainwater, resulting in less stormwater from your property.

### • RAINGARDENS

Raingardens (also known as bio retention systems), are garden beds that use a coarse or porous soil mixture of sand or gravel beneath a bed of native plants to capture, filter and treat stormwater from your driveway or roof. Raingardens reduce flooding by sending the water back underground rather than into the street. In addition, raingardens promote biodiversity by providing habitat for wildlife.

### • RAINWATER TANKS

Installing a rainwater tank is one of the easiest ways to reduce the amount of stormwater leaving your property, by collecting runoff from your roof and storing it for later use. Rainwater tanks come in all shapes and sizes and can be simply fitted with a tap and connected to a hose for watering the garden and for washing pets and vehicles. Your rainwater tank could also be connected internally providing water for toilets and laundry.

### • MATERIALS

Think about all of the hard surfaces that cannot absorb water, such as driveways, carports, rooftops, patios, and paths. These areas will increase rainwater runoff rather than absorbing it. Use porous materials designed to allow water to soak through the surface and seep back into the ground.

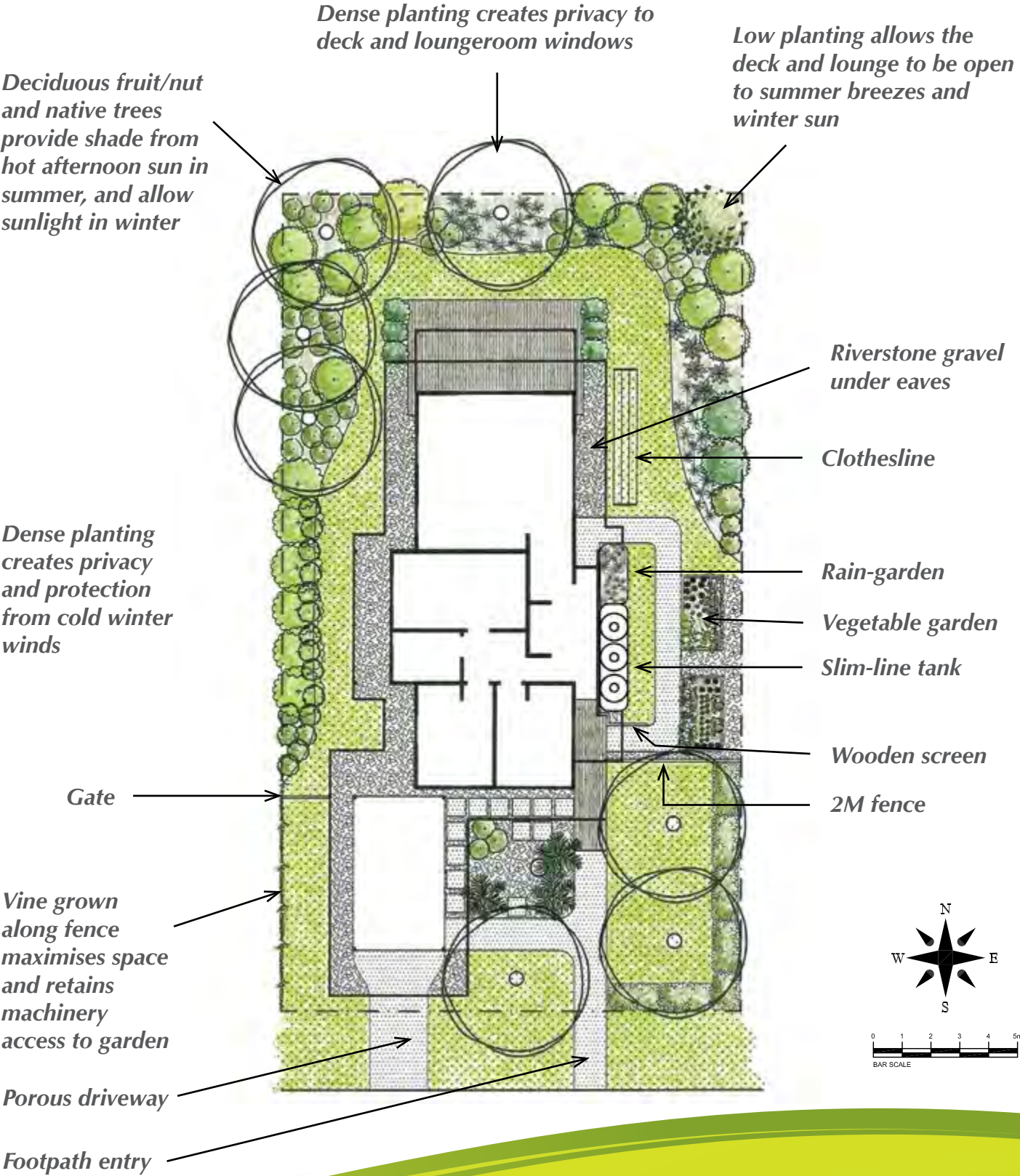
### • OTHER CONSIDERATIONS

Structural diversity is a crucial element in creating an assortment of habitats in your garden. Try to choose a variety of plants and layers, i.e. groundcovers & grasses, vines & scramblers, shrubs & thickets, small and tall trees, that will in turn maximise the range of wildlife that will come to nest, rest and play in your garden.

**Think about what functions you want your garden to serve.**

- Is there a place to relax and to entertain?
- Do you wish to attract birds and butterflies?
- Do you require children’s play areas or outdoor entertaining areas?
- What about site features such as pools, garden sheds or pergolas?
- Is low maintenance a priority?
- Do you want vegetable gardens and/or chickens?
- Do you have pets and will they need to be fenced?

GARDEN DESIGN EXAMPLE  
(Diagram 2)







Foambark. Photo: I Stych

## BASIC PLANTING GUIDE

### Before you plant

- Check your soil type – does it match the description & type of garden & plants in your zone? Does the soil need any ‘conditioning’ (mulch, fertiliser, organic matter) before planting?
- Choose plants – pay attention to microclimate, (e.g. full sun/shade, etc)
- Prepare the site – Preliminary weeding, dig all the holes and have fertiliser, mulch and water on hand

### Correct planting technique

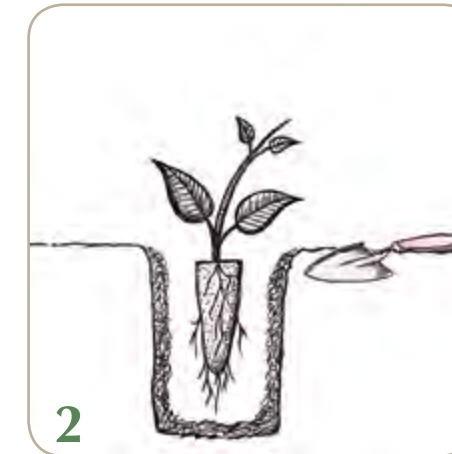
Check with the nursery where you purchase the plants about specific planting tips for your selected species, e.g. siting of the planting, watering & fertiliser requirements, mulching etc. Reputable online gardening websites can also be a great source of information.

### GETTING HELP

Help can be obtained from Lismore City Council, landscape designers, experienced bush regenerators, websites and nurseries. There are also a lot of great books and gardening magazines out there to help design your garden – why not put a scrapbook together of all the elements you wish to include? Most importantly, spend time in your garden, get to know the microclimates and plan your garden around its strengths and limitations.



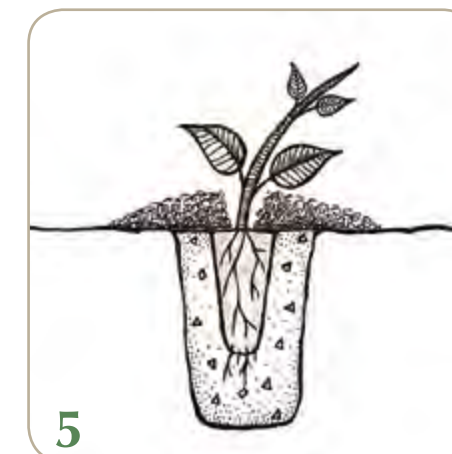
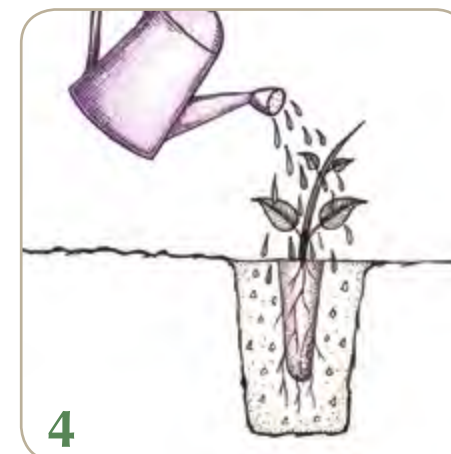
1. Dig a hole slightly deeper and at least twice as wide as the pot size. Loosen the soil around the sides of the planting hole. Water the plant & fill the hole with water and allow both to drain away. If the water doesn't drain from the hole you may need additional help with the addition of gypsum or build up a free draining mound of soil to plant into.



