

# BULOKE WOODLANDS

## flora and fauna guide for the Wimmera



# Buloke Woodlands

## flora and fauna guide for the Wimmera



© WWF-Australia 2005. All Rights Reserved.

ISBN 1-875941-43-6

Editors: Martine Maron, Tim Burnard and Julie Kirkwood

Published August 2005 by WWF-Australia. Any reproduction in full or in part of this publication must mention the title and credit the above-mentioned publisher as the copyright owner.

WWF-Australia	Threatened Species Network
Head Office	Victorian Coordinator
GPO Box 528	Level 3, 60 Leicester Street
Sydney, NSW, Australia 2001	Carlton, Victoria, Australia 3053
Tel: +612 9281 5515	Tel: +613 9341 6507
Fax: +612 9281 1060	Fax: +613 9347 5199
<a href="http://www.wwf.org.au">www.wwf.org.au</a>	

The opinions expressed in this publication are those of the editors and contributors and do not necessarily reflect the views of WWF or the Australian Government.

For copies of this book or a full list of WWF-Australia publications on a wide range of conservation issues, please contact us on [publications@wwf.org.au](mailto:publications@wwf.org.au) or call 1800 032 551.

## ACKNOWLEDGMENTS

Design/Layout: Tim Burnard and Barbara Vaughan

Photography: Front cover – Fat-tailed dunnart, J. Barnett; Buloke woodland, T. Burnard; Red-capped robin and Common eutaxia, Ian McCann courtesy of Department of Sustainability/Biodiversity and Natural Resources Collection. Title page – Buloke woodland, M. Maron.

All Ian McCann photographs courtesy of Department of Sustainability and Environment/Biodiversity and Natural Resources collection.

Printed and bound: Impact Printing, Melbourne

This book was produced by the Threatened Species Network, a community-based program of the Australian Government's Natural Heritage Trust and WWF-Australia. The editors would like to thank Fabian Douglas, Clive Crouch, Chris Grant, Terry Reardon, Neil Marriott, Lindy Lumsden, Dale Tonkinson, Dan Harley, Sue Hadden and Richard Hill for their contributions to the description of species. Thanks also to the photographers and illustrators for their contributions; to Phil Ingamells, Peter Kennedy, Leon Costermans and Barbara Vaughan; to the many people who have provided invaluable feedback in the development of this book; and for the support of the Department of Sustainability and Environment and the Wimmera Catchment Management Authority.

# Contents

<b>Introduction</b>	<b>5</b>
<b>The Wimmera buloke: why so special?</b>	<b>6</b>
<b>How rare are buloke woodlands?</b>	<b>6</b>
<b>Key threats</b>	<b>8</b>
<b>What can we do?</b>	<b>11</b>
<b>Planning wildlife habitat</b>	<b>12</b>
<b>Who can help?</b>	<b>13</b>
<b>Plants and wildlife – Wimmera buloke</b>	<b>14</b>
<b>Plants</b>	
Buloke	15
Buloke mistletoe	16
Broughton pea	17
Common eutaxia	18
Lambs-tails	19
Lemon beauty-heads	20
<b>Invertebrates</b>	
Amaryllis azure butterfly	21
Pale sun-moth	22
Wood white butterfly	23
Buloke cicada	24
Purple and yellow jewel beetle	25
<b>Mammals</b>	
Yellow-footed antechinus	26
Fat-tailed dunnart	27
Lesser long-eared bat	28

## Reptiles and frogs

Bearded dragon	29
Striped skink	30
Olive legless lizard	31
Common spadefoot toad	32

## Birds

Bush stone-curlew	33
Painted button-quail	34
Red-tailed black-cockatoo	35
Brown treecreeper	36
Southern whiteface	37
Spiny-cheeked honeyeater	38
Noisy miner	39
White-fronted honeyeater	40
Red-capped robin	41
Hooded robin	42
White-browed babbler	43
Varied sittella	44
Rufous whistler	45
Restless flycatcher	46
White-browed woodswallow	47
Diamond firetail	48
Mistletoebird	49

<b>Key contacts and resources</b>	<b>50</b>
-----------------------------------	-----------

<b>References</b>	<b>52</b>
-------------------	-----------

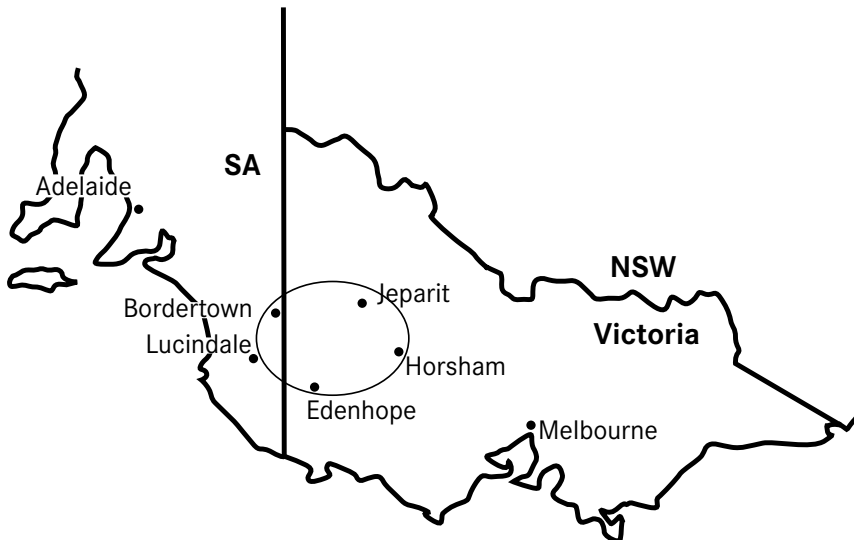
<b>Descriptions of conservation status</b>	<b>54</b>
--	-----------

# Introduction

Buloke trees have often been called the ‘Windharps of the Wimmera’, because of the eerie sound made as the wind passes through their foliage. In parts of western Victoria and south-east South Australia, these unusual, leafless trees grow in woodlands on the fertile soils of the plains. These woodlands are recognised by a growing number of people for their unique flora and as home to a broad range of wildlife, and they have long been popular with birdwatchers and naturalists.

The endangered buloke woodlands are home to an amazing array of species, but these are dwindling as the woodlands themselves decline. The extent of buloke woodlands within the Wimmera region of Victoria and adjoining parts of South Australia has reduced significantly since European arrival.

Already creatures like the brush-tailed phascogale appear to have disappeared from the area, and others such as the red-tailed black-cockatoo (often called the ‘red-tail’) may be next. If the buloke woodlands continue to be lost and degraded at the current rate, we could lose many of the animals and plants that we have always associated with the Wimmera (in this book, the reference to the Wimmera will include the Victorian region as well as adjoining areas of South Australia where buloke occurs).



The distribution of buloke woodlands within the Wimmera and adjoining parts of South Australia.

# The Wimmera buloke: why so special?

The Wimmera is a great spot for bird watching. If you're lucky, you may see the charismatic red-tailed black-cockatoos flying across the southern Wimmera looking for fruiting bulokes (from January to March) or having a drink at the end of the day at their local watering hole, which is often a stock trough.

But it's not just the endangered red-tails that depend on the Wimmera bulokes. Buloke woodlands are highly biodiverse; they are home to a great variety of plants, birds and other animals. While areas of buloke may be high in diversity, many of the species, especially birds, are threatened and declining. Therefore, the habitat remaining in this part of the world is particularly significant and valuable.



Photo: T. Burnard

The complicated task that those who study biodiversity face is to understand how all of its components work together to create functional ecosystems. Thousands of species don't yet even have names. We still don't have a complete understanding of the ways in which many species interact or what the long-term effects of removing one species from the ecosystem might be.

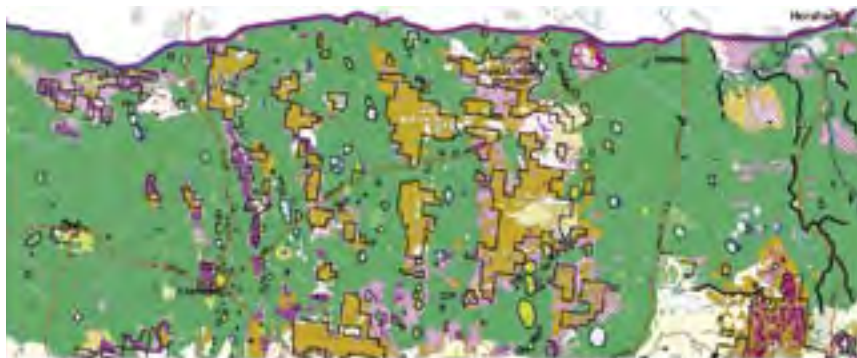
## How rare are buloke woodlands?

