# Guideline

Assessment Benchmarks in relation to Koala Habitat in South East Queensland





Prepared by: Conservation Policy and Planning, Department of Environment and Science

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#### Version history

Version	Effective date	Description of changes
1.00	7/02/2020	

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February 2020

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## 1 Overview

## 1.1 Purpose of this guideline

The purpose of this guideline is to assist assessment managers and development applicants in understanding the application and intent of the assessment benchmarks in schedule 11 of the Planning Regulation 2017 (Assessment benchmarks in relation to koala habitat in SEQ region) and to provide advice on how proposed development activities may meet these assessment benchmarks.

The use of this guideline does not guarantee compliance with all planning and environmental requirements of the assessment benchmarks. Development applicants must refer and respond to the assessment benchmarks in schedule 11 of the Planning Regulation 2017.

The Koala-sensitive Design Guideline: A guide to koala-sensitive design measures for planning and development activities also provides information to achieve the assessment benchmarks.

### 1.2 Structure of this guideline

Section 2 provides the intent of the assessment benchmarks and when the assessment benchmarks apply.

Section 3 provides key concepts that are relevant to the assessment benchmarks. Applications should consider the key concepts, how they relate to the proposed development and address the relevant key concepts when addressing the assessment benchmarks.

Section 4 provides the context for, and information on, how to respond to the assessment benchmarks.

Note: Terms are not defined in this document. Please refer to the relevant instruments for definitions.

# 2 Intent and application of assessment benchmarks

#### 2.1 Intent of the assessment benchmarks

Development on premises in koala priority areas not interfering with koala habitat

Koala priority areas are large, connected areas throughout South East Queensland (SEQ) identified as the most strategic locations for focusing koala conservation efforts to sustain wild koala populations in SEQ. Koala habitat areas in koala priority areas have the strictest clearing controls to protect koala habitat and are a key focus for restoration and threat mitigation actions to enhance and support koala habitat and koala populations.

Interference of koala habitat that is both a koala priority area and a koala habitat area is prohibited development, except for certain activities<sup>1</sup>. This means clearing cannot occur and a development application to clear koala habitat area cannot be lodged.

Development that does not involve clearing native vegetation in an area that is both a koala priority area and a koala habitat area may be assessable development under a local categorising instrument (e.g., planning scheme). This includes development activities that have the potential to impact on koala safety and movement. Assessment benchmarks in schedule 11, part 2 of the Planning Regulation 2017 apply to these development applications. They aim to prevent adverse impacts on the structure and function of koala habitat areas and maximise the safe and unimpeded movement of koalas through the landscape.

Development in identified koala broad-hectare areas

There are seven identified koala broad-hectare areas in SEQ. These are areas with pre-existing, long-term, established development commitments. Koala broad-hectare areas include areas identified under the *Queensland* 

<sup>1</sup> See schedule 24 of the Planning Regulation 2017 - "exempted development".

Housing Affordability Strategy and declared master planned areas under the repealed Sustainable Planning Act 2009 and the repealed Integrated Planning Act 1997.

Note: No new identified koala broad-hectare areas will be established.

Detailed land use planning has been undertaken to guide the landscape-scale design of these areas in relation to environmental, land use, infrastructure and development outcomes. Although environmental considerations such as connectivity have been incorporated into the landscape-scale design of these areas, site-based measures to achieve koala conservation outcomes have not and therefore must be considered on a case-by-case basis.

Assessment benchmarks in schedule 11, part 3 of the Planning Regulation 2017 have been developed to ensure development completely or partly in an identified koala-broad hectare area incorporates site-based measures to maximise the safe and unimpeded movement of koalas through the landscape, allow koalas to safely disperse from an area being cleared and reduce the risk of koala death or injury.

### 2.2 When the assessment benchmarks apply

Development on premises in koala priority areas not interfering with koala habitat

The assessment benchmarks in schedule 11, part 2 of the Planning Regulation 2017 apply to development applications for development that:

- is building works, a material change of use of premises, operational work or reconfiguring a lot that is made assessable under a local categorising instrument; and
- does not involve the interfering with koala habitat in a koala habitat area; and
- is proposed to be carried out in an area that is both a koala priority area and a koala habitat area.