2. Gently remove the plant from the pot or tube and place in the planting hole - the top of the root ball should be level with the surrounding soil. If the roots are pot-bound gently loosen the root ball and then place in hole.



3. Fill back soil, making sure that the surface root ball is well covered and include a little slow release native plant fertiliser and water crystals/gel. Press the backfill down with your hands and shape the soil surface slightly to hold water. Do not place organic matter or too much fertiliser at the base of the hole as this may encourage root rot or fertiliser ‘burn’.



4. Water the plant thoroughly after planting and then once a week for the first few months, (depending on season). Thereafter, water generously when the soil feels dry.
5. Mulch around the plant - 10cm thick with at least a 50cm radius - this will help to retain moisture and discourage weed growth. Avoid placing mulch against the stem of the plant as this may encourage collar rot.



# Coastal Plains Rivers and Floodplains

## LOCATIONS:

BEXHILL, BLAKEBROOK, BOATHARBOUR, BOOERIE CREEK, BOOYONG, BROADWATER, BUCKENDOON, CORAKI, CORNDALE, DUNGARUBBA, EAST CORAKI, ELTHAM, FERNSIDE, GREEN FOREST, GOOLMANGAR, HOWARDS GRASS, JIGGI, KILGIN, KOONIRIGAN, LAGOON GRASS, LISMORE (SOUTH, NORTH, CBD), LOFTVILLE, MONALTRE, RUTHVEN, SOUTH GUNDURIMBA, SPRING GROVE, TATHAM, TUCKURIMBA, TUNCESTER, NORTH WOODBURN, WOODLAWN, WYRALLAH.

The coastal plains, riparian zones and floodplains of the Lismore region are some of the most altered and disturbed in the Richmond Catchment. Settlement and farming on the floodplain has changed vegetation from flood-tolerant native trees, shrubs and wetland plants to flood-susceptible exotic plants and grasses. The floodplain is intensively grazed and cropped for sugarcane, tea-tree and soya beans.

Prior to settlement the coastal plain supported a rich mosaic of plant communities. Remnants of majestic eucalypt forest still exist in drier areas. Paper-bark tea-tree forest, swamp oak

communities and sedge-lands thrive in areas of wetlands, and, in the lower estuary, communities of mangroves and other salt tolerant plants are found. All these species, (except mangroves, which require brackish or salt water) can still flourish near dams, soaks or in gardens on the coastal plains.

Choosing to plant species native to the coastal plain of the Lismore region will make your property part of a region-wide wildlife corridor. Doing this will invite an incredible diversity of wildlife and plants into your backyard.

Dense plantings can slow runoff and catch silt, which will help prevent erosion and maintain the health of

the whole length of the waterway. It will also encourage the movement of all life forms that rely on the coastal plains for their survival.



Port Jackson Fig  
Illustration: A Erskine

## WILDLIFE:

ECHIDNAS, POSSUMS, WATER DRAGONS, PLATYPUS, FLYING FOX, INSECTIVOROUS BATS, SWAMP WALLABY, VARIOUS NATIVE FROGS AND FISH, AND A WIDE VARIETY OF BIRDS INCLUDING THE PACIFIC BAZZA



Green Tree Frog  
Photo: D Kemp



Echidna  
Photo: V Dante



Pacific BAZZA  
Photo: D Pierce



## CREATING A CREEK-SIDE RAINFOREST GARDEN

### SOIL DESCRIPTION:

From gravels near the headwaters to fine clays near the estuary and all the gradations of particle size in between.

Many gardens border creeks, rivers and ephemeral watercourses. By recreating the structure of the natural vegetation communities with trees for canopy cover, under-planted with shrubs, ferns and sedges, it is possible to create your own patch of riparian rainforest.

Plant tussocky Lomandras mixed with the beautiful Crinum Lilies to protect the creek sides from erosion. Interplant with shrubs such as Native Mulberry, a butterfly host and Velvet Leaf whose berries attract small birds, interspersed with local riparian tree species such as Weeping Lilly Pilly and Creek Sandpaper Fig. Finish off with a sward of native groundcovers such as Dianella and Blue Commelina, which can both be mown to help sieve sediments from runoff before it hits the creek. No rainforest garden is complete without a vine or two trained along

Slaters Creek,  
Photo: V Tallon

fences and pergolas to enjoy their showy flowers. Mulch is essential as it mimics the original forest's nutrient processing, keeps the soil moist, and inhibits the growth of weeds.

**EXAMPLES:** Currie Park and Pritchard Park in North Lismore.

## CREATING AN ALLUVIAL PLAINS GARDEN

### SOIL DESCRIPTION:

Silt-based, usually dark grey clays, tendency to crack if allowed to dry out.

Depending on their access to moisture, these lands once supported a variety of forests.

**Drier ground:** The Eucalypt (e.g. *E. tereticornis*) and Angophora (e. g. *A. floribunda*, *A. subvelutina*) species that once dominated these areas are potentially very large trees. Due to bushfire constraints and the danger of falling branches these species are not safe to plant near buildings. However there are hundreds of other plants to choose from including: River Oak, which when mature will attract the Black Cockatoo; Native Violet and Pygmy Panic which are low growing


Paperbark,  
Photo: V Dante

groundcovers, whilst Blue Tongue, Breyntia and Orange Thorn are all mid-sized shrubs and scramblers. Diligent weeding of exotic species may even revive one or two ground orchids.

**Wet or boggy ground:** A Paper-Bark Tea Tree forest will flourish where the ground water is close to the surface or the ground is frequently inundated. Plant species consist of River She-oaks and Buttonwood as well as Weeping Bottlebrush and Paper-Bark Tea Trees. Poorly drained soils support a large variety of sedges, rushes and ferns as well as such beauties as Sundews, Karamat and Violets.









