

SENVIRONMENT SLEVY TO WORK

# Backyard Habitat Planting Chide







## Contents



welcome to Wingecarribee's Habitat for Wildlife program!	4
What's in this guide?	5
About this guide	6
What else are we doing for environmental sustainability in this shire?	7
Importance of bushland in the shire	8
Threats to bushland	10
Benefits of native gardens	12
Creating a habitat garden	13
Attracting native fauna	18
Living in harmony with wildlife	22
Planning for bush fires	24
Important bushfire considerations	25
Planning your garden for bush fire	27
Example habitat gardens	29
Where to get plants	30
Local nurseries	
Volunteer at our community nursery!	
References	31
Websites	
Field guides	

# Welcome to Wingecarribee's Habitat for Wildlife program!

Thank you for joining the growing community caring for our native wildlife in Wingecarribee shire.

Habitat for Wildlife is a voluntary program designed to promote the importance of our backyards in conserving wildlife and creating safe havens for animals. We can all do something to help our native animals survive and prosper, no matter how small or large our backyard is. This guide will help you to make your backyard a friendly and inviting place for native fauna. It is exciting to be a part of the growing network of people in the shire who appreciate our wildlife and the beautiful natural environment. We hope you enjoy the guide.

# what's in this guide?

This guide contains information to help you to improve your backyard biodiversity, and learn how to create your own habitat garden. This guide also contains information on keeping pests and feral animals away, planning your garden to minimise the impact of bush fires (if you are in a bush fire prone area), and attracting a variety of native fauna.

The plants that are suitable for your garden will vary depending on where you live, and the best indicator is to find some remnant native bushland near to your home as a guide. Of course, large Eucalyptus trees may not be appropriate in your average backyard garden, as they can cause problems as they mature, with fallen branches and leaf litter in the gutters of your house, so you will need to plan carefully and match garden plants with the size and orientation of your backyard. Use the plant selector at <a href="https://www.wsc.nsw.gov.au/habitat-for-wildlife">www.wsc.nsw.gov.au/habitat-for-wildlife</a> as a starting point or chat to a local nursery which specialises in native plants.

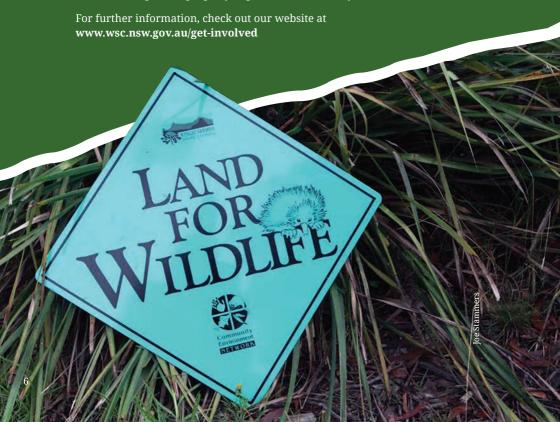


# about this guide

This guide has been produced as part of the Wingecarribee Shire Council Habitat for Wildlife and Land for Wildlife programs, two fantastic programs supported by Your Environment Levy. These programs are free to join, voluntary, locally coordinated and provide an opportunity for all rural and urban residents to create suitable habitat for native wildlife in their neighbourhood.

**Habitat for Wildlife** is our entry-level program for residential properties. It builds on the Land for Wildlife program initiated by the Community Environment Network (CEN).

The Land for Wildlife program is a voluntary property registration scheme for rural landowners who manage a larger patch of bush (>0.5 hectare), and who wish to manage their property to promote biodiversity and wildlife habitat.



# what else are we doing for environmental sustainability in this shire?

Wingecarribee Shire Council has a committed and professional team of specialists delivering a range of environment and sustainability projects and programs with our community. Most of our projects and programs are only made possible through Your Environment Levy.

We work to support local Bushcare and Landcare groups, landholders interested in private land conservation and creek rehabilitation, and special projects such as the Southern Highlands Koala Conservation Project involve collaboration and partnerships with other agencies and the community. We also support the local schools through the popular Schools' Environment Day in spring each year, and through environmental grants and promotions.

