

How to restore **Koala habitat** on your property

The NSW Mid North Coast provides significant areas of habitat vital for the long-term survival of Koalas. Threats, such as habitat loss, drought, and fires are placing pressure on Koala populations increasing the importance of all remaining habitat, including on private properties.

Finding signs of Koala can be difficult and landholders may not be aware that their property supports Koala habitat. You can recognise Koala habitat by Eucalypt forest with a significant proportion (approximately one-third) of preferred food trees. If you live in an area with a known population nearby then your property is likely to be used by Koalas. Koalas prefer a mix of tree ages with young trees used for browsing and older trees used for resting. Shelter trees with dense foliage are also used to stay cool during hot conditions, to evade threats, or for other behaviours. In summary good habitat will have suitable food trees, be continuous and connected, have access to shelter, and be safe from threats.

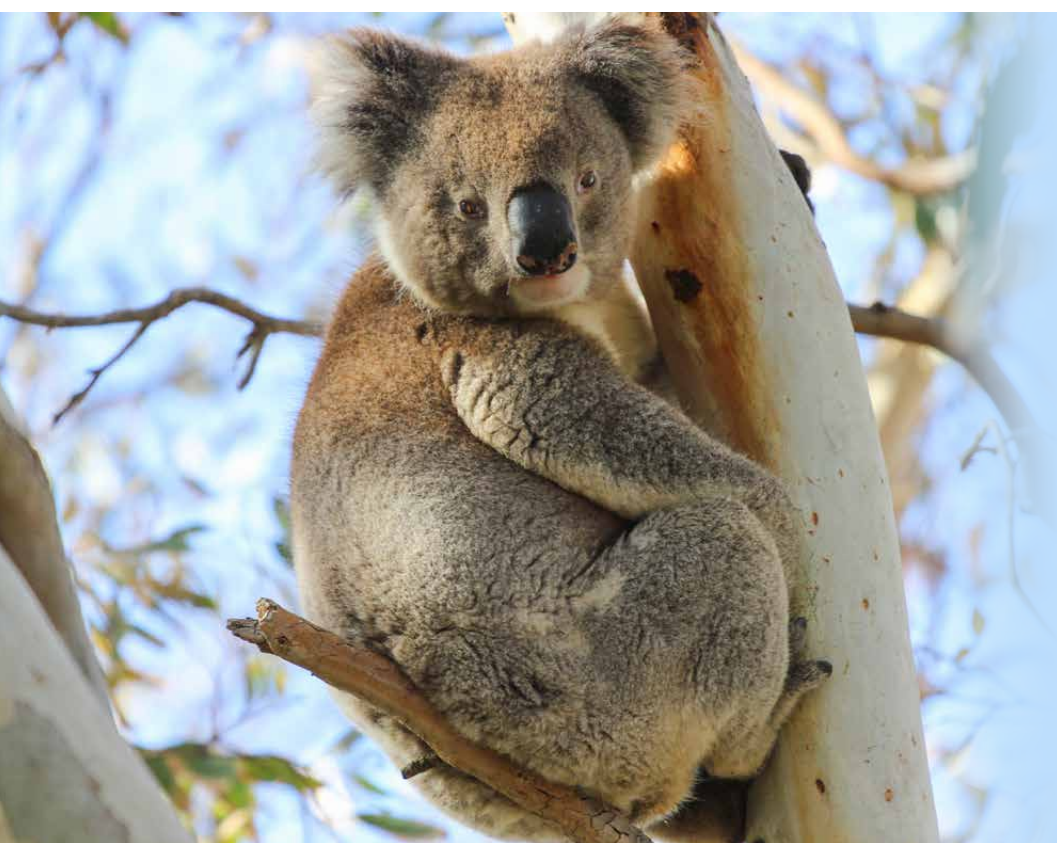
Priority should be given to protecting any existing Koala habitat on your property. You should aim to increase the size of habitat areas and enhance the connectivity between these areas. Habitat corridors are best placed to link larger areas, even if they are off your property, and can incorporate existing paddock trees. Corridors should be at least 20m wide to reduce 'edge effects' such as predation, weed invasion, and heat stress. Trees growing in wetter areas such as riverbanks, creek lines, and wetlands will provide a better koala food source. Any increase in area and connectivity is of benefit. Try to provide habitat areas away from potential threats such as roads or domestic dogs.