1

**Swamp Water Fern**  
Swampy, near paperbarks, creeping rhizomes




2

**Blue Commelina**  
Perennial herb with deep blue flowers




3

**Pygmy Panic, Dwarf Panic**  
Easily propagated; flowers blue; blue-banded bees; harvester ants; butterfly host




4

**Lomandra**  
Tussock growth, strappy leaves, branched flower spikes




5

**Swamp or River Lily**  
Fragrant showy white flowers




6

**Dianella**  
Great clumping grass. Lush, strappy leaves, dainty purple flowers & edible blue berries. Bushfood



7

**Native Violet**  
Sprawling groundcover with delicate purple and white flower




8

**Common Silkpod**  
Robust; scented flowers; butterfly host; bird attractant


Coastal Plains – Rivers and Floodplains

		COMMON NAME	SC NAME	HEIGHT	WIDTH	FULL SUN	FROST TOLERANT	FLOOD TOLERANT	DROUGHT TOLERANT	TOLERATES HEAVY CLAY SOILS	TOLERATES SANDY SOILS	FLOWERS
GROUNDCOVERS AND GRASSES	1	Swamp Water Fern	Blechnum indicum	0.5m	1m			✓			✓	
	2	Blue Commelina	Commelina cyanea	0.3m	1-2m	✓		✓		✓		Most of year
	3	Pygmy Panic, Dwarf Panic	Panicum pygmaeum	0.3m	creeping			✓		✓	✓	
	4	Lomandra	Lomandra hystrix	1m	1m	✓	✓	✓	✓	✓	✓	Spring/Summer
	5	Swamp or River Lily	Crinum pendunculatum	1m	1m	✓		✓		✓	✓	Spring/Summer
	6	Dianella	Dianella caerulea	0.8m	spreading	✓	✓	✓	✓	✓	✓	Spring/Summer
	7	Native Violet	Viola hederaceae	0.1m	spreading			✓	✓	✓		Most of year
VINES	8	Common Silkpod	Parsonia straminea	n/a	n/a	✓		✓			✓	Spring
	9 (p24)	Birdwing Butterfly Vine	Pararistolochia praevensosa	5-10m	spreading		✓			✓		Spring/Summer
	10 (p28)	Native Yam	Dioscorea transversa	4m	n/a	✓		✓	✓			
	11	Climbing Maidenhair Fern	Lygodium microphyllum	4m	spreading	✓		✓			✓	yes
SHRUBS AND SCRAMBLERS	12	Blue Tongue	Melastoma affine	2m	2m	✓		✓		✓	✓	All year
	13	Breynia	Breynia oblongifolia	3m	2m	✓				✓	✓	Spring
	14	Native Mulberry	Pipterus argenteus	8m	5m	✓			✓	✓		Spring to Autumn
	15	Orange Thorn	Pittosporum multiflorum	2m	1m	✓	✓			✓		Spring to Summer
	16	Velvet Leaf	Callicarpa pendunculata	2m	1m	✓	✓		✓	✓		Summer
	17	Thorny Pea	Desmodium acanthocladum	1-2m	spreading		✓	✓		✓		Summer
TREES	18	River Oak	Casuarina cunninghamiana	35m	8m	✓	✓	✓	✓		✓	
	19	Creek Sandpaper Fig	Ficus coronata	15m	6m	✓		✓		✓	✓	Spring
	20	Veiny Wilkiea	Wilkiea huegeliana	8m	2m			✓		✓		Spring to Summer
	21	Willow Bottlebrush	Callistemon salignus	10m	5-10m	✓	✓	✓			✓	Spring
	22	Weeping Lilly Pilly	Waterhousia floribunda	30m	10m	✓	✓	✓		✓	✓	Spring to Summer




11

**Climbing Maidenhair Fern**  
Dainty fern-like leaves. Prefers moist rockeries




12

**Blue Tongue**  
Prolific mauve flowers; edible fruit pulp




13

**Breynia**  
Tiny flowers, red berries; bird attractant, butterfly host




21

**Willow Bottlebrush**  
Flower spikes to 5 cm, bird & butterfly attractant




14

**Native Mulberry**  
Edible fruit; bird attractant, butterfly host




22

**Weeping Lilly Pilly**  
Drooping branches; older leaves red




15

**Orange Thorn**  
Spiny; cover for small birds; white flowers, edible berry




16

**Velvet Leaf**  
Bright berries summer to winter; attracts small birds




17

**Thorny Pea**  
Prickly shrub with delicate purple flowers.




18

**River Oak**  
Separate male and female; Food for Glossy Black Cockatoos



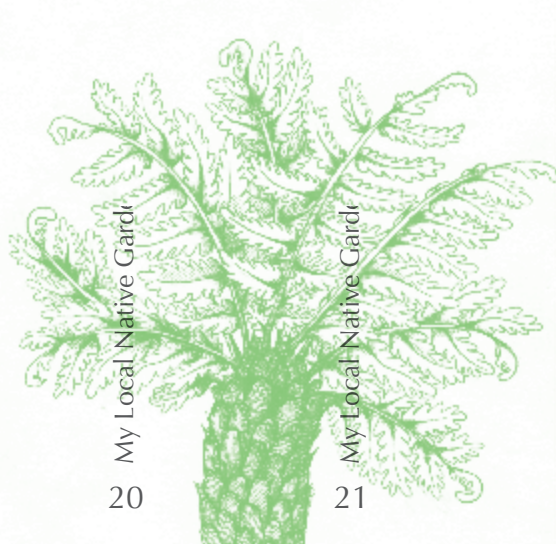
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**Creek Sandpaper Fig**  
Hairy edible fruit on trunk and older branches; birds, flying foxes, butterfly host




20

**Veiny Wilkiea**  
Perfumed white to yellow flowers; bird attractant, butterfly host



20

My Local Native Garden



21

My Local Native Garden



# Midland Hills

## LOCATIONS:

BENTLEY, BLUE KNOB, BUNGABEE, CANIABA, CHILCOTTS GRASS, CORNDALE, CLUNES, COFFEE CAMP, DORROUGHBY, DUNOON, EAST LISMORE, GIRARDS HILL, GOONELLABAH, GEORGICA, KEERRONG, LARNOOK, LEYCESTER, LINDENDALE, LISMORE HEIGHTS, MAROM CREEK, MCLEANS RIDGES, MCKEES HILL, MODANVILLE, MOUNTAIN TOP, NUMULGI, NIMBIN, PEARCES CREEK, REPENTANCE CREEK, RICHMOND HILL, ROCK VALLEY, ROSEBANK, STONEY CHUTE, THE CHANNON, TERANIA CREEK, TREGEAGLE, TUCKI TUCKI, TULLERA, TUNTABLE CREEK.

The midland hills are located primarily to the North of Lismore amongst the rolling hills and valleys of the Wilsons River catchment. The high rainfall and rich soils of this area create the perfect conditions for rainforest plants to thrive. The original vegetation of this area is lowland subtropical rainforest, commonly referred to as 'The Big Scrub' and remnants of this vegetation are now protected as an Endangered Ecological Community.

The Big Scrub once covered the entire hinterland area (75,000 hectares), however this was almost entirely cleared. Now only about 700 hectares (1% of its original extent) remains in small isolated remnants.

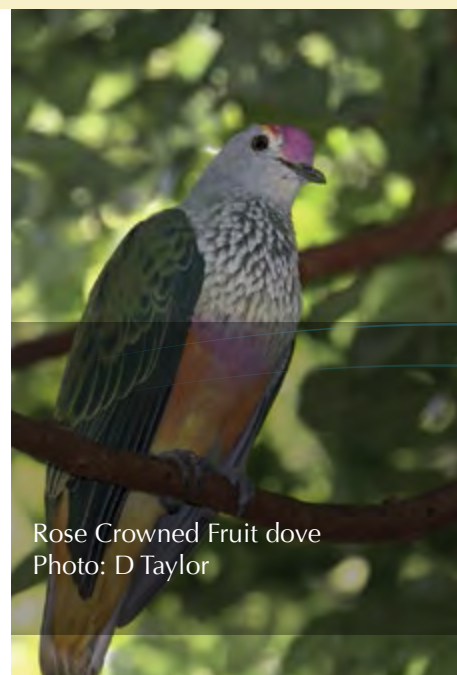
The elevation of the midland hills ranges from 40m along the river flats, which are prone to winter frosts, up to 300m in the north around Terania Creek and Whian Whian, where the soil and vegetation

changes from rainforest to wet sclerophyll forest.

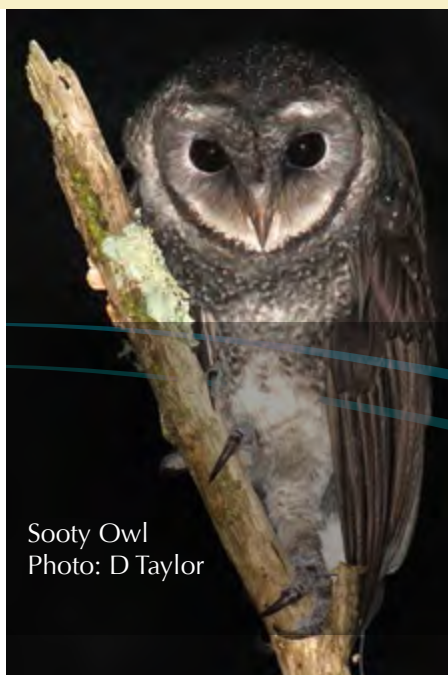
Sub-tropical rainforest forms a dense canopy of large trees above a mid and understory layer of dense lush foliage. The range of plants present is extremely diverse and includes trees, shrubs, vines, palms, epiphytes, fungi and groundcovers. This structure creates a cool, moist, shady microclimate by reducing the light intensity, wind and evaporation.

## WILDLIFE:

SUB-TROPICAL RAINFOREST IS A HAVEN FOR BIRDLIFE - WOMPOO PIGEON, ROSE-CROWNED FRUIT DOVE, BROWN CUCKOO DOVE, FIGBIRD, CURRAWONG, BAR-SHOULDER DOVE, EMERALD DOVE, FAIRY WREN, SILVER EYE, SOOTY OWL, VARIOUS HONEYEATERS, ALSO GREEN TREE FROG, PERONS TREE FROG, ROCKET FROG, A VARIETY OF LIZARDS, MICROBATS AND INSECTS.