In the Victorian Wimmera, less than 3% of buloke woodlands remain uncleared. This is one of the reasons why this woodland type is now listed nationally as Endangered. The loss of buloke woodlands is largely due to their original occurrence on the heavier soils that are most suitable for agriculture, which is now the Wimmera's major land use. Most remaining buloke woodland is highly degraded, with much of it now

consisting of small remnant blocks, scattered paddock trees or roadside remnants. The majority of remaining buloke occurs on private land. Even scattered paddock trees provide extremely valuable habitat for a range of wildlife.

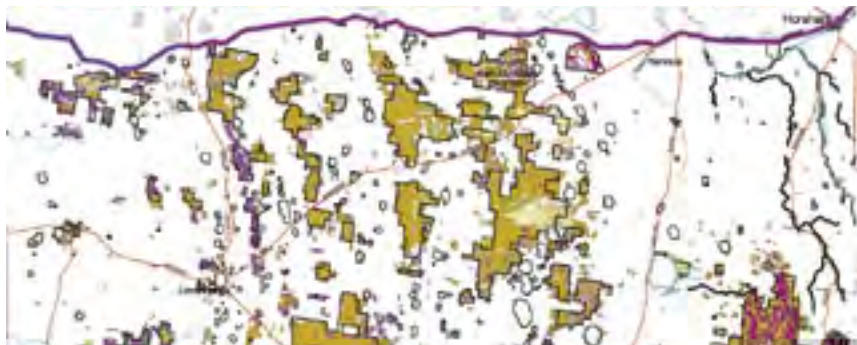
The quality and quantity of buloke woodlands continues to decline. A recent study found an average 25% loss of buloke trees from paddocks between 1982 and 1997, with a 39% decline in numbers in one study area (Maron 2003).

Maps a and b below show the change in native vegetation cover from 1750 to 1999 in the south-west Wimmera.



Map a – The dominant green colour in the top image represents the estimated extent of plains grassy woodland, which included buloke woodland in 1750. *Derived from the Department of Natural Resources and Environment, West Victoria, Comprehensive Regional Assessment (1999a).*

Map b – The bottom image shows the extent of plains grassy woodland in exactly the same area in 1999. *Derived from the Department of Natural Resources and Environment, West Victoria, Comprehensive Regional Assessment (1999b).*



As demonstrated by the above maps of the southern part of the Victorian Wimmera, the remaining native vegetation is almost entirely restricted to the less productive sandier soils that support quite a different group of plants and animals than buloke woodlands.



These days we understand some of the more obvious undesirable results of our tree clearing activities, such as the emergence of salinity and soil erosion. We are also beginning to understand some of the more subtle impacts of these activities on the Wimmera. Tree clearing has resulted in increased numbers of brown snakes and noisy miners, while the removal of fallen timber has made ground-nesting species such as bush-stone curlews more susceptible to fox predation.

Less understood is what happens when one species disappears completely. While it is not possible to determine the precise flow-on effects of the removal of bulokes from the ecosystem, our experiences so far tell us that the outcome is likely to be negative. We just don't know how negative.

## Key threats

**The ongoing removal of trees and the lack of regeneration of bulokes** are the main threats to buloke woodlands. Driving along a road can give the impression that buloke regeneration is common as roadsides are the main places where it occurs. But look at the same landscape from above and the problem becomes clearer.

Loss of buloke woodland through clearing or old age is of particular concern due to the difficulty involved in establishing young buloke trees. Buloke regenerates both by production of seedlings and through suckers from roots near the surface. Successful regeneration by either method requires exclusion of grazing and even then is very slow.

The loss of mature bulokes is a particular problem for the endangered red-tail as they feed in bulokes that have a 19cm or larger diameter trunk. The age of a tree of this size is estimated at approximately 100 years. This slow growth rate, coupled with the fact that direct seeding is not currently a successful method of cultivation, means that buloke is often omitted from revegetation projects. Successful buloke revegetation requires planting of seedlings, secure guarding from stock, rabbits and hares, and weed control for several years.

In the southern Wimmera, pressure to clear old buloke trees has increased with the move toward **centre pivot irrigation**, often for the purpose of white clover seed production. While some centre pivots may only require the removal of a few dozen trees, many new areas are being cleared for centre pivots and the cumulative impact is substantial. Additionally, research has found that clay soils accumulate salts immediately, with significant yield reductions expected to occur within five to 10 years of centre pivot irrigation commencing at a site (Gardner and Gardner, unpubl.). As a result, there is ongoing pressure to clear new areas of native vegetation for irrigation. Within the Wimmera, many of these areas include scattered buloke trees.



Centre pivot irrigation: scattered paddock trees are incompatible with the operation of these large revolving irrigation systems.

**Livestock grazing** prevents buloke regeneration in remnants and can cause loss of native plant species from the ground layer. Livestock, especially cattle, can also damage mature bulokes by ringbarking them and compacting the soil around the roots.

**Fire** used for stubble burning can burn through buloke and other trees and kill them. Stubble burning is used to control white and conical snails (a serious localised pest in cropping areas) and to control herbicide resistant rye-grass. Fire-breaks can easily be constructed around paddock trees to protect them from being damaged during a stubble burn.



Photo: M. Maron

Buloke habitat protected from stock grazing, with diverse grassy understorey and fallen timber.

In some situations, the **noisy miner**, a native honeyeater, also poses a threat to the conservation value of buloke woodlands. In most eastern Australian agricultural areas the fragmentation and degradation of native woodlands has benefited the noisy miner, which now occupies many smaller remnants of habitat. The miner lives in colonies that aggressively defend their territory against other birds, causing smaller bird species to be driven away. However, noisy miners are currently rare in buloke woodlands, which is one of the reasons why this habitat type is so important for other birds. If too many eucalypt trees such as yellow gum or grey box occur amongst the bulokes, miners will be more likely to invade. Miners occur at eucalypt densities as low as five trees per hectare within buloke woodland. Although the woodlands would naturally have comprised of mixed eucalypt/buloke stands as well as almost pure areas of buloke, we can help the birds by focusing our revegetation efforts on buloke and not planting too many eucalypts into buloke remnants. This will hopefully help to keep noisy miners at bay and maintain bird diversity within the buloke.

# What can we do?

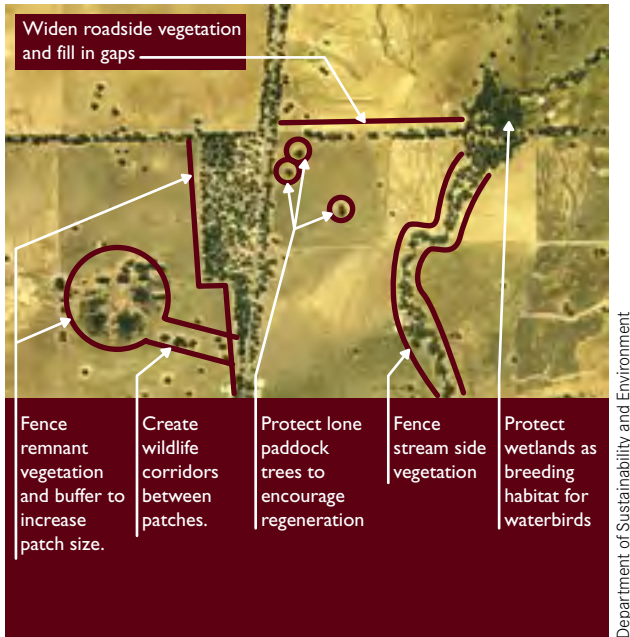
Protecting living buloke trees is one of the most constructive things a landholder can do to look after the environment, as old trees are very valuable for wildlife.

Because it takes so long for bulokes to grow, replanting new trees will not make up for the loss of existing trees in the short to medium term. Nevertheless, given that many of the existing trees will die of old age in the next 100 years, it is important to commence the task of replanting bulokes now. This will ensure that our children (and theirs) will be able to enjoy bulokes and all the other species that rely on buloke woodland in the future.