In addition, we are planning for climate change, getting our community more prepared for bushfires and other extreme events, installing solar arrays on community buildings, assisting with the development and support of local community gardens, improving the energy efficiency of council buildings and developing improved environment and health policies.

#### To keep up to date with these exciting programs, visit:

www.wsc.nsw.gov.au/environment/ or subscribe to the Wildlife Wingecarribee
and Wingecarribee Web e-newsletters at www.wsc.nsw.gov.au/newsletters

# To find out more about Your Environment Levy at Work, visit:

www.wsc.nsw.gov.au/environment-levy

# Importance of Bushland in the Shire

Wingecarribee Shire is rich in biodiversity, with hundreds of native plant and animal species.

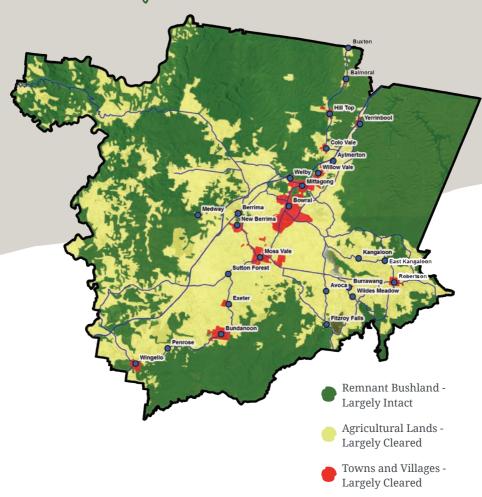
The shire has over 374 types of animals which is close to the number of different species found in Kakadu! Sadly though, there are around 50 native plants and 50 native animals now endangered in the Shire, and fifteen or more threatened ecological communities.

Remnant bushland is an important resource in the Shire, as it provides feeding, resting and roosting places for wildlife. Bushland also provides important "ecosystem services" for our community such as clean air and water, so it is important to retain as much as possible.



While Wingecarribee has a considerable area of remnant bushland, large areas have been cleared for agriculture and for our towns and villages. Many of our native animals now find it difficult to live and move through these cleared areas – but this is where you and our Habitat for Wildlife program can help! Everyone can assist by creating habitat for native animals in their gardens.

# The Wingecarribee Shire



## Threats to Bushland

Land clearing is the primary threat to native plants and animals in this shire, however there are other threats that impact on our bushland and these are listed below:

#### weeds:

A weed is simply a plant growing in the wrong place and has a detrimental impact on the environment, economy or human health. Some of the worst weeds have moved from gardens into bushland. When this happens weeds compete with bushland, crowding out and threatening native plants and animals.

Weeds are spread by wind, water, humans and animals and may also spread vegetatively, where weeds spread out smothering other plants. Dumping of garden waste into bushland is a major cause of weed invasion.

For more information about weeds and their control go to www.wsc.nsw.gov.au/weeds



## How you can help



#### You can help stop weeds from escaping your garden and invading bushland by:

- Planting native species (particularly local species)
- Removing weeds from your garden
- Composting or disposing of weeds in your kerbside bin, or by carefully transporting them to the Resource Recovery Centre (RRC) at Berrima Road, Moss Vale.
- Removing seed heads from plants before they have time to mature and disperse.
- Covering your compost so weed seeds cannot be spread by birds or wind

### Feral animals in Urban areas

Some introduced animal species have become pests effecting biodiversity and urban environments, and we call these "feral" animals. Common feral animals include foxes, rabbits, the black rat and Common (Indian) Myna birds. Common Mynas contribute to the decline of native species due to competition for food and nesting sites. They can also cause problems to humans, and impact the keeping of chickens, planting programs and gardening activities.

#### You can deter feral animals from coming into your backyard by:

- Not feeding wild animals
- Replacing weeds with native plants
- Not leaving uneaten or uncovered pet food in your yard
- Erecting a fox-proof fence to protect your chooks, at least 3 m in height, dug in at the bottom or turned out at least 300 mm across the ground (and pegged in).