Rose Crowned Fruit dove  
Photo: D Taylor



Sooty Owl  
Photo: D Taylor



Green Tree Snake  
Photo: R Hartlieb



Photo: J Britton

## CREATING YOUR OWN RAINFOREST

For those with more space on their property who wish to establish their own patch of rainforest, a site specific planting design and careful species selection is essential. A full description of this process is beyond the scope of this book but here is a brief overview.

The first step is achieved by planting 'pioneer', fast growing trees, which can handle full sun and are generally short-lived in terms of a rainforest (10-30 years). Plant the pioneers 3-4m apart to form a canopy in 2-5 years depending on the site and conditions. Interspersed through these pioneer trees, 'secondary' and 'mature phase' trees are planted. These are slower to establish but can live for hundreds of years and in time will form the rainforest habitat. Once the canopy is established, the final staged planting will contain a diverse mix of trees, shrubs, vines and groundcovers. Where possible, try to source the species that grow naturally in your area – talk to your local native nursery and ensure you are also planting species with local population genetics. By planting in this manner, you will extend the existing habitat for local species encouraging them to move into the new areas that you have provided.

Over time you will notice trees and other plants regenerating naturally. These are brought in by birds and the wind and germinate in the favourable conditions provided by the forest canopy.

More information about planting a rainforest can be found in the book published by the Big Scrub Landcare Group *Subtropical Rainforest Restoration*. This book is essential for anyone looking at undertaking this process, providing a detailed overview of the many factors to consider, as well as a list of appropriate species to plant.

## CREATING A RAINFOREST GARDEN

**SOIL DESCRIPTION:**  
**Deep, well-structured red/brown krasnozems, high clay content, often acidic – may benefit from the addition of gypsum or lime.**

A rainforest garden in a moist sheltered part of your property can produce a cool, lush oasis full of verdant foliage. Create a multi-layered rainforest structure by grouping together a range of trees, shrubs, palms and groundcovers sheltered from full sun, frost and prevailing winds.

For a smaller garden, trees such as a Macaranga or Native Frangipani and a few large Bangalow Palms can provide shade. If space is at a premium, plant utilising the shade from your house or fence line. Within this shelter, dense, mass plantings of large glossy-leaved species such as Native Ginger, Cordyline and Cunjevoi look impressive, interspersed with Dianella,

Finger Lime and Midgen Berries to provide food and occasional colour. If you need a hedge, Scrub Cherry can be a good choice with dense foliage that can be pruned and it also provides tasty pink berries. Lomandra can form a dense edge that helps keep your garden weed-free. Vines such as the Bower Vine and Purple Coral Pea can grow in a sunny spot and both have a showy display of flowers.

The Birdwing Butterfly Vine likes partial shade and provides essential habitat for the amazing Birdwing Butterfly. In the shade shrubs such as Narrow-Leaf Gardenia and Hairy Psychotria have distinct flowers and can provide a shaded ground layer where Native Violets will spread rapidly and display small purple flowers in summer.

Large feature trees include the Flame Tree, Coolamon and Firewheel, all of which have stunning flower displays. Always ensure large trees are positioned well away from buildings.

Mulch is an important component of a rainforest garden and mimics the humus layer found on the forest floor. The decomposing organic matter forms the basis of the garden ecosystem by adding nutrients to the soil, holding moisture and providing habitat for soil microbes and invertebrates, which in turn provide food for lizards and birds. Many rainforest plants have a network of surface roots that rely on the nutrients and moisture provided by the mulch.

**EXAMPLES: Protesters Falls in Nightcap National Park, Rotary Park in Lismore, Tucki Tucki Creek Recreation Park in Goonellabah and Rocky Creek Dam.**



Photo: R Hartlieb





**Native Ginger**

Lush clumping plant with large foliage and bright blue berries. Flowers in spring/summer. Attracts wildlife. Small variety *Alpinia arundelliana* also available



**Cunjevoi Lily**

Huge succulent, glossy leaves with a white/yellow flower spike and showy red fruit in summer. Warning: this plant is poisonous if ingested



**Rainforest Lomandra**

Native clumping grass with cream flowers and orange capsules in spring. Attracts wildlife. Smaller than other Lomandra species preferring more shade. The larger *Lomandra hystrix* could also be used



**Rough Maidenhair**

Attractive fern with delicate foliage that likes a moist shady position



**Soft Water fern**

Attractive clumping fern with a red flush on the new growth



**Ground Lilly**

Unique looking scrambler with shiny green leaves and small purple flowers



**Native Raspberry**

Spiky spreading shrub producing edible raspberries in summer. Bushfood. Attracts wildlife. Best grown in moist position receiving direct sunlight



**Birdwing Butterfly Vine**

Essential habitat for Birdwing Butterfly. They lay their eggs on the leaves and larvae eat the leaves after hatching. Flowers summer/autumn



**Bower Vine**

Great climber with showy white/pink flower in spring/summer. Attracts wildlife. Frost sensitive



**Narrow-leaved Gardenia**

Narrow leaves and fragrant white flower in late winter/spring. Attracts wildlife

# Midland Hills

		COMMON NAME	SC NAME	HEIGHT	WIDTH	SUN	PARTIAL SHADE	SHADE	TOLERATE WET SOIL	TOLERATE DRY SOIL
GROUNDCOVERS & GRASSES	1	Native Ginger	<i>Alpinia caerulea</i>	2m	1m	✓	✓	✓	✓	✓
	2	Cunjevoi	<i>Alocasia brisbanensis</i>	1m	1.5m		✓	✓	✓	
	3 (p20)	Dianella	<i>Dianella caerulea</i>	0.8m	spreading	✓	✓	✓	✓	✓
	4	Rainforest Lomandra	<i>Lomandra spicata</i>	0.5	0.8		✓	✓	✓	✓
	5 (p20)	Native Violet	<i>Viola hederacea</i>	0.1m	spreading		✓	✓	✓	
	6	Rough Maidenhair	<i>Adiantum hispidulum</i>	50-70cm	spreading		✓	✓	✓	
	7	Soft Water Fern	<i>Blechnum cartilagineum</i>	0.5m	spreading		✓	✓	✓	
	8	Ground Lilly	<i>Tripladenia cunninghamii</i>	0.4m	spreading		✓	✓	✓	
	9	Native Raspberry	<i>Rubus rosifolius</i>	1m	spreading	✓	✓		✓	✓
	10 (p28)	Basket Grass	<i>Oplismenus aemulus</i>	0.2	spreading		✓	✓	✓	✓
VINES/ EPIPHYTES	11	Birdwing Butterfly Vine	<i>Pararistolochia praevenosa</i>	5-10m	spreading		✓	✓		✓
	12 (p28)	Birdnest Fern	<i>Asplenium australasicum</i>	1m	2m		✓	✓	✓	
	13	Bower Vine	<i>Pandorea jasminoides</i>	3m	spreading	✓			✓	✓
SHRUBS	14	Narrow-leaved Gardenia	<i>Atractocarpus chartaceus</i>	3m	2m		✓	✓		
	15	Finger Lime	<i>Citrus australasica</i>	Up to 5m	1m	✓	✓			
	16	Broad-leaved Palm Lily	<i>Cordyline petiolaris</i>	2-5m	1.5	✓	✓	✓	✓	✓
	17	Tree Ferns	<i>Cyathea sp</i>	10m	4m	✓	✓		✓	
	18	Bolwarra	<i>Eupomatia laurina</i>	3m	2m		✓	✓		
	19	Hairy Psychotria	<i>Psychotria loniceroides</i>	3m	2m		✓	✓		
PALMS	20	Bangalow Palm	<i>Archontophoenix cunninghamiana</i>	20m	4m	✓	✓	✓	✓	✓
	21	Walking Stick Palm	<i>Linospadix monostachya</i>	2-3m	1m		✓	✓	✓	
TREES	22	Flame Tree	<i>Brachychiton acerifolius</i>	25m	8m	✓	✓			✓
	23	Scrub Cherry	<i>Syzygium australe</i>	25m	4-10m	✓	✓	✓	✓	✓
	24	Glossy Laurel	<i>Cryptocarya laevigata</i>	6m	2-6m	✓	✓	✓		



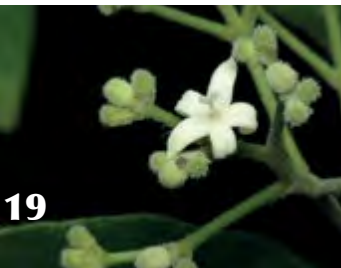
**Tree Ferns**

Spectacular species with delicate, shady foliage often used as a feature plant in landscaping