Other actions that will help buloke include:

- Permanently exclude heavy grazing from buloke woodland remnants with an intact, native ground layer.
- Exclude stock from remnants or areas with scattered trees for a few years to allow regeneration, then protect the young trees if stock need to be re-introduced.
- Leave isolated trees in paddocks – they can act as stepping-stones for animals to other native vegetation and are very important in their own right to wildlife like the red-tail.
- Leave fallen timber on the ground where possible – it offers protection and habitat for many species.
- Have a Property Management Plan that allows for native vegetation protection.
- Aim for as much native vegetation cover as possible in your plan because this allows for many birds and other wildlife.
- Leave dead trees with hollows standing – they are home to many species of birds and bats.
- Continue to control foxes, cats and rabbits.
- Control weeds in native vegetation, crops and pastures.
- Report any sightings of significant wildlife species to your local state environment department (see Key contacts at the end of this book).
- Remember to limit eucalypt plantings in buloke remnants as this can encourage noisy miner invasions (see previous page).

# Planning wildlife habitat



## Landscape planning

Once you have decided that you'd like to plan for wildlife protection, how do you get started? The picture above gives examples of how protection of vegetation and wildlife habitat can be incorporated into a landscape plan or a Property Management Plan. It demonstrates where fencing can be planned for the protection and regeneration of habitat.

There is a range of benefits to retaining wildlife habitat, particularly with respect to the increased number of native insects and wildlife that you may find over time. Some specific benefits are listed below.

- Native vegetation increases the numbers of birds and their associated benefits. Magpies, for example, will consume up to 40 scarab larvae per day.
- Native vegetation increases bat numbers, which can consume up to half their body weight in invertebrates in a single night.
- Shelter belts can greatly reduce cold stress on stock, and shade from trees can reduce heat stress.
- Native vegetation protects soil from wind erosion.

## Who can help?

As a landholder or member of a community group with an interest in protecting habitat or conserving wildlife, you may be able to access funds to help with fencing, habitat restoration or control of feral animals and weeds from a number of sources.

As funding programs change periodically, it's a good idea to contact your local Landcare group or extension officer, Trust for Nature or the Threatened Species Network (see Key contacts) to inquire about the best program available for the work you plan to do.

If your project focuses on a nationally-listed threatened species, funds are available through the Natural Heritage Trust and the Threatened Species Network (TSN) Community Grants program to help community groups (such as a Landcare group or field naturalist group) to undertake on-ground works. Details can be obtained from your state TSN coordinator or the Australian Government Department of the Environment and Heritage. Information about Natural Heritage Trust funding opportunities can also be found at [www.nht.gov.au](http://www.nht.gov.au).

Your regional catchment body – the Wimmera Catchment Management Authority (CMA) in Victoria or the South East Natural Resources Management Board in South Australia – and various other organisations also provide funding to assist landholders to protect and enhance remnant vegetation and carry out other environmental projects. For further information, contact your regional catchment body or local environment department (see Key contacts).

In Victoria, Trust for Nature may provide more assistance if you place a conservation covenant (or management agreement) over remnant habitat areas. They also have a flora and fauna survey program. Contact them for further information (see Key contacts).

Landholders are also eligible for tax concessions for certain types of land conservation activities. Landcare activities, water management and efforts to ameliorate land degradation are covered under the *Income Tax Assessment Act 1997*. Landholders who sign perpetual conservation covenants or donate property to eligible environmental bodies are also rewarded with tax breaks under the taxation law. For further information on Landcare incentives contact your nearest tax office or the Australian Government Department of Agriculture, Fisheries and Forestry (see Key contacts).

# Plants and wildlife – Wimmera buloke

The following pages provide information about some of the plants and wildlife that you could expect to find in the buloke woodlands and/or scattered buloke trees of the Wimmera region. It is not by any means an exhaustive list but it provides a sample of some of the threatened and declining, as well as the more common, plants and animals in the region and highlights their specific needs and threats. More comprehensive flora information for buloke woodlands, as well as advice on regeneration and restoration, is provided by Macaulay and Westbrooke (2003) (see Resources at the end of this book).

By managing and maintaining habitat for the plants and animals listed in this book, we will also be helping to protect a range of other species with similar requirements that share the same habitat.

# Buloke

*Allocasuarina luehmannii*

Photo: T. Burnard



Courtesy Parks Victoria



Courtesy Parks Victoria

**Conservation status:** The buloke woodland plant community is listed nationally as Endangered and is also included within the Victorian list of threatened communities under the *Flora and Fauna Guarantee Act*.

**Description:** Small tree to about 15m, with coarse, rough bark (ideal bat shelter). Branchlets are long and needle-like. Being wind-pollinated, the flowers are not obvious or scented and the branchlets tend to stand erect.

**Habitat needs:** Generally occurs on clay and/or alkaline sub-soils.

**Threats:** Ongoing threats to buloke include incremental clearing, lack of regeneration, damage due to livestock grazing, herbicide and other chemical drift. The scattered paddock bulokes that are a feature of many farms are at risk from soil compaction, ringbarking by stock and clearance for irrigation.

**Interesting things to note:**

- The green parts of this tree are not true leaves but modified stems. Look closely near the 'joints' of the branchlets and you will see the true leaves – reduced to tiny 'teeth'.
- The cones of these trees give the appearance of conifers but they are true flowering plants.
- Bulokes must be about 100 years old before a red-tailed black-cockatoo will eat the cones.
- It is estimated that buloke trees can live to more than 400 years.



# Buloke mistletoe

*Amyema linophylla* ssp. *orientale*



Photo: M. Maron

**Conservation status:** Vulnerable in Victoria.

**Description:** Mistletoes are attractive flowering plants that can only grow when attached to other plants. The buloke mistletoe has narrow, pale grey-green leaves, bright pink, tubular flowers and white, fleshy fruit.

**Habitat needs:** Occurs in low rainfall woodlands almost exclusively on buloke but occasionally on the related species belah.

**Threats:** This plant is dependent on its host for survival. The decline in its two dominant hosts, buloke and belah, means that it too is in decline.

## Interesting things to note:

- This plant provides food for caterpillars of wood white and amaryllis azure butterflies.
- The bright green harlequin mistletoe (*Lysiana exocarp*) also occurs on buloke.
- Buloke mistletoe foliage looks very much like buloke and the mistletoe is only noticeable when in flower.
- Mistletoe plays an important role in the ecosystem as food and shelter for many native birds, mammals and insects.
- Mistletoes are a natural occurrence on many plants. Only very heavy infestations are likely to harm a tree.

# Broughton pea

*Swainsona procumbens*



Photo: N. Marriott

**Conservation status:** Vulnerable in South Australia.

**Description:** Perennial trailing herb growing to 30cm tall. Large flowers from Aug-Nov can be blue to purple with a yellow tipped, coiled keel-petal. The keel is formed by the partial fusion of the two innermost petals.

**Habitat needs:** Found on heavy soils that may be seasonally wet.

In places where this plant survives there are usually other plants in the soil seed bank or present as rootstocks ready to regenerate.

**Threats:** Heavy, consistent grazing.

**Interesting things to note:**

- This plant fixes nitrogen in the soil.

# Common eutaxia

*Eutaxia microphylla*



Photo: Department of Sustainability and Environment/McCann

**Conservation status:** Not threatened.

**Description:** Low matted shrub up to 1.2m with small leaves. The ‘egg and bacon’ flowers are on long, often spiny stems from Aug–Dec. Two sub-species with different growth forms often occur in adjacent areas – *microphylla* (mostly prostrate) and *diffusa* (which is taller). The matted structure of the prostrate form (lying flat on the ground) helps in soil conservation, and the species also fixes nitrogen.

**Habitat needs:** Occurs in a wide range of grassy habitats from grassland to various types of grassy woodland.

**Threats:** May be locally threatened by frequent burning (ie. more often than every three years), rabbit and livestock grazing and repeated low slashing or ploughing.

**Interesting things to note:**

- Ants harvest the seeds from the ground to take to their nest. Consequently, an old ant nest may become a regeneration site for this plant.
- The seed can remain viable in the soil for many years.
- The seed pods open in spring-summer with an audible ‘pop’.

# Lambs-tails

*Ptilotus exaltatus* var. *semilanatus*



Photo: M. Maron

**Conservation status:** Endangered in South Australia.

**Description:** Attractive perennial erect tufted herb growing to 80cm high. Has large 'fluffy' pink flowers.

**Habitat needs:** Grasslands and grassy woodlands.

**Threats:** Heavy, consistent grazing. Readily re-colonises when given protection from grazing, rabbits and weed invasion.

