

# Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006 - 2016



# Foreword

Queensland once had millions of koalas. But scientists estimate that up to 90 percent have perished since European settlement.

This Koala Plan will ensure that in Queensland, koalas are for keeps.

Last century koalas were hunted for their skins. The biggest threat now is loss of habitat and the fragmentation of remaining bushland.

As we know, South East Queensland is the fastest growing region in Australia. To manage that we need the most innovative legislation, land management and regional planning.

That's why the Beattie Government has banned broad-scale tree clearing, constrained urban development into only 20% of South East Queensland, and has begun a 25 year project of progressively transferring 800,000 hectares of native forest from logging into National Park.

Yet because many koalas live in and around already developed areas we need to do more.

This landmark Koala Plan will ensure koalas are further protected.

We are creating *Koala Conservation and Sustainability Areas* where new private development must not impact on koalas and new essential community infrastructure will only occur with offsets.

That will mean that every hectare of koala habitat cleared for essential community infrastructure must be offset by providing habitat or other benefits for koalas.

We are also creating *Urban Koala Areas* where Koala Sensitive Design will be required or encouraged.

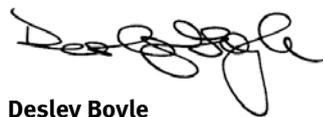
The Plan also improves how we manage and protect koalas addressing other issues such as research, display in zoos, public education and the rehabilitation of sick, injured and orphaned animals.

By taking these positive steps koalas will survive for another century and beyond.

Thank you to all those who made submissions and the koala and industry groups who helped develop this plan.

This is about protecting koalas and at the same time allowing smart, koala friendly development. By working with and around development, and with the community, we can not only ensure that koalas survive but thrive.

Yours Sincerely



**Desley Boyle**

Minister for Environment, Local Government,  
Planning and Women

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# 1 Introduction

Koalas are one of the most recognised animals in Australia. As the state's faunal emblem and icon species, they hold a special place in the hearts of Queenslanders. Consequently, koala conservation and welfare is held in high public regard.

Koalas are also a popular species with international visitors, with 75 percent of overseas tourists stating that they hoped to see a koala during a visit to Australia (Hundloe and Hamilton 1997). It has been estimated that koala-based industry provided tourism revenue of \$1.1 billion in 1996 and 9000 jobs (Hundloe and Hamilton 1997).

Queensland is fortunate to have one of the largest natural populations of koalas in the wild with many koalas occurring in urban areas in the southeast. However, although koalas are still considered common in many parts of the state, their populations are declining. Research has indicated that the koala has suffered a 50–90 percent

reduction in its range since European settlement. Indeed, in 2004, koalas in the South East Queensland Bioregion were classified as 'vulnerable' to extinction after scientific data indicated a significant decline in their population and a high level of threat from changing land uses.

In particular, koalas are suffering from the impacts of urban development and habitat clearing. The greatest threats to their survival are the destruction and fragmentation of their habitat, car strikes, dog attacks and disease. With population growth — some 55,000 a year over the past two decades — poised to continue into the foreseeable future, the need for an integrated landscape strategy to maintain vital koala habitat is vital, as is the need to provide for more compatible development where it does proceed.

The Queensland Government's strongest tool for the protection of koalas is this document, the *Nature*

*Conservation (Koala) Conservation Plan 2006 and Management Program 2006–2016*. This plan has been based on an extensive program of research conducted by the Environmental Protection Agency (EPA) and other institutions and is designed to ensure the conservation of koala populations in Queensland. It contains management strategies that are supported by legislation and are the culmination of extensive consultation with koala conservation interests, developers, local governments and State Government agencies. The protection of koalas and koala habitat will require significant co-operation and involvement from local governments, industry, organisations, community groups and individuals, each playing their part in implementing the recommendations of the *Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006–2016*.

## Preparation

The *Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006–2016* (the Koala Plan) has been prepared in accordance with section 112 of the *Nature Conservation Act 1992*.

The Nature Conservation Act sets out the required steps that the Minister for Environment must follow in preparing and making a conservation plan for native wildlife. The key steps include:

- giving public notice of the proposal to prepare a draft conservation plan and inviting public submissions;
- preparing a Draft Plan;
- making the Draft Plan available for public consultation and inviting further submissions;
- considering all properly made submissions on the Draft Plan; and
- approving a final plan.

To comply with these requirements, this final Koala Plan has been made following:

- an announcement by the then Minister for Environment, the Honorable Dean Wells and the Premier of Queensland, the Honorable Peter Beattie regarding the preparation of a draft conservation plan for koalas and inviting submissions in March 2003;
- the release of the draft *Nature Conservation (Koala) Conservation Plan and Management Program 2005–2015* in January 2005 and an invitation for further submissions. Public meetings regarding the draft Koala Plan were also held in key areas;
- reviewing 507 formal submissions. Each submission was assessed and summarised, and the key issues collated in a report for consideration by the Minister for Environment; and

- preparation of a final Koala Plan, the *Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006–2016*.

## Purpose

The Koala Plan is made up of two parts, being:

- the *Nature Conservation (Koala) Conservation Plan 2006* (the Koala Conservation Plan), which is subordinate legislation made under the Nature Conservation Act; and
- the *Nature Conservation (Koala) Management Program 2006–2016* (the Koala Management Program), a policy document outlining the legislative and policy context for the conservation of koalas in Queensland.

The main purposes of the Koala Conservation Plan are to:

- promote the continued existence of viable koala populations in the wild;
- prevent the decline of koala habitats, including by providing for the rehabilitation of cleared or otherwise disturbed koala habitats; and
- promote future land use and development that is compatible with the survival of koala populations in the wild.

The main purpose of the Koala Management Program is to complement the Koala Conservation Plan, by providing policy direction and management approaches to address key threatening processes to koalas.

Combined, they form a plan outlining a statutory and policy framework for the purpose of conserving koalas in the wild in Queensland.

The key components of the Koala Plan are outlined in Figure 1.

**Figure 1**

## **Introduction**

### **Koala biology and ecology**

This section provides background information on koalas, *Phascolarctos cinereus adustus*, in Queensland, its habits and habitat requirements.

### **Framework**

This section outlines the statutory and policy framework for the management and conservation of koalas, including the role of the South East Queensland Regional Plan.

### **Management approaches**

This section details the threatening processes faced by koalas in Queensland and the approaches and policies that will be used to address these.

### **Koala conservation criteria for development assessment**

This section contains the criteria against which certain assessable development under the *Integrated Planning Act 1997* is to be considered as directed by the *South East Queensland Regional Plan 2006–2026*. The koala conservation criteria replace the *Interim Guideline: Koalas and Development*.

### **Koala policies**

Specific policies relevant to the management approaches and referred to within koala conservation criteria are contained in this section to provide guidance for interpretation and additional information for implementing the Koala Plan.

### ***Nature Conservation (Koala) Conservation Plan 2006***

This is the subordinate legislation component of the Koala Plan made under the Nature Conservation Act. The subordinate legislation directs designation of koala districts and associated objectives; prescribes outcomes for Koala Habitat Areas and criteria against which development in these areas must be assessed; prescribes sequential clearing and koala spotting requirements; and includes additional wildlife permit restrictions for koalas.

## 2 Koala biology and ecology

### 2.1 Indigenous overview

To Aboriginal people from eastern and southern Australia, the koala is valued as an important cultural symbol depicted in a number of creation stories and through its use as a totem. The word 'koala' is derived from the name Koala (meaning 'no drink') given to it by Aboriginal people in the eastern New South Wales area. The koala was a food source for Aboriginal people though not favoured above other food sources. Culturally-driven sustainable hunting practices meant that the koala population survived thousands of years of use by Aboriginal people.

### 2.2 Historical overview

The first historical record of koalas in Australia was in 1798, 10 years after European settlement. Records show there were relatively low densities in the Brisbane area and south-west Queensland in 1840 (Lee and Martin 1988; Martin and Handasyde 1999).

Koalas were hunted for their fur during the late 1800s, with millions of skins exported during a regulated harvest (Phillips 1990). The animals were declared protected in Queensland in 1906, although regulated harvests continued until 1927. It is possible to gain some indication of koala numbers from these harvest figures. For instance, a six-month season in 1919 yielded about one million skins and the last open season declared in 1927

yielded more than 500,000 skins in one month (Lee and Martin 1988; Phillips 1990). There were six of these open seasons between 1907 and 1927 (Hrdina and Gordon 2004).

Koalas were scarce when the fur trade ceased. There is some evidence to suggest that numbers continued to decline during the mid-1900s, with animals not seen in any significant numbers for another 30 to 40 years (Howells 2000, Lee and Martin 1988).

### 2.3 Taxonomy

Three koala subspecies are currently recognised in Australia. Queensland koalas are generally considered to belong to the subspecies *Phascolarctos cinereus adustus*, described from specimens from near Mundubbera in southern Queensland (Thomas 1923).

The koala is the sole member of the marsupial family *Phascolarctidae* and its closest living relatives are the wombats.

### 2.4 Distribution

Koala populations are scattered throughout Queensland. The greatest concentration is in south-east Queensland. Lower densities occur throughout much of the central and eastern parts of Queensland (Gordon and McGreevy 1978; Melzer and Lamb 1994; Patterson 1996).

Koala distribution is widespread but patchy in forest and woodland vegetation. Their broad distribution has not contracted greatly since European settlement. For example, koala populations are still found on the western and northern margins of their range in semi-arid country and also in the heavily developed south-east corner of the state (Patterson 1996). They also continue to live in many rural areas where their habitat has been highly fragmented due to clearing (Gordon 1989; Gordon et al. 1990a; White 1999).

The local distribution of koalas in Queensland at the time of European settlement is not known in detail. However, Queensland had been subject to extensive tree clearing, which must have included significant areas of koala habitat. Therefore, it is reasonably certain that koala populations have undergone a major contraction in local distribution, including local extinctions and local declines in abundance (Phillips 1990).

### 2.5 Population size and dynamics

It is estimated that there are between 100,000 and 300,000 koalas in Queensland. In 2000 it was estimated that there were 63,000 ( $\pm 18,000$ ) in the Mulga Lands Bioregion, which is the semi-arid country on the western limit of their range (Sullivan 2000). There are a maximum of 6000 koalas in the

Koala Coast, an area including Redland Shire and parts of Brisbane City and Logan City (Dique et al. 2004), and 4500 in the Pine Rivers Shire (Dique et al. 2003a), representing two areas of significant habitat in south-east Queensland. The Koala Coast and Pine Rivers Shire comprise about one fifth of the animal's distribution in Queensland.

The local density of koala populations in Queensland ranges from 0.005 koalas/ha (or 1 koala/200ha) (Melzer and Lamb 1994) to 2.5 koalas/ha (Gordon et al. 1990a). Higher densities have been recorded in other states and anecdotal evidence indicates that Queensland's koala density has been much greater in the past. Typical densities in forested habitat in south-east Queensland (where koalas are often thought to be common) may be about 0.2–0.5 koalas/ha, with densities reaching more than 2 koalas/ha at some sites (White and Kunst 1990; Hasegawa 1995; Dique et al. 2003b).

Queensland's koala population has been variable over time, reaching high densities before declining or 'crashing'. The decline phase is partly a correction of the preceding expansion and does not necessarily affect the survival of the population overall (Gordon et al. 1988). However, more recent emerging threats affect the normal fluctuations in population densities, making recovery more difficult. A number of important factors now affect koala population size in Queensland. These are habitat fragmentation and loss, chlamydial disease, climate change, car strikes, dog attacks, fire and drought.

Understanding the extent of the decline of koalas since European settlement is complicated by a period of population growth following hunting

in the southern and central parts of its Queensland distribution from the late 1800s to the early 1900s (Gordon and Hrdina 2005). The population appears to have grown to a large size, perhaps larger than the pre-settlement size when Indigenous hunting maintained numbers, and then contracted severely between the 1920s and 1940s. The extent of decline since the period of high population growth gives a misleading impression of the overall change in status of koalas since settlement. However, it is likely that current koala population size is significantly smaller than the pre-settlement population due to the combined effects of the koala fur trade and a large reduction in suitable habitat resulting from the expansion of the Queensland agricultural industry.

## 2.6 Conservation status

The koala is classified as 'vulnerable' in the South East Queensland Bioregion under the *Nature Conservation Act 1992*. Although not abundant, it is classified as of 'least concern' elsewhere in Queensland.

## 2.7 Habitat requirements

Koalas are found in communities of eucalypts and some related species. While koalas choose their habitat based on the suitability of food trees, the reasons for choosing these trees are not well understood.

There are generally more koalas in forests and woodlands occurring on more fertile soils. In more arid regions, water regime appears to be important, as koalas are often more abundant along watercourses and on adjacent floodplains (Gordon et al. 1988; Melzer 1995; Munks et al. 1996).

Koalas generally attain different densities in different vegetation communities according to suitability of

the habitat. Plant communities that support higher densities are regarded as preferred habitat in an area.

Koalas successfully use highly fragmented habitats that have only small remnants of the original vegetation (Gordon 1989; Gordon et al. 1990a; White 1999). They also use young forest and highly modified vegetation such as grazed, disturbed or thinned forest and regrowth areas, moving significant distances across the ground between preferred trees. Research has also found they prefer larger trees (Sharpe 1984, Hindell and Lee 1987, White 1999).

## 2.8 Diet

The koala is a specialised leaf-eater, with food restricted mainly to species of *Eucalyptus* and some related genera including *Corymbia*, *Angophora* and *Lophostemon*. However, koalas also feed on a number of other species, including species from the genera *Melaleuca* and *Leptospermum*.

Diet is thought to be a major determinant of habitat selection. Attempts to identify koala food trees on the basis of leaf chemistry or environmental characteristics such as soil fertility have failed to provide a full explanation of koala food tree preference. Recent research has shown that certain eucalypt leaf compounds, formylated phloroglucinol compounds (FPCs), adversely affect mammals (Lawler et al. 1998; Moore and Foley 2000). Some possums that feed on eucalypts select trees with low levels of FPCs, and it is likely that this also has a major influence on koala food selection (Martin and Handasyde 1999).

Koalas usually show a preference for a small number of food trees in each locality, but may also feed on other species that are present. The latter are often referred to as secondary food

species. Food tree preference often varies regionally and between different vegetation communities and a species that is preferred in one region or community may sometimes be avoided in another region or community. Koalas may also show a preference for individual trees within a species (Martin and Handasyde 1999).

## 2.9 Reproduction

Healthy females breed from about two years of age and give birth each year. Females in Queensland can give birth between about August and May, but most births occur in December and January (de Villiers et al. in press). Young begin to emerge from the pouch at about six months of age and are weaned at about 12 months of age. Koalas are dependent for a long period of time compared to most other marsupials.

Failure to breed for two or more successive years is usually a sign of infertility brought on by a chlamydial infection of the reproductive tract. High levels of female infertility are present in many koala populations, with levels of more than 50 percent being recorded (Gordon et al. 1990a). This results in depression of the reproductive rate and may lead to reduced population growth or population decline.

## 2.10 Behaviour

Koalas live for about 15 years in the wild. They are solitary and show fidelity to a home range (Mitchell 1990; Gordon et al. 1990b; Martin and Handasyde 1999). They tend not to be territorial, with male and female home ranges overlapping. Social interactions between adult individuals tend to be more frequent in the breeding season and are often aggressive (Mitchell 1990).

Adult females and their young share a close bond (Martin and Handasyde 1999) until the young are weaned. Recently weaned young often occupy an overlapping home range with their mothers (Ramsay 1999) until they are two years old. From about two to four years of age, a large proportion of male and female koalas disperse from their birth areas. This usually corresponds with the breeding season (Dique et al. 2003b). The movement of adult and dispersing individuals in the breeding season increases the risk of car strikes and dog attacks (Dique et al. 2003b).

