

# Koala Field Guide

## For Queensland Forestry Operations

Koalas are listed as 'endangered' in Queensland under the *Nature Conservation Act (1992)* and the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act (1999)*. Both levels of government have conservation strategies in place to help address the decline of koala populations in key habitat areas.

### Purpose

This field guide aims to inform Queensland timber harvesting operators of their obligations under relevant koala legislation and general duty of care. Ensuring harvesting in state-owned forests is undertaken in such a way that koala populations and habitat are protected.

### Relevant documents

Documents to be read in conjunction with this field guide include:

- Koala Management Operating Guidelines
- *Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act) (Cwth)*
- *Nature Conservation Act 1992 (QLD)*
- *Nature Conservation (Koala) Conservation Plan 2017 (QLD)*
- Koala- Species Management Profile 2022
- QPWS Code of Practice 2020



### Acknowledgments

This field guide is a product of Timber Queensland's Native Forest Operations Capacity Building Project, funded by the Queensland Department of Agriculture and Fisheries (Forestry).

### Disclaimer

Information provided in this document is for general guidance only, it does not replace koala prescriptions outlined in Commonwealth and State Government legislation. This field guide applies to Queensland State Forest only, it does not apply to private native forestry, or timber plantations.

The field guide is tailored to mechanical harvesting operations, however the principles should be applied for all felling operations.

# About

## Description

The koala (*Phascolarctos cinereus*) has a short, compact body and large head, large ears, and no functional tail. It has dense fur, which is white below and brown to grey above with white patches, a prominent black nose, and large claws. Males and females can look different in relation to size and colour and females have a pouch. Koalas have poor vision and rely heavily on their senses, allowing them to seek out other koalas and their preferred feed trees. They also have excellent hearing.

## Habitat and distribution

Koalas live in a range of temperate, tropical, and woodland communities dominated by Eucalypts. Their preferred habitat is defined by the presence of a select group of feed trees - although they don't eat all types. Koalas are found in greater numbers where trees grow on fertile soil or near watercourses. They do remain in areas recently harvested if habitat and feed trees remain.



Koalas prefer non-juvenile koala habitat trees (**NJKHT**). Meaning trees that are greater than 4m tall and 10cm diameter at 1.3m high.

## Diet

Koalas commonly eat a variety of eucalyptus and related species such as *lophostemon*, *angophora*, *corymbia*, and *melaleuca*. They eat around **500 grams of leaves per day** and obtain most their required water from these leaves. This reduces the likelihood or need for koalas to climb down from trees in search of a drink, except in hot and dry periods. The leaves are incredibly low in energy and contain toxic compounds that most animals cannot eat.

## Behaviour

Koalas can sleep for up to **22 hours a day** due to their low energy diet. Although mostly nocturnal, they do move during the day if disturbed or relocating to a new tree. Koalas are typically solitary, existing within a network of overlapping home ranges. This allows for contact between individuals during mating season. Males begin calling in spring, advertising their presence to other koalas.



Koalas typically breed from **August to February**, during this time males are increasing mobile. Females reach reproductive maturity at 3-4 years before producing one joey every 1-3 years. Koalas can live for up to 12 years, producing 5-6 offspring on average.

# Signs of Koalas

## Visual

Koalas are difficult to spot by eye in the canopy of trees. If sighted, they are typically sitting between tree forks in NJKHT. Koalas can often shift through interlocking canopies.



## Scats

Scats are typically strong eucalyptus smelling and sticky. Scats are a main indicator of recent koala presence and can be found at the base of the tree, and extend towards the dripline. If found, ensure you look up and assess for a koala. A high use tree has 20 or more scats.



## Markings/scratches

Koalas are arboreal species (live off the ground), using their sharp claws for climbing. When climbing, koalas leave behind characteristic scratches from their double thumb in the bark. Males also leave scent markings on trees.



## Sound

Koalas have distinctive calls. Females may make a low-pitched bellow, and during the breeding season the male koala 'snores' or 'grunts.'