While some burning is necessary in areas with heavy grass cover, frequent burning (more often than every three years) is likely to cause the eventual loss of the plant.

**Interesting things to note:**

- The related plant *Ptilotus erubescens* (hairy tails) is more prostrate than *Ptilotus exaltatus*, with a rosette of glossy green leaves and pale yellowy-green coloured flowers. It occurs less commonly in buloke woodlands.

# Lemon beauty-heads

*Calocephalus citreus*



Photo: N. Marriott

**Conservation status:** Not threatened. Fairly common, especially in ungrazed remnants.

**Description:** A silvery tufted herb growing to 40cm with masses of egg-shaped lemon-yellow flower heads. Flowers mostly from Dec–March.

**Habitat needs:** Found in grasslands, woodlands and on roadsides. The plant can survive some intermittent grazing.

It often occurs in seasonally damp areas.

**Threats:** The plant is less common in sites heavily invaded by grassy weeds.

**Interesting things to note:**

- Flowers are highly attractive to a range of native insects.



# Amaryllis azure butterfly

*Ogyris amaryllis meridionalis*



Photo: D. Verrall, courtesy F. Douglas

**Conservation status:** Not threatened.

**Description:** The upper side of the wings (span of about 3–4cm) have a black border around shining metallic blue that is so bright that they can be seen up to 50m away. The underside is very different, providing camouflage that blends with the rough bark of a buloke.

**Habitat needs:** Prefers open shrub and woodland habitat. The larvae are reliant on the mistletoe and its host, the buloke tree. They usually feed on the buloke mistletoe.

**Threats:** As they rely on bulokes, the further loss of these trees could have a serious impact on this beautiful butterfly.

## Interesting things to note:

- Ants almost always attend the larvae and a female butterfly may not lay eggs until she has confirmed that the suitable ant species is within the vicinity of the host plant.
- The metallic blue colour of these and several other butterflies of their family is affected by moisture. If the blue wings get wet, they irreversibly turn green.
- In the Wimmera the adult flight season for this species commences in Sept and concludes in April.

# Pale sun-moth

*Synemon selene*



Photo: A. Sundholm, courtesy F. Douglas

**Conservation status:** Endangered in Victoria; presumed extinct in South Australia.

**Description:** Forewings are predominantly light to grey brown with small black and white markings. When at rest, these camouflage the brightly coloured hind wings, which are boldly marked with yellowish-orange and greyish-black.

**Habitat needs:** Appears to prefer grasslands and grassy woodlands dominated by bristly wallaby-grass that is short and open, as well as sparse tree coverage of buloke, black box and sometimes yellow gum. It is believed that they breed in open areas away from tree cover and that the roots of the bristly wallaby-grass are the larval food of the moth.

**Threats:** Habitat loss.

## Interesting things to note:

- The pale sun-moth was considered extinct in Victoria until it was rediscovered in 1991.
- Four of the five morphs (forms) are found in the Wimmera.
- Adults may be found flying around between early Feb and early March. They spend their time looking for suitable cracks in the ground where they lay their eggs.
- The adults only fly while the sun is shining. If a passing cloud blocks sunlight, they settle and only resume flying when the sunlight returns.
- The adults do not feed and only live for about five days, just long enough to lay their eggs.

# Wood white butterfly

*Delias aganippe*



Photo: M.F. Braby, courtesy F. Douglas

**Conservation status:** Not threatened.

**Description:** Spectacular butterfly with large (6cm) wingspan. Wing pattern is black and white with bright red and yellow patches on the under surface.

**Habitat needs:** Buloke mistletoe, sweet quandong and box mistletoe are common larval food plants.

**Threats:** Urbanisation and agricultural activities have destroyed or fragmented many of the known breeding areas.

**Interesting things to note:**

- Butterflies in the *Delias* genus are often poisonous to predators. They get their toxic properties through the plants they eat. The bright red and/or yellow spotting on the wing is intended to warn of the presence of these poisons to would-be predators such as birds.
- *Delias* are often slow fliers, making their warning colours easily recognisable by potential bird predators.
- Some of the *Delias* are non-poisonous but they gain protection from predators by appearing similar to a poisonous species.



# Buloke cicada

*Cicadetta* sp. aff. *tigris*

There is yet to be a photograph published of this undescribed cicada species.

The fact that we are still discovering new species in buloke woodlands highlights the importance of taking care of this habitat.

About 86,000 insect species have been discovered in Australia so far but the final number may end up being twice as many.

As yet, we have no idea what species are out there that may prove to be extremely important for other species, including humans. If we allow the buloke woodlands to degrade to a state where they cannot support the species that live there, we may never even know what has been lost.

**Conservation status:** Unknown.

**Description:** Black with light brown markings and transparent wings, except a 'w' shaped dark brown marking near the tip of each forewing. Wingspan is 6–7cm. Call is a sharp 'chip chip chip chi-chi-chip', accompanied continuously by a soft shivering sound that pulsates in time with the call.

**Habitat needs:** This cicada has only been found in stands of buloke.

**Threats:** Given that it has only been detected in buloke, the loss of bulokes is likely to have a serious impact on this species.

## Interesting things to note:

- This species was discovered by Fabian Douglas in 1997 near Lake Hindmarsh.
- Since the discovery, ten more populations have been located in the Wimmera area.
- This cicada appears to have a restricted distribution, which forms a rough triangle that runs from Weddings Reserve to near Pimpinio and across to a site 14km north-east of Nhill.
- The adult flight period of the buloke cicada starts in late November and continues until early March.
- Two vibrating drum-like membranes mounted on either side of the abdomen make the distinctive loud call of cicadas. These resonate in large cavities that amplify the sound.

# Purple and yellow jewel beetle

*Themognatha pascoei*



Photo: P. Lillywhite

**Conservation status:** Not threatened. The small amount of available data indicates that it is under significant decline in Victoria.

**Description:** The males measure about 3.5cm; females are a little larger at approximately 4cm. When viewed from above, the head and body are metallic purple or coppery-purple, with a narrow creamy-yellow stripe along the sides. The wing covers are creamy-yellow for the first two thirds of their length, with the remaining third being black with a purple or reddish-purple metallic sheen. The adult flight period is probably during January and February.

**Habitat needs:** Little is known about this beetle's requirements but it is likely that the larvae bore holes in live buloke.

**Threats:** Habitat loss due to the widespread clearing of buloke woodlands for agriculture. As the beetles lay only one or two eggs in each host plant, it is assumed that they require large areas of natural habitat. In the Wimmera area it may feed at the blossom of black box, dumosa mallee, or bull mallee.

## Interesting things to note:

- This is one of the rarest jewel beetles in Victoria.
- The recent establishment of corridors of native vegetation along roadside verges and watercourses to connect existing remnants of buloke woodland in the Wimmera should help to increase the population level of this species in Victoria.

# Yellow-footed antechinus

*Antechinus flavipes*



Photo: J. Barnett

**Conservation status:** Not threatened.

**Description:** Head and body length 90–160mm; tail length 65–140mm. The body varies in colour from grey to brown/red. Head and shoulders are always slate grey and the lower flanks, belly, legs and feet are yellowish to russet. Has a prominent light eye-ring.

**Habitat needs:** Dry forests, grassy or heathy woodlands to semi-arid shrubland. Forages on the ground, in trees and among rocks. Builds a nest of dry eucalypt leaves in tree cavities, rocks or buildings.

**Threats:** Loss of trees, hollows and fallen timber, as well as predation by cats and foxes.

## Interesting things to note:

- Don't mistake it for the common house mouse! Its face is more pointed and is a more brownish red than a mouse.
- It is predominantly nocturnal and able to climb trees.
- The mating season is fast and furious, lasting only two weeks. At the end of the breeding season all males in the colony die, leaving the food resources for the pregnant females.
- Feeds mostly on insects but also includes a range of fruit, flowers and nectar as well as small birds and mice.
- After a month's gestation the female gives birth to as many as 12 young who are carried in the pouch for up to five weeks.

# Fat-tailed dunnart

*Sminthopsis crassicaudata*



Photo: J. Barnett

**Conservation status:** Near Threatened in Victoria.

**Description:** Small grey marsupial with large ears and pointed nose. Its head and body length is 60–90mm and it weighs just 10–20g. The tail is grey, short (45–70mm) and often quite swollen.

**Habitat needs:** Uses a variety of habitats, particularly sparse grasslands and open shrubland with bare ground, grassy woodland, claypans, rough pasture and the edges of stubble paddocks.