For more information on pest animal species visit the website: www.wsc.nsw.gov.au/pest-animals

### Pets

Cats and dogs hunt; it is a natural instinct for them. Unfortunately, this means they often hunt native birds, lizards and mammals. Most wildlife killed by roaming pet cats is caught close to their homes. A captured bird or possum may appear unhurt, but is likely to die within 36 hours from shock or infection. Cats can carry Toxoplasmosis, a disease which can impact on human health, and which can devastate wildlife populations.

#### Some ways you can help protect native fauna include:

- Keep your pets contained, especially at night, as many of our native animals only come out at night.
- Put a CatBib™ or loud bell on your cat's collar
- De-sex your pets neutered pets are often less aggressive and predatory
- Always walk your dog on a leash
- Install a cat-proof birdbath. Use a small, shallow bowl about 3 cm deep with rope or chain attached

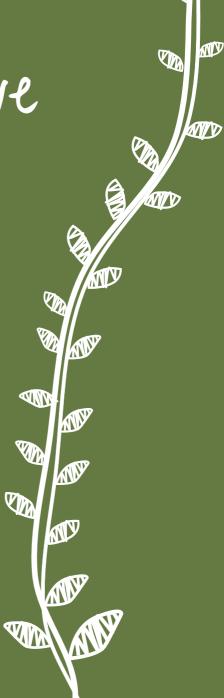
- to allow for hanging. Hang the small bowl within the foliage of a prickly shrub to provide security to small birds whilst they drink and bathe
- Surrender unwanted pets to animal shelters – never dump them into the bush as they will kill native animals to survive. Instead contact the RSPCA on 1300 278 358 or the Wingecarribee Animal Shelter on (02) 4868-1520.

# Benefits of Native Cardens

Native plants play a large role in maintaining the biodiversity of both flora and fauna in Australia.

#### Local native plants:

- Are well adapted to the local soil and climatic conditions
- Are able to tolerate local climatic extremes, such as frost or periodic drought
- Provide the right habitat and food for native animals, birds and insects
- May grow faster and hardier than exotic species and be less susceptible to local pests and diseases
- Provide shade and can help modify local temperature extremes
- Do not develop into an ongoing weed problem.



# Creating a Habitat Garden

what is a habitat garden?

A habitat garden is a garden that provides natural food, shelter and water for native Australian fauna. Habitat gardens are grown using native Australian plants and particularly those species that grow naturally in your locality. In a good habitat garden you could expect to see a wide variety of animals such as birds, butterflies, moths, lizards, possums, frogs and insects either living in, or visiting your garden.





# Recipe for a habitat garden

A tall, mature tree, native to your area
A patch of natural mulch for beetles and earthworms
A clump of dense shrubs where birds can shelter
Nectar plants for honeyeaters
A cat-safe birdbath

A frog-friendly pond with unpolluted water A warm, sheltered rocky corner for lizards Flowering natives for insects and butterflies Native grasses for small, seed-eating birds



THE

- A. Tall mature tree, local to your area
- B. Mulch and leaf litter
- C. Dense shrubs
- D. Nectar plants
- E. Cat-proof bird bath
- F. Frog friendly pond
- G. Warm sheltered corner for lizards
- H. Daisies for butterflies

## Features of a habitat garden

A habitat garden needs a variety of features to be effective (see pages 14-15). An important feature is different layers of vegetation. Figure 1 describes these layers and provides examples of plants that make up each layer. The more layers in your habitat garden the greater the number of potential habitats or places to live for native species.

Different animals feed and shelter in different layers of vegetation, with some species feeding in one level and sheltering in another. By planting a variety of different sized plants you will attract a wider variety of wildlife. Keeping dead wood, leaf litter and rocks provides habitat for small mammals, reptiles and insects.

Figure 1: Layers of a habitat garden.