**Bolwarra**

Heavily scented flower in summer and edible fruit in autumn/winter. Bushfood. Attracts wildlife



**Hairy Psychotria**

Delicate white flowers in summer. Bird attractant fruit



**Bangalow Palm**

Classic local palm with bright red fruit in autumn. Bird attractant and a must for any rainforest garden



**Walking Stick Palm**

Distinctive understorey palm with bright red fruit sporadically through year. Attracts wildlife



**Flame Tree**

Semi-deciduous feature tree with showy red flowers in spring/summer and large woody capsules



**Scrub Cherry**

Great hedge. Can be pruned to shape. Edible pink/red fruit in spring. Bushfood. Attracts wildlife



**Glossy Laurel**

Shrubby tree with glossy foliage and large red fruit in spring/summer. Attracts wildlife



**Finger Lime**

Edible citrus, great in salads and with fish. Bushfood



**Broad-leaf Palm Lily**

Large lush leaves and bright red berry in summer. Bird attracting fruit. Bushfood

My Local Native Garden 24

My Local Native Garden 25



# Escarpment Ranges

## LOCATIONS:

NIGHTCAP RANGE ON RIDGES SURROUNDING THE CHANNON, DORROUGHBY, NIMBIN, REPENTANCE CREEK, TERANIA CREEK AND WHIAN WHIAN, AND THE MACKELLAR RANGE, KOONORIGAN RANGE AND MOUNTAIN TOP.

The spectacular ranges, ridges and gullies of the escarpment provide a distinctively different vegetation community to the rest of the Lismore region. The Nightcap Range, including the World heritage-listed Nightcap National Park, and broader escarpment, contains the most intact biodiversity in the Lismore region, with only a small portion under commercial agriculture.

The area is dominated by 'tall open forest' with a shady canopy of Eucalypts, Casuarinas and Brushbox. It has a well-developed mid-storey of tall tree ferns and pea flowered shrubs, and an understorey of lush

ground ferns. Grass trees, cycads and scramblers feature and there are many epiphytes, (growing on other plants) including the magnificent Bird's Nest Fern and Staghorn.

These Eucalypt-dominated communities are also known as Wet Sclerophyll Forests, and can overlap with rainforest communities, especially in the gullies or on the red volcanic soils. Native orchids can be found on trees and rocks in and around Wet Sclerophyll Forest. On the exposed ridges the soil layer is often very thin and only low, tough-leaved heath shrubs grow comfortably,

providing an occasional exuberant and showy flower display.

The plant communities of the ridges and ranges have evolved to handle the unique and harsh environmental conditions such as exposure to wind, extreme cold and heat, fire and drought and an elevation ranging from 50m to 100m and more. Fires are an integral part of the Australian bush, but it is a delicate balance – while it can stimulate germination and growth of new species, fire can also destroy homes, property and in some cases, reduce the number of plant species and allow weeds to grow in place of natives.

## WILDLIFE:

KOALA, RING-TAILED POSSUM, SPOTTED TAIL QUOLL, WEDGE-TAILED EAGLE, POWERFUL OWL, BARKING OWL, GLOSSY BLACK COCKATOO, YELLOW TAILED BLACK COCKATOO, LACE MONITORS, A VARIETY OF SKINKS & REPTILES, BLUE AND BROWN BUTTERFLIES



Koala  
Photo: R Hartlieb



Tawny Frogmouth  
Photo: R Hartlieb



Lace Monitor  
Photo: R Hartlieb



## FEATURE PLANTS FOR RIDGES AND RANGES

Planting in clumps provides a variety of textural accents to your garden. By including structural diversity in your design, (different layers of heights and plants), you will create ample habitat for local wildlife and draw the eye to focal points. Try using some of these feature plants, either en mass or as a point of interest, to create a spectacular local native garden.

Birdsnest Fern	Giant Spear Lilly
Cycad	Hovea
Grass Trees	Narrow-leaved
Hairpin Banksia	Palm Lily
Flooded Gum	Tree Fern
Cliff Bottlebrush	

## CREATING A RIDGE-TOP GARDEN

### SOIL DESCRIPTION:

**Red/brown soils, well-drained and often gravelly, slightly acidic and often leached of humus from high rainfall, runoff and exposure to wind. The addition of mulch is always helpful to retain moisture, add organic matter and keep weeds under control.**

The major consideration in designing a ridge-top garden is to avoid creating a fire prone environment. An 'Asset Protection Zone' (APZ) is essential in providing a firebreak between your 'assets', (house, shed etc.) and 'fuel', (vegetation). Check with your local fire brigade or Council about recommended setbacks.

Although most Eucalypts are not suitable near the house, a ridgeline garden can provide a shady cooling environment. If you have the space and can set back far enough from the

house, Eucalypts do make spectacular feature trees – local native Flooded Gum are beautiful in wet gullies and Tallowwood are a favourite for koalas. A smaller canopy of trees could include the Mountain Bottlebrush, Banksias, Forest Oak and Blueberry ash – all will provide colour, and a range of foliage and shade for the understorey to establish. Try planting masses of ground ferns interspersed with a variety of shrubs such as Grass Trees, Hovea, Narrow-leaved Palm Lily, tall Treeferns, Cycads or Giant Spear Lily to provide a contrast of foliage. Shaded or moist spots with rocks may help to establish native Orchids, Birdnest Ferns and Elkhorns.

### EXAMPLES: Minyon Falls, Whian Whian and Nightcap National Park.

#### Factors to consider near your house:

Avoid tall, fire loving trees like Eucalypts, in the house garden. Avoid plants with a fibrous bark. Use plants that can be trimmed and that resprout

from lignotubers (e.g. some Banksias). Rainforest plants are good to include, especially climbers such as Native Yam and Guinea Flower, which are effective fire and weed barriers for edges of the garden.

Space taller plants further apart and don't allow taller shrubs and trees to hang over the roof and gutters. Keep gutters clear of leaves and branches. Carefully arrange the taller plants to avoid a continuous canopy, thus avoiding a fire prone garden, even though a dense canopy is a feature of the natural environment. Use Sweet Pittosporum (*Pittosporum undulatum*) for low cover and shade. Position lawns, garden walls, paved areas, swimming pools and other fire retarding features such as water features and ponds on the side closest to the fire threat. The native Basket Grasses (*Oplismenus* spp.) make excellent lawns in shady places when mowed regularly. Use mulches that break down quickly (finely chopped tea tree or gravels).

Photo: R Hartlieb







# Aquatic Plants

## Ponds, Dams and Wetlands

Ponds, dams, wetlands and raingardens enhance the beauty of your garden and supplement its habitat values. This section lists some of the more common and accessible local native plants that are suitable to grow in and around your water feature. Aquatic plants may be floating or emergent - those that are rooted in the soil but which can tolerate being partially submerged.



### Water Snowflake

White flowers in spring-autumn

1



### Nardoo

Leaves vary from light green to rustic brown

2



### Azolla

Spreads rapidly especially in warm weather - can carpet ponds or dams. Fronds plants may be green or red dependant on sun/shade levels

3



### Duck Weed

Although commonly called Duck Weed this is a native plant - not an environmental weed. Very small green leaves up to 1 cm

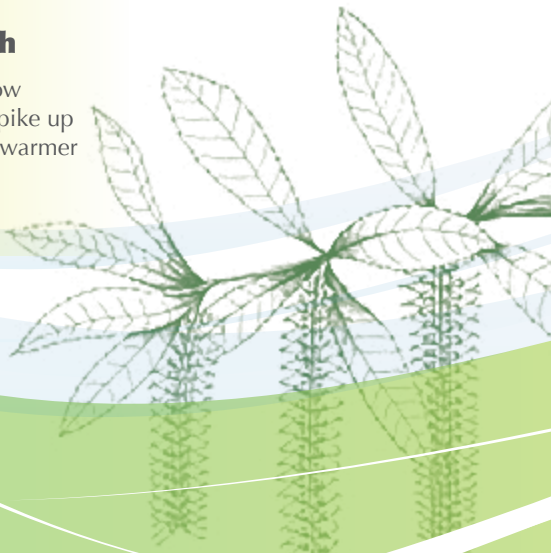
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### Frogmouth

Beautiful yellow flowers on a spike up to 1m long in warmer months

5



### SAFETY & HEALTH

Whenever installing ponds, dams or wetlands make sure they are safe, especially for young children. Details on safety and water bodies can be obtained from State and local government agencies. Another health consideration is to ensure that mosquitoes are not breeding in your pond.