## Signs of distressed koalas

Signs can include excessive movement up and down the trunk, to the canopy and onto the ground. Alternatively, can shut down and not move at all. Refer to the Koala Response Care Plan if there are signs. During times of distress, koalas can become aggressive.

In Queensland, koalas and their habitat are protected and managed through:

## Commonwealth legislation

The *Environmental Protection and Biodiversity Conservation Act (1999)* provides the legal framework to protect and manage nationally and internationally important flora, fauna, and ecological communities. In 2022, the koala listing was elevated to '**Endangered**'.

## State legislation

At a state level, protection of koalas occurs through the *Nature Conservation Act (1992)*. This is supported by the *Nature Conservation (Koala) Conservation Plan (2017)* to promote the continued existence of viable koala populations and prevention of habitat loss. The Conservation Plan divides the state into three koala districts, forming the basis of management strategies, and identifying koala priority areas.

Forest operations are managed through:

## QPWS Code of Practice 2020

- The Code defines a set of minimal operational harvesting standards. The following schedules under the code apply to koalas:
- Schedule 3 – Watercourse protection
- Schedule 6 – Nature conservation including habitat trees
- Schedule 8 – Forest road and track management



## Sales Permits

A Sales Permit is required under the *Forestry Act (1959)* to conduct harvesting activities. This is a legal agreement between the state and a permittee and sets out the commercial terms, rights, and performance requirements. Operational harvest provisions are included as an attachment to Sales Permits that provides additional instruction for koala management.

## Operational Harvesting Plans

Operational Harvesting Plans (OHP) identify all harvesting requirements under legislation and aim to protect environmental, cultural, water quality, and endangered species. The OHP includes relevant SMPs.

## Species Management Profile

A Species Management Profile (SMP) aims to apply measures to protect habitat and breeding sites, conserve native species, maintain ecosystem function, and monitor the biodiversity values and impacts. The SMP refers to identifying **high use indicators** as a main action. This field guide is based off the SMP.

 A screenshot of a Species Management Profile (SMP) for the Koala (Phascolarctos cinereus). The document is from the Queensland Government and includes the following sections:
 

- Conservation status:** A table showing the status in Queensland and Commonwealth. Queensland is listed as 'ENDANGERED' (in a red box), while Commonwealth is 'NEAR THREATENED'.
- Description:** A text block describing the koala's physical characteristics, such as its short compact body, large head, and no functional tail.
- Habitat:** A text block describing the koala's habitat, including temperate, sub-tropical, and tropical forests, woodlands, and some communities dominated by Eucalyptus species.
- Acute signs (check only):** A section with two images: one showing fresh, wet, silky appearing scat with a strong scent, and another showing distinct fresh scratches on a tree trunk.
- Distribution:** A text block describing the fragmented sub-populations of koalas throughout Queensland and inland from the East Coast.

# Training and Education

## Training and education

All operators undertaking harvesting (mechanical and hand felling) or any form of tree removal/felling will be required to undertake koala training. The training must provide for understanding and knowledge in:

- Identifying high use trees.
- Observing koalas.
- Conducting koala surveys.

Non-felling operators are expected to understand the Koala Care Field Guide and requirements of reporting sightings.

## High use indicators

High use indicators are found on and around trees that are frequently used by koalas- commonly NJKHT. These are high use in relation to the area. Under the SMP, high use indicators are identified as:

