

Koala habitat restoration and revegetation resources

National Koala Recovery Team

October 2024



Publishing details

This document was developed by the National Koala Recovery Team, which includes representatives from the New South Wales, Queensland, ACT, Victorian and South Australian governments, NGOs, research institutions and community groups. It is endorsed by the National Koala Recovery Team Board.

It can be referenced as National Koala Recovery Team 2024 *Koala habitat restoration and revegetation guidance*. Australian Government.

Acknowledgement of Country

We acknowledge the Traditional Owners of Country throughout Australia and recognise their continuing connection to land, waters and culture. We pay our respects to their Elders past and present.

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Introduction

The koala has a wide but patchy distribution across coastal and inland areas of eastern and southern Australia. It has suffered a significant decline in numbers since the arrival of Europeans in Australia, particularly in NSW and Queensland.

Threats to koalas include:

- habitat loss, fragmentation and degradation
- disease
- vehicle strike and predation by dogs
- heat stress due to drought and heat waves
- altered fire regimes
- habitat change due to a changing climate, such as changes in the nutritional quality of *Eucalyptus* leaves.

There has been a significant reduction in the quantity and quality of suitable koala habitat. Remaining areas of koala habitat are becoming increasingly fragmented, and this can influence the koala's movement through and use of the landscape, home range size, breeding and genetic flow.

In recognition of this, the listing status of the koala (combined populations in Queensland, New South Wales and the ACT) was increased from 'vulnerable' to 'endangered' under the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) in February 2022. Subsequently the status of the koala was uplisted to 'endangered' under the NSW *Biodiversity Conservation Act 2016*, the Queensland *Nature Conservation Act 1992*, and the ACT *Nature Conservation Act 2014*.

The 'National Recovery Plan for the Koala *Phascolarctos cinereus* (combined populations of Queensland, New South Wales and the Australian Capital Territory)' sets out a clear pathway for investment and action to support the recovery of the listed koala. It includes actions to increase the area of protected listed koala habitat, and to strategically restore koala habitat.

Action 5b of the recovery plan requires the development and implementation of best practice revegetation and restoration guidelines appropriate to local conditions, building on existing guidelines.

How to use this guide

This document collates existing resources that can guide anyone wanting to carry out restoration or revegetation activities to support koala populations.

This is not a regulatory document, and it does not supersede any regulatory requirements under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), any Act that supersedes this and/or any referral guidelines sitting under this Act. Further, it does not replace any equivalent state, territory or local government regulation or planning requirements.

If you are a local community group or individual wanting to carry out koala restoration or revegetation activities, before starting work it is suggested that you contact:

1. your local Natural Resource Management organisation to discuss your project. They may be able to provide information on locally preferred koala tree species, guides on restoration and revegetation, contacts for local nurseries and/or put you in contact with other organisations in your area who can assist, such as Landcare and koala community groups. A map showing NRM regions in Australia and providing a link to contact details is available [here](#)
2. your local council, to find out if there is a koala management plan or conservation plan for your area. Council may also have local planting guides, contacts for local nurseries or be able to connect you with other assistance.

Some of the resources in this guide are not recent, and you may wish to check items such as local tree species lists with your local council or natural resource management organisation in case these have changed, for example as a result of recent research or climatic changes.

This guidance is published as a document of the National Koala Recovery Team.

Restoring koala habitat

While the conservation and protection of existing koala habitat is vital, revegetating disturbed or cleared land can play an important part in expanding areas of existing habitat, improving habitat quality, and increasing connectivity between habitat patches. The aim should be to restore an ecologically functional local native ecosystem that supports healthy koala populations and other species.

Broadly, koala habitat restoration involves:

- understanding the habitat preferences and distribution of a local koala population
- early engagement with stakeholders, such as First Nations people, local landholders, NRM organisations and community groups to inform project design
- identifying appropriate areas to restore based on project goals and landscape considerations
- choosing the most appropriate restoration methods, such as natural regeneration, facilitated or assisted regeneration or replanting with seeds / seedlings

- identifying the existing vegetation community (or an appropriate local reference community) to be restored and for revegetation work, choosing the appropriate species to restore this local ecosystem. If revegetating:
 - o consider changes to plant community composition that may occur in a changing climate to ‘future-proof’ works and adjust planting as needed
 - o use locally provenanced seed / tubestock where possible, unless provenance mixing is required to support climate resilience
 - o consider planting a mix of over-storey, mid-storey and understorey species
- implementing works using best practice methods
- managing threats to seedling establishment, including weeds and predation by other herbivores
- mitigating other threatening processes that may prevent koalas or their resources from persisting in the area where feasible
- monitoring and evaluation to assess the outcomes and success of restoration and revegetation programs and inform adaptive management.