Layer	Layer Description	Examples
Canopy	Tall trees (>5 m) provide resources for a large number of species	Eucalypts, Wattles, Angophoras, Lilly-Pillies
Middle-storey	Smaller trees and tall shrubs (up to 5m) provide shelter and rich sources of nectar and insects	Wattles, Banksias, Bottlebrushes, Tea trees, Kunzea, Sheoaks
Small shrub layer	Shrubs (0.5 – 1.5 m)	Shrub wattles, Correas, Hop-bushes, Hakeas, Bush peas, Rushes
Ground layer	Grasses, small shrubs and herbs (<0.5m), support a rich insect fauna and in turn, many vertebrate fauna	Sedges, Rushes, Lillies, Grasses, Herbs, Creepers, Groundcovers, Orchids, Ferns
LiHer layer	Ground elements that provide habitat where animals can shelter and hide	Leaf litter, twigs, fallen branches, logs, rocks, lichen and fungi

The ground and small shrub layers are very important as they provide many natural functions such as:

- Natural weed control
- Habitat and protection for smaller species in the food chain
- Encouragement of smaller birds
- Erosion protection and enrichment of the soil
- The ability of some species to fix nitrogen and other nutrients in the soil assisting other species to grow (e.g. wattles)
- The maintenance of biodiversity and genetic resources
- Providing a suitable environment for regeneration of canopy trees.

It is important to conserve remnant native understorey as it represents 90 per cent of native plant biodiversity and impacts directly on the types of wildlife residing in your garden. Use the plant selector at www.wsc.nsw.gov.au/habitat-for-wildlife as a guide to native understorey species you can plant in your garden.



## attracting Native Fauna



## Flowering year round

In the bush, there is always something flowering. Providing autumn and winter flowering plants will encourage native fauna to visit your garden year round.

## Ottracting birds

Small birds use dense thickets of shrubs and trees with sharp or prickly foliage as a refuge from weather, larger birds, cats and dogs.

Provide a water source to encourage birds to visit your garden, and keep it topped up, particularly during the warmer months.

Tree hollows provide important habitat for many native animals for shelter and nesting and in fact around 20 per cent of animals need hollows for their long-term survival. If you don't have any natural hollows in your trees, you can install nest boxes as a substitute. See the section on nest boxes in this guide for more information.



Butterflies and beneficial insects

Beneficial insects feed on common garden pests, which eliminates or reduces the need for pesticides. They also help to pollinate our fruit and vegetable crops.

- Ladybirds, lacewings and praying mantis eat scale, mealy-bugs, aphids, moth eggs and small caterpillars
- Butterflies provide food for birds, lizards and other wildlife, which in return, keep your garden clear of pests.
- Native blue-banded bees, teddy bear bees and carpenter bees are excellent pollinators.

The best way to attract insects is to plant a variety of species as food sources, keep leaf litter for insects to live in, and don't use pesticides.

### Frogs

Native frogs can be attracted to your backyard by building a pond where they can feed and breed. Ponds don't need to be large as frogs only use them as a place to lay their eggs and will spend a lot of time hiding in your garden. Provide a mulched or densely planted area with rocks for basking next to your pond to keep the frogs moist and attract insects for food.

To make your frog pond child-safe, you can install wire mesh just below the surface, fence the pond off or put a checkerboard of stones across the pond. Any pond with a depth of 30 cm or more requires Council approval and should be fenced.

Don't add mosquito fish (*Gambusia* sp.) or any other exotic fish species to your pond as they eat tadpoles and pose a threat to native fish and frogs if they escape into local waterways.

### Reptiles

Lizards require debris for shelter and retreat from predators through camouflage. Provide leaf mulch, hollow logs, bark, rock and vegetation such as groundcovers or small shrubs where lizards can forage for food.

Avoid using pesticides that will kill insects, snails and slugs. Lizards may be killed by eating snail bait or through eating insects affected by these chemicals.

blue tongue lizard



### mammals

Mammals such as wallabies, possums, koalas, kangaroos and echidnas may visit your garden. These larger animals are generally more adept at fending for themselves, and are unlikely to make a home there (the exception being possums). If you do see any mammals, enjoy the sight but don't feed them and keep your pets away.