However, this part does not apply to the extent the development is in an identified koala broad-scale hectare area.

Development in identified koala broad-hectare areas

The assessment benchmarks in schedule 11, part 3 of the Planning Regulation 2017 apply in relation to a development application for development to the extent the development is

- is in an identified koala broad-hectare area; and
- · is assessable development under a local categorising instrument; or
- reconfiguring a lot that is assessable development under schedule 10, part 14, division 1, section 21 reconfiguring a lot under the *Land Title Act 1994*.

# 2.3 When the assessment benchmarks do not apply

The assessment benchmarks in schedule 11 of the Planning Regulation 2017 do not apply to development applications if:

- the chief executive is the prescribed assessment manager for the development application; or
- · the development is for a coordinated project; or
- the development is in a State development area; or
- the development is in the area of a development control plan that the old Act, section 857 applies to; or
- the development is for infrastructure stated in schedule 5 and is carried out by or for the State or a public sector entity; or
- the development is PDA-related
- the development results in a development footprint of 500m<sup>2</sup> or less; or
- the development is carried out under a development permit given for an application that was properly made before 7 February 2020; or
- the development is consistent with a development approval—
  - in effect for the premises on which the development is carried out; and
  - given for an application that was properly made before 7 February 2020.

In identified koala broad-hectare areas, the assessment benchmarks in part 3 do not apply to the extent the development is for an extractive industry.

# 2.4 Assessment benchmarks apply in addition to local planning instruments

The assessment benchmarks in schedule 11, part 2 or part 3 apply to a development application in addition to any other local assessment benchmarks in relation to the conservation of koalas in a local planning instrument. If there is an inconsistency between an assessment benchmark in schedule 11 and a local planning instrument requirement, the schedule 11 requirement prevails to the extent of the inconsistency.

# 3 Key concepts

#### 3.1 Koala safe movement

Threats to the safe movement of koalas increase with distance between habitat and the number of threats introduced. This affects a koala's ability to move safely from one patch of habitat to another. As landscapes become modified, native vegetation (including koala habitat areas) is replaced by barriers to koalas, such as urban development, roads, rail lines, fences and large expanses of cleared land. These barriers make it hard or impossible for koalas to move safely through the area. In existing or developing urban areas, or areas where road or rail is proposed, the safe movement of koalas can be improved by using a range of koala-sensitive planning and design measures that aim to mitigate the risk to koalas.

Further information on this is provided in the Koala-sensitive Design Guideline: A guide to koala-sensitive design measures for planning and development activities.

### 3.2 Connectivity

Connectivity refers to the ability of plants or animals to move through a landscape. Higher levels of connectivity exist where there are fewer barriers to dispersal or migration. Maintaining safe and effective connectivity is important within and between patches of koala habitat to maintain viable koala populations. Connectivity is required for everyday movement of koalas, expanded movement at breeding, dispersal of sub-adults, opportunities to move from immediate threats such as bushfire and more gradual threats to habitat from climate change. Connectivity also provides for genetic exchange between populations to maintain genetic diversity and reduce inbreeding.

Koala movement is safer where there are no obstacles or cleared land within a koala's home range or between nearby habitat patches. The greater the distance a koala spends on the ground moving between habitat trees and/or the more barriers in its way, the higher the risk is of death or injury from exhaustion, lack of food and safe shelter, heat stress, dog attack, rival koala attacks or vehicle strike. Urban areas, major transport routes and large expanses of cleared land provide the greatest risk to connectivity.

Corridors are the clearest way to increase connectivity, as they provide structural connections between habitats in the landscape. There are other ways to increase connectivity where having a corridor is not possible, such as reducing the distance between koala habitat areas and retaining stepping stones.

Applying koala sensitive design principles in urban areas or across transport routes also assists connectivity. For further information refer to Koala-sensitive Design Guideline: A guide to koala-sensitive design measures for planning and development activities.