Allowing vegetation to naturally regenerate is often the easiest way to increase habitat. You may need to install fences to manage livestock, control weeds, or undertake planned burning to trigger natural regeneration. Use wildlife-friendly fence designs to allow wildlife to move through without injury.

When natural regeneration is insufficient tree planting will be needed to restore habitat. Tree planting can increase the proportion of koala food trees in existing habitat, increase the size of habitat areas, and create corridors to link habitat areas. More detail on how to undertake habitat plantings is provided in this brochure.

Remember your property also provides habitat for a range of other wildlife that should be considered. Maintaining all the different habitat types on your property is the best way support this biodiversity.

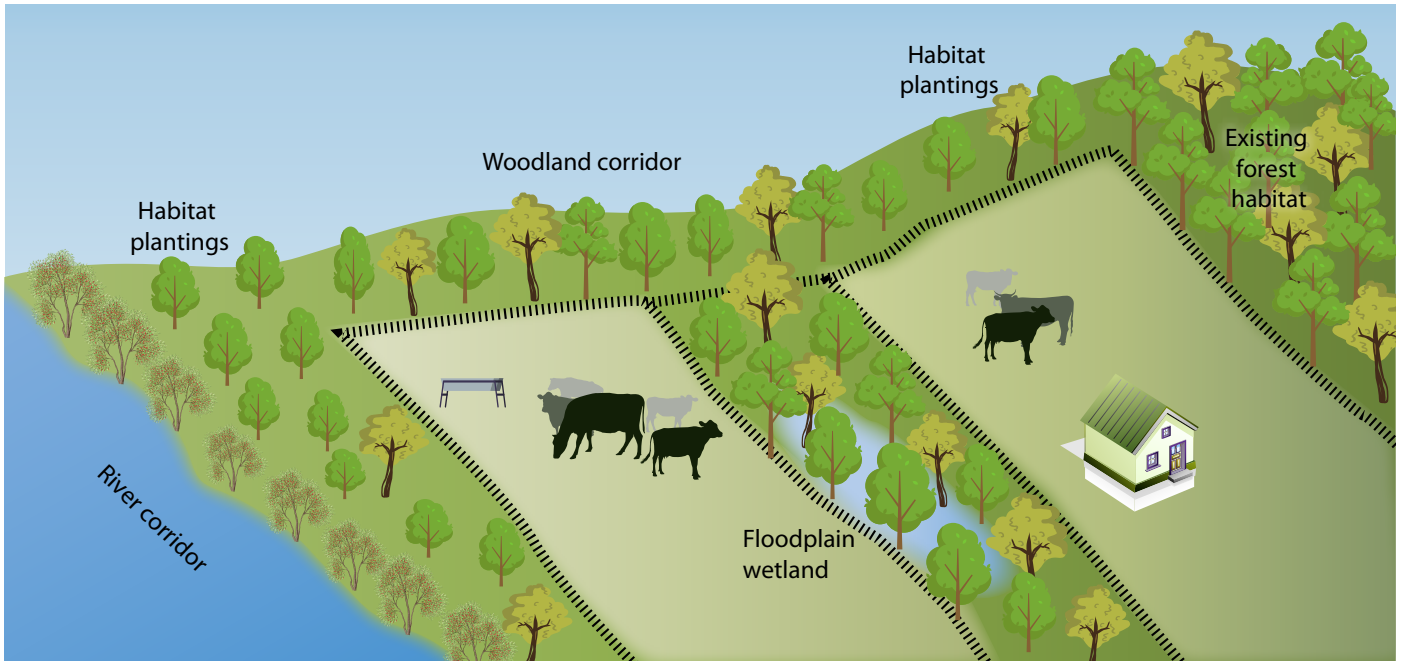
More information on Koala habitat restoration is available in the publication *Koala habitat revegetation guidelines: A practical guide to identify, connect and revegetate koala habitat in New South Wales*, published by the NSW Department of Planning, Industry and Environment.



Dawn Mills planting Swamp Mahogany



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Create corridors to connect with habitat areas on and off your farm

Koala Habitat Planting Guide for the Mid North Coast

If done correctly, tree planting is an excellent method to restore or create Koala habitat. If Koalas are present they can use new plantings in as little as 3-5 years. Plantings also provide additional environmental functions that should also be factored into your planting design.