Resources

There are a range of existing resources that can guide koala habitat restoration work. These include:

- national or state-wide guidance on approaches to koala habitat restoration, including broad information on habitat requirements, issues to consider when restoring koala habitat, restoration methods and monitoring approaches
- national and state guidance on ecological restoration (non-koala-specific)
- local or regional koala management or conservation plans
- regional and locally tailored koala restoration guidance
- lists of koala food species

The Atlas of Living Australia has created a [Habitat Restoration Hub](#). This aims to provide an online, open-access and enduring space for documenting current and past habitat restoration work using standard criteria and in standard format. The information collected in this archive of habitat restoration sites will:

- provide program managers with a central record of the work they have conducted over time
- enable restoration work to be summarised and analysed over different spatial and temporal scales
- assist with coordination and planning of large-scale restoration programs
- assist with natural resource management, conservation and research.

You may wish to use this resource to document your restoration / revegetation work. It is used by some funding bodies: for example the NSW Government is committed to uploading restoration data annually for koala habitat restoration activities funded by the NSW Government.

A list of resources is provided with weblinks – this is not exhaustive. Individual koala management or conservation plans are not listed: these are generally available on local government websites.

Resource	Author	Contents
BROAD GUIDANCE – KOALA-SPECIFIC		
Revegetating Koala Habitat (2022)	Beale, P., Marsh, K.J., Youngentob, K.N. Prepared for the Department of Climate Change, Energy, the Environment and Water, Canberra.	A national technical guide for revegetating koala habitat that incorporates current knowledge of koala habitat requirements and nutritional ecology from peer reviewed literature.
Koala habitat restoration guidelines: A practical guide to identify, connect and restore koala habitat in New South Wales (2022) NSW local government resources for koala habitat restoration	NSW Department of Planning and Environment	A comprehensive user-friendly guide to restoring koala habitat in NSW which outlines how to identify koala habitat, issues to consider in restoration, methods, monitoring and case studies. While a NSW guide, the approach has broader application. Linked to this is a series of koala habitat revegetation fact sheets for local government covering NSW koala management areas. Each has a list of tree species for koala habitat for the region, and useful resources such as relevant koala management plans and habitat studies.
National Koala Tree Planting List (2015)	Australian Koala Foundation	Provides lists of koala trees by state and local government area. You may wish to check with the local council or Landcare group to ensure information is relevant for your local area.
Planning Guidelines for Koala Conservation and Recovery: A guide to best planning practice (2006)	McAlpine, C; Rhodes J, Peterson A, Possingham H, Callaghan, J, Curran T, Mitchell D, Lunney D. [collaboration between the University of Queensland, the Australian Koala Foundation and the NSW Department of Environment and Conservation]	The guidelines provide information on how to conserve and restore koala populations in fragmented landscapes. It includes guidance on where to focus revegetation efforts and how to enhance existing habitat.

Resource	Author	Contents
BROAD GUIDANCE – NON-KOALA SPECIFIC		
National Standards for the Practice of Ecological Restoration in Australia (2021)	Standards Reference Group SERA , Society for Ecological Restoration Australasia.	The Standards identifies the principles underpinning restoration philosophies and methods, and outlines the steps required to plan, implement, monitor and evaluate a restoration project to increase the likelihood of its success.
Climate-ready revegetation. A guide for natural resource managers. Version 2 (2018)	Hancock, N., Harris, R., Broadhurst, L. and Hughes, L., Macquarie University, Sydney	The guide provides step-by-step instructions on where to find and how to use climate projections and how to consider the suitability of species and provenances for revegetation projects.
Biodiversity revegetation with provenance mixing for climate change adaptation	Department of Energy, Environment and Climate Action	A 2-page factsheet on ensuring current and future revegetation works are suitable for a changing climate.
Restore and Renew	Royal Botanic Gardens Sydney	Research and website guiding seed collection strategies to improve genetics and long-term resilience of restoration projects.
A practical guide to planting tubestock paddock trees (2024)	J.R Baker. Hovells Creek Landcare Group	This guide provides practical advice on paddock tree planting across much of the Central West and Central and Southern Tablelands of NSW. Many of the general practices will be transferable to other regions.
A Revegetation Guide for Temperate Riparian Lands (2017)	Greening Australia	An introductory guide on the basic principles and practices of planting trees, shrubs and grasses to revegetate gullies, creeks and wetland areas in temperate Australia.
AABRs Guiding Principles for Ecological Restoration and Rehabilitation (2013) The 7 ‘Do’s’ of bush regeneration practice, relevant to all ecological restoration	Australian Association of Bush Regenerators (NSW) Inc	A guide to principles and approaches to ecological restoration. This is summarised in the ‘7 do’s’ guide.
Note V3: Revegetation Principles (2011) Note V4: Revegetation Practicalities (2011)	Land for Wildlife Queensland	User-friendly guides to revegetation
REGIONAL OR LOCAL GUIDANCE		
New South Wales		
Koala habitat restoration guidelines: A practical guide to identify, connect and restore koala habitat in New South Wales (2022)	NSW Department of Planning and Environment	A comprehensive user-friendly guide to restoring koala habitat in NSW which outlines how to identify koala habitat, issues to consider in restoration, methods, monitoring and case studies. It includes links to NSW region-specific fact sheets & tree species lists.