**Threats:** Loss of habitat, especially rocks and fallen timber, intensive farming practices and predation by foxes and cats.

**Interesting things to note:**

- The fat-tailed dunnart shelters during the day in a grass nest under a log or a rock, or within cracking soil.
- Communal dens have been observed.
- This small nocturnal mammal will enter a state of dormancy (torpor), with reduced body temperature and metabolism when conditions are tough.

# Lesser long-eared bat

*Nyctophilus geoffroyi*



Photo: T. Rearden

**Conservation status:** Not threatened.

**Description:** A small bat (6–8 grams and about 4–5cm long) with brown or grey fur on its back and a white belly. Very large ears but when the bat is inactive the ears fold and curl under making them less obvious.

**Habitat needs:** Roosts in tree hollows, under bark, in narrow cracks (usually 2.5cm wide) in dead trees, in roofs, hollow walls, old fence posts and even coats hung on the back verandah. Maternity roosts are usually in large old dead trees. The bats forage predominantly around trees but commute over open paddocks to reach trees for foraging. Can survive in farmland provided there is some remnant vegetation.

**Threats:** Loss of tree hollows and loss of feeding grounds by forestry activities, land degradation, clearing for agriculture and housing.

## Interesting things to note:

- Insectivorous bats have the ability to consume up to half of their body weight in insects each night. Overseas, poisoning of large numbers of insectivorous bats has resulted in insect plagues.
- The young bats feed on milk from teats located in their mother's armpits until they are six weeks old.
- These bats will readily take to artificial roost boxes.
- Dead trees are very important for this species – other species prefer live trees but this one predominantly roosts in dead trees or dead sections of live trees.

# Bearded dragon

*Pogona barbatus*



Photo: Courtesy Parks Victoria

**Conservation status:** Data Deficient in Victoria.

**Description:** Variable in colour from pale grey to fawn or brown to almost black. Their rough, often spiny skin, upright postures and long limbs make dragons easy to recognise.

**Habitat needs:** This is a semi-arboreal species located in drier regions in forests and woodlands. It prefers areas with fallen timber and stumps but little ground cover.

**Threats:** Dense ground cover without areas for basking. Removal of fallen timber.

**Interesting things to note:**

- Often seen perched on a fence post or basking on the road.
- It requires sunlight for activity (this is called heliothermy).
- It is more common in grazed woodlands, which have clear areas for basking in the sun.
- Many dragons employ a suite of visual signals to communicate. Head-bobbing, arm-waving, tail-lashing and even changing the intensity of colour are used to indicate territory and sexual status.
- Dragons can be extremely evasive. If approached, they often freeze, lower their head, and closely hug their perch to remain undetected.
- When threatened, they often turn darker around the beard area.

# Striped skink

*Ctenotus robustus*



Photo: C. Crouch

**Conservation status:** Not threatened.

**Description:** Has a long black stripe from its neck to the base of the tail, bordered by thin cream or white lines with more stripes on either side.

**Habitat needs:** Lives in a variety of habitats, including eucalypt forests and rocky sites, shrublands, grasslands and buloke woodlands. It takes refuge in short, shallow burrows under ground debris where it lays its eggs. It seems to prefer woodlands with open ground cover and high shrub complexity.

**Threats:** Habitat fragmentation and thick ground cover.

## Interesting things to note:

- Large and wide remnants have higher abundances of this skink.
- Light grazing appears to favour the species.
- The skink family is extremely varied, from bigger species like blue tongues and shinglebacks to the wormlike burrowing types. Some skinks lay eggs, while others give birth to fully-formed young.
- If you're looking under a rock, be quick. They'll be off in a flash!



# Olive legless lizard

*Delma inornata*



Photo: Department of Sustainability and Environment / McCann

**Conservation status:** Rare in South Australia.

**Description:** Grey to olive in colour, often with black lining to individual scales. Also known as the olive snake-lizard in South Australia. Grows to about 30cm in length and about 1cm in width.

**Habitat needs:** Associated with open grassy remnants without a shrub layer and with leaf litter protection on the ground. Requires logs and surface debris for shelter and tussock grass as feeding areas. Do not appear to be disadvantaged by moderate habitat disturbance.

**Threats:** Predation by foxes and cats, and habitat destruction.

**Interesting things to note:**

- Olive legless lizards are mostly active at dusk and dawn.
- They feed almost exclusively on insects and spiders.
- They look a lot like a snake but have some distinguishing features that snakes don't have, such as external ear holes, vestigial hindlimb flaps and a broad, rounded tongue.
- Olive legless lizards make a squeaking noise when disturbed or handled.
- Their tail makes up two-thirds of their total body length. Like many other skinks, they are able to shed their tail.



# Common spadefoot toad

*Neobatrachus sudelli*



Photo: Department of Sustainability and Environment/McCann

**Conservation status:** Not threatened.

**Description:** Colours vary from grey, brown, yellow to reddish brown with large patches or marbling of brown or olive. Its call is a slowly pulsed trill – ‘craw-aw-aw-aw-aw-awk’.

**Habitat needs:** Dry environments in soils with a high clay content. It prefers sites with a high shrub complexity, providing shelter and insects.

**Threats:** Soil disturbance and changes in climatic conditions, such as long dry periods.

## Interesting things to note:

- The spadefoot burrows for long periods and is usually only found after summer rains when it breeds in grassy marshes, lagoons, flooded claypans and temporary roadside pools.
- They have a small black tubercle on the hind feet to help with burrowing.
- Listen to the call at <http://frogs.org.au>.

# Bush stone-curlew

*Burhinus grallarius*



Photo: D. Harley

**Conservation status:** Endangered in Victoria, Vulnerable in South Australia.

**Description:** Large (50–60cm) long-legged bird with large yellow eyes and grey-streaked upper parts.

**Habitat needs:** Daytime roosts and nest sites are in grassy woodlands of buloke, gum or box with low, sparse grassy or herb understorey. Curlews prefer areas with lots of fallen timber. They require a sparse understorey, so where pasture grasses are established, these need to be grazed at times to keep grass height down.

**Threats:** Foxes are the main predator, preventing successful nesting. Removal of fallen timber from around trees removes cover and camouflage for nesting curlews. Urgent action to protect their roost and nest sites is required in order to prevent their extinction from the region.

**Interesting things to note:**

- Bush stone-curlews still wander the streets of suburban Kangaroo Island and many parts of northern Australia. It's amazing what a lack of foxes can do!
- Parent curlews will vigorously defend their nest, approaching the intruder with their large wings outstretched, hissing loudly.
- Also known as the bush thick-knee and the rainbird.
- Individuals can live for more than 20 years.
- Breeds between August and February, and pairs show strong site fidelity.

# Painted button-quail

*Turnix varia*



Photo: Department of Sustainability and Environment/McCann

**Conservation status:** Vulnerable in South Australia and thought to be declining elsewhere in south-eastern Australia.

**Description:** Plump and short-legged with intricate plumage patterns that help to camouflage them. Their short, strong wings are ideal for quick take-off into rapid flight that is typical of button-quails.

**Habitat needs:** Woodlands with a relatively undisturbed ground layer, plenty of leaf litter and tussocks of native grass for cover.

**Threats:** Grazing removes cover that the birds need while foraging. They rarely leave the ground and are susceptible to predation by cats and foxes.

## Interesting things to note:

- Difficult to observe. They are alert and will often quietly depart before you catch a glimpse of them. If hidden in deep grass they can ‘explode’ out of the undergrowth, giving the intruder quite a start!
- Recent foraging sites are marked by saucer-like depressions where the birds scratch in the leaf litter with one foot while pivoting in a circle balanced on the other.
- Although they look alike, button-quails are not related to true quails such as the stubble quail.
- The female is more colourful, has the stronger patterns and is larger than the male.

# Red-tailed black-cockatoo

*Calyptorhynchus banksii graptogyne*



Photo: R. Drummond

**Conservation status:** Listed as Endangered nationally, in Victoria and in South Australia.

**Description:** A large black cockatoo, often confused in the region with the yellow-tailed black-cockatoo. The male has a red tail while the female and juveniles have barred orange-yellow tails. They can be seen floating across the country in pairs or flocks. During summer and early autumn they are particularly visible in the buloke remnants of the south-west Wimmera. Red-tails only eat the seeds of bulokes and stringybark trees.