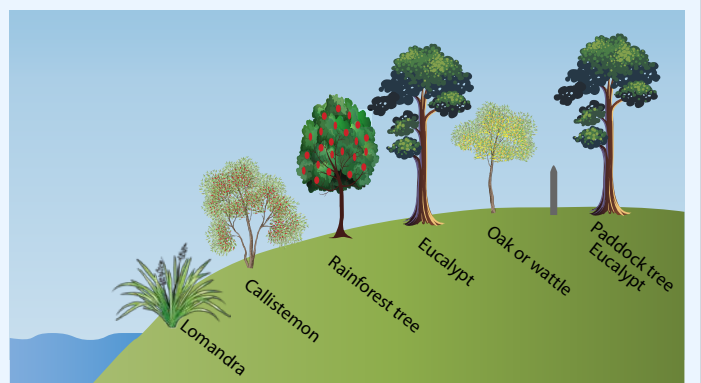
A successful tree planting will involve good planning, preparation, and maintenance. Follow these three steps to plan your plantings: 1. Identify your planting site; 2. Select your species; and 3. Prepare and maintain the site.

1. Identify your site

The selection and placement of species for planting will depend on the position of your planting site in the landscape. Some examples of different planting models include riverbank and creekline corridors, buffers around floodplain wetlands, and woodland blocks and corridors.

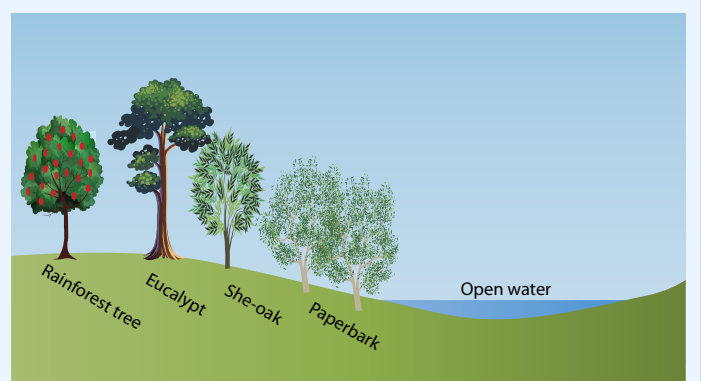
Riverbank and creekline corridors

Riverbank and creekline areas are subject to flooding and plants need to be selected and placed according to their position on the bank. Riverbank vegetation is arranged in zones: the top of the bank, the bank slope, and the bank toe. The top of the bank or paddock edge provides a suitable location for Eucalypts and other Koala habitat trees. On cattle grazing properties an additional row of Eucalypts can be planted in the adjoining paddock to provide additional Koala food trees and shelter for livestock.



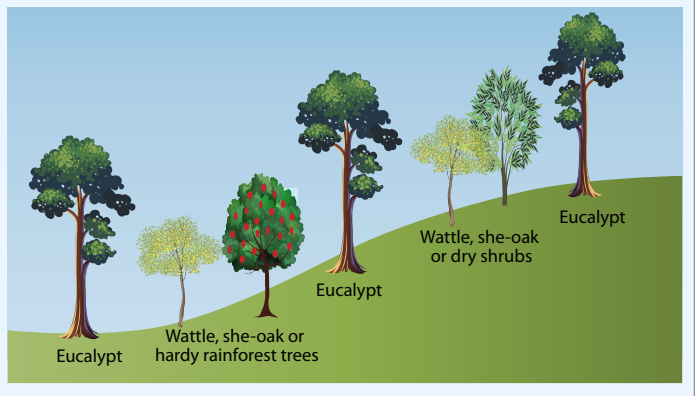
Floodplain wetlands

Wetlands are subject to flooding and vegetation is typically arranged in zones according to subtle changes in land elevation and water ponding. Species selection and placement should follow this pattern with the lowest lying areas having no trees, regularly wet areas supporting Paperbark and Swamp Oak forest, and higher areas supporting Eucalypts and other habitat trees.



Woodland blocks and corridors

The selection and placement of species in woodland areas should be guided by the topography. On drier ridgelines, upper slopes, and north or west facing slopes plant a mix of Eucalypts and hardy trees and shrubs. On lower slopes, gullies, and south or east facing slopes that hold more moisture plant a different mix of Eucalypts, Wattles, She-oaks, and hardier rainforest species.