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Northern Rivers Regional Koala Conservation Strategy (2023)	Prepared on behalf of Northern Rivers Koala Partnership	This includes specific references to preferred koala food trees for Northern Rivers.
A guide to successful tree establishment for environmental plantings (nd)	Armidale Tree Group	A short one-page guide on tree establishment.
Revegetation and regeneration in a changing climate: lessons from New England (nd)	Lawrence, R and Carr, D, Armidale Tree Group	Practical guidance on revegetation to survive hotter and drier conditions.
How to restore Koala habitat on your property (2021)	Macleay Landcare Network Inc.	A short guide for the NSW Mid North Coast, including key steps to planning plantings and a list of preferred tree species.
Locally important koala trees in Port Stephens	Koala Koalition EcoNetwork Port Stephens	A 2 page list of tree species used by koalas for Port Stephens.
Planting native vegetation for koalas in Moree (2020)	Local Land Services and Landcare NSW Inc.	A 2-page list of important food and shelter trees for koalas in the Moree region.
Blue Mountains Koala Project Koalas in the Lower Blue Mountains (nd) Koalas in Hawkesbury / SE Wollemi (nd)	Science for Wildlife	These booklets include a list of tree species relevant to each area, including images of bark/leaves/fruits/buds.
Local koala food trees - Southern Highlands Koala Conservation Project (2024)	Wingecarribee Shire Council	A list of koala feed trees in Southern Highlands.
Planting and enhancing Koala habitat (nd)	Forestry Corporation	A 2-page guide to planting, including preferred tree species.
Queensland		
Queensland Regional Ecosystem vegetation descriptions	Queensland Government	This provides guidance on ecosystems to inform revegetation work and is used by some Queensland agencies to guide habitat restoration.
South East Queensland Ecological Restoration Framework, 2012 Code of Practice Guideline Manual	Prepared on behalf of SEQ Catchments and South East Queensland Local Governments, Brisbane	A guide to ecological restoration in South East Queensland. Note the statutory frameworks referenced in this resource may be out of date.
Koala food trees, Queensland (nd)	Koala Crusaders	A list of koala food trees for Queensland.
Koala Food Trees (nd)	Koala Action Incorporated	A list of primary and secondary koala food trees for South East Queensland, with images to help identify the species.

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Koala habitat rehabilitation guidelines (2022)	Gympie Regional Council	A user-friendly short guide which includes preferred tree species for the Gympie region.
Planting for Koala Habitat in the Gympie Region (2024)	Burnett Mary Regional Group	A 2-page guide to koala tree species for the Gympie region.
Protecting and restoring koala habitat: a resource for landholders (2024)	Hinterland Bush Links	A short guide which covers threats to koalas, healthy koala habitat, responsible stewardship and how to plan and undertake a revegetation project (including a list of trees), for Sunshine Coast and hinterland.
Koala-ty Tree Species (2023)	Reef Catchments (NRM)	A list of koala food trees for the Mackay region.
Planting for Koala Habitat in the Burnett Catchment (nd)	Burnett Catchment Care Association	A 2 page guide with simple planting tips and preferred tree species.
Victoria		
NatureKit	Department of Energy, Environment and Climate Action	NatureKit is a mapping tool that provides information on Victoria's biodiversity values, including Ecological Vegetation Classes (EVCs) which can inform revegetation.
Landcare Victoria - native vegetation fire recovery and shelterbelts	Landcare Victoria	Various guides on restoring native vegetation after bushfires and planting shelterbelts for wildlife.
Revegetation Techniques: A guide for establishing native vegetation in Victoria (2003)	Greening Australia	A 'how-to' guide for establishing native plants from seed or seedlings, informed by practical experience.
Best trees to plant for koalas in Victoria (nd)	Koala Clancy Foundation	Information on koala feed trees species.
Trees for Koalas on the Mornington Peninsula (nd)	Mornington Peninsula Koala Conservation	Information on preferred koala trees species.
South Australia		
Habitat restoration planning guide for natural resource managers (2010)	SA Department of Environment and Natural Resources	A comprehensive guide that promotes a goal-based approach to habitat restoration in South Australia's temperate agricultural regions.