**Habitat needs:** Bulokes and stringybarks for feeding and large eucalypts with hollows for nesting.

**Threats:** Loss of habitat by clearing and too frequent burning of stringbark. The expansion of centre pivot irrigation has caused substantial losses of its buloke feeding habitat.

## Interesting things to note:

- Almost all red-tails eat left-footed.
- Look under a tree where they have been feeding and you will see an abundance of trash, including the tips of branches and chewed nuts and cones.
- There are five sub-species of red-tailed black-cockatoos across Australia. This south-eastern sub-species is the only one listed as nationally Endangered.
- The red-tail does not feed in pine trees, whereas the yellow-tailed black-cockatoo is often seen feeding on pine cones.
- Hear the red-tails call at [www.redtail.com.au](http://www.redtail.com.au).
- The red-tailed black-cockatoo is a totem of the local aboriginal people.

# Brown treecreeper

## *Climacteris picumnus*

### Conservation status:

Declining; the south-eastern sub-species (*Climacteris picumnus victoricae*) is Near Threatened in Victoria.

**Description:** Mostly grey to brown with subtle markings.

**Habitat needs:** Fallen timber is very important for this bird. Brown treecreepers need trees with small hollows and crevices in which to nest, usually large old grey box or black box trees. Their ground-foraging habit means they don't like weedy grasses such as phalaris and rye grass.

**Threats:** In some parts of Australia, groups of birds in highly isolated remnants do not have a breeding female. It appears that the birds have difficulty flying between isolated woodland remnants, so if a female is lost, she is not easily replaced.

### Interesting things to note:

- You will know when you've wandered into the territory of a family of treecreepers. If they've been foraging on the ground as they often do, they'll fly up into a tree, displaying cream-coloured wing-bars, and call repeatedly and loudly.
- Like most treecreepers, this one breeds cooperatively, with two or three males tending to the young of one female.
- Treecreepers have strong legs for gripping and can effortlessly walk along the underside of a branch. This ability gives them access to food other birds cannot reach.



Photo: Department of Sustainability and Environment/McCann



# Southern whiteface

*Aphelocephala leucopsis*



Photo: Department of Sustainability and Environment/McCann

**Conservation status:** Declining.

**Description:** Just 11 cm from head to tail, southern whitefaces can be distinguished from other small, brown, ground-feeding birds by their plain brown rump, which is unlike those of yellow-rumped and chestnut-rumped thornbills. The curious facial expression is due to the black band that runs over their foreheads and borders their white faces. The stout bill is designed for eating seeds and insects.

**Habitat needs:** Open woodland from near arid habitats to wetter grassy woodlands. In buloke woodlands, they feed almost exclusively on the ground and avoid areas with too much tall weedy grass.

**Threats:** Loss of woodland habitat, removal of dead timber on the ground and ground cover that is either too dense or non-existent. In weedy woodlands, light grazing for short periods may help improve the ground-layer habitat.

**Interesting things to note:**

- They usually forage in small flocks and fly up as a group, emitting twittering calls if disturbed.
- Sometimes they join other small birds such as thornbills in a foraging group.
- They sometimes nest in tree hollows, which is unusual for a small bird.

# Spiny-cheeked honeyeater

*Acanthagenys rufogularis*



Photo: Chris Tzaros

**Conservation status:** Not threatened.

**Description:** 22–26cm in length. This unusual and robust-looking honeyeater has a rich apricot throat and breast and blue eyes. Its call is a varied mix of rich, gurgling tones.

**Habitat needs:** Characteristic honeyeater of buloke woodlands. Like other honeyeaters, it enjoys feeding on mistletoe nectar during the summer.

## Interesting things to note:

- In the evening, the bird is often seen perched high in a tree, warbling its strange, liquid-sounding notes.
- Despite its name, it feeds mostly on invertebrates when in buloke.
- It is primarily an inland species and generally occurs no further south-east than the buloke woodlands of the Wimmera, with the exception of Victoria's coastal strip.
- Spiny-cheeked honeyeaters are thought to be one of the most important dispersers of mistletoe, second only to mistletoe birds.

# Noisy miner

*Manorina melanocephala*



Photo: Department of Sustainability and Environment/McCann

**Conservation status:** Increasing.

**Description:** A grey bird with a yellow beak and legs and a black crown.

**Habitat needs:** Although native to eastern Australia, the noisy miner is one bird that has benefited from human modification of the environment. It thrives in woodlands and forests where the understorey has been destroyed, or where the edges of woodland remnants adjoin farmland.

**Threats:** This species is a threat to other species. It lives in territorial, aggressive colonies, forcing most other birds from the area.

## Interesting things to note:

- This bird occurs in degraded environments (see 'Key threats' at the start of this book).
- In contrast to the noisy miner, its close relative the black-eared miner is highly endangered. The black-eared miner lives only in the long-unburnt mallee of far north-western Victoria and adjoining South Australia.
- Noisy miners exclude small insectivorous birds through group aggression. The exclusion of these birds results in an increase in insect attack of trees and is considered a factor in the dieback of trees in rural areas.
- Noisy miners occur at eucalypt densities as low as five trees per hectare within buloke woodland, demonstrating the value of limiting eucalypt planting within buloke remnants and in buloke revegetation efforts.



# White-fronted honeyeater

*Phylidonyris albifrons*



Photo: Department of Sustainability and Environment/McCann

**Conservation status:** Not threatened.

**Description:** 16–18cm from head to tip of tail. A very unusual-looking honeyeater with white underparts, a black bib and a white mask. It is closely related to the New Holland honeyeater, a common garden bird, but the white-fronted honeyeater lacks the bright yellow wing markings and white eye of its relative and wears a white mask instead.

**Habitat needs:** Loves drinking nectar from the flowers of buloke mistletoe, which grows almost exclusively on buloke trees.

## Interesting things to note:

- This species is associated with the arid zone. The Wimmera is on the very southern edge of its range.
- These periodic visitors often show up in large numbers in the summer when the buloke mistletoe blooms.
- Note what appears to be an odd facial expression caused by the white patches between the eyes and the bill.

# Red-capped robin

*Petroica goodenovii*

## Conservation

**status:** Not threatened but declining.

**Description:** Plump little bird (11–12cm). Males are like beacons with brilliant red caps and breasts, but the females are much less obtrusive and mainly grey with only a pale red cap of various intensity.

**Habitat needs:** Like the hooded robin, the red-capped robin prefers fallen timber and low branches for perching but avoids areas of long weedy grass. It likes to forage in areas where there is fine leaf litter underneath buloke trees.



Photo: Department of Sustainability and Environment/McCann

**Threats:** In the Wimmera the robin still lives in small woodland patches, many of which are not able to regenerate due to grazing. As old trees die and are not replaced, habitat for the robin and other birds is disappearing.

## Interesting things to note:

- A well-known little robin (the smallest of the Australian robins) commonly found in the Wimmera's buloke woodlands.
- The trilling call of the male can be heard some way away, but the quiet 'tick' sounds of both sexes often reveal their presence close by.
- They forage in a similar way to the hooded robin but typically choose hunting perches closer to the ground, often the lowest branch of a buloke or a fallen branch.
- Australian robins build the smallest nest of any Australian bird.

# Hooded robin

*Melanodryas cucullata*



Photo: Department of Sustainability and Environment/McCann

**Conservation status:** Near Threatened in Victoria.

**Description:** The male is striking and handsome in black and white colouring, while the females and immature males are grey. Both sexes have white wing-bars visible in flight.

**Habitat needs:** Hooded robins like to perch on fallen timber and low branches while hunting for invertebrate prey. They feed mostly by pouncing on ground-dwelling prey and tend to avoid areas where tall weedy grass has invaded remnants.

**Threats:** Habitat loss, invasion of remnants by introduced pastures and collection of fallen timber from woodland remnants.

## Interesting things to note:

- Another communal breeder, sometimes with three or more attending the nest.
- Young birds often stay with their parents for a while, but as the breeding season approaches, the adult birds can become aggressive towards these hangers-on and chase them from their territory.

# White-browed babbler

*Pomatostomus superciliosus*



Photo: Department of Sustainability and Environment/McCann

**Conservation status:** Not threatened but declining.

**Description:** Mostly grey with white chest and eyebrows; 18–22cm long.

**Habitat needs:** Dry open forests and woodlands with a shrubby understorey. They forage on the ground as one ‘happy family’.

**Threats:** These noisy birds live in groups and were once common across the Wimmera but their numbers have declined considerably. This may be because of their unwillingness to cross cleared country to reach new areas of habitat. Connecting patches of scrub with corridors can benefit many species as well as provide shelter for stock.