**'High Use'**  
**>20 scats**  
**Multiple scratches**  
**Rub/scent marks**

## When evidence of high use is found

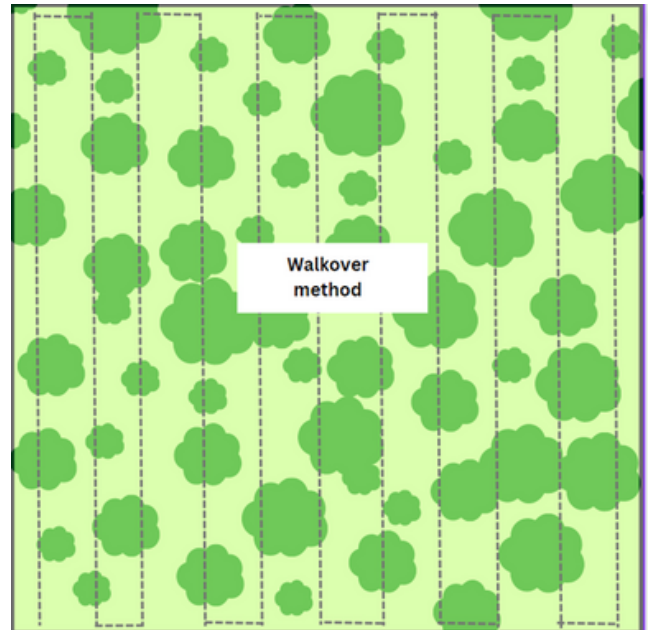
- A high use tree is to be protected as a habitat and recruitment tree (H&R tree) - as per The Code.
- The tree is not to be felled.
- Thoroughly inspect the tree, to determine whether there is a koala in the tree.

# Survey Method

To assess for high use indicators:

## Walkover method

Involves systematically walking through area, during the pre-harvest phase. **Aimed to observe signs of high use indicators.** The dotted lines in the image demonstrate a suggested walkthrough pattern.



To assess for koalas:

## Spiral method

Involves conducting 360-degree surveys on trees during the daily pre-harvest survey. Walk in a spiral motion, with your back facing a 'centre point'. This can be undertaken per tree, or for a larger group of trees- as per diagram. The method aims to view the trees from several angles and distances, from the base of the tree, to the drip line and throughout levels of the canopy. **This method is aimed at observing koalas.**



# Pre-Harvest Survey

## Pre-harvest survey

The aim of the pre-harvest survey is to conduct a survey using the **walkover method prior** to operations commencing. The survey can occur during planning or when marking product or habitat trees, mapping waterway exclusions and marking the road and extraction track layout.

All trees likely to be felled must be inspected for high use indicators using a walkover method (visually inspecting on foot), and incidentally for koalas. High use indicators are commonly found in NJKHT.

### When evidence of high use is found

- Tree is to be marked as a H&R tree.
- Tree is not to be felled.
- Inspect tree for koala.

### When a koala is observed

- Tree is to be marked as a H&R tree.
- Assess general condition of koala.
- Reassess this area prior to commencing operations.
- Collect information (GPS, date, time) and complete survey record.



# Daily Pre-Harvest Survey

## Daily pre-harvest survey

The aim of the **daily** pre-harvest survey is to conduct a survey using the **spiral method** to determine if there is a koala present in the tree, and indirectly to determine any tree which shows indicators of high usage by koalas. There is a greater importance on surveying NJKHT.

Inspect all trees likely to be felled that day, either systematically (small areas) or entire area. For mechanical harvesting:

- Use spiral method by: broad survey (prior to felling that day), operator getting out of the cab per tree/group of trees, or using a non-feller to survey the area.

### When evidence of high use is found

- Tree is to be marked as a H&R tree.
- Tree is not to be felled.
- Inspect tree for koala.

### When a koala is observed

- Cease all harvesting activity and move to different area outside the exclusion zone
- Assess the koala for general condition, or physical harm. Determine if veterinary care is required (refer to Koala Care Response Plan below).
- Record GPS point and apply a 100m exclusion zone (diagram). Consider physical marking with flagging tape or paint.
- Notify DAF and other operators in the area.
- Complete survey record.

The pre-harvest survey does not replace requirements of daily pre-harvest surveys, it is simply beneficial for identifying and marking high use trees and H&R trees. On the day of felling, **all trees planned to be felled must be inspected.**

# During Operations

## During harvesting

- Minimise damage to existing trees and manage harvest residue appropriately.
- Maintain 100m exclusion zones.
- Try to ensure habitat links are maintained within the harvesting site, and between the site and adjacent areas. This allows koalas to move out of the site of their own accord.

For example, if your harvesting site is adjacent to forest, commence harvesting as far away from the forest as possible and work towards it. Koalas will move towards the forest and settle there until operations are complete.