2. Species selection, placement, and numbers.

When choosing trees for Koala habitat plantings you should include three components: Koala food trees, nitrogen-fixing species, and shelter trees. Preference should be given to locally occurring species.

Koalas browse from a wide range of Eucalypt trees, and occasionally other species such as Broad-leaved Paperbark. The palatability of individual trees will be influenced by soil fertility, moisture levels, tree stress, and local tree genetics. Put simply Koalas will favour leaves that are nutritious, moist, healthy, vigorous, and locally sourced. Plant a variety of locally occurring food trees to increase the likelihood they will be utilised under different environmental conditions.

Wattle trees (*Acacia*) and She-oaks (*Allocasuarina* and *Casuarina*) fix atmospheric nitrogen into the soil to aid tree growth. By including these nitrogen-fixing species in your plantings the Koala food trees will also benefit and pass on the nutritional value to browsing Koalas.

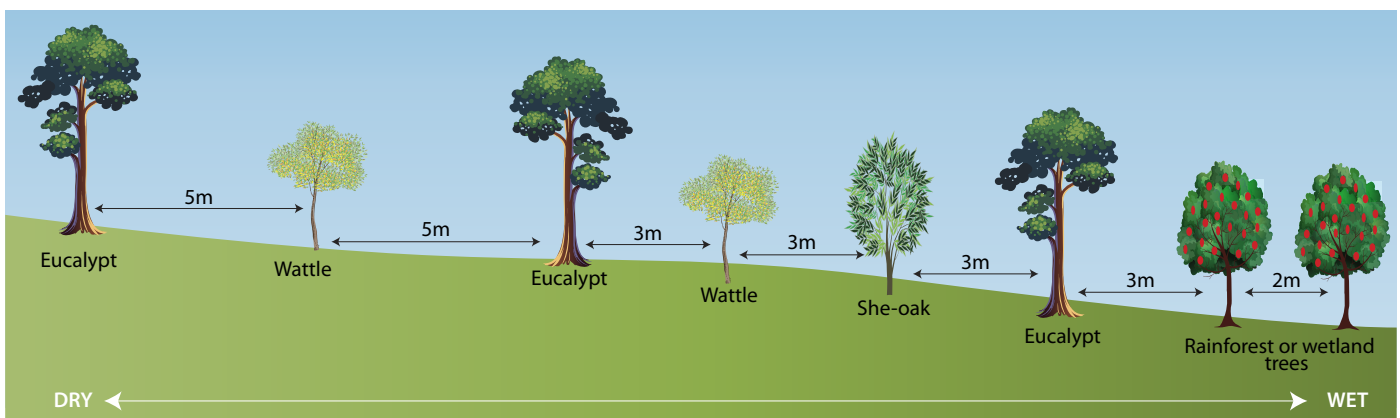
Shelter trees with dense foliage provide a refuge for Koalas during extreme weather events such as storms, heat waves,

and droughts. By including a mix of local trees you also provide habitat for other wildlife species.

When selecting species to plant consider the location of your planting site and its position in the landscape. A list of recommended species from a range of different habitats found in the NSW Mid-North Coast is provided in this brochure. You can find more specific planting lists for your property online by searching for the *Koala Habitat Planting Map*.

When planting Eucalyptus food trees for Koala habitat they should be spaced approximately 10 metres apart to increase lateral branch development and leaf growth. This allows room to place nitrogen-fixing and shelter trees and shrubs between Eucalypt plantings. The distance between these plants can vary from 2 to 5m apart, with 3m being a good standard spacing. Rainforest species or understorey shrubs can be planted at closer spacings of 2m. On drier sites plant at a wider spacing of 5m to retain a grassy understorey.

Now you're ready to prepare your planting list, calculate plant numbers, and order your trees. Ask for locally sourced trees to retain local genetics and support your local community.



Example spacing of different plant types in a Koala habitat planting

3. Site preparation and maintenance

Control any weeds and grass growth amongst your plantings. The competition around the young plant will reduce growth and establishment rates. Compacted soils can be improved by removing stock, deep ripping, or mulching

weeks before you plant. Regularly maintain your plantings for up to 3 years to fully establish your new trees. Refer to Macleay Landcare's *Tree Planting for Success* factsheet or other resources for more tips on successful tree planting.