**Interesting things to note:**

- Very gregarious. They forage, preen, dust bath, raise young and roost in groups of up to about a dozen individuals.
- A pair of white-browed babblers has difficulty breeding on its own because nesting and looking after young is shared among the members of a group.
- The close relatives, the grey-crowned babblers, used to occur in the Wimmera but are now reduced to one tiny population in north-eastern Victoria due to clearing and fragmentation of habitat.

# Varied sittella

*Daphoenositta chrysoptera*



Photo: Department of Sustainability and Environment/McCann

**Conservation status:** Not threatened but declining.

**Description:** Small (11–12.5cm), mostly grey with white underparts. Has a black crown and black tail feathers with white tips. Orange wing-bars show in flight.

**Habitat needs:** Copses of trees and scattered trees in paddocks (especially rough-barked trees like bulokes and box eucalypts), as well as larger patches of woodland are important for this species.

**Threats:** Loss of habitat, and in some woodland types, habitat degradation.

## Interesting things to note:

- Often first noticed by the chorus of high-pitched whistles as a flock of foraging birds descends on a tree.
- They forage from the uppermost branches down to the main trunk, and then fly up to start near the top of another tree. Bulokes are ideal trees for foraging sittellas, due to the creviced bark that hides the invertebrates they prey upon.
- Another sociable bird, they roost and forage communally. While only one female may lay the eggs, the whole group helps to feed the young.
- Their nests are remarkably well camouflaged. They decorate them with bark or moss to blend in with the branches.

# Rufous whistler

## *Pachycephala rufiventris*



Photo: Department of Sustainability and Environment/McCann

**Conservation status:** Not threatened but declining.

**Description:** Small (17cm), mostly grey bird. The male has a white throat-patch, thickly bordered with a black band, and a rufous breast and belly. The female is plainer and generally grey, but with dark striations from throat to belly.

**Habitat needs:** Open forest, woodlands and mallee.

**Threats:** The loss and degradation of its woodland habitat are the main factors impacting on the rufous whistler in southern Australia.

**Interesting things to note:**

- This bird is heard whistling away in the springtime. Whistlers are recognised as some of Australia's best bird vocalists.
- In the past it has been known by the less than flattering name 'thickhead', resulting from the fact that whistlers do tend to have large rounded heads.
- Courtship displays are called see-sawing, where the body rocks with both the head and tail pointed skyward.
- Rufous whistlers are a migrant, arriving in the Wimmera each year from northern Australia in late September.



# Restless flycatcher

*Myiagra inquieta*



Photo: Department of Sustainability and Environment/McCann

**Conservation status:** Not threatened but declining.

**Description:** Small (16–21cm) handsome bird with glossy blue-black back and white chest. At first glance, you might think this bird is a willie wagtail. Look again and you'll notice that unlike the willie wagtail, the white of the breast extends right up to under the bill. The restless flycatcher spends a lot of its time hovering above the ground searching for insect prey.

**Habitat needs:** This species lives in open forests, woodland and farmland, including lightly treed paddocks, especially near water.

**Threats:** Loss of woodland habitat.

**Interesting things to note:**

- The restless flycatcher makes an amazing sound that gave it the nickname 'scissor grinder'. It makes this noise to alarm insects into flight where they are easy prey.

# White-browed woodswallow

*Artamus superciliosus*



Photo: Department of Sustainability and Environment/McCann

**Conservation status:** Not threatened but declining.

**Description:** 18–21 cm, handsome blue-grey birds with rich chestnut underparts and a conspicuous bright white brow.

**Habitat needs:** Arid shrublands, open forests and woodlands. Often found in suburbs and on farms.

**Threats:** Loss of habitat. The nest is usually a scanty shallow cup in the fork of a tree, in hollow stumps and even in old fence posts.

**Interesting things to note:**

- On occasion in spring and summer, the sound of distant chirping can be heard coming from high above as a large flock of migrating woodswallows passes overhead. Usually most of these are white-browed woodswallows.
- Woodswallows are generally a sociable mob. They can often be seen perched in a close group on a branch.
- They love to feed on swarming flights of termites, especially on warm, humid evenings.



# Diamond firetail

*Stagonopleura guttata*



Photo: Department of Sustainability and Environment/McCann

**Conservation status:** Vulnerable in Victoria and South Australia.

**Description:** This stunning little bird wears a dapper suit of a black breast band, white-spotted flanks and a bright red rump and beak.

**Habitat needs:** Lives in open forests and woodlands, and likes to feed on the seeds of native grasses.

**Threats:** The diamond firetail is one of many woodland species in decline in south-eastern Australia due to clearing of habitat and degradation of remaining patches. The invasion of exotic grasses that replace their native food species is thought to be the main reason that remaining habitat is becoming unsuitable.

## Interesting things to note:

- You can tell an immature bird by its black beak; mature birds have a red beak.
- Males commence courtship by picking up a length of grass stalk, holding it by one end and flying to the top of a tree. The female follows and the male begins a song and dance. Like many finches, the diamond firetail stretches the head and bounces on his perch whilst singing/crowing. Females signal their receptiveness by flying to the nest and quivering their tail.
- The bonding between pairs is very strong and appears to last for life.

# Mistletoebird

*Dicaeum hirundinaceum*



Photo: Department of Sustainability and Environment / McCann

**Conservation status:** Not threatened.

**Description:** At 9.5–11 cm long, this bird is tiny! The male has a bright scarlet throat and glossy blue-black head, back and wings, while the female is soft grey with pink under the tail.

**Habitat needs:** Mistletoe! The bird relies heavily on mistletoe plants both to feed and to nest. It is the only Australian representative of the flowerpecker group, and true to its name lives largely on the sticky berries of mistletoe plants.

**Threats:** Loss of trees that support mistletoe, such as buloke.

**Interesting things to note:**

- It performs an important service for the mistletoes. The bird's modified gut ensures the mistletoe seeds are excreted intact, and the seeds' stickiness helps them adhere to the tree branch on which the mistletoebird perches as it defecates, allowing a new mistletoe plant to germinate.
- An excellent example of mutual dependency. Neither the mistletoebird, nor the 60 odd species of mistletoe in Australia, could survive without the other. Neither is present in Tasmania.
- Very difficult to see because they are small, very fast and often up high. The best way to locate them is to listen out for their call, which is quite loud for such a small bird!

# Key contacts and resources

(current as at May 2005)

## **Red-tailed black-cockatoo Recovery Team**

for any sightings of red-tails

1800 262 062  
[www.redtail.com.au](http://www.redtail.com.au)

## **WWF–Australia**

GPO Box 528  
Sydney NSW 2001

(02) 9281 5515 or 1800 251 573  
[www.wwf.org.au](http://www.wwf.org.au)

## **Threatened Species Network**

Victorian Coordinator  
Level 3, 60 Leicester Street  
Carlton VIC 3053

(03) 9341 6507  
[www.wwf.org.au/tsn](http://www.wwf.org.au/tsn)

South Australian Coordinator  
C/- South Australian Conservation Centre  
120 Wakefield Street  
Adelaide SA 5000

(08) 8223 5155  
[www.wwf.org.au/tsn](http://www.wwf.org.au/tsn)

## **Trust for Nature (Vic)**

Wimmera Regional Manager

(03) 5356 2404  
or 1800 999 933  
[www.tfn.org.au](http://www.tfn.org.au)

## **Greening Australia**

Regional Manager for South West Victoria

(03) 5381 1010  
[www.greeningaustralia.org.au](http://www.greeningaustralia.org.au)

## **Kowree Farm Tree Group**

Secretary, Andrew Bradey

(03) 5587 3558

## **Regional Catchment Bodies**

South East Natural Resources Management Board (SA)  
Environmental Manager

(08) 8723 1057  
[www.lcrdb.com/senrcc/](http://www.lcrdb.com/senrcc/)

Wimmera Catchment Management Authority (Vic)  
26 Darlot Street  
Horsham VIC 3402

(03) 5382 1544  
[www.wcma.vic.gov.au](http://www.wcma.vic.gov.au)

## **Department of Sustainability and Environment (Vic) and Department of Primary Industries (Vic)**

Victorian Institute of Dryland Agriculture  
Natimuk Road, Horsham

(03) 5362 2111 or 136 186  
[www.dse.vic.gov.au](http://www.dse.vic.gov.au)

**Department for Environment and Heritage (SA)**

Naracoorte office (08) 8762 3412  
Mount Gambier office (08) 8735 1111  
[www.deh.sa.gov.au](http://www.deh.sa.gov.au)

**Australian Government**

Department of the Environment and Heritage 1800 803 772  
[www.deh.gov.au](http://www.deh.gov.au)

Department of Agriculture, Fisheries and Forestry (02) 6272 3933  
[www.daff.gov.au](http://www.daff.gov.au)

**Birds Australia**

(03) 9882 2622  
[www.birdsaustralia.com.au](http://www.birdsaustralia.com.au)

**Bird Observers Club of Australia**

(03) 9877 5342  
[www.birdobservers.org.au](http://www.birdobservers.org.au)

**Field Naturalists Club of Victoria**

Melbourne (03) 9877 9860

**The Field Naturalists Society of SA Inc.**

(08) 8339 4809

**Land for Wildlife (Vic)**

State coordinator (03) 5430 4363

**Atlas of Victorian Wildlife**

You can help monitor our wildlife by reporting any sightings of species to the Atlas of Victorian Wildlife database. If you would like a kit to record the species you find on the Atlas of Victorian Wildlife, contact your local Department of Sustainability and Environment office.