## Recommencing harvesting

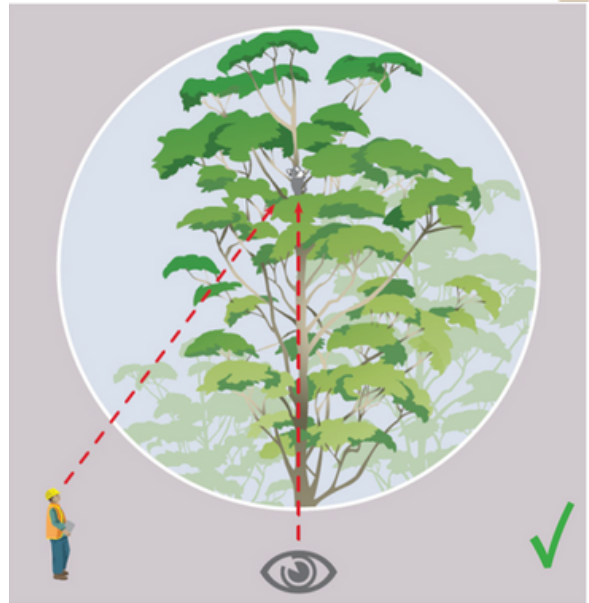
Operations must only recommence after 6am the following day. After 6am, the tree must be inspected for the koala. If the koala is no longer in the excluded area, then operations can recommence.

## Documentation:

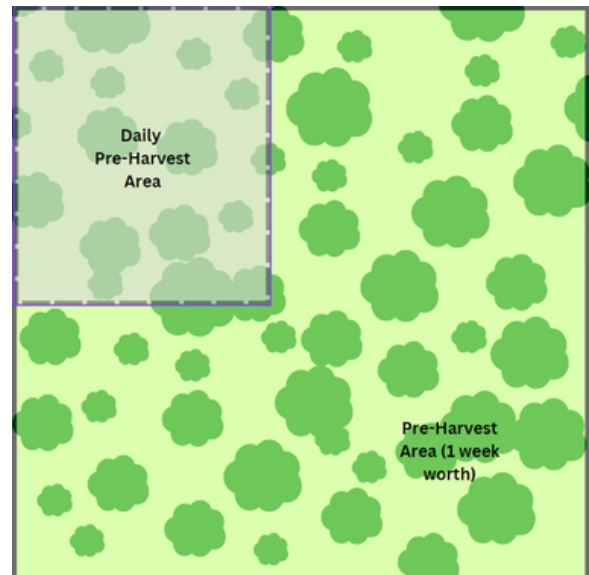
- Record all koala sightings and details in record.
- Include date, time and location for observations.
- Record all sighting and exclusions on your OHP map.
- Map completed pre-harvest and daily pre-harvest survey area.
- Submit documents to DAF as required. DAF will notify DES for the inclusion in the relevant database.

**SAFETY NOTE :** If an independent person is commencing the koala survey (not the feller), then maintain constant communications on location. A person/s who is working with the feller must ensure they are a **minimum of 100m** from any machinery or felling activities.

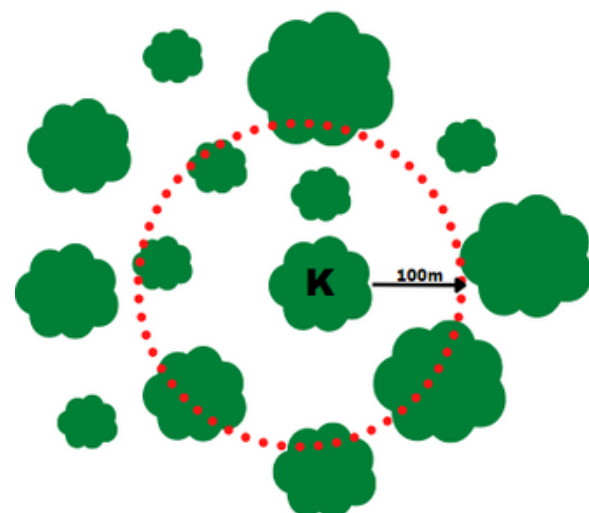
# Diagrams



Correct spotting technique



Pre-harvest area vs daily pre-harvest area



Applying 100m exclusion zone

# Koala Care Response Plan

## Koala Care Response Plan

**STOP:** If you see a koala at any time stop operations and establish an exclusion zone around the koala for checking, assessment, and protection.