## 2.11 Genetics

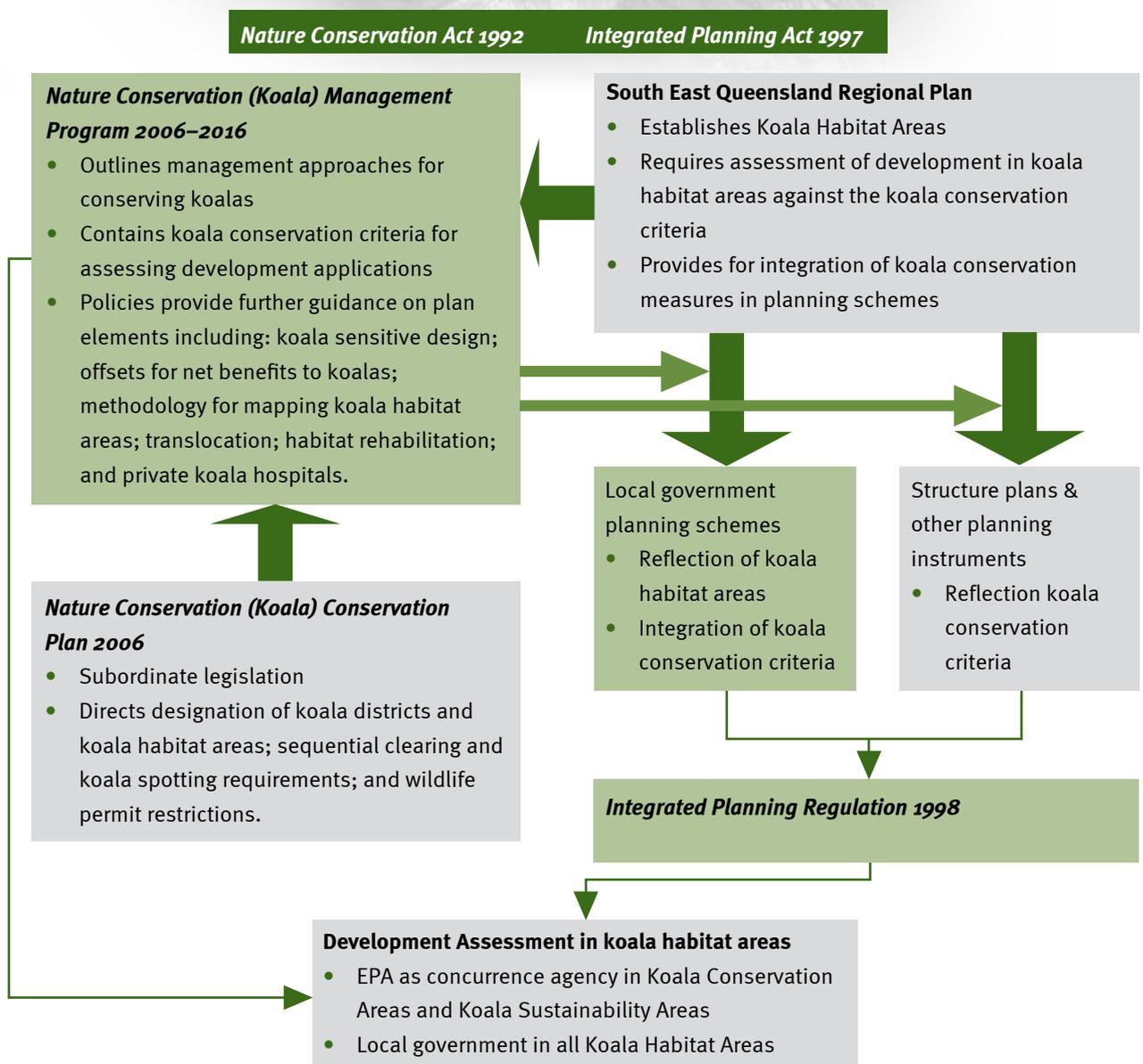
Reduction in genetic variation has been identified as a potential management issue in koala populations (Sherwin et al. 2000). Historical population crashes, translocation and fragmentation are thought to have caused a reduction in genetic variation within and among populations in southern states.

A reduction in genetic variation may also occur in highly fragmented areas in south-east Queensland (QPWS unpublished data) and may indicate a need for genetic monitoring of some highly isolated populations. Although there is low genetic variation in some populations in Australia, no natural population has been identified with certainty as declining due to low variation.

# 3 Framework

The statutory and policy framework for koala conservation in Queensland is linked to both the *Nature Conservation Act 1992* and the *Integrated Planning Act 1997* through the *South East Queensland Regional Plan 2005–2026*. The components of the framework are outlined in figure 2.

Figure 2



### 3.1 Nature Conservation Act 1992

The Nature Conservation Act provides for the conservation of nature and prescribes management principles for protected wildlife. Specific requirements to recover or conserve wildlife can be prescribed within a conservation plan.

A conservation plan for koalas has been prepared following its listing as a vulnerable species within the South East Queensland Bioregion in 2004. The *Nature Conservation (Koala) Conservation Plan 2006* forms part of a broader policy framework directed towards redressing the current decline

in koala populations, particularly in south-east Queensland. This broader policy framework is outlined by this document, the *Nature Conservation (Koala) Conservation Plan 2006* and *Management Program 2006–2016*.

### 3.2 South East Queensland Regional Plan 2005–2026

The *South East Queensland Regional Plan 2005–2026* (SEQ Regional Plan) sets out a blueprint for how future development should be accommodated in the South East Queensland region (SEQ region) while also protecting the region's natural assets. It specifies desired outcomes,

policies, and regional land use categories and includes regulatory provisions to achieve particular outcomes in relation to these elements.

The SEQ Regional Plan has incorporated regional policies for koala conservation and by doing so seeks to integrate koala conservation with development and land use planning. The SEQ Regional Plan, in Map 5, identifies Koala Conservation Areas and Koala Sustainability Areas for the SEQ region.

The Koala Plan provides further guidance on the interpretation of the SEQ Regional Plan's koala conservation policies.

## SEQ Regional Plan

### 2.2 Koala Conservation

#### Principle

Assist the survival of koalas in SEQ by protecting identified koala habitat areas and adopting conservation measures to reduce conflict between urban development and koalas

#### Policies

- 2.2.1 Define significant areas of koala habitat in South East Queensland under one of three koala habitat areas: Koala Conservation Area, Koala Sustainability Area and Urban Koala Area<sup>1</sup>.
- 2.2.2 Assess development in koala habitat areas against the koala conservation criteria contained in the *Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006–2016* or, prior to the adoption of the Conservation Plan, the *Interim Guideline: Koalas and Development*.
- 2.2.3 Ensure development in Koala Conservation Area and Koala Sustainability Area is compatible with the conservation of koalas, except where there are development commitments and, under certain circumstances, in areas required for extractive industry or community infrastructure.
- 2.2.4 Ensure development in Urban Koala Area includes measures to assist koala survival, having regard to the planning intents and requirements set out in structure plans and planning schemes.
- 2.2.5 Ensure local government considers koala conservation throughout their local government areas and encourage the identification of koala habitat areas in planning schemes.

<sup>1</sup>Refer to SEQ Regional Plan, Map 5 — Koala Management Areas

**SEQ Regional Plan Interim  
Guideline: Koalas and Development**

The *Interim Guideline: Koalas and Development* is superseded by the koala conservation criteria contained in section 5 of the Koala Management Program.

**3.3 Application of the Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006–2016**

The Koala Conservation Plan establishes three koala districts (A, B and C) in order to group similar management regimes. The boundaries

of the districts have been determined on the basis of the conservation status of the species and the significance of threatening processes affecting the species. Koala districts are identified in Map 1.

The objectives for each koala district include the following:

- to ensure measures are adopted for the district to achieve the purposes of this plan;
- to monitor koala populations in the district and threats to their survival;
- to monitor and review the effectiveness of conservation measures for koalas and koala habitats in the district;

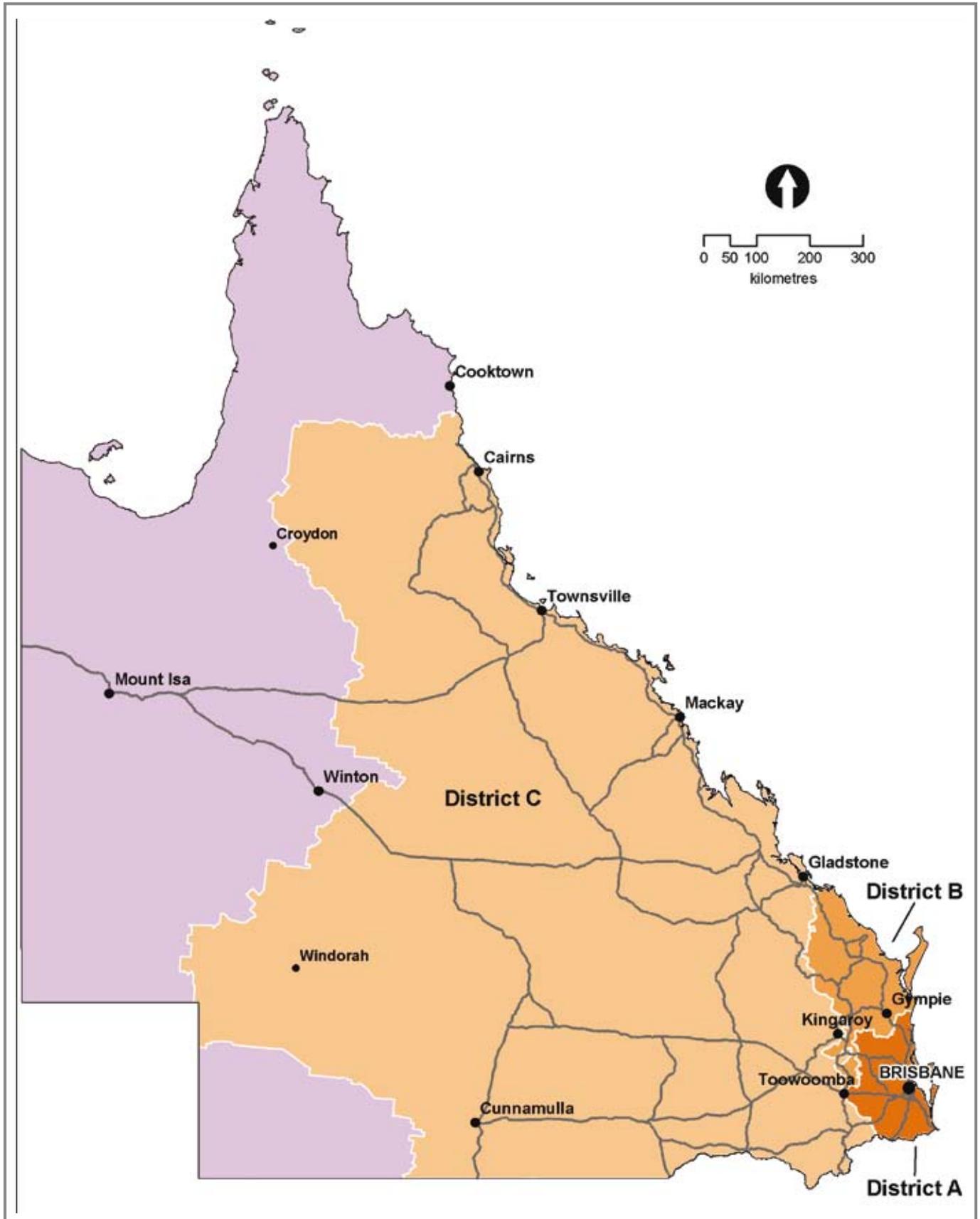
- to provide education and management strategies to help manage threats to the survival of koala populations in the wild, including, for example, threats caused by dog attacks or vehicle strikes.

The districts are aligned to local government authority boundaries of local governments shown in Table 1, to ensure the physical boundaries are easily identified.

**Table 1 Wildlife districts and local government authority boundaries**

Koala District A Vulnerable wildlife <i>Highest threat</i>	Koala District B Vulnerable wildlife <i>Moderate to high threat</i>	Koala District C Least concern wildlife <i>Lowest threat</i>
Beaudesert, Boonah, Brisbane, Caboolture, Caloundra, Esk, Gatton, Gold Coast, Ipswich, Kilcoy, Laidley, Logan, Maroochy, Noosa, Pine Rivers, Redcliffe, Redland, Toowoomba.	Biggenden, Bundaberg, Burnett, Cherbourg, Cooloola, Crows Nest, Gayndah, Hervey Bay, Isis, Kilkivan, Kolan, Maryborough, Miriam Vale, Murgon, Nanango, Perry, Tiara, Woocoo.	Aramac, Atherton, Balonne, Banana, Barcaldine, Barcoo, Bauhinia, Belyando, Bendemere, Blackall, Booringa, Bowen, Broadsound, Bungil, Burdekin, Cairns, Calliope, Cambooya, Cardwell, Charters Towers, Chinchilla, Clifton, Dalby, Dalrymple, Douglas, Duaringa, Eacham, Eidsvold, Emerald, Etheridge, Fitzroy, Flinders, Gladstone, Goondiwindi, Herberton, Hinchinbrook, Ilfracombe, Inglewood, Isisford, Jericho, Johnstone, Jondaryan, Kingaroy, Livingstone, Longreach, Mackay, Mareeba, Millmerran, Mirani, Monto, Mount Morgan, Mundubbera, Murilla, Murweh, Nebo, Paroo, Peak Downs, Pittsworth, Quilpie, Rockhampton, Roma, Rosalie, Sarina, Stanthorpe, Tambo, Tara, Taroom, Thuringowa, Townsville, Waggamba, Wambo, Warroo, Warwick, Whitsunday, Woorabinda, Wondai, Yarrabah.

**Map 1** The State map – koala districts



### **Koala District A**

District A comprises 18 local government authorities in the southern portion of the South East Queensland Bioregion, where koalas are listed as *vulnerable*. District A also corresponds to the SEQ region under the SEQ Regional Plan.

In District A, koala population densities are the highest, however the threats associated with habitat destruction and human impacts are also the greatest, resulting in a reduction in the long-term viability of some koala populations.

Within this district, the State has identified known koala habitat and areas where koalas live. Koala Habitat Areas are statutory areas identified by the SEQ Regional Plan under the

Integrated Planning Act, and are referred to as:

- Koala Conservation Areas;
- Koala Sustainability Areas; or
- Urban Koala Areas.

These areas are shown on Map 2, Summary of Koala Habitat Areas<sup>2</sup>.

A fourth category, Koala Living Area, has also been identified. This category does not form part of the Koala Habitat Area due to its non-statutory intent.



<sup>2</sup>For more detailed information at a cadastral scale, refer to the State Map of Koala Habitat Areas in section 5: Koala conservation criteria for development assessment.

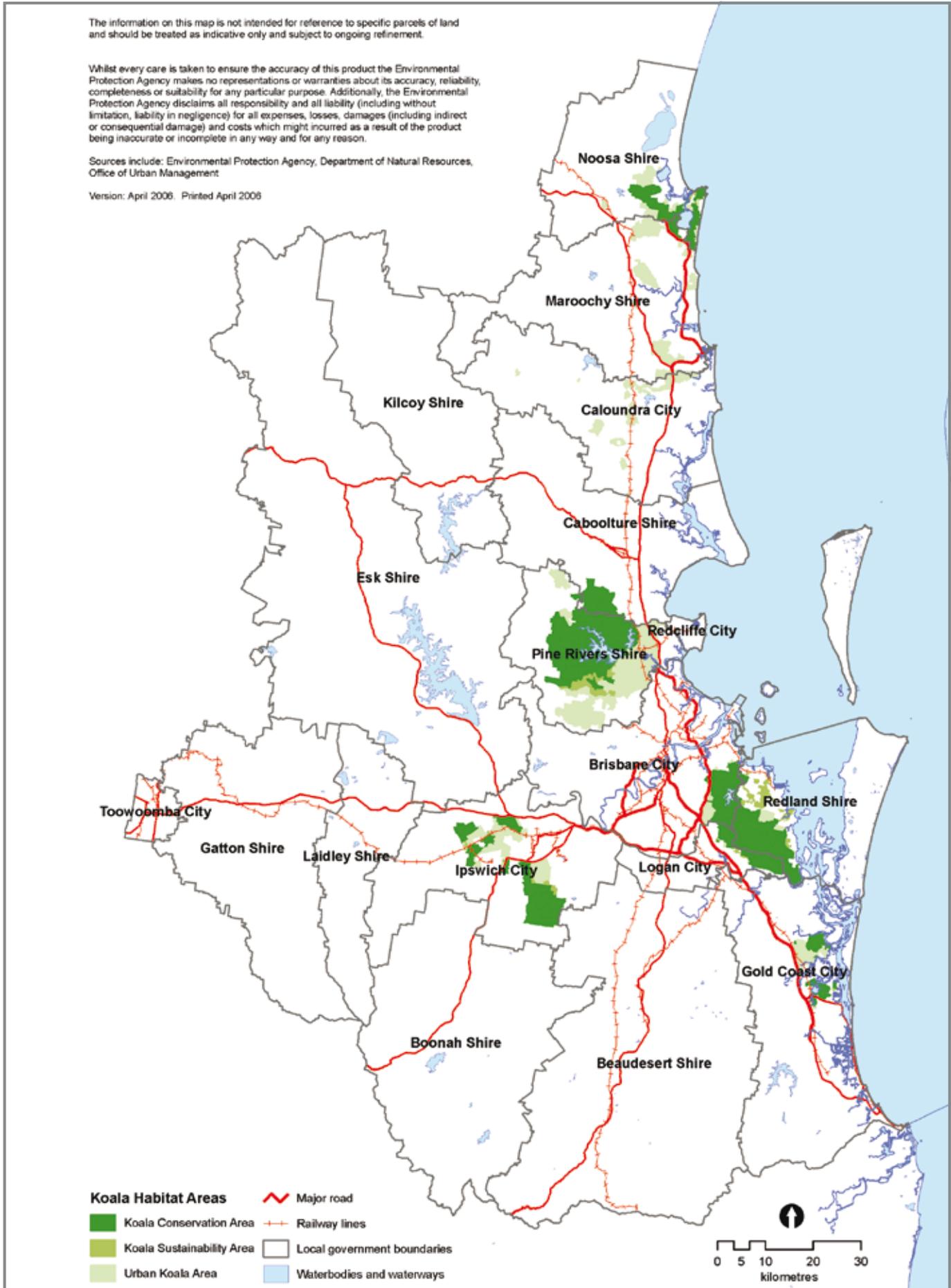
## Map 2 Summary of Koala Habitat Areas

The information on this map is not intended for reference to specific parcels of land and should be treated as indicative only and subject to ongoing refinement.

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Sources include: Environmental Protection Agency, Department of Natural Resources, Office of Urban Management

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The Koala Plan recognises Koala Conservation Areas and Koala Sustainability Areas as the most critical to the continued existence of viable koala populations in the wild. The following table (table 2) provides general characteristics of both the Koala Habitat Areas and Koala Living Area.