# 3.3 Ecological corridors

An ecological corridor is an extent of vegetated or unobstructed land that joins two or more larger areas of similar wildlife habitat. In order of preference and effectiveness, ecological corridors can consist of:

- 1. koala habitat areas remaining intact and connected with continuous koala habitat areas;
- 2. continuous corridors of native vegetation with koala habitat trees between koala habitat areas;
- 3. continuous corridors of non-native vegetation with scattered koala habitat trees between koala habitat areas;
- 4. areas with small, segregated patches of vegetation with scattered koala habitat trees known as "stepping stones" between koala habitat areas;

Examples of ecological corridors include ecological, linkage or stepping-stone habitat corridors shown on a map in a local planning instrument.

### 3.4 Stepping stones

Stepping stones are small patches of habitat where koalas can eat, rest and escape predators as they move between larger areas of habitat. Stepping stones can include small patches of koala habitat area (e.g. areas less than 2ha), patches of other vegetation that includes scattered koala habitat trees or a single koala habitat tree. Stepping stones within urbanised environments include parks, vegetated waterways, easements and road reserves with koala habitat trees. There may also be several stepping stones between large patches of koala habitat areas that facilitate koala movement over long distances.

Stepping stones must be as close as possible. In non-urban areas they should be a minimum of 100m from large koala habitat areas or other stepping stones as this is the average distance that a female koala will move in a day. In urban environments the distance between areas of refuge should be 30m or less to significantly reduce the risk of koalas becoming stressed and/or encountering threats from dogs and vehicles.

Stepping stones at much greater distances should not be discounted, as these have shown to be important for koalas, particularly young males dispersing long distances when establishing new home ranges.

# 4 Addressing the assessment benchmarks

# 4.1 Development on premises in koala priority areas not interfering with koala habitat

#### 4.1.1 Assessment benchmark 1a

- (1) The following matters are assessment benchmarks for the development:
- (a) the development provides, on the premises, the safe koala movement measures necessary to maximise the safe movement of koalas:
  - (i) within a koala habitat area on the premises; and
  - (ii) between a koala habitat area on the premises (the first area) and a koala habitat area or ecological corridor within 200m of the first area.

#### Intent

Koala habitat areas located 200m or less from each other are considered 'highly connected patches'.<sup>2</sup> The intent of assessment benchmark 1a is to ensure development is sited and designed to allow koalas to move safely between these highly connected patches, from one patch to another.

Development has the potential to introduce impediments or barriers to koala's moving safely between patches of koala habitat areas. Impediments can be introduced into an area by changing land uses from ones that are suitable for koalas, to ones that that introduce threats to koalas, such as dogs, cars, pools and other water bodies. Death and injury from vehicle strikes and dog attacks are amongst the highest urban development impacts leading to the decline of koalas.

Sites that are vegetated or that contain cleared undeveloped land, with or without stepping stones or single koala habitat trees, provide opportunities for koalas to move safely throughout the landscape. Development that removes an area that provides safe movement opportunities fragments remaining koala habitat areas. This can occur through clearing or, where clearing has already occurred, by placing development in those areas. This reduces connectivity, impacts on koala safe movement and increases the risk of injury or death of koalas.

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2 See McAlpine et all, 2007.

Development layout, operation and design must ensure that there is opportunity for koalas to move safely from one patch of koala habitat to another and not create barriers that prevents koala movement or makes it dangerous for koalas to move across a site.

Development should be sited and designed to avoid fragmenting koala habitat areas by:

- Avoiding the removal of vegetation between patches of koala habitat area; and
- providing corridors to facilitate koala movement in undeveloped areas.

Further information on practical examples of how to achieve this assessment benchmark can be found in the Koala-sensitive Design Guideline: A guide to koala-sensitive design measures for planning and development activities.

#### **Information Requirements**

Development applications must include a plan that identifies:

- koala habitat areas that are within 200m of each other (on the development site and on adjacent / nearby lots);
- development and infrastructure proposed in-between patches of koala habitat areas including roads, fences, waterbodies and buildings;
- any proposed corridors, their width, proposed composition (e.g., native vegetation, other vegetation or cleared), proposed uses (e.g., conservation, open space); and
- details of any areas that require rehabilitation to ensure safe koala movement is achieved.