**CHECK:** Without causing stress to the koala, make a visual assessment of the koala to determine if veterinary assistance is required. Look to see if the koala:

- Has any visible injuries.
- Is not placing weight on limbs.
- Has weeping eyes.
- Has poor body condition.
- Is smaller than normal, i.e., a joey.

**CALL:** If the answer to any of the above is yes then koala care is required.

**ACTIONS:** If an injured koala is found you must:

- Apply an exclusion area of 100m in all directions from the injured koala.
- Cease all operations within the exclusion area.
- Not interfere with or transport the injured animal.
- Advise **1300 ANIMAL (1300 264 625)** and the DAF as soon as possible.

**SEARCH:** Inspect the exclusion zone, immediate and broader area for any further evidence of koalas. This can be completed using the spiral survey method. Remember to up and down for signs of high use.

## Koala Rescue and Care Groups

- 1300 ANIMAL (1300 264 625)
- Koala Rescue Queensland
  - 0466 439 947
- Australia Zoo Wildlife Hospital
  - (07) 5436 2000
- RSPCA
  - (07) 3429 9910- Brisbane
  - (07) 5442 8057- Eumundi
- Currumbin Wildlife Hospital
  - (07) 5534 0813
- Moggill Koala Rehabilitation Centre
  - 1300 130 372
- Daisy Hill Koala Centre
  - (07) 3078 3101

**Or contact your nearest wildlife veterinary clinic.**



Help for any animal any time

**1300 ANIMAL**

**RSPCA** 



# Suitable Species

The following species are classified as '**high**' suitability for koalas:

- *Eucalyptus longirostrata*, (Grey Gum),
- *Eucalyptus major* (Queensland Grey Gum)
- *Eucalyptus microcorys* (Tallowwood)
- *Eucalyptus propinqua* (Grey Gum)
- *Eucalyptus robusta* (Swamp Mahogany)
- *Eucalyptus tereticornis subsp. tereticornis* (Forest Red Gum)
- *Eucalyptus biturbinata* (Grey Gum)
- *Eucalyptus camaldulensis* (River Red Gum)
- *Eucalyptus punctata* (Grey Gum)

The following species are classified as '**medium**' suitability for koalas:

- *Corymbia citriodora* (Spotted Gum)
- *Eucalyptus drepanophylla* (Grey Ironbark)
- *Eucalyptus crebra* (Narrow-leaved IB)
- *Eucalyptus pilularis* (Blackbutt)
- *Eucalyptus resinifera* (Red Mahogany)
- *Eucalyptus poplenea* (Poplar Box) and
- *Eucalyptus thozetiana* (Mountain Yapunyah).



*Eucalyptus tereticornis subsp. tereticornis*

For a full list of species and suitable, see the Koala Management Operating Guidelines (Runge, 2021).



*Eucalyptus microcorys* (Tallowwood)



*Eucalyptus major* (Queensland Grey Gum)



*Eucalyptus crebra* (Narrow-leaved IB)



*Corymbia citriodora* (Spotted Gum)



*Eucalyptus propinqua* (Grey Gum var)

**Tip: A method to identify species is by using the adult fruit (as pictured).**



*Eucalyptus resinifera* (Red Mahogany)



*Eucalyptus pilularis* (Blackbutt)



*Eucalyptus robusta* (Swamp Mahogany).



*Eucalyptus camaldulensis* (River Red Gum)



*Eucalyptus pilularis* (Blackbutt)



*Eucalyptus thozetiana* (Mountain Yapunyah)



*Eucalyptus microcorys* (Tallowwood)

Scratches and rub marks can be more difficult to see on rough bark species.

Scats can be difficult to see under species that shed bark.