**Table 2 Koala Habitat Areas**

Koala Conservation Area	Koala Sustainability Area	Urban Koala Area	Koala Living Area
<b>Statutory, Habitat and Locational Characteristics</b>			
<ul style="list-style-type: none"> <li>• Statutory intent</li> <li>• Located within the Regional Landscape and Rural Production Area under the SEQ Regional Plan</li> <li>• Important koala habitat - critical source areas for the survival and dispersal of koalas across the landscape</li> <li>• Large areas of relatively intact remnant or regrowth eucalypt-dominated forest and woodlands</li> <li>• Area may include cleared areas and areas of fragmented forest and woodlands</li> <li>• Area generally reflects high connectivity between patches</li> <li>• Area contains high koala habitat values and/or generally high koala densities (relative to the local government area)</li> <li>• Habitat contains a mosaic of private lands, public lands and park estate with limited infrastructure or urban development</li> </ul>	<ul style="list-style-type: none"> <li>• Statutory intent</li> <li>• Located within either the Urban Footprint or Rural Living Area under the SEQ Regional Plan</li> <li>• Important koala habitat – critical to the survival and dispersal of koalas across the landscape</li> <li>• Areas of relatively intact and/or fragmented remnant and regrowth eucalypt-dominated forest and woodlands</li> <li>• Area may include cleared areas</li> <li>• Area generally reflects medium/high connectivity between patches</li> <li>• Contains high koala habitat values and/or generally high koala densities (relative to the local government area)</li> <li>• Habitat contains a mosaic of private lands, public lands and park estate. Increase levels of infrastructure and urban development</li> <li>• Habitat may contain open space areas and existing rural residential development</li> </ul>	<ul style="list-style-type: none"> <li>• Statutory intent</li> <li>• Located within either the Urban Footprint or Rural Living Area under the SEQ Regional Plan</li> <li>• Area subject to a recognised urban planning intent within local government planning instruments</li> <li>• May contain patches of fragmented remnant and regrowth eucalypt-dominated woodland</li> <li>• May include cleared areas</li> <li>• Varied levels of connectivity</li> <li>• Contains areas with both high and lower koala habitat values and/or koala densities (relative to the local government area)</li> </ul>	<ul style="list-style-type: none"> <li>• Non-statutory intent</li> <li>• Located within either the Regional Landscape and Rural Production; Rural Living Area or Urban Footprint under the SEQ Regional Plan</li> <li>• Area may support small bushland areas, vegetated creek lines, parks, scattered trees, residential areas with landscaped gardens and cleared areas</li> <li>• Area is known to support pockets of highly fragmented koala habitat and/or lower density koala population</li> <li>• Area may be highly urbanised with a high level of infrastructure provision or be located in a highly modified rural or semi rural environment</li> </ul>



Koala Habitat Areas and Koala Living Areas have been identified using a range of data sources including:

- existing studies both undertaken by the EPA and local government;
- koala sightings and koala hospital records;
- expert panel knowledge and data; and
- koala habitat suitability modelling.

### ***Koala District B***

Koala District B comprises 18 local government areas in the northern portion of South East Queensland Bioregion, where koalas are listed as *vulnerable*. The district supports koala densities generally lower than 0.2 koalas/ha and characteristically contains habitat in areas zoned for rural purposes.

### ***Koala District C***

Koala District C comprises the remaining 77 local government authorities where koalas are found. Although there is evidence of decline in this district, koalas are classified as *of least concern wildlife* under the Nature Conservation Act due to a generally lower perceived threat to their survival.

# 4 Management approaches

The conservation of koalas in Queensland is dependent on identifying and addressing the key threatening processes. These are, habitat loss and fragmentation, vehicular traffic, dogs and disease (as a result of anthropogenic factors). Koala populations are generally affected by more than one threatening process.

The Queensland Government will safeguard the future of the koala using a suite of statutory and non-statutory tools, ranging from regulatory measures to community education programs. The Koala Management Program outlines management approaches that have been tailored to suit various populations and areas of the state. The strongest management requirements are in south-east Queensland where the species is listed as *vulnerable* and the threats are the greatest.

## 4.1 Development and land use

### Policy statements

- Protect koalas and koala habitat through existing statutory processes to manage development and land use.
- Recognise existing development commitments.
- Reflect Koala Habitat Areas and the koala conservation criteria for development assessment within local government planning instruments.

- Consider the objectives for each koala district and the overall outcomes for Koala Habitat Areas in the planning and management of koalas and koala habitat.
- Encourage innovation and collaboration to achieve planning solutions in areas of koala habitat.

### Comments

The clearing and fragmentation of koala habitat for urban development has the single most significant impact on koala populations. Resulting impacts from vehicles, dogs and disease magnify the threat from urban development.

The strongest management strategies to address this threatening process are focussed on Koala District A where significant koala populations remain and development pressure is high. In this area, the SEQ Regional Plan, which was released on 30 June 2005, has been utilised to deliver specific koala conservation measures.

It is acknowledged that similar threatening processes may exist in District B and parts of District C, however, sufficient data on koalas and koala habitat and the impacts of urban development on these populations is not available to substantiate a similar management strategies at this point in time.

### Development in Koala Habitat Areas assessable under the Integrated Planning Act

The SEQ Regional Plan requires certain new development occurring in Koala Habitat Areas and captured by the Integrated Development Assessment System under the Integrated Planning Act, to be assessed against koala conservation criteria contained in this Koala Management Program. The koala conservation criteria are based on the Koala Habitat Area, type of development activity and whether the development is committed or uncommitted.

A range of issues relevant to koalas and koala habitat are addressed by the koala conservation criteria including vegetation clearing, degradation of habitat, generation of additional vehicle traffic and the permeability of the proposed development to koalas.

The koala conservation criteria allow for existing development commitments (being development that is consistent with either an existing development approval, the local government planning scheme or SEQ Regional Plan).

Applications proposing uncommitted development within the important Koala Conservation and Koala Sustainability Areas must meet more stringent guidelines.

Any application must demonstrate that the future use of the land is compatible with the protection of koalas and koala habitat for it to satisfy the koala conservation criteria.

In defined circumstances, uncommitted extractive industry in Key Resource Areas or community infrastructure, made assessable development under the Integrated Planning Act or a local government planning scheme, may be approved within Koala Conservation or Koala Sustainability Areas despite their likely negative impact on koalas. The koala conservation criteria deal with these developments separately and require that the impacts of the development be offset by providing a net benefit for koalas. Development in these areas will be assessed using *Policy 2: Offsets for net benefit to koalas and koala habitat* to determine whether the application meets this requirement. The development must meet this requirement for it to be approved.

Additionally, uncommitted community infrastructure will be required to demonstrate an overriding need in the public interest justifying its location within these areas.

Urban Koala Areas are recognised as having both koala habitat values and an urban purpose planning intent as defined within local government planning schemes. Consequently, the koala conservation criteria requires that all development in these areas include measures to assist the koala's survival, where these measures do not inhibit the ability of the development to effectively achieve its urban purpose. Such measures may include (but are not limited to) the retention of habitat linkages, koala habitat trees, landscaping with native vegetation, and koala-friendly fencing.

An important focus for Urban Koala Areas will be on the integration of

strategic koala conservation outcomes within higher level planning documents such as local growth management strategies, structure plans and planning schemes.

The EPA will provide assistance to local government in the interpretation of the koala conservation criteria. This will include providing technical guidelines that address matters such as assessing the impact of development on koala movement and calculating net benefits.

### ***EPA concurrence agency role in the SEQ region***

The EPA has nominated to become a concurrence agency under the Integrated Planning Act for defined development in Koala Conservation and Koala Sustainability Areas. This will enable the EPA to take an active role in ensuring development in these areas is compatible with the conservation of koalas and koala habitat or where the development is committed development, ensuring the impacts are mitigated to the extent practicable.

The EPA will be a concurrence agency for applications for a material change of use; reconfiguring a lot; or operational work if it involves one or more of the following triggers, as contained in the *Integrated Planning Regulation 1998*:

- additional lots;
- clearing of native vegetation;
- new buildings or extension to new buildings;
- extraction of resources;
- excavating or filling; or
- generating additional vehicle traffic.

The koala conservation criteria and policies contained within this Koala Management Program are relevant to the EPA when assessing development applications.

### ***Koala conservation within local government planning schemes***

All local governments in Koala Districts A, B and C are encouraged to consider koala conservation in the making of their planning schemes and associated planning and development assessment mechanisms.

In the SEQ region, local government planning schemes are required to be consistent with the outcomes of the SEQ Regional Plan. The SEQ Regional Plan requires local government to consider koala conservation throughout their local government areas. They are also encouraged to identify koala habitat in planning schemes.

### ***Relevant sections and policies in the Koala Management Program***

<b>Section 5</b>	Koala conservation criteria for development assessment
<b>Policy 1</b>	<i>Koala Sensitive Development</i>
<b>Policy 2</b>	<i>Offsets for substantial net benefit to koalas and koala habitat</i>
<b>Policy 3</b>	<i>Determining overriding need in the public interest</i>
<b>Policy 4</b>	<i>Koala survey methodology for site assessment</i>
<b>Policy 6</b>	<i>Vegetation clearing practices</i>
<b>Policy 8</b>	<i>Drafting and amending planning schemes</i>
<b>Policy 10</b>	<i>SEQ Regional Plan Investigation Areas</i>
<b>Policy 12</b>	<i>Local road placement, design and upgrade</i>

## 4.2 Habitat protection and vegetation clearing

### Policy statements

- Ensure the survival of the koala through the identification, protection, management and rehabilitation of koala habitat.
- Encourage local governments to map koala habitat.
- Use planning mechanisms and vegetation management strategies to protect koala habitat.
- Encourage government, industry, community and landholders to consider a range of options for the protection of koala habitat.
- Encourage and support philanthropic activities and/or organisations that may assist in providing conservation outcomes for koalas, including the protection of habitat.

### Comments

Habitat loss has been identified as the greatest threat to koala survival. Koala habitat is lost through clearing for urban development, broad scale clearing in rural and peri-urban areas and fragmentation by development creating barriers to movement between retained patches of bushland. Bushland can also become degraded through poor management, fire, or pest and weed infestations.

Habitat protection and vegetation retention is of critical importance to koala conservation in Queensland. Some koala habitat is already protected through its inclusion with national parks, State Forests and other State land tenures. In addition, a range of measures is in place or are available to government, industry and the community to achieve habitat protection and retention, complementing the approaches in the Koala Plan.

### Regulation of clearing under existing legislation

Most koala habitat occurs on land with private tenure (Patterson 1996; ANZECC 1998). The Queensland Government has taken a significant step to address habitat loss on private land by phasing out broad scale clearing of remnant vegetation under the *Vegetation Management Act 1999*. This initiative will provide significant benefits to koalas and other wildlife in remnant vegetation across the state.

Certain development applications can continue to be made to clear native vegetation under the *Vegetation Management Act*. However, clearing is generally prevented if the clearing is to occur in an area of essential habitat. Essential habitat refers to habitat for a species of wildlife listed as vulnerable, rare, near threatened or endangered under the *Nature Conservation Act*.

Essential habitat is delineated on a map prepared by the Environmental Protection Agency (EPA) and certified for use by the Department of Natural Resources, Mines and Water. Koala sightings data and modelling of potential habitat will be used to include koala habitat within the portion of the essential habitat map that is part of the South East Queensland Bioregion (where the koala is listed as vulnerable).

To avoid duplication, the Department of Natural Resources, Mines and Water will not consider the essential habitat map in relation to koalas when assessing vegetation clearing applications under the *Vegetation Management Act* if the clearing is proposed to occur within a Koala Habitat Area. Other legislation, such as the *Water Act 2000*, also regulates the destruction of vegetation. The protection of vegetation within

waterways under the *Water Act* is of particular significance for koalas as koalas tend to rest and forage in trees situated within riparian areas.

### Avoiding injuries to koalas when clearing koala habitat trees

Vegetation clearing has the potential to result in injury or death to koalas. In response to this threat, the Koala Plan requires the clearing of koala habitat trees in Districts A and B to be undertaken in a sequential manner, allowing koalas present to move out of the site of their own accord in preference to being moved. Further, the clearing of koala habitat trees in a Koala Habitat Area must be carried out in the presence of a koala spotter who has the primary role of locating koalas in the trees.

### Mapping and protection of koala habitat

In the SEQ region, the State Government has identified known important koala habitat. Outside these known areas and in other parts of the state there is less information on their usage of habitat and abundance. Koalas are however, known to be generally widespread in their distribution.

Local government, in collaboration with the EPA, is encouraged to undertake further mapping to identify koala habitat and provide additional habitat protection particularly in the SEQ region and in areas of the State subject to higher growth pressures where koalas and koala habitat are known to occur. The identification of koala habitat is particularly important in areas of non-remnant vegetation, which koalas readily use as habitat. This vegetation is not necessarily protected from clearing under the *Vegetation Management Act*.

Strategies for the protection of koala habitat may include the linking of koala habitat to local government conservation initiatives (e.g. Land for Wildlife, Voluntary Conservation Agreements, green levies), community education and the incorporation of provisions into local government planning schemes. These provisions may include koala habitat mapping/ biodiversity overlays/codes and relevant development assessment triggers, the assessment of applications to clear non-remnant vegetation and requirements for koala and koala habitat surveys.

### **Voluntary conservation of koala habitat**

Landholders can voluntarily protect significant habitat by having their land declared a nature refuge under the Nature Conservation Act. This is a category of protected area that provides for the protection of threatened ecosystems, plants or animals, while allowing the ecologically sustainable use of a natural resource by the landowner. As of May 2006, 205 nature refuges protecting 464,365ha were registered with the EPA across the state, with at least 10 protecting koala habitat.

The Koala Bushland Coordinated Conservation Area (CCA) located in the Koala Coast (parts of Brisbane and Logan Cities and Redland Shire), also protects habitat. The CCA, a form of protected area estate under the Nature Conservation Act, was a voluntary but formal agreement between State and local government landholders to co-ordinate the management of 1170ha of adjoining parcels of land and limit activities to those that are compatible with the conservation of the koala.

Some local governments have a range of nature conservation initiatives to protect koala habitat, including

voluntary conservation agreements. Rate deferral or reduction has been used in some areas as an incentive to protect and manage land of conservation significance. These types of programs result in the protection of valuable koala habitat and habitat linkages, and are encouraged.

### **Other land based conservation initiatives**

The Queensland Government has established the Trust for Nature, a program aimed at protecting significant natural areas in private ownership through a range of mechanisms. These mechanisms include the purchase of significant conservation value properties, the application of conservation covenants on that land to preserve its natural values and on-selling of the covenanted land to fund the purchase of further properties. This program can have important benefits for the protection of koala habitat in Queensland. Preserving open space in south-east Queensland is a priority for the Trust.

A number of local governments have introduced green levies to purchase conservation significant land and open space. These programs provide an excellent opportunity to secure bushland with koala habitat values.

### **Rehabilitation**

Rehabilitation or revegetation of degraded habitats is also important in order to restore, enhance or maintain existing koala habitat. Rehabilitation of easements, creek lines and parkland in urban and rural areas will provide significant habitat and habitat links for koalas. Local governments are encouraged to identify areas for rehabilitation or revegetation that can function as habitat or habitat linkages in the future and facilitate this rehabilitation or revegetation work being undertaken.

### **Fire**

Fire is a direct threat to koalas and can deplete some plant species and favour others that are highly flammable and contribute to the fuel load. Very hot fires that extend into the canopy (crown fires) can kill koalas and other arboreal animals and effective fire management strategies can help reduce the chance of them occurring (Melzer et al. 2000).

### **Pest plants and animals**

Non-native plant species and weeds penetrate koala habitat areas from a variety of sources, including seed spread from other wildlife and the dumping of garden waste. Weeds can degrade koala habitat by changing the composition of species, limiting seed regeneration, increasing fuel loads and choking or smothering trees.

Feral animals that degrade habitats by changing the structure of ecosystems can impact on koalas. Wild dogs are a particular threat to koalas moving between trees.

The most important tool in the fight against pest plants and animals is the *Land Protection (Pest and Stock Route Management) Act 2002*. This legislation governs the actions of everyone with respect to the control and management of declared plants and animals in the state. It provides local governments with the impetus to co-ordinate actions to control pest plants and animals across their local government areas. Legal instruments are also available to enforce the management of high-priority weeds and pest animals.

### Relevant sections and policies in the Koala Management Program

- Policy 4 *Koala survey methodology for site assessment*
- Policy 6 *Vegetation clearing practices*
- Policy 7 *Koala habitat assessment and mapping*
- Policy 8 *Drafting and amending planning schemes*
- Policy 11 *Rehabilitation of land to provide koala habitat*

### 4.3 State-controlled community infrastructure

#### Policy statement

- Ensure all State-controlled community infrastructure addresses the Koala Plan.

#### Comments

The provision of infrastructure is vital to Queenslanders' ongoing quality of life. South-east Queensland is experiencing the fastest growth rate of any area within Australia. It is expected that by 2026 the population of South-east Queensland will be approximately 3.7 million people.

Infrastructure includes road and rail corridors, development for water and energy as well as social and community infrastructure. The State Government recognises the vital importance of timely infrastructure provision to the efficient and orderly growth in south-east Queensland. In April 2005, the State Government released the *South East Queensland Infrastructure Plan and Program 2005–2026*.