### POND MANAGEMENT

Many native animals including birds, frogs and Dragonflies often visit small ponds, and if you are lucky, frogs may even breed in your pond. However be careful that you are not breeding cane toads.

There is a fact sheet to keep toads out of your pond at [www.byron.nsw.gov.au/cane-toads](http://www.byron.nsw.gov.au/cane-toads)

Although it is great to invite frogs to come to your pond to breed you are not permitted to move or breed frogs without a license. This is to ensure that diseases are not spread through our native frog populations.

Visit: <http://frogsaustralia.net.au/> for more information. Another consideration is that an over abundance of plants can cause the water to deoxygenate, so you may need to install an aeration system.

### Jointed Twig rush

Can spread to a thick stand therefore best for dams and larger ponds. Attractive seed heads

6



### Common Spike rush

Thin cylindrical stems

7



### Tassel sedge

Showy yellow-green fronds, drooping inflorescence

8



### Water Primrose

Bright yellow flowers

9



### Smart weeds or Knotweeds

Flowers vary in colour between species though usually white or pink. These species readily regenerate naturally in ponds and dams. The species pictured is Slender Knotweed and is a native species. If you have knotweeds regenerating check that they are one of the native species

10



### CREATING A RAINGARDEN

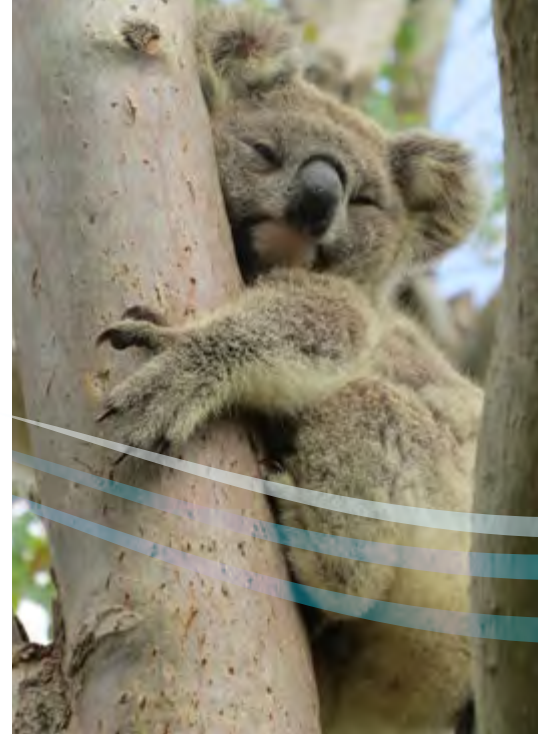
Raingardens (also known as bio-retention systems), are garden beds that use a coarse or porous soil mixture of sand or gravel beneath a bed of native plants to capture, filter and treat stormwater from your drive way or roof. Raingardens reduce flooding by sending the water back underground rather than into the street. In addition, raingardens promote biodiversity by providing habitat for wildlife.

### When building a raingarden in your backyard remember:

- On flat sites, raised planter boxes make ideal raingardens. On steeper areas with enough depth for drainage, raingardens can be excavated;
- Try to capture and treat stormwater from the greatest impervious area;
- Locate the raingarden as close as possible to the roof downpipe and stormwater drainage system to minimise the plumbing work needed; and
- Choose native plants with deep fibrous roots that can tolerate short periods of wet conditions, followed by longer dry periods.



# Local Koala populations have state significance



KOALAS ARE LISTED AS 'VULNERABLE' TO EXTINCTION UNDER STATE AND FEDERAL LEGISLATION. LISMORE IS LUCKY TO BE ONE OF THREE URBAN CENTRES IN NSW WITH A SIGNIFICANT KOALA POPULATION.

The greatest threat to the long-term survival of the koala is human activities and with it, habitat destruction. Many of the remaining belts of eucalypts along traditional koala routes have become severely fragmented by residential and infrastructure development. This increases koala susceptibility to disease, motor vehicle accidents and dog attacks. Koalas are under greater stress because food is harder to find

and they spend more time on the ground as food trees are further apart.

Lismore City Council's Comprehensive Koala Plan of Management for South-east Lismore (CKPoM) aims to protect the remaining koala population found in the southeast of the LGA, which is considered one of the most significant on the NSW North Coast.

For more on the CKPoM please go to the council website.

Lismore City Council is also implementing a Biodiversity Management Strategy that is restoring koala habitat throughout the Lismore area mostly on private property through partnerships with landholders.

## HOW CAN YOU HELP?

### CREATE AND RESTORE KOALA HABITAT

Residents with existing koala habitat and food trees can help by protecting and restoring these areas by removing weeds such as lantana and invasive vines that can inhibit koalas accessing food and shelter trees.

Residents can also help by planting local koala food trees in suitable places. Planting between patches will help create corridors along which koalas can move freely and access food.

If you don't have koala trees but live in a koala habitat area with enough clear land to accommodate tall growing species, you can help by planting these four local preferred species:

**Forest red gum** *Eucalyptus tereticornis* – suitable across the entire LGA

**Tallowwood** *Eucalyptus microcorys* – prefers midland hills and escarpment

**Swamp mahogany** *Eucalyptus robusta* – suitable on the floodplain and swampy areas

**Small-fruited grey gum** *Eucalyptus propinqua* – dryer escarpment areas such as the North-west

### Secondary browse trees include:

**Flooded Gum** *Eucalyptus grandis*

**Blackbutt** *Eucalyptus pilularis*

**Sydney Blue Gum** *Eucalyptus saligna*

**Scribbly Gum** *Eucalyptus signata*

**Grey Ironbark** *Eucalyptus siderophloia*

**Forest Oak** *Allocasuarina torulosa*

**Brush Box** *Lophostemon confertus*

**Paperbark** *Melaleuca quinquenervia*

When planting food trees for koalas it's important that the trees be grown from seed collected locally, and preferably from trees known to be eaten by koalas. You can ensure this by shopping from one of the local nurseries listed in this book.

## IS THAT KOALA SICK OR HEALTHY?

Healthy koalas have a thick grey and white coat; a full rounded belly; bright alert eyes; are responsive when startled; and spend most of their time in trees.

Sick koalas have: a brown, dry matted coat; crusty, red or pussy eyes; and dirty or wet bottoms. They often remain fairly low in a tree for a number of days, are unresponsive and have difficulty climbing.

## CONTAINING DOGS

Koalas are very susceptible to infection and death if they receive even a minor puncture wound from a dog, as under their thick fur their skin is very fragile. It's a natural instinct for dogs to chase things, so dog owners need to be realistic about their dogs' chase and hunt behaviour. It helps to divert your dog's chase behaviour to balls, toys and games. Training your dog to respond to your call when chasing a ball may help if you need to call them away from a koala. A veranda with a self-closing gate can be adequate to contain your dog. An enclosed area or koala proof fenced run are better alternatives.



## REPORTING INJURED KOALAS

If you see a sick koala or your or a neighbour's dog has had a koala in its mouth, it's crucial that it be rescued and treated immediately. Friends of the Koala operate a 24 hour Rescue Phone on 6622 1233.





# Invasive Species

INVASIVE SPECIES ARE INTRODUCED SPECIES THAT HAVE NATURALISED AND HAVE AN ADVERSE EFFECT ON NATURAL ECOSYSTEMS. MOST PEOPLE KNOW THAT FOXES, RABBITS, CANE TOADS AND INDIAN MYNAS ARE ALL INVASIVE SPECIES BUT INVASIVE SPECIES ALSO INCLUDES PARASITES, FUNGI, INSECTS AND WEEDS.

## INVASIVE FAUNA

Indian mynas and cane toads are two of the most destructive invasive species and may be found in your garden. There are several things you can do to help limit the populations of toads and mynas.

1. Grow your lawn longer because toads and mynas love short manicured lawns
2. Don't feed these pests, this includes not leaving unattended pet food outside
3. Toad proof your ponds and dams
4. Join the Indian Myna trapping program
5. Join a Landcare toad buster group

## PETS

It is important to remember that pets such as cats and dogs are introduced species and need to be managed in a way that doesn't adversely affect our native fauna. Don't let your pets roam freely and keep cats in the house, especially at night.

## WHAT IS AN ENVIRONMENTAL WEED?

Some of the most invasive species with the biggest impact on our native bushlands have escaped from gardens. These plants are environmental weeds and Australia's 2006 State of the Environment Report identified weeds as 'Australia's second greatest threat to biodiversity after land-clearing.'