Development applications that are proposing to reduce connectivity must be accompanied by a report prepared by a suitably qualified ecologist that demonstrates how connectivity will be maintained by retaining existing connectivity and / or identified corridors. The report must specifically identify:

- the dimensions of the area (e.g., length by width) proposed to be retained to avoid fragmenting koala habitat areas:
- the composition on the area retained (e.g., does the area contain remnant or regrowth vegetation, what are the flora species in the retained area, does it contain koala habitat area, other native or non-native vegetation, is the area cleared, what is the location and distance between koala habitat areas or individual tree);
- any actions that will be undertaken on land retained to avoid fragmenting koala habitat areas that will improve connectivity between koala habitat areas (e.g., removing barriers, revegetating with koala habitat trees, the density of plantings, the distance between planted trees, encouraging natural revegetation);
- elevation and slope of areas to be retained to avoid fragmenting koala habitat areas;
- the location of waterways and waterbodies in relation to areas retained to avoid fragmenting koala habitat areas;
- the basis upon which those areas are considered suitable for safe koala movement.

The locations should be based on koala surveys of known koala locations, koala home ranges within the area and resident koala movement patterns or desktop analysis of koalas' preferred habitat types for that locality and likely movement patterns.

Applications that introduce impediments to movement, including waterbodies, structures, fences and roads, must:

- identify any barriers to movement that will be proposed by the development; and
- include justification why the proposed impediments to movement could not be located elsewhere; and
- outline measures that will be undertaken to ensure koalas can move safely between highly connected patches
  of retained koala habitat area; and
- include a justification for why the proposed measures are suitable for providing safe koala movement opportunities.

For roads that separate koala habitat areas, applications must identify:

- the width of the road;
- measures proposed to reduce koalas being injured or killed by cars (e.g. overpasses, underpasses, road design and lighting, speed limits, signage).

#### 4.1.2 Assessment benchmark b

- (1) The following matters are assessment benchmarks for the development:
- (b) either:
  - (i) each building, structure or works associated with the development is at least 50m from a koala habitat area; or
  - (ii) the development complies with each of the criteria stated in subsection (2).
- (2) For subsection (1)(b)(ii), the criteria are as follows:
- (a) any change to the condition of soil as a result of the development does not adversely affect a koala habitat area:

Examples of changes to the condition of soil:

- the addition of nutrients to the soil
- the erosion of the soil
- the compaction of the soil
- (b) any alteration of hydrological flows as a result of the development does not adversely affect a koala habitat area:
- (c) any landscaping associated with the development that involves planting non-native vegetation does not adversely affect a koala habitat area;
- (d) the development does not adversely affect a koala habitat area by resulting in the increased growth or spread of weeds in the koala habitat area:
- (e) a building, structure or works associated with the development is located to minimise the amount of vegetation required to be cleared for safety purposes.

Examples of clearing for safety purposes:

- clearing for a fire break
- clearing to reduce risks from falling branches

#### Intent

Development has the potential to impact on the integrity of koala habitat area due to impacts from edge effects. When vegetation is cleared, the remaining vegetation can be negatively impacted by changes to physical, microclimatic and biological conditions at the cleared / non-cleared interface. These changes impact on the remaining vegetation, leaving it susceptible to degradation and weed infestation, change hydrology, soil moisture and temperature, and ultimately reduce the viability of the forested area.

Vegetation can be protected from edge effects by ensuring that activities that cause detrimental impacts at the interface of cleared / non-cleared areas do not cause further degradation to adjacent koala habitat areas.

The assessment benchmark provides two options for achieving this outcome.

The first option is for development and all activities associated with the construction and operation of the development to be located 50m or more from the edge of the vegetated area. This "buffer" provides a minimum recommended width to minimise impacts of development on koala habitat.

The second option allows for a site- specific assessment to be undertaken, considering a number of key impacts that can cause degradation on adjacent vegetation. It provides opportunity for alternative approaches to be implemented to mitigate the impacts of edge effects from the development.

#### Information Requirements

Applicants must identify if they are proposing to meet option 1b(i) or 1b(ii).