Infrastructure, such as road corridors, has the potential to impact on koalas and koala habitat by reducing the amount of available habitat. It can also

fragment and/or otherwise degrade the habitat that remains. Road corridors result in high levels of koala mortality due to vehicle strike, and create barriers to movement.

Applying the policies and requirements of the Koala Plan will largely depend on community infrastructure developments either being assessable development under the Integrated Planning Act or local government planning schemes, or subject to 'designation of land for community infrastructure' under the Integrated Planning Act.

It is the intent of the Koala Plan to ensure all community infrastructure provided by the State addresses koala conservation, irrespective of whether the particular development is assessable, subject to community infrastructure designation, or exempt development under the Integrated Planning Act. This approach is a reflection of the State's commitment to the protection of koalas and koala habitat and intention to address threatening processes on koalas.

Accordingly, the EPA proposes to develop Memoranda of Understanding with key State government infrastructure providers to address development in Koala Conservation and Koala Sustainability Areas within the SEQ region. The Memorandum of Agreement will describe the role and responsibilities of the key stakeholders and the EPA, and the processes applicable to development. It will address:

- the provision of net benefit offsets to koalas and koala habitat;
- demonstrating overriding public need in the public interest justifying the development's location within the Koala Conservation or Koala Sustainability Area; and
- koala sensitive development.

The Memorandum of Understanding will apply to development identified in the South East Queensland Infrastructure Plan and Program or other such strategic infrastructure documents.

### Relevant sections and policies in the Koala Management Program

- Policy 1 *Koala sensitive development*
- Policy 2 *Offsets for substantial net benefit to koalas and koala habitat*
- Policy 3 *Determining overriding need in the public interest*
- Policy 4 *Koala survey methodology for site assessment*
- Policy 6 *Vegetation clearing practices*
- Policy 11 *Rehabilitation of land to provide koala habitat*

### 4.4 Vehicle related koala mortality

#### Policy statement

- Investigate and monitor mitigation measures to reduce the level of vehicle-related mortality.
- Maintain koala support services to collect, treat and document injured koalas.
- Promote community awareness of koala vehicle related mortality.

#### Comments

Vehicle related koala mortality has the most significant impact on koalas after habitat clearing and fragmentation. Koalas living in developed areas have

to cross streets and highways to get to pockets of remaining fragmented habitat. Their ability to do this is affected by a number of factors including traffic volume, traffic speed, road position and road design. It is predominantly breeding-age animals that are killed by vehicles.

While koala-exclusion fencing can keep animals off the roads, it can also interfere with migration and dispersal, which in turn affects genetic diversity. These processes are important in maintaining the viability of some koala populations, particularly in fragmented habitats. The use of exclusion fencing to keep koalas from sections of roads should only be considered if alternative means for koala movements are provided.

Integrated solutions considering population and habitat dynamics, improved road design, exclusion techniques and reduced traffic speed will be more effective than relying on single strategies to address road deaths.

The application of the koala conservation criteria will result in new developments being refused in Koala Conservation Areas or Koala Sustainability Areas if the development is likely to generate increased vehicular traffic volumes at night-time. This will prevent the creation of new accident ‘hotspots’ in these important koala habitat areas.

Development in Urban Koala Areas that includes new roads is required to incorporate measures to address the risk to koalas from vehicle strike to the extent practicable. These measures may include:

- the use of barriers and channel fencing that lead koalas to designated crossing points such as underpasses and overpasses;

- improved lighting and verge maintenance to make animals more visible when crossing roads;
- traffic calming to slow traffic down; and
- reduced speed limits.

Local government controlled roads are exempt from assessment under the Integrated Planning Act and are therefore not subject to the koala conservation criteria. However, a Best Practice approach is strongly advocated where new roads or upgrades to existing roads are planned within koala habitat. Best Practice is centred around an ‘avoid, minimise and mitigate’ approach to impacts on koalas and koala habitat.

For existing roads with proven high koala mortality, hazard reduction measures directed at addressing accident ‘hotspots’ is strongly encouraged. Where habitat fragmentation is putting koalas at greater risk from being struck by vehicles, preference should be given to widening existing roads, rather than further fragmenting habitat by the construction of new roads in areas of koala habitat.

The Department of Main Roads is developing a ‘Main Roads Koala Conservation Plan Policy’ to clarify its position in relation to koala management in the South East Queensland Bioregion. The policy will outline strategies to contribute towards conservation outcomes for koalas.

The Koala Plan will also use education as a tool to address the risk to koalas from vehicle strike. Raising awareness among drivers of the presence of koalas and the importance of slowing vehicle speed may be more effective in motivating drivers to reduce their speed when combined with the direct regulation of speed, which on its own

has been problematic in the past. A reduced vehicular speed also has benefits for human safety.

### ***Relevant sections and policies in the Koala Management Program***

**Section 4.3** State-controlled community infrastructure

**Section 4.10** Education and community awareness

**Policy 12** *Local road placement, design and upgrade*

## 4.5 Domestic dog related koala-mortality

### Policy statement

- Increase community awareness of domestic dog related koala-mortality.
- Promote koala-sensitive dog ownership.

### Comments

Domestic dogs have a significant and preventable impact on koala populations, particularly in south-east Queensland. Attacks from domestic dogs are the third most significant known cause of death behind car strikes and habitat clearing. Although there would be some predation on koalas by wild dogs, dog-related mortality is principally caused by domestic dogs, generally in suburban backyards. A study (de Villiers et al. in press [dogs]) demonstrated that:

- Although they occur throughout the year, more dogs attack during July to September (the months leading up to koala breeding). There is a seasonal peak in dog attacks in September, which particularly affects young males.
- Some 96 percent of recorded attacks are by dogs larger than 10kg in weight with few attacks by dogs weighing less than 7kg.
- If two or more dogs are present at a property there is a higher incidence of attack.
- The frequency of dog attacks in a suburb strongly correlates with the density of dogs in the suburb. Attacks on sick animals are no more frequent than for healthy koalas.

The SEQ region (District A) has the highest densities of healthy koalas in Queensland but also the highest human population and the highest risk from domestic dog attack. Measures to

reduce impacts on koalas, particularly in District A, are important elements in the Koala Management Program's approach to improve the survival of koalas and their ability to disperse across the landscape.

It is recognised that addressing the threat to koalas posed by domestic dogs is a difficult community issue to solve and involves multiple stakeholders and management strategies.

### Community awareness

The EPA maintains the position that people have the right to own a dog, but that right does not extend to a dog injuring or killing other animals including koalas. The EPA will collaborate with local government, community organisations, dog owners and developers, to establish an education program that results in dog owners taking appropriate actions to reduce the risk of their dog attacking koalas.

Education will play a strong role in raising awareness among dog owners of the impact of dog attacks on koalas and of their responsibilities under existing legislation. Education strategies will focus on existing residential areas where koalas live and include a number of key messages:

- As almost all attacks occur at night, limiting the movement of dogs between dusk and dawn would be the single most effective way of ensuring dogs and koalas do not come into contact. This can be achieved by keeping dogs indoors at night where they can be effective watchdogs and good companions.
- Research indicates that households containing large dogs have a higher rate of attacks on koalas. 'Koala-friendly' dog breeds are breeds that generally do not grow to more than 7–10kg in size. Small but alert dogs are also effective for home security.

- Koala exclusion fencing can be utilised to prevent koalas entering yards where there are dogs. Koala exclusion can be achieved by installing fencing with a design or materials that prevents koalas from climbing the fence or by cheaply retrofitting existing fences to prevent koalas climbing the fence.

Options for the effective control of a domestic dog in existing built environments may include:

- keeping the dog in a suitable enclosure (particularly at night) that places a physical barrier between it and koalas (e.g. a pen, kennel, garage or house) or modifying existing boundary fences to exclude koalas (i.e. exclusion fencing); or
- tethering the dog at night on a short leash, with the provision of appropriate shelter, food and water, to limit the area of premises where a dog could attack a koala.

Options associated with the design and construction of new residential estates within Koala Habitat Areas may include:

- creating dog free estates using covenants or community title to prohibit in perpetuity, the keeping of dogs, or limiting of the breed/size of dog allowed to be kept;
- incorporating exclusion fencing on part of a lot or premises to separate dogs and koalas.

### Relevant sections and policies in the Koala Management Program

Section 4.10 Education and community awareness

Policy 1 Koala sensitive development

## 4.6 Translocation

### Policy statement

- Restrict the translocation of koalas to exceptional circumstances under strict scientific guidelines.

### Comments

When there is conflict between the habitat requirements of wildlife and human requirements for land use, there can be pressure to ‘move the wildlife’. Translocation, or the relocating of animals out of areas to be developed and into other habitat, can be perceived as a viable option. Unfortunately, this wrongly assumes that there is suitable habitat available, the translocated wildlife will survive and the habitat has the capacity to support additional wildlife including koalas.

In Australia, koalas have been translocated for a variety of reasons including to reduce over-abundance at the capture site, relocate rescued and rehabilitated animals, restock areas, remove animals from areas to be cleared, reintroduce koalas to perceived vacant habitat, and introduce koalas to areas outside their natural range.

Translocation can have a significant impact on the individuals being translocated to a new area of habitat as well as on the other wildlife occupying that habitat. Many of Australia’s most intractable environmental problems have been caused by unwise translocation of animals and plants from interstate and overseas. Nonetheless, translocation can be an effective tool in the recovery of threatened species as part of planned and sustained research-based recovery programs.

Handling a koala in order to translocate the animal is regulated under the

Nature Conservation Act and requires a permit. The translocation of koalas will not be approved in Queensland except under a controlled scientific research approval aimed at expanding knowledge about wildlife translocation.

### Relevant sections and policies in the Koala Management Program

**Policy 5** *Requirements for the translocation and release of koalas*

**Policy 6** *Vegetation clearing practices*

## 4.7 Koala rehabilitation

### Policy statement

- Facilitate a management system for the rescue, rehabilitation and release of sick, injured and orphaned koalas.
- Establish and maintain partnerships with providers to ensure wider access to koala care, including the establishment of privately operated koala care facilities, where appropriate.
- Involve wildlife rehabilitation groups, volunteers and other organisations in the rehabilitation of rescued koalas.
- Provide for the rescue, treatment, rehabilitation and release of sick, injured or orphaned koalas, including the development of guidelines.
- Return rehabilitated koalas with high chances of survival to the wild.
- Rehabilitated koalas are released as close as possible to where they were found.

### Comments

The EPA, a number of zoos, philanthropic organisations, veterinarians and an extensive network of highly committed and trained volunteers provide rescue, rehabilitation and release services for

koalas across Queensland. Through this action, many hundreds of koalas have been successfully returned to the wild that would otherwise not have survived, making it an important contribution to koala sustainability.

The EPA operates a comprehensive koala welfare, rescue and rehabilitation system through the Moggill Koala Hospital and volunteer network. A private koala hospital also operates at Beerwah, established under an agreement between the EPA and Australia Zoo. This facility works in concert with the Moggill facility, sharing information on treatments and injury, recovery and release data. A number of zoos in south-east Queensland also treat injured koalas and maintain contact with wildlife rehabilitation groups to care for sick, injured and orphaned koalas.

There is potential for other koala hospital facilities to be developed in the future. Such facilities will need to operate under an agreement with the EPA, working under guidelines aimed at maximising the return of koalas to the wild.

Optimum husbandry standards are critical for successful rehabilitation of koalas (Carrick et al. 1996). Facilities at koala hospitals and at individual carer’s premises must operate under a Rehabilitation Permit issued under the Nature Conservation Act, and comply with established standards for the rescue, rehabilitation and release of koalas.

Due to the special husbandry needs of koalas, in particular sick, injured and orphaned koalas, carers and rescue volunteers must meet stringent requirements. To be a koala carer, a person must be endorsed by the EPA or a rehabilitation group .

The Queensland Wildlife Rehabilitation Council (QWRC) has been established to assist with the development of standards and with general management of issues concerning volunteer wildlife care providers.

Their functions include:

- developing of standards that are applicable to the rehabilitation of wildlife;
- liaising directly with voluntary wildlife care providers and individual permit holders to resolve issues pertaining to wildlife handling and care and, for serious breaches, referring complaints to conservation officers for investigation;
- developing accreditation standards that will form the basis for assessing applications for rehabilitation permits;
- providing information and up-to-date advice to clients about wildlife care and rehabilitation; and
- managing wildlife welfare.

### Release

Once fully treated, koalas are returned to the area from which they originated or to nearby habitat. To improve their prospects for survival and limit the impacts on resident koalas in areas of limited habitat value, koalas are released within one kilometre of the capture site, but no greater than five kilometres from the capture site. If the original habitat has been cleared, koalas are returned to the nearest intact area of eucalypt forest or woodland. To maximise the survival of healthy animals and reduce competition for food and shelter on existing populations in a constrained habitat environment, koalas that cannot make a contribution to the ongoing reproductive success of the species are not returned to the wild.

### Relevant sections and policies in the Koala Management Program

**Policy 5** *Requirements for the translocation and release of koalas.*

**Policy 9** *Requirements for private koala hospitals.*

### 4.8 Display of koalas

#### Policy statement

- Ensure koalas are only exported from Queensland to overseas zoological institutions under agreement with the Queensland Government.
- Ensure no koalas are taken from the wild for display purposes.
- Ensure artificial insemination is used as the primary method of introducing new genetic diversity to local and overseas zoos in lieu of talking animals from the wild.
- Ensure koalas are available for interchange between zoos to maintain genetic viability.
- Ensure the commercial utilisation of koalas provides benefits to the conservation of koalas in the wild.
- Strive for continual improvement in the husbandry and health of captive koalas, in partnership with Queensland Zoological parks.

#### Comments

Koala colonies in zoos are popular visitor attractions and make an important contribution to the state, national and international tourism industry. They can also play an important role in educating visitors about the conservation and protection of koalas and their habitat. It is essential, therefore, that displays are maintained at high standards.

Koalas have specialist animal husbandry and veterinary needs. The *Code of Practice of ARAZPAQ* —

*Minimum standards for exhibiting wildlife in Queensland (Part A Koalas Phascolarctos cinereus) (2003)*, approved under the Nature Conservation Act, sets minimum standards and conditions for captive koala management in Queensland. All zoos in Queensland must comply with the provisions of this code.

The State Government does not support the export of koalas for commercial gain and seeks to limit the export of Queensland koalas, except under agreement with the Australian and Queensland governments. These agreements will be part of movement permit requirements and outline the conditions for the display of koalas, including exchange of koalas between institutions overseas and provision of resources to assist in the conservation of koalas in the wild in Queensland. Moreover, the EPA will require interstate organisations intending to move a koala interstate and then overseas to also enter into a similar written agreement.

Koalas have been gifted by governments to overseas cities and zoos in the past and such arrangements have raised awareness overseas of koala conservation in Queensland. However, where the trade in a vulnerable species is permitted, it is appropriate that demonstrable benefits be derived for the conservation of the species. Accordingly, when koalas are to be exported from Queensland, the exporting and/or receiving institutions will need to provide significant, tangible benefits towards the conservation of koalas in the wild and demonstrate that suitable husbandry and population management of captive colonies are maintained.

To reduce the need to export live koalas in the future, the EPA is also working with the University of Queensland, a world-leader on koala biological research, on reproductive technologies for koalas. In future, artificial insemination will provide for the introduction of new genetic diversity to local and overseas zoos and provide more effective, less costly measures for maintaining viable breeding colonies.

## 4.9 Research and monitoring

### *Policy statement*

- Promote and facilitate koala research and monitoring.
- Establish co-operative and independent research programs developed collaboratively with researchers, particularly universities.
- Provide research data to government agencies with land management/use responsibilities that will assist with improved koala management and planning actions.
- Ensure the implementation of sound management techniques designed to halt the decline and lead to the recovery of populations of koalas in Queensland.
- Research and evaluate strategies to mitigate the impacts of development on koalas and koala habitat.
- Collate koala reports from south-east Queensland within a central data storage location.
- Develop a system for communicating koala statistics to stakeholders involved in koala recovery actions.

### *Comments*

A large body of research information is available on koalas. The EPA, universities and non-government organisations have completed intensive koala research and monitoring programs throughout

Queensland. This work, covering population ecology, genetics, habitat mapping, reproduction, reproductive technologies, impacts of threats and assessment of conservation status has made a valuable contribution to knowledge of koala biology and management.

Research results have been used in combination with data obtained from the Moggill Koala Hospital's rehabilitation program to:

- identify key conservation areas;
- determine trends in threatening processes such as those associated with habitat loss, disease, dog attack and vehicle strikes;
- determine the success of damage mitigation initiatives;
- predict and minimise potential threatening processes, particularly those associated with development and land use; and
- shape current management strategies and develop future management initiatives to better conserve koala populations across the state.

Priorities for future research include:

- population surveys across the state;
- identification of important habitat and habitat utilisation;
- population dynamics and limiting factors, including disease;
- genetic variation in the wild;
- key sites for habitat restoration;
- road design and mitigation of road hazards;
- reduction of threats from attack by domestic dogs;
- rehabilitation techniques for rescued koalas;
- effects of climate change on koala viability; and
- identification of key koala habitat linkages to facilitate movement of koala populations responding to climate change.