Environmental weeds are plants growing outside of their natural distribution that have a negative impact on the natural ecosystems and the plants and animals within those ecosystems. These weeds are introduced into new areas by human activities. Sometime this is accidental such as via transport but most often, plants are bought for the home garden and then escape. In fact one hundred and twenty four environmental weed species are still being sold in nurseries across New South Wales!

## HOW CAN MY GARDEN PLANTS THREATEN BIODIVERSITY?

Some introduced plants have a direct impact on native animals. For example the introduced species Dutchman's pipe has very similar leaves to the native Richmond Birdwing Vine. When the Richmond Birdwing butterfly accidentally lays its eggs on the exotic plant the caterpillars are poisoned.

Most environmental weeds simply out-compete native plants for light, water, nutrients and space. Invasive vines such as Morning Glory, Madeira



Indian Myna  
Photo: W Gibney

Vine and Cats-claw Creeper are some of the worst environmental weeds as they smother native plants, completely blocking photosynthesis and can grow thick enough to break branches and bring down entire trees and shrubs.

## HOW DO THE PLANTS ESCAPE FROM GARDENS?

Garden waste dumping is a serious threat to native bushland as weeds are directly spread into new areas. But environmental weeds may also be spread indirectly. Seeds can be dispersed by birds or bats, some may be wind-blown or spread by water and others still have sticky seeds that cling to clothing, pets or even vehicles. Plants such as the Madeira vine spread vegetatively and even a small leaf is enough to start a new infestation. So no matter how careful you are, environmental weeds in your garden can still spread to natural ecosystems. Best not to have them in the first place.

## NOT ALL INTRODUCED SPECIES ARE A PROBLEM

Many exotic species of plants from other parts of the world pose no threat at all. Roses, Gardenias and Azaleas are all exotic plants but none of these have the potential to become invasive species.



Cane Toad  
Photo: W Gibney

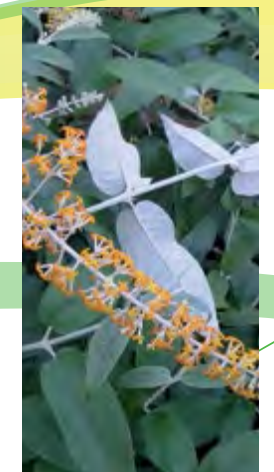
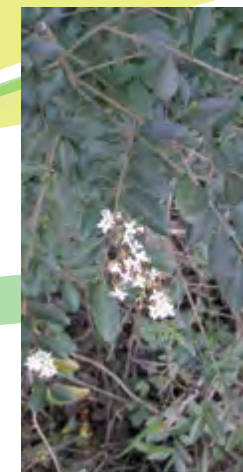
## WHAT CAN YOU DO TO STOP THE SPREAD OF ENVIRONMENTAL WEEDS?

1. Learn which plants are environmental weeds
2. Don't plant environmental weeds and gradually remove weeds from your garden
3. Plant local native species
4. Buy plants from Bushland friendly nurseries
5. Carefully dispose of environmental weeds and their seeds
6. Join your local Landcare or Dunecare group

*Some of the exotic species introduced into Australian gardens that have escaped to become serious environmental weeds: , Elephant Ears, Small Leaved Privet, Buddleja, Camphor laurel. Photos courtesy Byron Shire Council.*

## WEEDS – THE GOOD NEWS

Nature doesn't like gaps. Wherever there is space to grow, something, (usually weeds) fills it. However in terms of looking after the environment, weeds can provide an important role in binding the soil together and providing habitat for native species. There is nothing as bad as bare soil – this is an invitation for erosion to take hold. Apart from losing precious topsoil, the runoff can lead to pollution of our waterways. It is imperative to have a plan when attacking weeds – whether it's for natural regeneration, (is there a native seedbank still active in your soil?) or a planting regime - consider what will take over when you remove the weeds.





# Other Points for Consideration

## CULTIVARS

When a naturally occurring plant has been 'selected' or changed by the intentional actions of humans, it is called a 'cultivar' (under the International Code of Nomenclature for Cultivated Plants). Humans have been 'improving' nature by cultivation for thousands of years; orange trees, tomatoes and wheat are good examples. It is important to recognise that cultivated native plants are not the same as 'local' natives or naturally occurring species.

Cultivars often have fancy names like 'Callistemon Perth Pink', which is a selected form of *Callistemon salignus*, a local native plant. Cultivars can be identified where the abbreviation 'cv' is used. They are often bred to flower more prolifically than 'true' natives and if they are not sterile, may produce viable seed. For this reason, cultivars should never be reintroduced to bushland situations, or used in revegetation. If you live near natural bush, be aware that the cultivars and exotics in your garden may influence native vegetation through the spread of seeds by birds or seedlings over time.

Cultivars are very popular for gardens as they are seen as 'improvements' to the wild species. However they have potential to hybridise or cross with the native species, thus changing the genetics forever. The dangers in this are that the new species may not have the genetic characteristics (resilience) to survive over time; frost hardness or drought tolerance may be reduced.

Land Mullet (top)  
Coral Fungi (top facing page)  
Photos: R Hartlieb

Local nurseries that collect and grow wild seed are performing a valuable service in preserving the genetic resources of our native bush. We ask you to please consider the importance of the natural ecology and genetic integrity when designing your garden.

## CREATING STRUCTURAL HABITAT FEATURES

To attract wildlife in your garden, it takes more than just plants. While the flowers, fruit and protection provided by plants is important, features such as logs, rocks, leaf litter and ponds create important structural features that make your garden more inviting to a range of wildlife. Mulch, leaf litter, sticks and bark forms the basis of the food pyramid in your garden ecosystem. These features provide habitat for worms and insects, many of which are important in the cycling of nutrients to the soil and in turn, provide a food source for lizards, birds, frogs, bandicoots and echidnas. Logs and rocks placed in protected areas around the garden will provide a home for frogs and lizards while a rock placed in the morning sun will be appreciated



by the local skinks. A birdbath placed in an open sunny spot will attract local birds, providing a reliable source of water and somewhere for them to cool off in summer. A shrub located nearby will provide a safe retreat from predators. (For further information - see pond management under the Aquatic Plants chapter.)

Be sure not to take rocks and hollow logs from the bush where they are already providing habitat for the wildlife.

## FUNGI IN THE GARDEN

Fungi are a little known but vital component of all local ecosystems. In any forest system, fungi rot down wood and wood litter making nutrients available for new growth. It is estimated 80-90% of all plants form mycorrhizal partnerships with fungi - a mutually beneficial relationship where plants can acquire moisture and minerals sooner from fungi than



they could get themselves, whilst the fungi find shelter in the tree roots - both a critical survival strategy during droughts. Excellent information about Australian fungi can be found here: <http://www.anbg.gov.au/fungi/index.html> You can also learn more about local fungi from the ongoing collection being blogged at <http://calderafungi.blogspot.com>.

## NEST BOXES

Nest boxes in backyards are a great way to encourage many birds around your house and can give your local possum an alternative home to your roof. Nest boxes placed in rural areas can provide important habitat for a range of species including birds, arboreal (tree dwelling) mammals and microbats. Many of these species play an important part in our ecosystem through pollination of plants, dispersal of seeds and regulating insect population.



Artificial tree hollows, or 'nest boxes' can be used by a range of animals as a replacement for natural hollows in the landscape. At least 10 mammals, 15 birds and 8 micro-bat species as well as some reptiles have been recorded using nest boxes in Australia.

When deciding what sort of box to install, identify what hollow-using fauna occur in your area and use this to guide what type of box is appropriate to use. It is not recommended to be providing homes for some animals within urban development or adjacent to busy roads. Consider the consequences and potential risk to wildlife from road kill and attacks by domestic pets. In busy urban areas nest boxes located high in trees targeting birds may be a preferred option.

There are several nest box manufacturers in Australia as well as a number of publications that outline their design and construction - easily sourced from the internet. The Bush Futures Project has an excellent brochure on nest boxes that can be found here: [www.byron.nsw.gov.au/environmental-resources](http://www.byron.nsw.gov.au/environmental-resources).

## BUSH FOOD

What could be more logical than planting endemic species that provide food for wildlife and people? Local plants are adapted to the conditions and rarely need fertilisers, pesticides or additional water once established.