For option 1b(i), applicants must provide a plan to scale showing that the edge of adjacent vegetation is 50m or greater from the location of all buildings, works and infrastructure for the development.

For option 1b(ii) applicants must provide a report by a suitably qualified ecologist with experience in impacts to flora and fauna from edge effects that addresses items 1b(ii), items a) to e).

The report is to be accompanied by a plan to scale showing the edge of adjacent vegetation, the location of all buildings, works and infrastructure for the development and the proposed distance between the vegetation and development.

The report must provide justification for any alternative buffer distances from the development to vegetated areas, including any additional actions to be undertaken to reduce the impacts of edge effects from the development.

### 4.2 Development in identified koala broad-hectare areas

#### 4.2.1 Assessment benchmark a

The following matters are assessment benchmarks for the development:

(a) the development provides, on the premises, the safe koala movement measures necessary to maximise the safe movement of koalas within and through the premises;

#### Intent

The intent of this assessment benchmark is the same as safe koala movement intents under assessment benchmark 1a (4.1.1).

#### **Information Requirements**

Information requirements for this assessment benchmark are the same as safe koala movement requirements under assessment benchmark 1a (4.1.1).

#### 4.2.2 Assessment benchmark b

The following matters are assessment benchmarks for the development:

(b) any clearing of native vegetation complies with the *Nature Conservation (Koala) Conservation Plan 2017*, sections 10 and 11 to the extent the sections apply to the clearing;

#### Intent

Clearing koala habitat has the potential to injure and kill koalas. Koalas are at risk from trees being felled while they are still in them or by trees being felled falling on them. The intent of this assessment benchmark is to ensure that any vegetation clearing activities are undertaken in a way that does not increase the risk of stress, injury or death to any koala on site when clearing activities are undertaken.

There are legal requirements for how koala habitat is cleared under the *Nature Conservation (Koala) Conservation Plan 2017* to ensure clearing minimises the risk of stress, injury or death to koalas. This includes sequential clearing requirements and having an experienced koala spotter<sup>3</sup> on site when clearing occurs. For more information see sections 11 and 11 of the *Nature Conservation (Koala) Conservation Plan 2017.* 

<sup>3</sup> koala spotter means a person who has qualifications and experience, or demonstrated skills and knowledge, in:

<sup>(</sup>a) locating koalas in koala habitats; or

<sup>(</sup>b) conducting arboreal fauna surveys.

### **Information Requirements**

Applications must provide a Koala Management Plan developed by a suitably qualified and experienced person that has knowledge of koala ecology and experience developing management plans that demonstrates compliance with the sequential clearing requirements of the *Nature Conservation (Koala) Conservation Plan 2017.* 

The Koala Management Plan (sequential clearing requirements) must address, at a minimum, the following.

For a site which is greater than three hectares, the Koala Management Plan will need to ensure that:

- koalas are provided enough time to move out of the site without human intervention;
- clearing occurs in stages whereby the total area cleared in any one stage:
  - o is no greater than 50 per cent of the area of a site that is 6 hectares or smaller;
  - o is no greater than three hectares or three per cent of the area of a site that is larger than 6 hectares
- there is at least one 12-hour period that starts at 6 pm on one day and ends at 6 am on the following day during which no trees are cleared on the site:
- any tree in which a koala is present, or which has a crown overlapping a tree in which a koala is present, is not cleared:
- appropriate habitat links are maintained within the clearing site and between the site and its adjacent areas, to allow koalas living on the site to move out of the site.

Where a site is less than three hectares, the Koala Management Plan will need to ensure that:

- koalas are provided enough time to move out of the site without human intervention;
- any tree in which a koala is present, or has a crown overlapping a tree where a koala is present, is not cleared;
- appropriate habitat links are maintained within the clearing site and between the site and its adjacent areas, to allow koalas living on the site to move out of the site.

The name and qualifications of the experienced koala spotter must be provided.

#### 4.2.3 Assessment benchmark c

The following matters are assessment benchmarks for the development:

(c) measures are implemented to ensure that a construction activity on the premises does not increase the risk of death or injury to koalas;

#### Intent

The intent of this measure is to ensure koalas are not injured or killed as result of construction activities associated with a development. This includes clearing and subsequent construction activities that follow such as earthworks and building activities.