Possum



#### Hollows and Nest Boxes

Hollows are important for many species and should be retained wherever possible. Tree hollows form in the trunk or branches of live or dead trees, and are usually found in much older trees, typically 100-150 years old. Hollows can also be created by a qualified arborist as opportunities

arise. For more information about hollows visit

www.wsc.nsw.gov.au/tree-hollows

If you have no mature native trees with hollows on your property, breeding and nesting sites can be created by installing nest boxes for wildlife. These are cheap and easy to make, and are also available to buy.

Different types of nest boxes will attract different species of birds and mammals.

Micro-bats and small gliders can enter small holes or gaps (20-30 mm diameter) while brushtail possums, some parrots and owls require large entrance holes (100 mm diameter).

The orientation of the box will also affect who comes to live there. Kookaburras, lorikeets and some smaller birds such as pardalotes prefer horizontal boxes, whereas cockatoos, gliders and possums prefer vertical boxes.

Rod Dewey

Ones

Smaller

Possum IN Nestbox

Common (Indian) Myna birds, honey bees and European wasps are all pest species that can take over nest boxes, so it is a good idea to design the box so that it can be checked relatively easily. To deter Myna birds, add a baffle to the box. A baffle is a piece of wood attached

to the front of the nest box to hide the opening. Common Mynas fly straight into their nesting hole, and won't navigate around a baffle.

www.birdsinbackyards.net provides an excellent fact sheet on designing nest boxes to attract different bird species and how to keep out pests.





## Living in harmony with wildlife

Along with the joy we gain through encouraging native wildlife to our gardens, there are times when our "wild neighbours" may challenge us. But there are some simple steps you can take.

Possums are native, but some can take up residence in roofs and buildings in urban areas. Brushtail Possums sleep in tree hollows, however Ringtail Possums will build a nest of twigs (called a "Drey") up to four metres high in trees.

You can help keep Brushtail Possums out of your house by installing a simple nest box in one of your trees in a sheltered spot. Please don't put food in the box to attract animals. Once you are sure the possum is outside your roof, block up the entry holes it was using to get in.

Snakes, although frightening to some people, are an important part of the ecosystem. Snakes are also protected, and killing one is an offence. They are generally not aggressive, and because we are too big to eat, they are not interested in us. Snakes only attack when they feel threatened.

# You can help keep snakes away from your house by:

- Controlling mice and rats living in or around your house and removing food sources that attract these animals
- Removing hiding places such as rubbish piles and building materials
- Maintaining a clear area around your house free of debris and long grass
- Blocking access holes into ceiling space and using weather stripping on doors and windows
- Keeping compost heaps or wood piles well away from your house.



# Do not try to catch or handle any native wildlife!

Contact your local Wildlife Rescue Organisation or nearest National Parks and Wildlife Service office for advice.

Wildlife Rescue South Coast – **Tel 0418 427 214** (www.wildlife-rescue.org.au)

WIRES – **Tel 1300 094** 737 (www.wires.org.au)

National Parks and Wildlife Service – Fitzroy Falls – Tel (02) 4887 7270

(www.national parks.nsw.gov. au/things-to-do/visitor-centres/fitzroy-falls-visitor-centre)



Planning for Bush Fires

Bush fires are part of life in Australia, and are most likely to occur in spring and summer.

If you live on a bush fire prone property, it is important to consider the type and placement of plants in your garden. You can design your habitat garden to reduce the threat of bush fires. Designing and planting a habitat garden does not mean planting a forest. It means providing a diverse range of vegetation types and structures and other habitat features such as rocky areas.