The Department of Sustainability and Environment also manages the state-wide flora database to which you can contribute records and obtain species lists and maps.

**South Australia**

Sightings of wildlife can be reported to the Mount Gambier Department for the Environment and Heritage.

**Museum Victoria**

Museum Victoria welcomes enquiries regarding species identification. Identification is a free service and operates seven days a week for all types of wildlife. Email details to [infozone@museum.vic.gov.au](mailto:infozone@museum.vic.gov.au) or post to InfoZone Melbourne Museum, GPO Box 666e, Melbourne 3001. You can also call the enquiry line (03) 8341 7111.

Information on how to post samples can be found at: [www.museum.vic.gov.au](http://www.museum.vic.gov.au).

# References

Cogger, H. G. (2000). *Reptiles and Amphibians of Australia*, Reed New Holland, Frenchs Forest.

Department of Natural Resources and Environment (1999a). *West Victoria Comprehensive Regional Assessment Volume 2, Ecological Vegetation Classes: Pre-1750*. Joint Commonwealth and Victorian Regional Forest Agreement (RFA) Steering Committee.

Department of Natural Resources and Environment (1999b). *West Victoria Comprehensive Regional Assessment Volume 2, Extant Ecological Vegetation Classes*. Joint Commonwealth and Victorian Regional Forest Agreement (RFA) Steering Committee.

Department of Sustainability and Environment (2003). *Advisory list of threatened vertebrate fauna in Victoria – 2003*. Victorian Department of Sustainability and Environment, East Melbourne.

Department of Sustainability and Environment (2005). *Advisory list of rare or threatened plants in Victoria – 2005*. Victorian Department of Sustainability and Environment, East Melbourne.

Douglas, F. (2005). Some guidelines for the conservation of woodland insects in the Wimmera area. *The Victorian Naturalist* 122 (1): 13–20.

Duncan, A., G. Barry Baker & N. Montgomery (eds) (1999). *The Action Plan for Australian Bats*. Environment Australia, Canberra.

Ehmann, H. and NPIAW (1992). *Encyclopedia of Australian Animals: Reptiles*. Angus & Robertson, Pymble.

Gardner, B. and Gardner, J. (unpublished report). *Best practice management of centre pivots in the West Wimmera*: A report commissioned by the West Wimmera Shire Council to investigate soil and water quality constraints to sustainable irrigation in the West Wimmera. (For a copy of this report contact the West Wimmera Shire on (03) 5585 9900 and ask for the Planning Office.)

Garnett, S. & Crowley, G. (2000). *The Action Plan for Australian Birds 2000*. Environment Australia, Canberra.

Lunt, I., T. Barlow, & J. Ross (1998). *Plains Wandering. Exploring the Grassy plains of south-eastern Australia*. Victorian National Parks Association & Trust for Nature, Melbourne.

Lynch, J.J., and Donnelly, J.B., (1980). Changes in Pasture and Animal Production Resulting from the Use of Windbreaks. *Australian Journal of Agriculture*, 31: 967–979.

Maron, M. (2003). *An assessment of the rate of decline and recruitment of Buloke trees in the southern Wimmera: implications for conservation of the endangered South-eastern Red-tailed black-cockatoo*. Draft report to the Department of Sustainability and Environment, Melbourne.

Maron, M., A. Lill, D. M. Watson, and R. MacNally (2005). Temporal variation in bird assemblages: how representative is a one-year snapshot? *Austral Ecology* 30: 383–394.

Marriott, N. & J. (1998). *Grassland Plants of South-Eastern Australia. A field guide to grassland and grassy woodland plants of south eastern Australia*. Bloomings Books, Hawthorn.

Macaulay, L. & Westbrooke, M. (2003). *Guidelines for the management and rehabilitation of the Wimmera Buloke Woodlands of Western Victoria*. University of Ballarat, Ballarat.

Menkhorst, P. & Knight, F. (2004). *A field guide to the mammals of Australia*, second edition. Oxford University Press, South Melbourne.

Pizzey, G. & Knight, F. (2003). *Field Guide to the Birds of Australia*, seventh edition. Harper Collins, Pymble.

Reid, J. R. W. (1999). *Threatened and Declining Birds in the New South Wales Sheep-Wheat belt: 1. Diagnosis, Characteristics and Management*. Consultancy report to NSW National Parks and Wildlife Service. CSIRO Wildlife and Ecology, Canberra.

Sands, D. P. A. & New, T. R. (2002). *The Action Plan for Australian Butterflies*. Environment Australia, Canberra.

Simpson, K. & Day, N. (2004). *Field guide to the Birds of Australia*, seventh edition. Viking, Ringwood.

Strahan, R. (Ed.) (1995). *The mammals of Australia*. Reed Books, Chatswood.

Traill, B. J., and Duncan, S. (2000). *Status of birds in the New South Wales temperate woodlands region*. Consultancy report to the NSW National Parks and Wildlife Service. Australian Woodlands Conservancy, Chiltern, Victoria.

# Descriptions of conservation status

'Threatened' is a general term to designate species whose survival is at risk. As can be seen below in the brief descriptions, threatened covers a range of categories.

**Extinct:** Where there is no reasonable doubt that the last individual has died.

**Critically Endangered:** Facing an extremely high risk of extinction in the wild in the immediate future.

**Endangered:** Not critically endangered, but facing a very high risk of extinction in the wild in the near future.

**Vulnerable:** Facing a high risk of extinction in the wild in the medium-term future.

**Data Deficient:** There is inadequate information to make a direct assessment of the extinction risk of the taxon. Listing in this category indicates that more information is required, which may possibly show the taxon is threatened.

**Near Threatened:** The taxon has been assessed and does not qualify for critically endangered, endangered or vulnerable now, but it could in the near future.

**Not threatened:** The taxon is currently considered secure at a state and national level, although it may be under threat and declining at regional or local scales.

**Declining:** Taxa that are known to be in decline through at least part of their range, but are still abundant enough or widespread enough that they are not listed as threatened at a state level. The category of Declining as used for birds in this book is based on Reid (1999).

This book gives the conservation status in Victoria and South Australia, as well as the national status where relevant. National conservation status is defined under the *Environment Protection and Biodiversity Conservation Act 1999*. South Australian status is defined under the *National Parks and Wildlife Act 1972*. In Victoria, while threatened species and communities are listed under the *Flora and Fauna Guarantee Act 1988*, conservation status is defined separately in Department of Sustainability and Environment (2003) and Department of Sustainability and Environment (2005).

For more comprehensive listings of threatened species refer to: National – [www.deh.gov.au/epbc](http://www.deh.gov.au/epbc), Victoria – [www.dse.vic.gov.au](http://www.dse.vic.gov.au) and South Australia – [www.parliament.sa.gov.au/Catalog/legislation/Acts/N/1972.56.un.htm](http://www.parliament.sa.gov.au/Catalog/legislation/Acts/N/1972.56.un.htm)





Red-tailed black-cockatoo male tail feather  
M. Maron

The Threatened Species Network (TSN)  
is a community-based program of the  
Australian Government's Natural Heritage  
Trust and WWF-Australia.

For further information,  
email [enquiries@wwf.org.au](mailto:enquiries@wwf.org.au) or  
call our toll free number 1800 032 551.