The risk to koalas can be higher in areas where clearing has previously occurred. Koalas will remain in or near their home range areas even after clearing has occurred. If koala habitat has been cleared on a site, it is possible that koalas will try to remain on the development site while it is being developed. Impacts to koalas on a development site may include:

- injury or death when trees are cleared while koalas are still in them or when trees fall on other trees that have koalas in them:
- falling into excavated pits and holes and become injured or trapped;
- koalas taking refuge in machinery at night and being injured when machinery starts the next day;
- being run over by heavy machinery;
- being stressed by dust impacting on remaining adjacent koala habitat; or
- being attacked by security dogs or dogs bought on site by employees working on the development site at construction stage.

Impacts to koalas can be managed through excluding koalas from dangerous worksites, providing koala safe movement areas through a development site, excluding dogs on site and ensuring dust and light does not affect adjacent koala habitat.

Risks to koalas at the construction phase and management practices to avoid those risks should be identified in a Koala Management Plan. Acceptable management measures to mitigate risks can include:

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use koala exclusion fencing (temporary or permanent) in areas that may be dangerous to koalas (e.g.,

excavated pits, waterbodies, areas where guard dogs are present);

- checking machinery prior to use;
- raising awareness of site workers to watch for koalas on site;
- koala crossing signage on site roads;
- ensuring site worker's dogs are excluded from a site, on a leash or otherwise restrained; and
- ensuring a process is in place to ensure injured/sick animals are taken care of immediately, including by
  contacting or taking animals to the closest appropriate koala care agents (e.g., koala carers group, veterinary
  clinic, wildlife hospital).

#### **Information Requirements**

Applications must include a Koala Management Plan developed by a suitably qualified and experienced person that has knowledge of koala ecology and experience developing management plans. The Koala Management Plan must, at a minimum, identify the following:

- all potential risks to koalas from clearing and construction activities proposed on site;
- all management measures that will be implemented to address those risks;
- the process and measures to address accidental injury or death of koalas; and
- the process for implementing the management plan including:
  - o identifying the person responsible for implementing the plan (e.g., site supervisor, foreman); and
  - o detailing the process for training all contractors working on the site to comply with the plan.

#### 4.2.4 Assessment benchmark d

The following matters are assessment benchmarks for the development:

(d) any area on the premises that is cleared of native vegetation as a result of a construction activity is progressively rehabilitated.

#### Intent

Construction activities may require areas that are in the long term to be retained as koala habitat or corridors to be cleared to facilitate construction activities to occur. The intent of this assessment benchmark is to allow construction activities for the development to occur and ensure that rehabilitation efforts are managed and successful and are undertaken as soon as possible after construction activities have stopped.

#### **Information Requirements**

Applicants must include a revegetation plan that take account of, at a minimum, the following:

- a map identifying the area of temporary clearing and future rehabilitation;
- vegetation community/s (regional ecosystems or other vegetation identified through survey) on the area;
- the timing of clearing and when rehabilitation will commence;
- method for undertaking revegetation addressing:
  - o species selection for replanting, including the range of plants required to achieve the revegetated regional ecosystem type (e.g., ground, shrub, tree layers);
  - o species planting layout (reflective of the proposed revegetated regional ecosystem type);
  - o soil chemistry and nutrients and plant requirements;
  - o timing of planting;
  - ongoing management (which should address watering, weeding, replacing plants that die, predation from animals, soil stability, who will be responsible for management and how long management options will be undertaken to ensure the revegetated area is sustainable).

# 5.0 Supporting references

Koala-sensitive Design Guideline: A guide to koala-sensitive design measures for planning and development activities, Queensland Government 2019.

Planning guideline for koala conservation and recovery, A guide to best planning practice, Clive McAlpine, Jonathan Rhodes, Ann Peterson, Hugh Possingham, John Callaghan, Dan Lunney. 2007 (https://espace.library.uq.edu.au/view/UQ:124088/mcalpine\_et\_al\_2007.pdf)