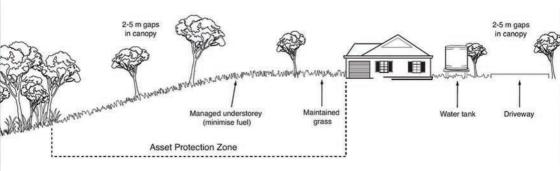


## Important Bush Fire Considerations

Firstly, you need to determine if your property is bush fire prone. Council has a map of bush fire prone land for the Shire and a link to the NSW Rural Fire Service online tool available on our website at www.wsc.nsw.gov.au/bushfire-prone-land. Large areas of the shire are mapped as bush fire prone.

If you live on bush fire prone land or near bushland you should take precautions to protect your family and home by preparing a Bush Fire Survival Plan. A guide on how to prepare your plan can be downloaded from the NSW Rural Fire Service website <a href="www.rfs.nsw.gov.au">www.rfs.nsw.gov.au</a> and copies are also available from Council.

If you live in a bush fire prone area, you may need to have an Asset Protection Zone (APZ) around your house. An APZ is a buffer area between the bush fire risk area and your house.



### an apz has an:

- Inner Protection Area (IPA) closest to building, where fire-fighting may occur
- Outer Protection Area (OPA) designed to reduce flame length, slow fire spread, filter embers and suppress crown fires.

The fuel load in an APZ should be managed so it is progressively reduced, with the least amount of fuel closest to the house. This approach aims to reduce the potential radiant heat levels, flame contact, ember and smoke attack on life and property.

Reduction of fuel does not mean removing all vegetation, which would cause environmental damage. Instead, plan your landscaping for bush fire protection, for example, ensure there is not continuous canopy, and that larger shrubs and trees are well away from the house. In addition, move wood stockpiles away from the house, and remove any other flammable items from verandas. You can also consider planting less flammable species (see our plant selector at www.wsc.nsw.gov.au/habitat-for-wildlife).

For more information on other vegetation clearing that may be permitted around your property under the 10/50 Vegetation Clearing Scheme visit www.rfs.nsw.gov.au/plan-and-prepare/1050-vegetation-clearing



# Planning your garden for bush fire

A well-planned garden can be created in an APZ however it is recommended that dense vegetation not be planted too close to your house.

Below are some general rules to follow to minimise the risk of bush fire in your habitat garden.

### Landscaping

When planting a habitat garden, use landscaping elements such as open space, paths, gravel areas, entertainment areas and lawns to create breaks in the vegetation:

- Have taller plants away from the house staging down to smaller shrubs closer to the house
- Plant trees and shrubs so that:
  - They are in clumps rather than in continuous rows
  - The branches will not overhang the roof
  - The tree canopy is not continuous
  - They create a windbreak in the direction from which fires are likely to approach.
- Ensure vegetation doesn't provide a continuous path to the house. Maintain a clear area of low-cut lawn or pavement adjacent to the house
- Keep areas under fences, fence posts and gates cleared of vegetation
- Use non-combustible fencing and retaining walls
- Use non-organic mulch such as pebbles
- Use plants closer to the house that can be pruned heavily
- Maintain your plants prune dead limbs and put excess leaf litter in the compost heap or green waste bin.

### Less Flammable Plants

Some plants are generally more flammable than others.

Grow species that are less likely to encourage fire closer to the house. Species that are less likely to burn are included in the plant selector at www.wsc.nsw.gov.au/habitat-for-wildlife.

#### Plants that are harder to burn have the following features:

- High moisture content leaves that are larger and thicker with smooth edges take more heat to dry out and ignite
- · High levels of salt
- Low volatile oil content of leaves e.g. some Eucalypts and Melaleucas are
  not suitable as they burst into flames on heating and increase fire intensity.
  If you hold a leaf up to the sun and look through it, you can sometimes see
  little spotty oil glands
- Smooth bark which produces less litter. Trees with loose, fibrous or stringy bark can more easily ignite and encourage fire to spread through the crown of the trees
- Maintain a clear space between the canopy of trees and the understorey to reduce the vertical spread of fire into the canopy.