Photo: A Underwood



Blue Fig,  
Rous County Council

Some people like to dot their bushfood plants around the garden so they can have a nibble as they potter, others prefer to create a 'food forest' where all the edibles are clustered in one area for ease of harvesting. Please note the previous section on cultivars when choosing plants where there is a possibility their seed may be spread into the bush. Our favourites include: Midgen Berry, Macadamia Nut Tree, Brush Cherry, Native Raspberry, Davidson's Plum, Native Tamarind & Finger Lime. The Internet is a great resource for recipes - just plug 'Bushfood' or the plant of your choice into your web browser. Brunswick Valley Landcare has a download of species found in the local Yallakool reserve: [http://www.brunswickvalleylandcare.org.au/PLANT\\_LIST.pdf](http://www.brunswickvalleylandcare.org.au/PLANT_LIST.pdf)

## CLIMATE CHANGE

A predicted increase in extreme weather events in the form of more severe droughts, more frequent fires and the possibility of greater variations in rainfall patterns, may lead to increased stress on plants and animals as they become progressively isolated in remnants of vegetation, (CSIRO 2007). All the more reason why it is critically important to protect existing remnants and expand local wildlife corridors to offer some refuge and provide our endemic plants and animals a chance to adapt to these evolving conditions.

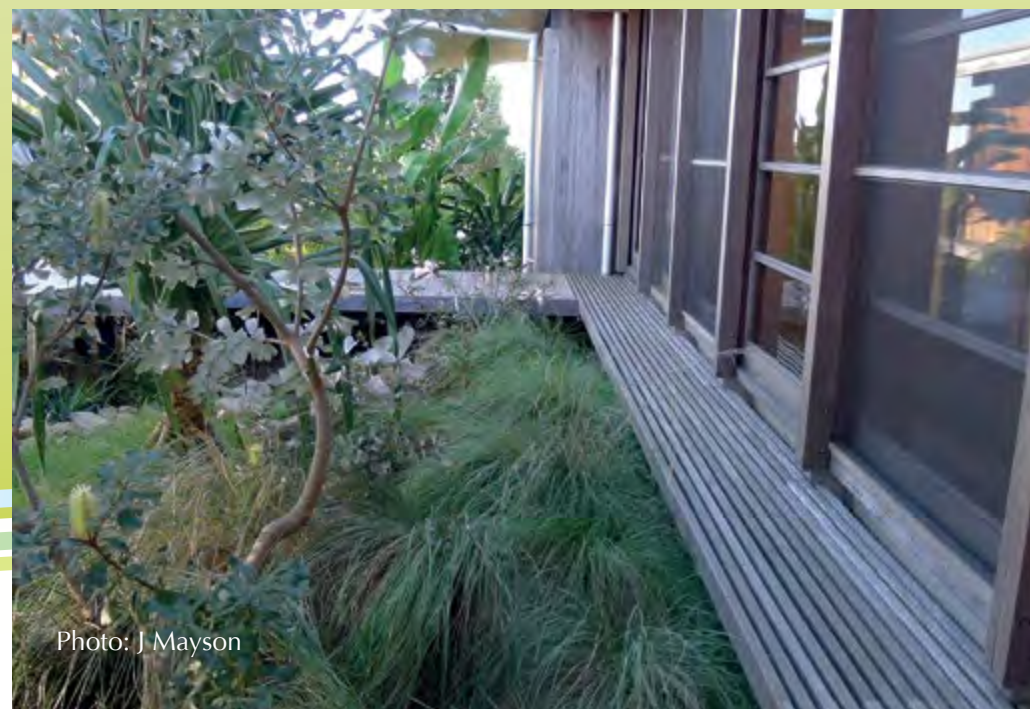


Photo: J Mayson



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**A Field Guide to Australian Frogs** 1995. Barker J. Grigg G.C. Tyler, M.J. Published Surrey Beatty & Sons.

**A Field Guide to Reptiles of New South Wales** 2004. Swan G. Shea G. Sadlier R. Publisher Reed New Holland.

**Common Weeds of Subtropical Rainforests of Eastern Australia – a practical manual for their identification and control** 2008. Big Scrub Landcare Group.

**Create More Butterflies** 2005. Jordan, F & Schwenke, H. Publied by Eathling Enterprises.

**Grasses of Subtropical Eastern Australia** 2008 by Watsford and Elliot (CD with colour photos) Published by Nullum Publications.

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**Healthy Catchments, Healthy Water – Managing land within drinking water catchments: A practical guide for NSW landholders** (2016). Rous Water and the Water Directorate.

**Landscape and Building Design for Bushfire Areas** 2003. Ramsey, C & Rudolph, L. CSIRO Publishing.

**Mangroves to Mountains** 2009 by Logan River Branch S G A P (Qld Region) Inc. Published by Copyright Publishing Co Pty Ltd.

**Nest Boxes for Wildlife - A practical Guide** 2006. Alan and Stacey Franks. Publisher Blooming Books.

**Plants of the Forest Floor** 2008 by Watsford and Elliot (CD with colour photos) Published by Nullum Publications.

**Rainforest Climbing Plants - A field guide to their identification** 2007. Harden G. McDonald, B. Williams, J. Gwen Harden Publishing.

**Rainforest trees and Shrubs – A field guide to their identification.** 2006. Harden G. McDonald, B. Williams, J. Gwen Harden Publishing.

**Rainforest Trees of Mainland South-eastern Australia** 2008. Floyd, A.G. Terania Publishing Lismore.

**Subtropical Rainforest Restoration** 2005. Big Scrub Landcare Group.

**Waterplants in Australia: a field guide 4th edition** 2003. Sainty, G and Jacobs, S. Published by Sainty and Associates.

ONLINE RESOURCES

**Australian Plant Image Index:**  
www.anbg.gov.au/photo/index.html

**Australian Association of Bush Regenerators:**  
www.aabr.org.au

**Backyard Buddies:**  
www.backyardbuddies.net.au/

**Big Scrub Landcare:**  
www.bigscrubrainforest.org.au/

**Brunswick Valley Landcare:**  
www.brunswickvalleylandcare.org.au

**Friends of Lismore Rainforest Botanical Gardens:**  
www.friendslrbg.com.au

**Frogs Australia:**  
frogsaustralia.net.au/

**Landcare Australia:**  
www.landcareonline.com.au/

**Lismore City Council:**  
www.lismore.nsw.gov.au

**National Parks:**  
www.environment.nsw.gov.au/parks/RegionNorthernRivers.htm

**North Coast Local Land Services:**  
www.northcoast.lls.nsw.gov.au/

**North Coast Weeds Advisory Committee:**  
www.northcoastweeds.org.au/

**NSW Flora Online - Plantnet:**  
plantnet.rbgsyd.nsw.gov.au/

**Rous Water:**  
www.rous.nsw.gov.au

**Rural Fire Service NSW:**  
www.rfs.nsw.gov.au

**Save Our Waterways Now, (Check out their brilliant booklet, “The Creek In Our Backyard”):**  
www.saveourwaterwaysnow.com.au

**Subtropical Farm Forestry Associaton:**  
www.sffa.org.au/index.htm

**Threatened Species:**  
www.environment.nsw.gov.au/threatenedspecies/index.htm

**Water by Design:**  
www.waterbydesign.com.au

LOCAL NURSERIES (Bush-Friendly)

**All Natives**  
Ph 6664 7310 | 04 2993 7315  
1078 Bulmers Rd, Hogarth Range  
info@allnatives.com.au  
By appointment and at Lismore Car Boot Market & Channon Market

**Booyong Rainforest Creation**  
Ph: 04 2215 2098 | 04 3517 5173  
400 Houghlahans Creek Rd, Via Booyong.  
booyongrc@outlook.com

**Eastern Forest Nursery**  
Ph 6629 0353  
848 Bruxner Hwy, Sth Gundurimba 2480  
e.f.n@bigpond.com  
Open M – F 7.30 – 3.00

**Firewheel Rainforest Nursery**  
Ph 6689 5246 | 04 2700 8522  
387 Dorroughby Road, Dorroughby NSW 2480  
info@firewheelnursery.com.au  
www.firewheelnursery.com.au

**Friends of the Koala Nursery**  
Ph 6624 5032  
Rifle Range Road, East Lismore NSW 2480

**Mullum Creek Nursery**  
Ph 6684 1703  
Lot 2 Yankee Ck Rd, Mullumbimby 2482  
bgreen@mcnativenursery.com.au

**Windara Nursery**  
Ph 6662 3857  
253 Sextonville Rd Casino  
admin@windara.org.au  
Open M – F 8.30 - 4