Ongoing monitoring is also important to assess the effectiveness of management actions. It is important to monitor:

- the status of koala populations in key areas over the long-term;
- the effectiveness of management actions and to identify any changes required for future management;
- disturbed areas and evaluate impacts of development to provide for best practice development requirements in koala habitat areas; and
- the effectiveness of rehabilitation programs.

## 4.10 Education and community awareness

### *Policy statement*

- Promote an awareness of actions individuals can take to protect koalas and koala habitat.
- Educate the community in koala biology and conservation through the dissemination of information to the public, community groups and government authorities.
- Increase community involvement in koala conservation activities.

### *Comments*

Community awareness is vital in fostering support for koala conservation. The need for people to understand and participate in the management strategies in this plan is critical for the protection of the koala, particularly as the majority of koalas occur on privately owned land.

An education program aimed at empowering people to actively support koala conservation will help to reduce the threats arising from co-habitation e.g. dog attacks and vehicle strikes. The EPA, local governments and wildlife conservation and welfare groups will play an important role in promoting responsible behaviour in koala areas.

The EPA runs koala education programs at the Daisy Hill Koala Centre near Brisbane. Wildlife rangers conduct talks and activities while displays and videos provide information on koala biology, ecology and threatening processes. This facility, in the heart of the Koala Coast, will continue to provide education for school children and visitors as well as providing a venue where people can see koalas on display and in the wild.

Koala rescue and rehabilitation groups, including the two koala rehabilitation hospitals at Beerwah and Moggill, provide valuable opportunities to make the community aware of the koala protection issues and solutions.

A wide range of organisations also display koalas, including the EPA's own David Fleay Wildlife Park on the Gold Coast. Similarly, many organisations conduct nature-based tourism and educational activities that involve observing and presenting information about koalas at these displays and in the wild. These displays and activities play an important role in educating the community about koala conservation issues. The onus is on these organisations to ensure messages to visitors and participants encourage their active contribution to koala conservation.

Key messages for any education program may include:

- the status of koalas and the need to conserve them;
- the importance of retaining habitat and trees;
- the responsibilities of property owners to ensure the safety of the koala on their properties;
- the management of dogs in koala habitat;
- who to contact if a person finds an injured or dead koala;

- the importance of vehicular speed restrictions in koala habitat;
- koala sensitive development in Koala Habitat Areas; and
- protection actions by communities that can make a difference.

Articles in local newspapers, news items on electronic media, community service announcements and brochures, information sheets and permanent displays at public locations such as veterinary surgeries, EPA and other community education facilities, shopping centres and libraries will assist in communicating koala conservation messages. Information can also be provided through rates notices, dog registration renewal notices and official web sites.

Map 3. *Education and community awareness* identifies locations in south-east Queensland that will benefit from community education and awareness programs. These areas reflect Koala Habitat Areas and Koala Living Areas. The identification of these areas does not restrict a more widespread approach to providing education and community awareness programs.

Koala Living Areas represent a non-statutory classification identified solely by the Koala Management Program. These areas are located within south-east Queensland and are predominately located in highly developed areas but may also occur in other areas, including rural or rural-residential areas where koala populations are known to occur but not at densities consistent with Koala Habitat Areas.

Koalas within Koala Living Areas are highly reliant on local parks, treed or landscaped gardens, clumps and individual trees and vegetated creek lines, and face significant threats from

domestic dogs, traffic and removal of habitat trees. Opportunities may exist, subject to the planning intent of the area, to improve the outcomes for these individuals predominately through community education and awareness programs targeting these threats. Opportunities may also exist for local government, where it elects to do so, to target these areas through a variety of mechanisms such as local laws, community bushcare activities and Council's landscaping activities.

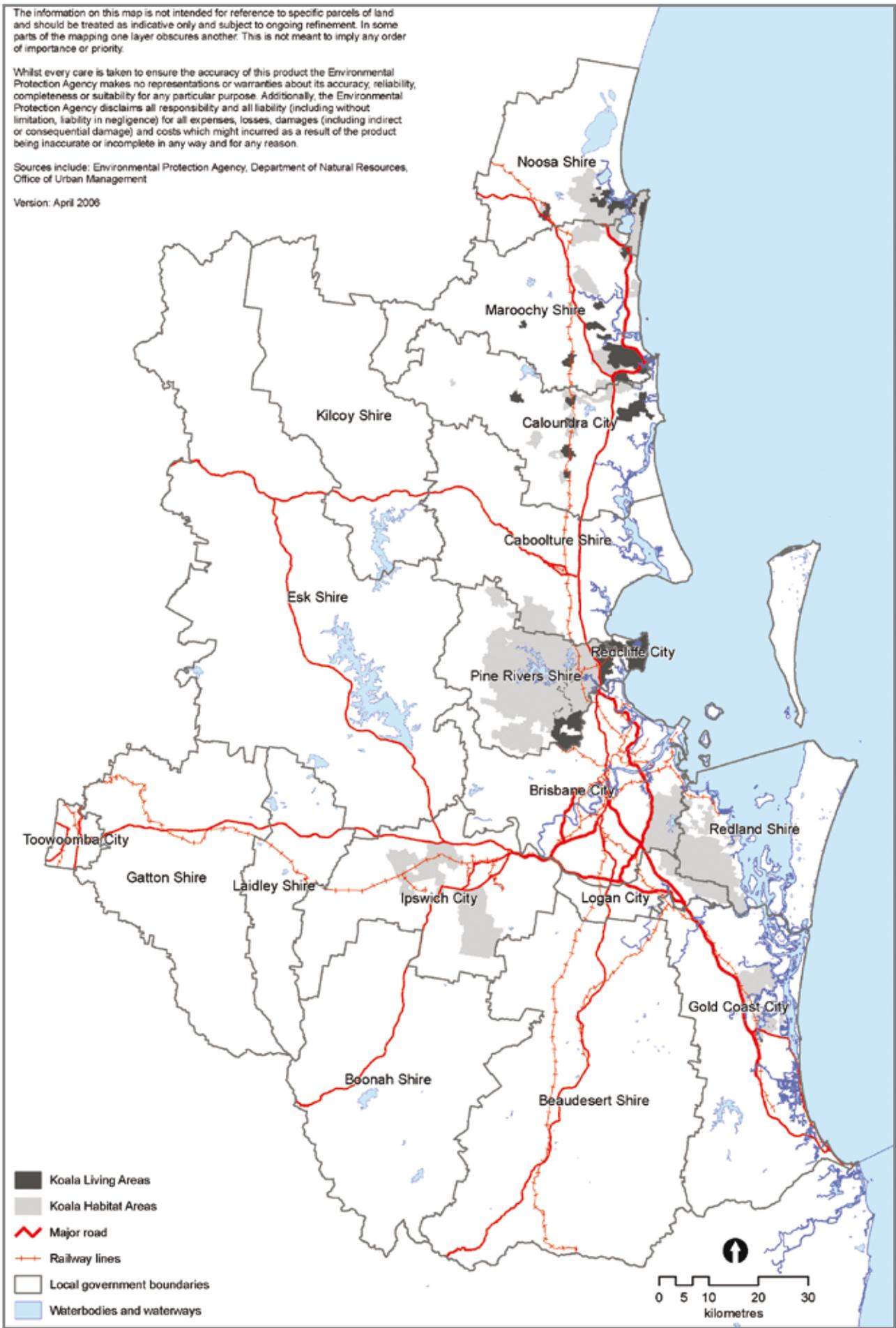
### **Relevant sections and policies in the Koala Management Program**

Section 4.5 Vehicle related koala mortality.

Section 4.6 Domestic dog related koala-mortality.



### Map 3 Education and community awareness



# 5 Koala conservation criteria for development assessment

Section 5. Koala conservation criteria for development assessment contains the following elements:

- 5.1 The SEQ Regional Plan
- 5.2 The *Nature Conservation (Koala) Conservation Plan 2006* (Koala Conservation Plan)
- 5.3 Application of koala conservation criteria
- 5.4 Assessable and non-assessable development
- 5.5 Koala conservation criteria
- Annex 1 The State map— Koala Habitat Areas
- Annex 2 Glossary

## 5.1 The SEQ Regional Plan

The SEQ Regional Plan contains regional policies that address development and koala conservation in the SEQ region within section 2.2 Koala Conservation. Specifically, policy 2.2.2 ‘calls up’ the koala conservation criteria for use in development assessment as follows:

‘Assess development in Koala Habitat Areas against the koala conservation criteria contained in the *Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006–2016*, or prior to the adoption of the

Conservation Plan, the *Interim Guideline: Koalas and Development*.

The *Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006–2016* contains koala conservation criteria applying to assessable development in Koala Habitat Areas. The SEQ Regional Plan identifies Koala Habitat Areas as being Koala Conservation Areas, Koala Sustainability Areas and Urban Koala Areas.

Koala Conservation Areas and Koala Sustainability Areas are identified in Map 5 — Koala Management Areas, within the SEQ Regional Plan. The SEQ Regional Plan states Urban Koala Areas are addressed in the *Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006–2016*.

## 5.2 The *Nature Conservation (Koala) Conservation Plan 2006*

The *Nature Conservation (Koala) Conservation Plan 2006* defines each category of Koala Habitat Area. It specifically addresses Urban Koala Areas and requires the chief executive

to show each Urban Koala Area on a map, being the State map<sup>3</sup>. The State map may also show Koala Conservation Areas and Koala Sustainability Areas.

## 5.3 Application of koala conservation criteria

Schedule 2 of the *Integrated Planning Regulation 1998* sets out the role and referral jurisdiction of the EPA for development relevant to koala conservation, being that of a concurrence agency for the purposes of the Nature Conservation Act. In undertaking this role the EPA will consider the Nature Conservation Act, the Koala Conservation Plan and the Koala Management Program, including the koala conservation criteria, consistent with s3.3.15 of the Integrated Planning Act.

The EPA’s concurrence agency role applies in Koala Conservation Areas and Koala Sustainability Areas.

<sup>3</sup>The State map may consist of a series of maps showing how the State is divided into Koala Districts and Koala Habitat Areas. Annex 1 contains the State Map reflecting Koala Habitat Areas at a cadastral scale. This information is current at the time of printing. Applicants are responsible for obtaining up-to-date information on the location of koala habitat areas. Up-to-date information may be obtained from Map 5 of the SEQ Regional Plan, and the relevant local government, or the EPA website which contains a current version of the State map. The State map is available for inspection free of charge on the EPA’s website at: [www.epa.qld.gov.au](http://www.epa.qld.gov.au); or during office hours on business days, at the Agency’s central office or at each regional office of the department.

## 5.4 Assessable and non-assessable development

### Area where the criteria apply

The koala conservation criteria are applicable only in the South East Queensland region, as defined by the SEQ Regional Plan. This encompasses the following 18 local government areas: Beaudesert Shire, Boonah Shire, Brisbane City, Caboolture Shire, Caloundra City, Esk Shire, Gatton Shire, Gold Coast City, Ipswich City, Kilcoy Shire, Laidley Shire, Logan City, Maroochy Shire, Noosa Shire, Pine Rivers Shire, Redcliffe City, Redland Shire, and Toowoomba City.

### Development to which the criteria apply

The koala conservation criteria apply to development located in a Koala Habitat Area if the development is listed in Table 3 and made assessable by:

- schedule 8 of the Integrated Planning Act;
- local government planning schemes; or
- the regulatory provisions of the SEQ Regional Plan.

The criteria also apply to proposed community infrastructure designations.

### Table 3 Development to which the criteria apply:

Column 1 — identifies the relevant Koala Habitat Area.

Column 2 — identifies the types of development (as defined in section 1.3.5 of the Integrated Planning Act) to which the koala conservation criteria apply.

Column 3 — identifies the types of development activity to which the koala conservation criteria apply (e.g. where an application is made for a development that does not involve a development activity as defined in Column 3, the koala conservation criteria do not apply)

The criteria also apply to proposed community infrastructure designations.

**Note:** As specified in Table 3, the koala conservation criteria do not apply to development for a domestic activity<sup>4</sup>.



<sup>4</sup>Refer to Annex 2: Glossary

**Table 3 Development to which the criteria apply**

Column 1	Column 2	Column 3
Koala Habitat Area	Development	Development Activity
<b>Koala Conservation Area and Koala Sustainability Area</b>	Material Change of Use other than a 'domestic activity'	Where development involves: (a) the clearing of native vegetation; or (b) a new building and any reasonably associated structure with a total footprint greater than 500m <sup>2</sup> ; or (c) an extension to an existing building and any reasonably associated structure if the extension has a footprint greater than 500m <sup>2</sup> ; or (d) extracting gravel, rock, sand or soil from an area greater than 5000m <sup>2</sup> , or (e) excavating or filling an area greater than 5000m <sup>2</sup> ; or (f) additional traffic in an area between 6pm on a day and 6am on the following day.
	Reconfiguring a lot	Where development involves: (a) increasing the number of lots; or (b) the clearing of native vegetation.
	Operational work	Where development involves: (a) the clearing of native vegetation; or (b) extracting gravel, rock, sand or soil from an area greater than 5000m <sup>2</sup> , or (c) excavating or filling an area greater than 5000m <sup>2</sup> .
<b>Urban Koala Area</b> where the premises are not – (a) subject to an approved structure plan; or (b) located in a Local Area Plan, Development Control Plan, Master Plan, precinct or other similar local planning instrument which contains koala management measures; or (c) located within a Regional Activity Centre.	Material Change of Use other than a – (a) 'domestic activity' (b) development which is consistent with an existing preliminary approval.	Where development involves: (a) the clearing of native vegetation; or (b) a new building and any reasonably associated structure with a total footprint greater than 500m <sup>2</sup> ; or (c) an extension to an existing building and any reasonably associated structure if the extension has a footprint greater than 500m <sup>2</sup> ; or (d) extracting gravel, rock, sand or soil from an area greater than 5000m <sup>2</sup> , or (e) excavating or filling an area greater than 5000m <sup>2</sup> .
	Reconfiguring a lot	Where development involves: (a) increasing the number of lots; or (b) the clearing of native vegetation.
	Operational work	Where development involves: (a) the clearing of native vegetation; or (b) extracting gravel, rock, sand or soil from an area greater than 5000m <sup>2</sup> , or (c) excavating or filling an area greater than 5000m <sup>2</sup> .

## 5.5 Koala Conservation Criteria

This section provides koala conservation criteria to achieve compliance with the SEQ Regional Plan's Koala Conservation Policy 2.2.2.

The koala conservation criteria comprise of the following:

- (a) Koala Habitat Area overall outcomes;
- (b) Tables of assessment criteria.
  - The relevance of each table of criteria is specific to the type of development being assessed. Column 3 of Table 4 identifies which tables of assessment criteria are relevant to different types of development.

The tables of assessment criteria consist of the following components:

- (a) Individual criterion
  - Each criterion is to be read in conjunction with the relevant Koala Habitat Area overall outcomes.
  - A development is required to achieve compliance with each relevant criterion.
- (b) Solutions (Urban Koala Area only)
  - Solutions are a means of achieving compliance with relevant criterion. • Where a solution is not provided, or a solution proposed by the development is different to the solution found in Column 2 of Table 12, the applicant must demonstrate that the proposal

achieves compliance with the relevant criterion.

- (c) Comments
  - Comments provide further advice on how each criterion and the solutions can be addressed.
  - Comments include references to additional information, which may assist in achieving compliance with each criterion.

### Compliance with koala conservation criteria

Development that is consistent with Tables 5–12 listed in Column 3 of Table 4, complies with the koala conservation criteria.

**Table 4 Development reference**

Column 1	Column 2	Column 3
<b>Koala Habitat Area</b>	<b>Development Type</b>	<b>Assessment Criteria Table</b>
<ul style="list-style-type: none"> <li>• Koala Conservation Area</li> <li>• Koala Sustainability Area</li> </ul>	General Development <sup>5</sup>	Table 5 – General Uncommitted Development Table 6 – General Committed Development
	Extractive Industry	Table 7 – Uncommitted Extractive Industry Development in a Key Resource Area Table 8 – Uncommitted Extractive Industry Development in a Non-Key Resource Area Table 9 – Committed Extractive Industry Development
	<b>Explanatory Note</b> for Extractive Industry in a Key Resource Area: Committed development is taken to be: 1. a development commitment as at 30 June 2005 where the development commitment remains current; or 2. development with a current development approval issued after 30 June 2005.	
	Community Infrastructure	Table 10 – Uncommitted Community Infrastructure Development Table 11 – Committed Community Infrastructure Development
	<b>Explanatory Note</b> for Community Infrastructure: Committed development is taken to be: 1. a development commitment as at 30 June 2005 where the development commitment remains current; or 2. development with a current development approval issued after 30 June 2005.	
<ul style="list-style-type: none"> <li>• Urban Koala Area</li> </ul>	All	Table 12 – All

<sup>5</sup> The term 'general development' applies to any assessable development with the exception of a domestic activity, extractive industry or community infrastructure.

**Overall outcomes for Koala Conservation Areas and Koala Sustainability Areas**

- (a) Koalas in the area are protected;
- (b) Koala habitats are protected, maintained and their integrity enhanced;
- (c) The ability of koalas to move into, within and out of the area is maintained;
- (d) Committed development is designed, constructed and operated in a way that mitigates, to the greatest practicable extent,

any adverse effects of the development on:

- koalas or koala habitats in the area; and
- the movement of koalas into, within or out of the Koala Habitat Area;
- (e) With the following two exceptions, uncommitted development is compatible with achieving the outcomes mentioned in paragraphs (a) to (c):
  - uncommitted extractive industry development in a key resource area or
  - uncommitted community

infrastructure development that demonstrates an overriding need in the public interest justifying its location within a Koala Conservation Area or Koala Sustainability Area;

- (f) Within a key resource area, extractive industry development that was uncommitted at 30 June 2005, results in a net benefit to koalas or koala habitats; and
- (g) Community infrastructure development that was uncommitted at 30 June 2005 and justifies its location within a Koala Conservation Area or Koala Sustainability Area results in a net benefit to koalas or koala habitats.