Koala Habitat Planting List for the Mid North Coast

Recommended species for a range of different habitats in the NSW Mid-North Coast.

Species name	Common Name	Habit	Tree type			Where I grow			
			F	N	H	R	WT	WW	WD
<i>Acacia binervata</i>	Two-veined Hickory Wattle	Tree		✓					✓
<i>Acacia blakei</i>	Blake's Wattle	Tree		✓					✓
<i>Acacia concurrens</i>	Black Wattle	Tree		✓					✓
<i>Acacia falcata</i>	Hickory Wattle	Tree small		✓					✓
<i>Acacia floribunda</i>	White Sally Wattle	Tree		✓		✓		✓	
<i>Acacia maidenii</i>	Maiden's Wattle	Tree		✓		✓	✓	✓	
<i>Acacia melanoxylon</i>	Blackwood	Tree		✓		✓	✓	✓	
<i>Allocasuarina littoralis</i>	Black She-oak	Tree – C*		✓					✓
<i>Allocasuarina torulosa</i>	Forest Oak	Tree		✓		✓		✓	✓
<i>Alphitonia excelsa</i>	Red Ash	Tree			✓	✓	✓	✓	
<i>Backhousia myrtifolia</i>	Grey Myrtle	Tree			✓	✓		✓	
<i>Callistemon saligus</i>	Pink-tipped Callistemon	Tree			✓	✓	✓	✓	
<i>Casuarina glauca</i>	Swamp Oak	Tree		✓			✓		
<i>Cupaniopsis parvifolia</i>	Small-leaved Tuckeroo	Tree			✓	✓		✓	
<i>Eucalyptus acmenoides</i>	White Mahogany	Tree tall	✓					✓	✓
<i>Eucalyptus amplifolia</i>	Cabbage Gum	Tree tall	✓			✓	✓		
<i>Eucalyptus globoidea</i>	White Stringybark	Tree tall	✓					✓	✓
<i>Eucalyptus grandis</i>	Flooded Gum	Tree tall	✓			✓		✓	
<i>Eucalyptus eugenoides</i>	Thin-leaved Stringybark	Tree tall	✓					✓	✓
<i>Eucalyptus microcorys</i>	Tallowwood	Tree tall	✓			✓	✓	✓	✓
<i>Eucalyptus moluccana</i>	Grey Box	Tree tall	✓					✓	✓
<i>Eucalyptus pilularis</i>	Blackbutt	Tree tall	✓					✓	
<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	Tree tall	✓					✓	✓
<i>Eucalyptus racemosa</i>	Narrow-leaved Scribbly Gum	Tree tall	✓						✓
<i>Eucalyptus resinifera</i>	Red Mahogany	Tree tall	✓					✓	✓
<i>Eucalyptus robusta</i>	Swamp Mahogany	Tree tall	✓				✓		
<i>Eucalyptus saligna</i>	Sydney Blue Gum	Tree tall	✓					✓	
<i>Eucalyptus siderophloia</i>	Ironbark	Tree tall	✓					✓	✓
<i>Eucalyptus signata</i>	Scribbly Gum	Tree tall	✓						✓
<i>Eucalyptus tereticornis</i>	Forest Red Gum	Tree tall	✓			✓	✓		
<i>Glochchideon ferdinandii</i>	Cheese Tree	Tree			✓	✓	✓	✓	
<i>Guioa semiglauc</i>	Guioa	Tree			✓	✓		✓	
<i>Jagera pseudorhus</i>	Foambark tree	Tree			✓	✓		✓	
<i>Lophostemon confertus</i>	Brush Box	Tree tall			✓	✓		✓	
<i>Mallotus philipinensis</i>	Red Kamala	Tree			✓	✓		✓	
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark	Tree	✓				✓		
<i>Melaleuca styphelioides</i>	Prickly-leaved paperbark	Tree			✓	✓	✓		
<i>Synoum glandulosum</i>	Scentless Rosewood	Tree - C*			✓	✓		✓	
<i>Syzygium smithii</i>	Lilly Pilly	Tree			✓	✓		✓	

Key for Tree type: F = Food tree; N = Nitrogen fixing plant; H = Habitat and shelter value only.

Key for Where I grow: R = Riverbanks; WT = Wetlands and estuaries; WW = Wetter woodlands and gullies; WD = Dry woodlands.

C* = Mostly found within 30km of the coast.



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