# Example habitat gardens

Photographs courtesy of Rob Reichenfeld, Nicholas Bray Landscapes and Wariapendi Nursery



# where to get plants Local Nurseries

You can purchase native plants from most general nurseries in the Shire. There are also specialist native plant nurseries who can provide you with expert advice and a much wider range of plants.

An internet search for native plant suppliers will produce results of stockists in the Wingecarribee Shire.

## volunteer at our Community Nursery!

Your Environment Levy supports the operation of a community nursery, situated in Moss Vale.

The nursery is operated by Council with the support of community volunteers and produces thousands of local native plants each year for environmental projects and bushcare groups across the Shire.

While we don't sell native plants at the nursery, your assistance in helping to grow them can be rewarding in many ways:

- It's a fantastic way to contribute to the creation and restoration of native wildlife habitat across the Shire
- Learn new skills in native plant identification and propagation
- Share great experiences with other like-minded volunteers.

For more information on the Community Nursery, contact Council's Environment Officer (Bushcare and Citizen Science) on (02) 4868-0888 or visit www.wsc.nsw.gov.au/bushcare

## References

Bush Invaders of South-East Australia – A guide to the identification and control of environmental weeds found in South-East Australia. 2001. Adam Muyt.

Flora for Fauna, www.floraforfauna.com.au/

Lake Macquarie City Council (2013). Backyard Habitat Planting Guide. Lake Macquarie City Council.

NSW Rural Fire Service (RFS) 2006. Planning for Bush Fire Protection (PBP)

The Slater Field Guide to Australian Birds (2nd Ed.) Peter Slater, Pat Slater and Raoul Slater.

Wariapendi Nursery Tree Talk - A guide to planting native trees and shrubs

Wingecarribee Shire Council: State of the Environment Report 2012 www.wsc.nsw.gov.au/environment/reports-and-resources/state-of-the-environment-report

Wingecarribee Waste and Recycling Services. www.wsc.nsw.gov.au/waste-recycling

#### Websites

Aussie Bee (native bees) www.aussiebee.com.au

Australian Museum www.australianmuseum.net.au

Australian Plants Society www.austplants-nsw.org.au

Backyard Buddies www.backyardbuddies.org.au

BIONET - the website for the Atlas of NSW Wildlife www.bionet.nsw.gov.au

Birdlife Southern Highlands www.birdlife.org.au/locations/birdlife-southern-highlands

Birds in Backvards www.birdsinbackvards.net

Local Land Services - South East www.southeast.lls.nsw.gov.au/

NSW Rural Fire Service (RFS) www.rfs.nsw.gov.au

Wariapendi Nursery www.wariapendi.com.au/

Wildlife Rescue South Coast www.wildlife-rescue.org.au

Wingecarribee Shire Council www.wsc.nsw.gov.au

WIRES - Wildlife Rescue www.wires.org.au

### Field guides

A Field Guide to Insects in Australia (3rd Ed.). Paul Zborowski and Ross Storey.

A Field Guide to Reptiles of New South Wales (2nd Ed.) 2009. G. Swan, G. Shea, and R. Sadlier.

Field Companion to the Mammals of Australia. Steve Van Dyck, Ian Gynther and Andrew Baker.

Field Guide to Australian Mammals (2008). Cath Jones and Steve Parish.

Field Guide to the Birds of Australia (8th Ed.). Graham Pizzey.

Frogs and Reptiles of the Sydney Region (2012). Ken Griffiths.

Native Plants of the Sydney Region: From Newcastle to Nowra and west to the Dividing Range (3rd Ed.) by Alan Fairley and Philip Moore.

Planting Wetlands and Dams - A practical guide to wetland design, construction and propagation (2nd Ed.). Nick Romanowski.

Weeds of the South-East – An identification guide for Australia. (2007). F.J. Richardson, R.G. Richardson, and R.C.H. Shepherd.



#### Wingecarribee Shire Council

Civic Centre, 68 Elizabeth St. Moss Vale, NSW 2577

Ph: (02) 4868 0888 www.wsc.nsw.gov.au