**Table 5 Koala Conservation Area and Koala Sustainability Area General uncommitted development**

Criteria	Comments
1. Development is not for an urban activity.	A domestic activity is exempt development.
2. Development does not involve the clearing of koala habitat trees that have: <ul style="list-style-type: none"> <li>(a) a height of more than 4m; or</li> <li>(b) a trunk with a diameter of more than 10cm at 1.3m above the ground.</li> </ul>	
3. Development provides for koala movement across the landscape through its design and layout by incorporating koala sensitive development.	Further guidance on how a development can incorporate design and layout measures to provide for koala movement is provided within Policy 1: Koala sensitive development.
4. Development progressively rehabilitates koala habitat cleared or otherwise disturbed by the development.	Cleared koala habitat, for the purposes of Table 5, Criterion 4 refers to areas where clearing of koala habitat trees is proposed and the koala habitat trees: <ul style="list-style-type: none"> <li>(a) have a height of less than 4m; or</li> <li>(b) have a trunk with a diameter of less than 10cm at 1.3m above the ground.</li> </ul>
5. Plants used for landscaping consist of at least 70% Australian plants, of which at least 50% of plants are native to the area; including koala habitat trees native to the area.	
6. Development does not result in: <ul style="list-style-type: none"> <li>(a) increased vehicular traffic between the hours of 6pm on a day and 6am the following day; or</li> <li>(b) a requirement for bushfire management measures that will, or is likely to, result in loss of koalas or degradation of koala habitat or its values.</li> </ul>	
7. Development: <ul style="list-style-type: none"> <li>(a) minimises the total footprint within which all activities, buildings or structures, driveways, landscaping, fencing or infrastructure are contained;</li> <li>(b) is located in cleared areas or areas that support koala habitat trees with a height of less than 4m; or a trunk with a diameter less than 10cm at 1.3m above the ground; and</li> <li>(c) has limited impact on adjacent areas.</li> </ul>	Development proposals and/or conditions on development approvals for Material Change of Use or Reconfiguration of a Lot should include 'development envelopes' to define the extent of development (the total footprint) on the development site.
8. Development does not result in adverse impacts on koalas and koala habitat during construction.	

**Table 6 Koala Conservation Area and Koala Sustainability Area  
General committed development**

Criteria	Comments
1. Development is designed and constructed in a way that minimises the loss and degradation of koala habitat.	<p>An ecological assessment survey and report, supported by a vegetation management plan, should be provided with the development application to support the development proposal where removal of koala habitat is proposed. Such a survey/report will be the subject of an information request when not provided with the development application.</p> <p>Policy 4: <i>Koala survey methodology for site assessment</i> should be consulted regarding site assessment of koalas and koala habitat.</p> <p>Refer to the <i>Nature Conservation (Koala) Conservation Plan 2006</i> and Policy 6: <i>Vegetation clearing practices</i>, for further information regarding vegetation clearing methods and requirements.</p>
2. Development provides for koala movement across the landscape through its design and layout by incorporating koala sensitive development.	Further guidance on how a development can incorporate design and layout measures to provide for koala movement is provided within Policy 1: <i>Koala sensitive development</i> .
3. Plants used for landscaping consist of at least 70% Australian plants, of which at least 50% of plants are native to the area; including koala habitat trees native to the area, to the greatest practicable extent.	
4. Development (a) minimises the total footprint within which all activities, buildings or structures, driveways, landscaping, fencing or infrastructure are contained; (b) is located in cleared areas or areas that support koala habitat trees with a height of less than 4m; or a trunk with a diameter less than 10cm at 1.3m above the ground, where practicable; and (c) minimises its impacts on adjacent areas.	Development proposals and/or conditions on development approvals for Material Change of Use or Reconfiguration of a Lot should include ‘development envelopes’ to define the extent of development (the total footprint) on the development site.
5. Development progressively rehabilitates koala habitat cleared or otherwise disturbed by the development.	
6. Development minimises adverse impacts on koalas and koala habitat during construction.	

**Table 7 Koala Conservation Area and Koala Sustainability Area  
Uncommitted extractive industry development in a key resource area**

Criteria	Comments
1. Extractive industry development demonstrates a net benefit to koalas or koala habitat in the area.	<p>Compliance with Criterion 1 will be achieved if consistent with Policy 2: <i>Offsets for net benefit to koalas and koala habitat</i>.</p> <p>An application without a proposed offset package, as identified in Policy 2: <i>Offsets for net benefit to koalas and koala habitat</i>, will be the subject of an information request.</p>
2. Development is designed and constructed in a way that minimises the loss and degradation of koala habitat.	An ecological assessment survey and report, supported by a Vegetation Management Plan, should be provided with the development application to support the development proposal where removal of koala habitat is proposed. Such a survey/report will be the subject of an information request when not provided with the development application.
3. Areas cleared or otherwise disturbed by extractive industry development are progressively rehabilitated under an approved rehabilitation plan.	<p>A rehabilitation plan (or similar) should be provided with the development application to support the development proposal where removal of koala habitat is proposed. Such a plan will be the subject of an information request when not provided with the development application.</p> <p>Financial assurance will be a requirement where rehabilitation of cleared or otherwise disturbed areas is proposed under a rehabilitation plan.</p>
4. Plants used for landscaping consist of at least 70% Australian plants, of which at least 50% of plants are native to the area; including koala habitat trees native to the area.	
5. Extractive industry development provides for koala movement across the landscape in its design and layout by incorporating koala sensitive development, as applicable to extractive industry development.	Further guidance on how a development can incorporate design and layout measures to provide for koala movement is provided within Policy 1: <i>Koala sensitive development</i> .
6. Extractive industry development does not result in increased vehicular traffic between 6pm on a day and 6am on the following day.	
7. Development minimises adverse impacts on koalas during operation.	

**Table 8 Koala Conservation Area and Koala Sustainability Area  
Uncommitted extractive industry development in a non-key resource area**

Criteria	Comments
<p>1. Extractive industry does not involve the clearing of koala habitat trees that have:</p> <p>(a) a height of more than 4m; or</p> <p>(b) a trunk with a diameter of more than 10cm at 1.3m above the ground.</p>	
<p>2. Extractive industry development provides for koala movement across the landscape in its design and layout by incorporating koala sensitive development, as applicable to extractive industry development.</p>	<p>Further guidance on how a development can incorporate design and layout measures to provide for koala movement is provided within Policy 1: <i>Koala sensitive development</i>.</p>
<p>3. Areas cleared or otherwise disturbed by extractive industry development are progressively rehabilitated in accordance with an approved rehabilitation plan.</p>	<p>Cleared, for the purposes of Table 8 Criterion 2 refers to areas where clearing of koala habitat trees is proposed and the koala habitat trees:</p> <p>(a) have a height of less than 4m; or</p> <p>(b) have a trunk with a diameter of less than 10cm at 1.3m above the ground.</p> <p>A rehabilitation plan (or similar) should be provided with the development application to support the development proposal where removal of koala habitat is proposed. Such a plan will be the subject of an information request when not provided with the development application.</p> <p>Financial assurance is a requirement where the rehabilitation of cleared or otherwise disturbed areas is proposed under a rehabilitation plan.</p>
<p>4. Plants used for landscaping consist of at least 70% Australian plants, of which at least 50% of plants are native to the area; including koala habitat trees native to the area.</p>	
<p>5. Extractive industry development does not result in increased vehicular traffic between 6pm on a day and 6am on the following day.</p>	
<p>6. Development minimises adverse impacts on koalas during operation.</p>	

**Table 9 Koala Conservation Area and Koala Sustainability Area  
Committed extractive industry development**

Criteria	Comments
1. Development is designed and constructed in a way that minimises the loss and degradation of koala habitat.	<p>An ecological assessment survey and report, supported by a Vegetation Management Plan, should be provided with the development application to support the development proposal where removal of koala habitat is proposed. Such a survey/report will be the subject of an information request when not provided with the development application.</p> <p>Refer to the <i>Nature Conservation (Koala) Conservation Plan 2006</i> and <i>Policy 6: Vegetation clearing practices</i> in this document for further information on vegetation clearing requirements.</p>
2. Areas cleared or otherwise disturbed by extractive industry development are progressively rehabilitated in accordance with an approved rehabilitation plan.	<p>A rehabilitation plan (or similar) should be provided with the development application to support the development proposal where removal of koala habitat is proposed. Such a plan will be the subject of an information request when not provided with the development application.</p> <p>Financial assurance is a requirement where the rehabilitation of cleared or otherwise disturbed areas is proposed under a rehabilitation plan.</p>
3. Plants used for landscaping consist of at least 70% Australian plants, of which at least 50% of plants are native to the area; including koala habitat trees native to the area.	
4. Extractive industry development provides for koala movement across the landscape in its design and layout by incorporating koala sensitive development, as applicable to extractive industry development, to the greatest extent practicable.	<p>Further guidance on how a development can incorporate design and layout measures to provide for koala movement is provided within <i>Policy 1: Koala sensitive development</i>.</p>
5. Extractive industry development does not result in increased vehicular traffic between 6pm on a day and 6am on the following day.	
6. Development minimises adverse impacts on koalas during operation.	

**Table 10 Koala Conservation Area and Koala Sustainability Area  
Uncommitted community infrastructure development**

Criteria	Comments
1. Community infrastructure development demonstrates an overriding need in the public interest justifying its location in the Koala Conservation or Koala Sustainability Area.	<p>Further guidance on meeting Criterion 1 is located in Policy 3: <i>Determining overriding need in the public interest</i>.</p> <p>An application that does not provide information demonstrating an overriding need in the public interest justifying its location in the Koala Conservation or Koala Sustainability Area, will be the subject of an information request.</p>
2. Community infrastructure development results in a net benefit to koalas and koala habitat.	<p>Compliance with Criterion 2 will be achieved if consistent with Policy 2: <i>Offsets for net benefit to koalas and koala habitat</i>.</p> <p>An application without a proposed offset package, as identified in Policy 2: <i>Offsets for net benefit to koalas and koala habitat</i>, will be the subject of an information request.</p>
3. Community infrastructure development is designed and constructed in a way that minimises the loss and degradation of koala habitat.	<p>An ecological assessment survey and report, supported by a vegetation management plan (or similar), should be provided with the development application to support the development proposal where removal of koala habitat is proposed. Such a survey/report will be the subject of an information request when not provided with the development application.</p> <p>Refer to the <i>Nature Conservation (Koala) Conservation Plan 2006</i> and Policy 6: <i>Vegetation clearing requirements</i> of this document for further information regarding vegetation clearing requirements.</p>
4. Areas cleared or otherwise disturbed by community infrastructure development, and which do not form part of the ongoing use, are progressively rehabilitated and protected.	<p>A rehabilitation plan (or similar) should be provided with the development application to support the development proposal where removal of koala habitat is proposed. Such a plan will be the subject of an information request when not provided with the development application.</p>
5. Plants used for landscaping consist of at least 70% Australian plants, of which at least 50% of plants are native to the area; including koala habitat trees native to the area, to the greatest practicable extent.	
6. Community infrastructure development provides for koala movement across the landscape in its design and layout by incorporating koala sensitive development, as applicable to the community infrastructure development.	
7. Development minimises adverse impacts on koalas during operation.	

**Table 11 Koala Conservation Area and Koala Sustainability Area  
Committed community infrastructure development**

Criteria	Comments
1. Community infrastructure is designed and constructed in a way that minimises the loss and degradation of koala habitat.	An ecological assessment survey and report, supported by a vegetation management plan, should be provided with the development application to support the development proposal where removal of koala habitat is proposed. Such a survey/report will be the subject of an information request when not provided with the development application.  Refer to the <i>Nature Conservation (Koala) Conservation Plan 2006</i> and Policy 6: Vegetation clearing requirements in this document for further information regarding vegetation clearing methods and requirements.
2. Areas cleared or otherwise disturbed by community infrastructure development and which do not form part of the ongoing use, are progressively rehabilitated and protected.	
3. Plants used for landscaping consist of at least 70% Australian plants, of which at least 50% of plants are native to the area, including koala habitat trees native to the area.	
4. Community infrastructure development provides for koala movement across the landscape in its design and layout by incorporating koala sensitive development as applicable to the community infrastructure development, to the greatest extent practicable.	Further guidance on how a development can incorporate design and layout measures to provide for koala movement is provided within Policy 1: <i>Koala sensitive development</i> .
5. Development minimises adverse impacts on koalas and koala habitat during construction and operation.	

**Overall outcomes for Urban Koala Areas**

- (a) Development includes measures to assist the survival of koala populations in the area, having regard to the planning intent and requirements stated, or otherwise reflected, in local government planning schemes, applying to the development;
- (b) Koala habitat linkages that are important to koalas are maintained, to the greatest practicable extent;
- (c) Committed development in the area is designed, constructed and operated in a way that mitigates, to the greatest practicable extent, any adverse effects of the development on:

- (i) koalas or koala habitats in the area; and
- (ii) the movement of koalas into, within or out of the area.

**Table 12 Urban Koala Area  
All development**

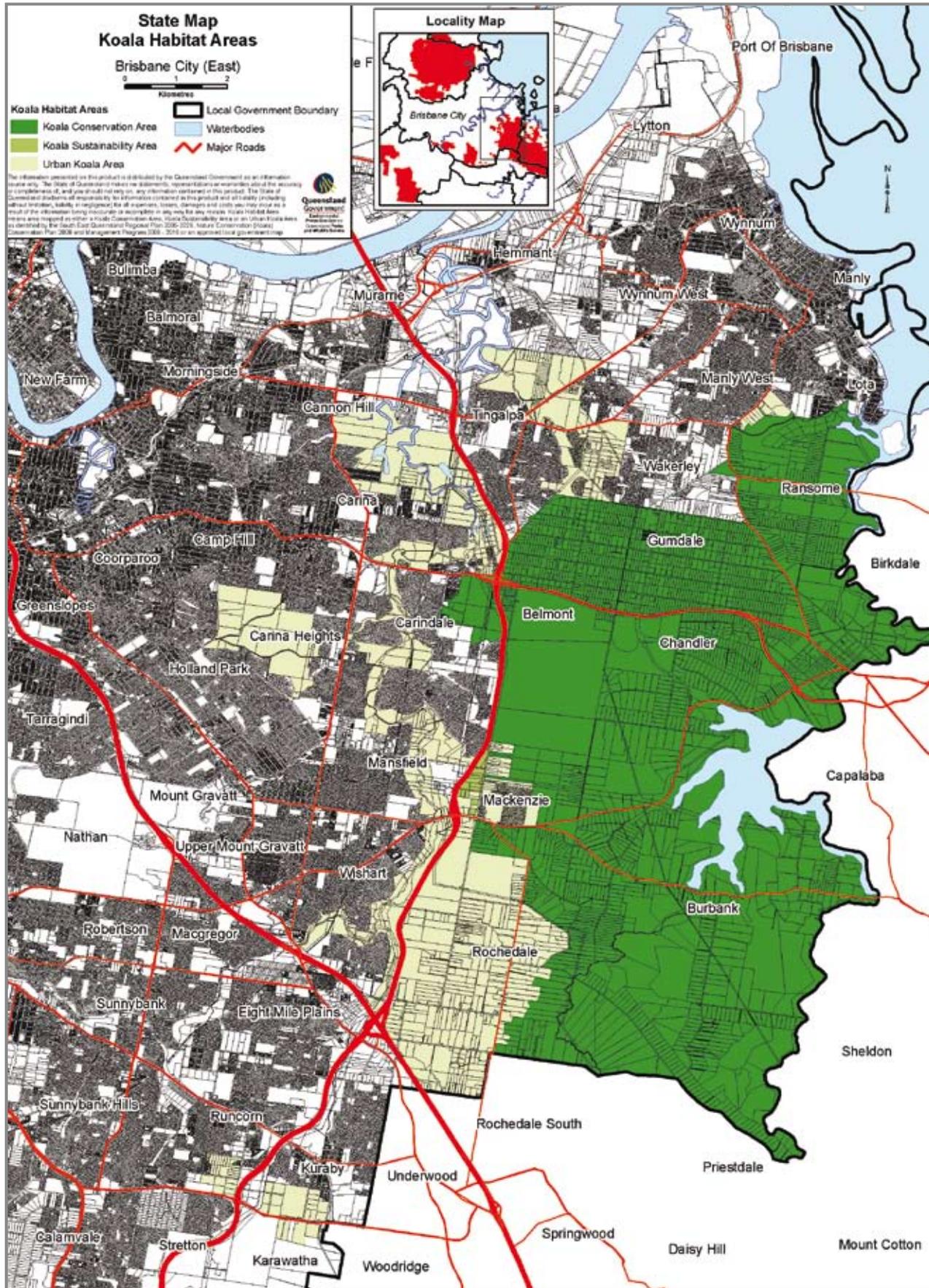
Criteria	Solution	Comments
<p>1. Development is consistent with the urban intent of the area while maintaining koala habitat linkages, and incorporating koala sensitive development, where practicable.</p>	<p>1.1 Development maintains koala habitat linkages.</p> <p>1.2 The location and design of buildings, structures and other works, to the extent practicable, allows koalas to traverse the landscape in which the development is located. This includes:</p> <p>(a) Siting buildings/structures, roads and works in ways that minimise the fragmentation of koala habitat to be retained.</p> <p>(b) Incorporating layout and design measures to minimise the extent to which a koala that is traversing the landscape is impeded from reaching its destination either within the development site, or on the other side of the development site.</p> <p>(c) Locating buildings/structures and other works in existing cleared areas.</p> <p>(d) Retaining koala habitat trees in those parts of the development site not required for achieving the development objectives of the site.</p> <p>(e) Providing habitat links of native vegetation across the site.</p> <p>(f) Erecting koala friendly fences on lot boundaries, except where koala exclusion fences are the only practical way of safeguarding koalas from uses on the lot.</p> <p>1.3 Roads or road networks are located, designed and constructed to minimise the risk to koalas from vehicle strike.</p> <p>1.4 Plants used for landscaping comprise 70% Australian plants of which 50% are native to the area, including koala habitat trees native to the area, where practicable.</p>	<p>The urban intent includes any relevant urban development objectives and commitments contained in:</p> <ul style="list-style-type: none"> <li>• The SEQ Regional Plan;</li> <li>• Structure plan;</li> <li>• Planning scheme;</li> <li>• Existing preliminary or development approval.</li> </ul> <p>Guidance on koala sensitive development is located within Policy 1: <i>Koala sensitive development</i>.</p> <p>Undertaking an ecological assessment of a site with ecological values prior to development is deemed Best Practice and will assist in identifying habitat linkages. Further guidance on undertaking ecological assessments for koalas and koala habitat is located in Policy 4: <i>Koala survey methodology for site assessment</i>.</p> <p>Refer to the <i>Nature Conservation (Koala) Conservation Plan 2006</i> and Policy 6: <i>Vegetation clearing practices</i> for further information regarding vegetation clearing methods and requirements.</p>

**Table 12 Urban Koala Area  
All development (cont)**

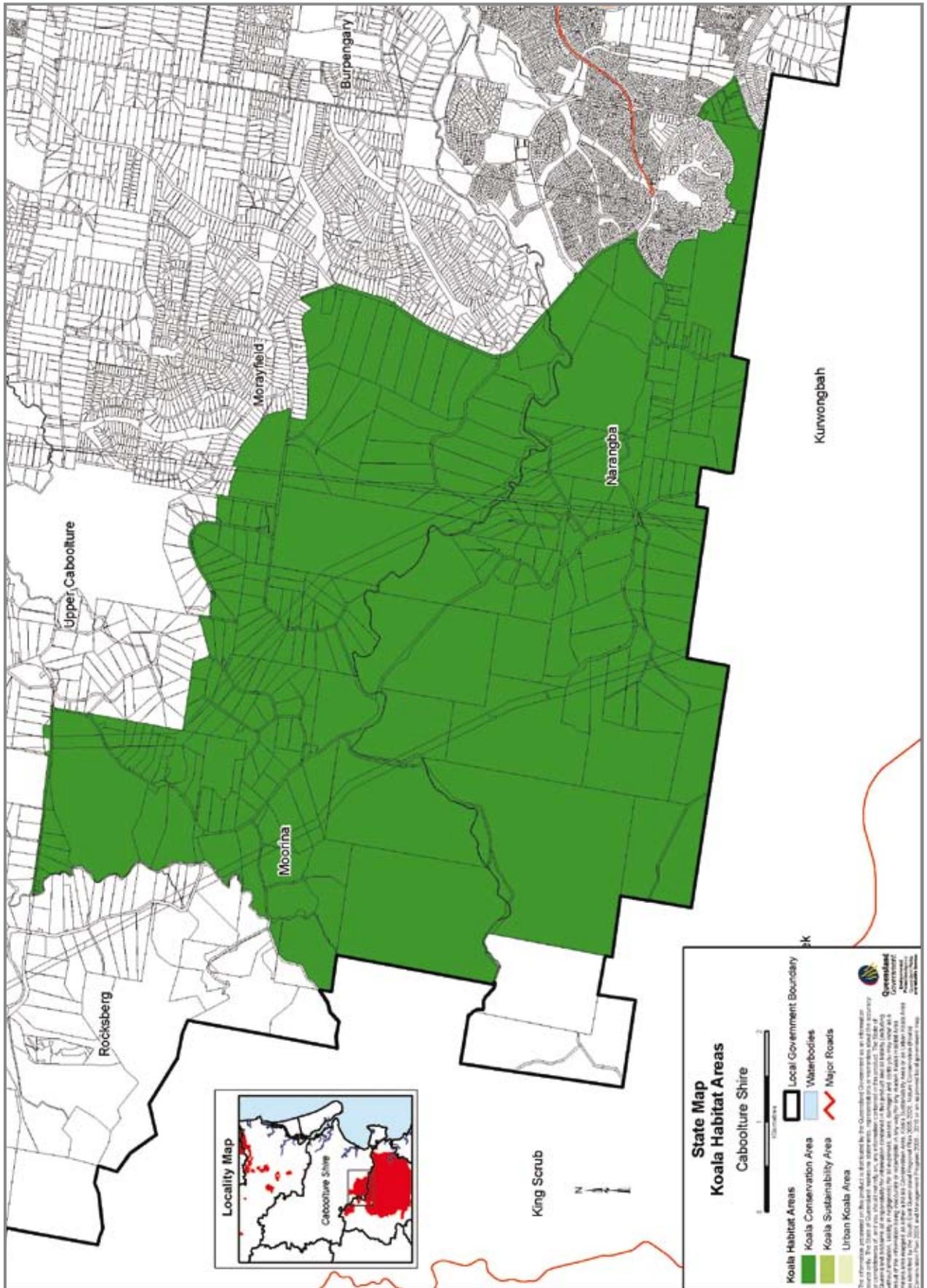
Criteria	Solution	Comments
<p>2. Development with densities below 5 dwellings per hectare or lots greater than 2000m<sup>2</sup> are designed, consistent with the urban intent of the area, to:</p> <p>(a) incorporate koala sensitive development; and</p> <p>(b) maintain habitat linkages.</p>	<p>2.1 Development maintains habitat linkages.</p> <p>2.2 The location and design of buildings, structures and other works, to the extent practicable, allows koalas to traverse the landscape in which the development is located. This includes:</p> <p>(a) Siting buildings/structures, roads and works in ways that minimise the fragmentation of koala habitat to be retained;</p> <p>(b) Incorporating layout and design measures to minimise the extent to which a koala that is traversing the landscape is impeded from reaching its destination either within the development site, or on the other side of the development site;</p> <p>(c) Locating buildings/structures and other works in existing cleared areas;</p> <p>(d) Retaining koala habitat trees in those parts of the development site not required for achieving the development objectives of the site;</p> <p>(e) Providing habitat links containing native vegetation across the site;</p> <p>(f) Erecting koala-friendly fences on lot boundaries, except where koala exclusion fences are the only practical way of safeguarding koalas from uses on the lot.</p> <p>2.3 Roads or road networks are located, designed and constructed to minimise the risk to koalas from vehicle strike.</p> <p>2.4 Plants used for landscaping comprise 70% Australian plants of which 50% are native to the area, including koala habitat trees native to the area, where practicable.</p> <p>2.5 Development is designed to:</p> <p>(a) minimise the total footprint within which all activities, buildings or structures, driveways, landscaping, fencing or infrastructure are contained</p> <p>(b) be located in cleared areas or areas that support koala habitat trees with a height of less than 4m; or a trunk with a diameter less than 10cm at 1.3m above the ground, where practicable;</p> <p>(c) minimise impacts on adjacent areas.</p>	<p>The urban intent includes any relevant urban development objectives and commitments contained in:</p> <ul style="list-style-type: none"> <li>• The SEQ Regional Plan;</li> <li>• Planning scheme;</li> <li>• Existing preliminary or development approval.</li> </ul> <p>Guidance on koala sensitive development is located within <i>Policy 1: Koala sensitive development</i>.</p> <p>Undertaking an ecological assessment of a site with ecological values prior to development is deemed Best Practice and will assist in identifying habitat linkages. Further guidance on undertaking ecological assessments for koalas and koala habitat is located in <i>Policy 4: Koala survey methodology for site assessment</i>.</p> <p>Refer to the <i>Nature Conservation (Koala) Conservation Plan 2006</i> and <i>Policy 6: Vegetation clearing practices</i> for further information regarding vegetation clearing methods and requirements.</p> <p>Development proposals and/or conditions on development approvals for Material Change of Use or Reconfiguration of a Lot should include ‘development envelopes’ to define the extent of development (the total footprint) on the development site.</p> <p>Addressing Criterion 2.3 could include, for example, measures to assist koalas to cross roads more safely as well as maximising the number of no through roads in road network design.</p>

# Annex 1 The State map – Koala Habitat Areas

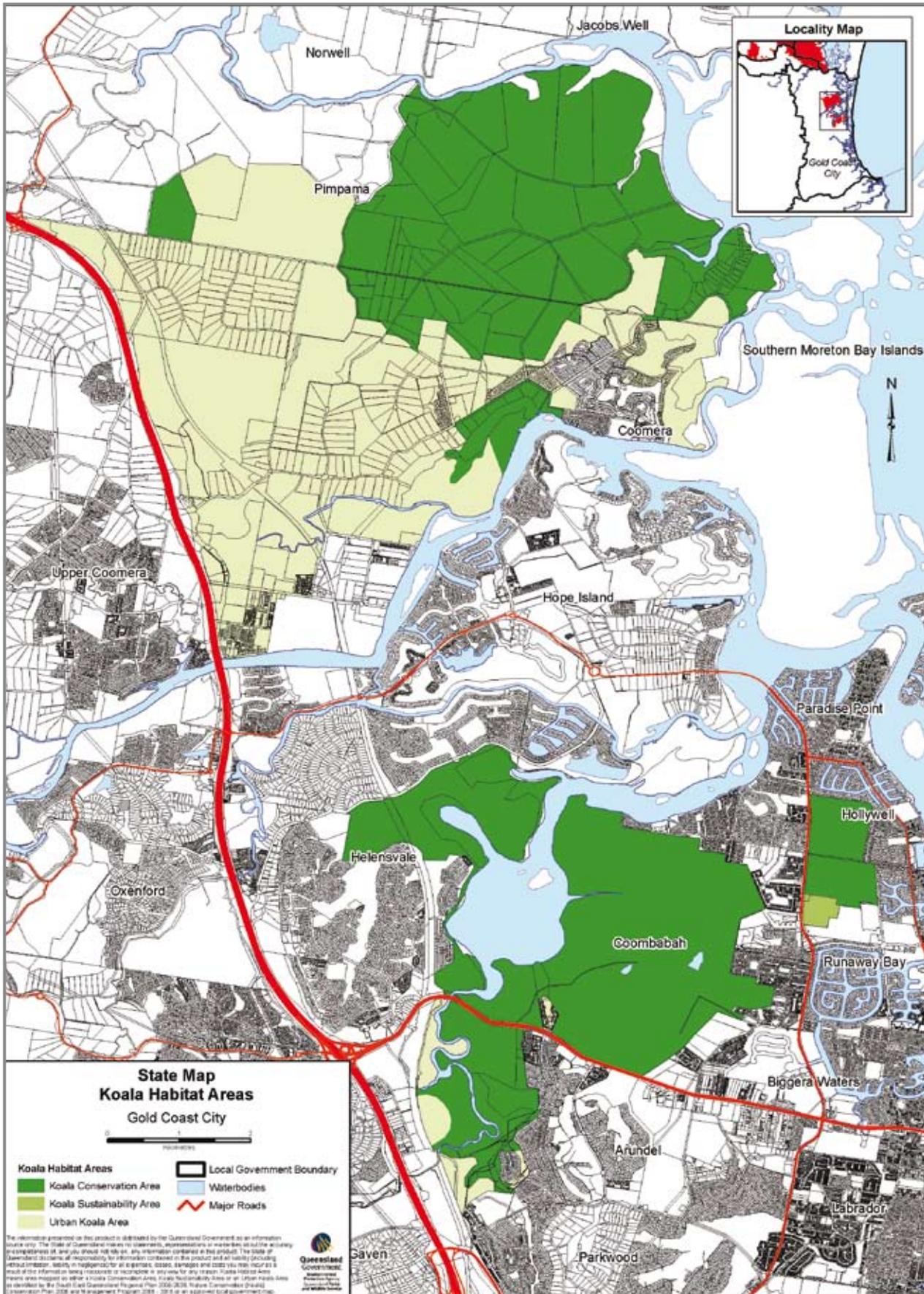
## Koala Habitat Areas Brisbane City (East)



# Koala Habitat Areas Caboolture Shire

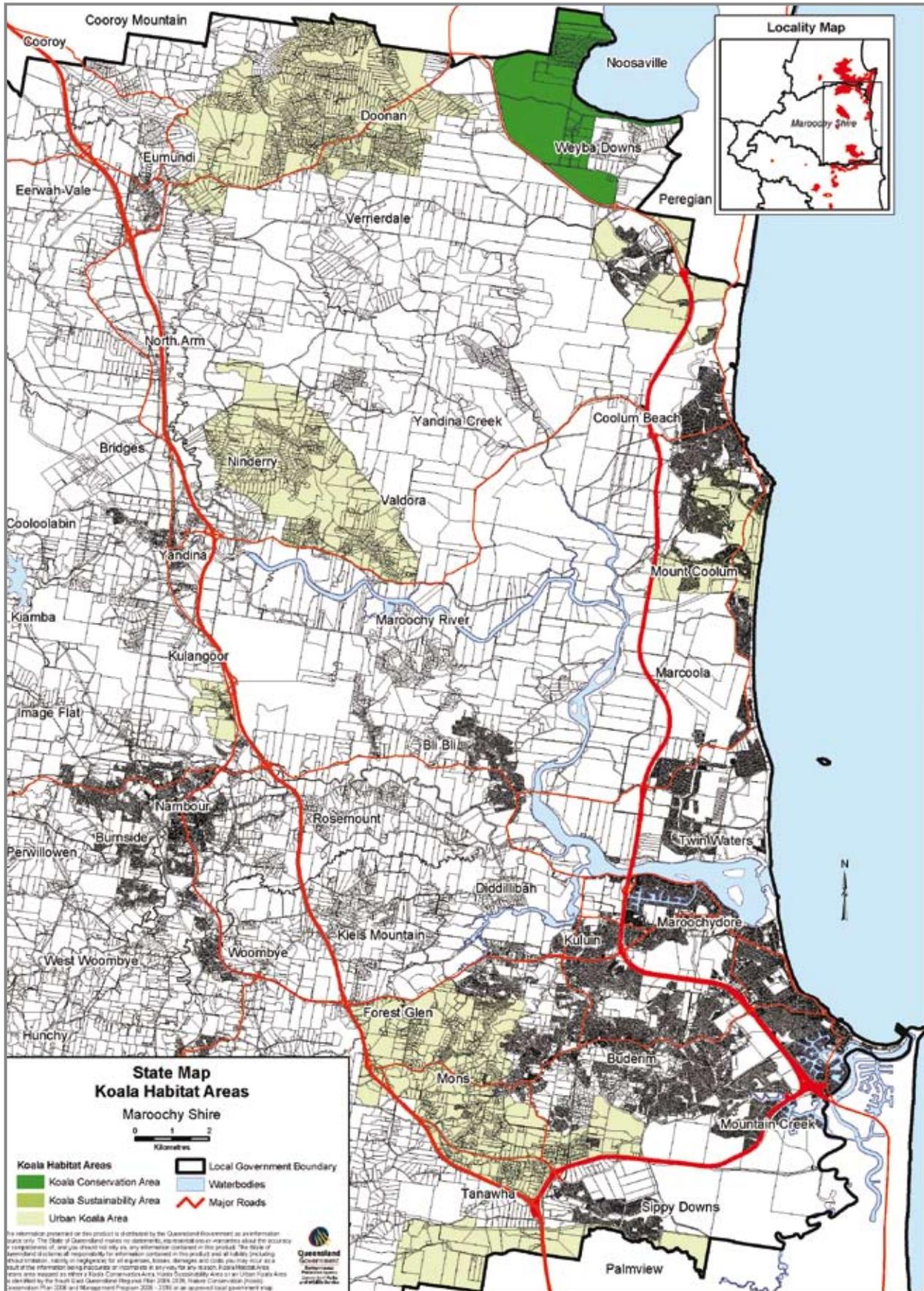


# Koala Habitat Areas Gold Coast City





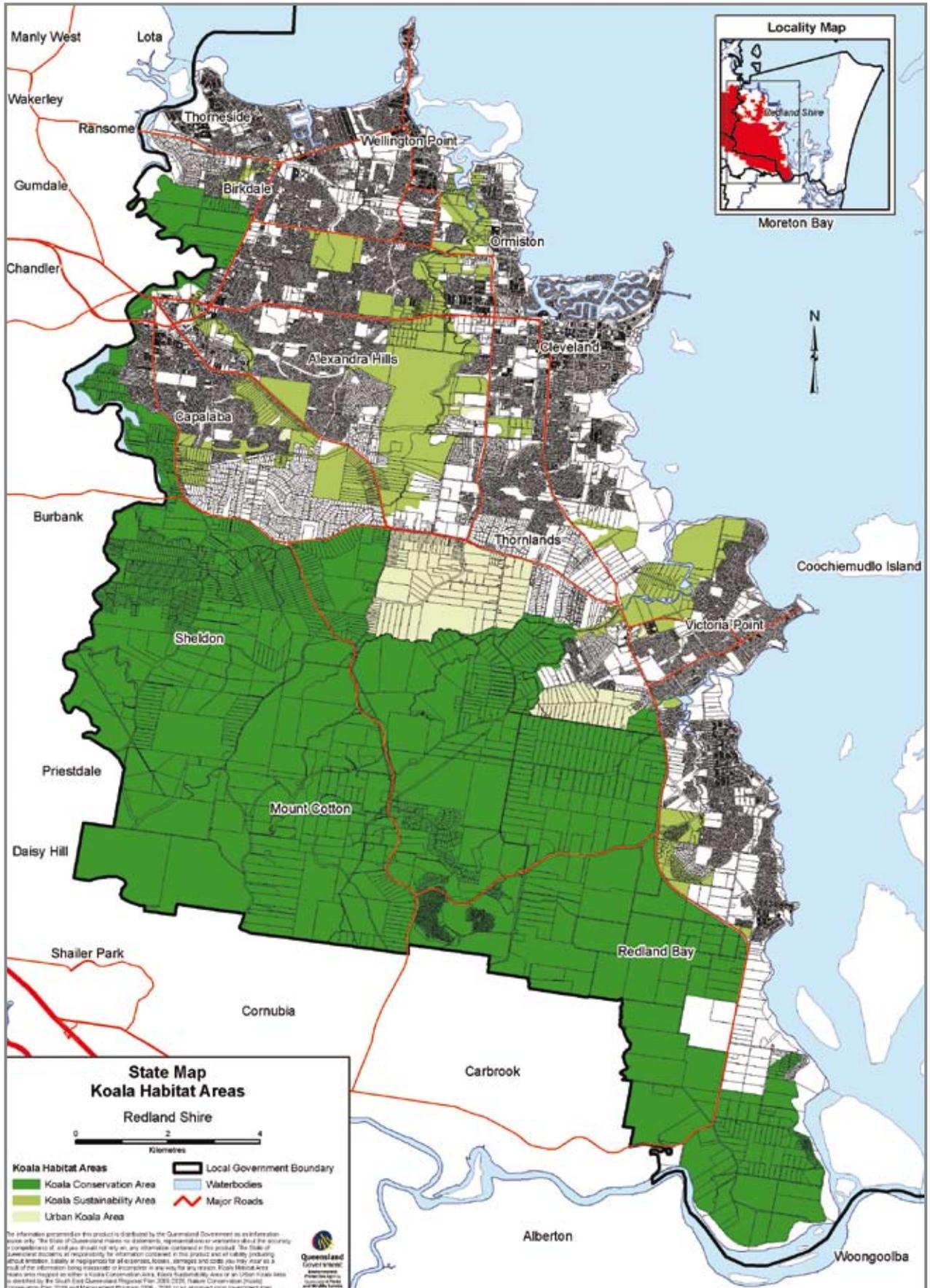
# Koala Habitat Areas Maroochy Shire







## Koala Habitat Areas Redland Shire

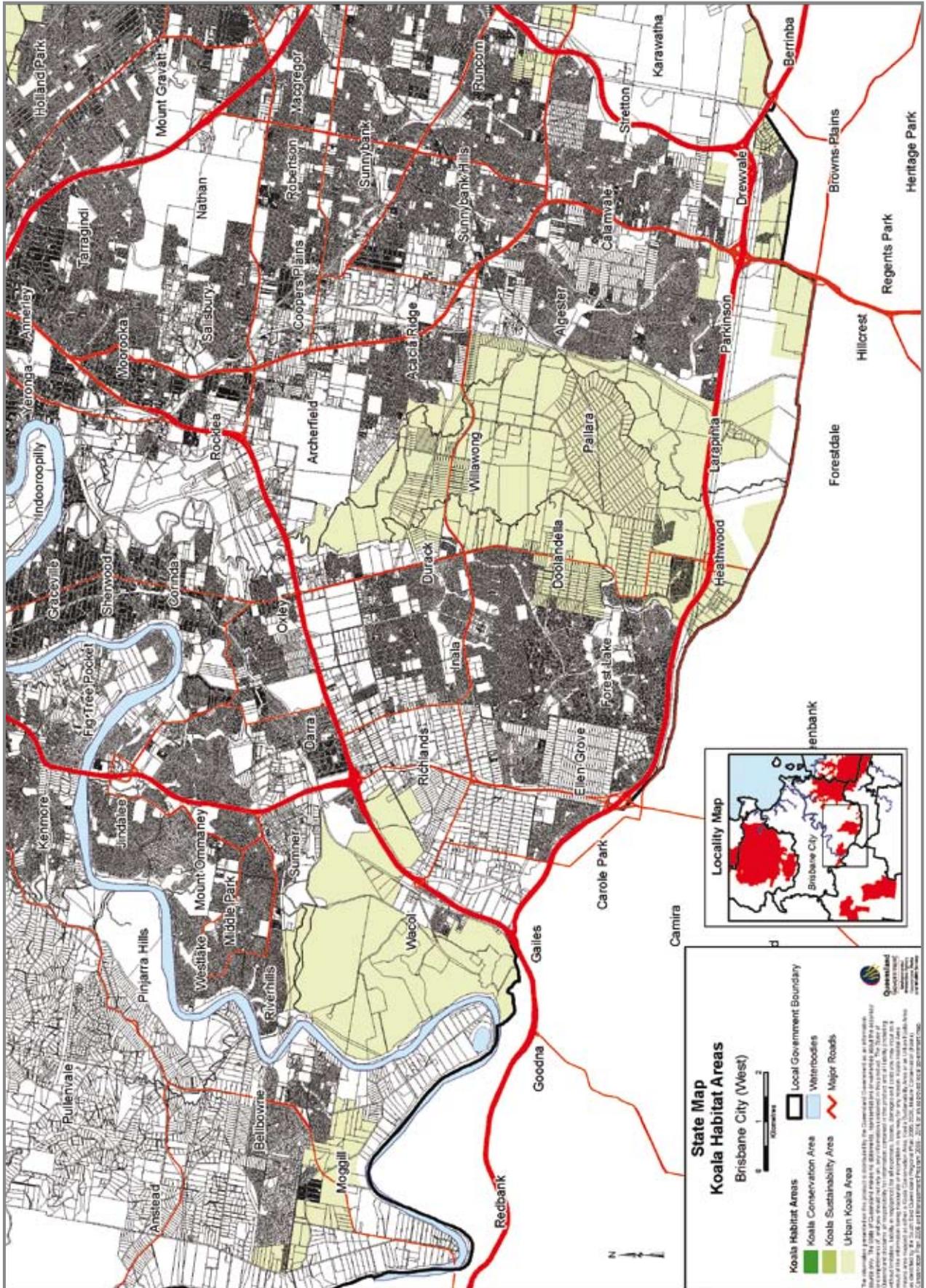








# Koala Habitat Areas Brisbane City (West)



# Annex 2 Glossary

**Chief executive:** means the chief executive of the Agency in which the *Nature Conservation Act 1992* is administered.

**Clear:** see the *Integrated Planning Act 1997*, schedule 10.

**Committed development:** means a development commitment

**Community infrastructure:** see *Integrated Planning Act 1997*, schedule 5.

**Concurrence agency:** see *Integrated Planning Act 1997*, schedule 10.

**Development application:** see the *Integrated Planning Act 1997*, schedule 10.

**Development commitment:** means any of the following:

- (a) a development with a current development approval; or
- (b) a material change of use clearly consistent with:
  - (i) if within the Regional Landscape and Rural Production Area, Rural Living Area, Investigation Area — the regulatory provisions of the SEQ Regional Plan; and the purposes of codes (or equivalent policy intents) of the relevant zone (or equivalent) and any applicable overlays in the relevant planning scheme; or
  - (ii) if within the Urban Footprint — the purposes of codes (or equivalent policy intents) of the relevant zone (or equivalent) and any applicable overlays in the planning scheme; or
- (c) reconfiguring a lot consistent with:
  - (i) if within the Regional Landscape and Rural Production Area, Rural Living Area, Investigation Area

— the regulatory provisions of the SEQ Regional Plan; and the purposes of codes (or equivalent policy intents) of the relevant zone (or equivalent) and any applicable overlays in the relevant planning scheme; or

- (ii) if within the Urban Footprint — the purposes of codes (or equivalent policy intents) of the relevant zone (or equivalent) and any applicable overlays in the planning scheme; or
- (d) building or operational work:
  - (i) arising from and necessarily associated with a valid development approval for a material change of use or reconfiguring a lot; or
  - (ii) consistent with the planning scheme; or
  - (iii) that is a development consistent with a community infrastructure designation.

**Domestic activity:** means the construction or use of a single residence on a lot and any reasonably associated building or structure.

Examples of a building or structure that could be reasonably associated with a single residence—caretaker’s residence, granny flat, building or structure used for a home business.

**Extractive industry development:** means assessable development that is for:

- (a) the extraction and processing of extractive resources for use in infrastructure or construction; and
- (b) activities associated with the extraction and processing.

However, extractive industry development does not include the extraction of rock in slab form for a building or monument.

**Total footprint,** of a building and any reasonably associated structure, or an extension of an existing building and any reasonably associated structure, means: the total area of land developed for the building and structure, or the extension, including, for example, the areas covered by the following:

- (a) the floor area of the building and structure or the extension;
- (b) landscaping and fencing for the building and structure or the extension;
- (c) a car park, driveway or other facility associated with the building and structure or the extension.

**General development:** means any assessable development with the exception of a domestic activity, extractive industry or community infrastructure.

**Habitat linkage:** means koala habitat that allows for and promotes the movement of koalas into, within, or out of an area.

**Koala conservation criteria:** means the koala conservation criteria mentioned in the *Nature Conservation (Koala) Conservation Plan 2006*, section 8.

**Key resource area:** means an area identified as a key resource area in a State planning policy about extractive resources made under the *Integrated Planning Act 1997*, chapter 2, part 4.

**Koala:**

- (a) means a mammal of the species *Phascolarctos cinereus* and
- (b) includes the reproductive material of a mammal mentioned in paragraph (a).

**Koala conservation area:** means

- each part of the State shown on the SEQ map as a koala conservation area; and
- if a local government has an approved local government map for its area—each part of the local government’s area shown on the map as a koala conservation area.

**Koala habitat:** means

- a woodland where koalas currently live; or
- a partially or completely cleared area that is used by koalas to cross from one woodland where koalas currently live to another woodland where koalas currently live; or
- a woodland where koalas do not currently live if the woodland:
  - primarily consists of koala habitat trees; and
  - is reasonably suitable to sustain koalas.

**Koala habitat area:** means

- a Koala Conservation Area; or
- a Koala Sustainability Area; or
- an Urban Koala Area.

**Koala habitat tree:** means a tree of any of the following genera:

- Angophora*;
- Corymbia*;
- Eucalyptus*;
- Lophostemon*; and
- Melaleuca*.

**Koala habitat values:** means those characteristics of an area that make it suitable as habitat or refuge for koalas. These characteristics include the nature, extent, condition and connectivity of an area and its relation to other areas of habitat.

**Koala sensitive development:** means development that reflects the integration of targeted planning, design, construction and operational measures which avoid (where possible), minimise and mitigate the impacts associated with development and associated infrastructure, on koalas and koala habitat. It creates permeable environments that:

- promote the safe movement of koalas within and across the landscape; and
- reduces the threats to koalas.

**Koala Sustainability Area:** means

- each part of the State shown on the SEQ map as a koala sustainability area; and
- if a local government has an approved local government map for its area—each part of the local government’s area shown on the map as a koala sustainability area.

**Net benefit to koalas and koala habitat:** an overall improvement in the long term viability of koala populations in the wild.

**Offsets:** an offset is an action in conservation undertaken by an applicant to compensate for an adverse environmental impact elsewhere.

**Other development:** means development other than an extractive industry or community infrastructure.

**Regional Activity Centre:** see SEQ Regional Plan.

**SEQ Regional Plan:** means the *South East Queensland Regional Plan 2005-2006* made under the *Integrated Planning Act 1997*.

**Structure Plan:** see SEQ Regional Plan.

**Uncommitted development:** means development that is not a development commitment.

**Urban activity:** means an urban activity as defined by the SEQ Regional Plan, Part H: The Regulatory Provisions.

**Urban Koala Area:** means

- each part of the State shown on the State map as an Urban Koala Area; and
- if a local government has an approved local government map for its area—each part of the local government’s area shown on the map as an Urban Koala Area.

**SEQ map:** means map 5 of the SEQ Regional Plan.

**SEQ region:** means the SEQ region as described in the *Integrated Planning Act 1997*, section 2.5A.2

**State map:** see the *Nature Conservation (Koala) Conservation Plan 2006* section 10(1).

# 6 Koala policies

## Policy 1: Koala sensitive development

### Purpose

The purpose of this policy is to:

- provide direction on achieving compliance with the koala conservation criteria for development assessment within the *Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006–2016* appropriate to the Koala Habitat Area, development type and development commitment; and
- establish the objectives and practices which can be applied by State and local government and the development industry to provide for, and promote the movement of koalas into, within or out of an area.

### When this policy applies

This policy applies to development located within a Koala Habitat Area in the SEQ region, as identified by the SEQ Regional Plan and local government planning schemes.

### What this policy does

The policy outlines measures that can be used to reduce the impact of development on koala populations. Collectively these measures are known as koala sensitive development. This policy identifies what is koala sensitive development for the purposes of development assessment, and how it

may be achieved. However, it does not purport to be the only authority.

Nothing in this policy restricts a local government from requiring alternative or more stringent koala sensitive development measures than that set out in the policy.

The Koala Plan promotes innovation to achieve improved outcomes for koalas and koala habitat through koala sensitive development.

### Further guidance and information

The EPA will facilitate the provision of further guidance and information regarding the implementation of koala sensitive development in the form of technical guidelines that address matters such as providing for koala movement.

### Definition of koala sensitive development

Koala sensitive development is development that reflects the integration of targeted planning, design, construction and operational measures which avoid (where possible), minimise and mitigate the impacts associated with development and associated infrastructure, on koalas and koala habitat.

The aim of koala sensitive development is to create permeable environments that:

- provide for the safe movement of koalas within and across the landscape; and
- reduce the threats to koalas.

Koala sensitive development can be implemented at both the strategic and/or site level scale.

### Koala Habitat Areas

#### Strategic planning

The overall outcomes for Koala Habitat Areas (refer to section 5: Koala conservation criteria for development assessment) are to be reflected within all relevant strategic planning documents. These documents include:

- local growth management strategies;
- structure plans,
- local government planning schemes;
- local area plans, development control plans, master plans, rural precinct plans or other similar planning instruments;
- local government nature conservation strategies; and
- State Government plans and studies.

### Koala sensitive development objectives

Koala sensitive development objectives include:

- (1) protection of undisturbed areas where koalas live in conservation and open space areas;

- (2) provision of continuous connections of habitat where fragmentation by roads and other structures is minimised;
- (3) linkage of on-site habitat to habitat external to the site;
- (4) reconnecting and rehabilitating disturbed habitat linkages and areas retained within open space;
- (5) buffering and protecting retained habitat from the impacts of earthworks, clearing, weed invasion and inappropriate fire regimes;
- (6) responding to a site's opportunities and constraints to maximise the retention of habitat and individual trees;
- (7) mitigating threats from domestic dogs;
- (8) minimising and mitigating impacts from road traffic;
- (9) promoting community awareness through education;
- (10) incorporating a range of layout and design measures designed to provide for safe koala movement, including:
  - koala friendly fencing;
  - koala friendly swimming pool design;
  - koala exclusion fencing where appropriate;
  - landscaping with native vegetation, including locally occurring koala habitat trees;
  - retention of koala habitat within road verges, district, local and pocket parks and residential lots;
  - road design, alignment and construction that aims to, where appropriate, reduce speed, increase visibility and provide for safe road crossings;
  - utilise measures, such as covenants and body corporate/community title provisions, to achieve layout and design measures.

### **Implementation of koala sensitive development objectives**

Koala movement across a site or area can be facilitated through the following measures:

- (1) Establishing the context of the development;
- (2) Undertaking a site assessment;
- (3) Undertaking constraint analysis and preparation of a layout plan based on points 1 and 2;
- (4) Identifying detailed design specifications, other measures, considerations and requirements, including:
  - (A) Management of vegetation loss;
    - (i) Open space;
    - (ii) Vegetation removal; and
    - (iii) On-going vegetation management;
  - (B) Providing permeability;
    - (i) Lot layout
    - (ii) Habitat linkages; and
    - (iii) Fencing – koala friendly and koala exclusion;
  - (C) Rehabilitation of koala habitat;
  - (D) Landscaping;
  - (E) Local government roads;
  - (F) Community infrastructure and utility services; and
  - (G) Dog management;
- (5) Defining development envelopes;
- (6) Road design;
- (7) Construction;
- (8) Extractive industry;
- (9) Covenants/community title; and
- (10) Community education and awareness;
  - (A) Swimming pool design; and
  - (B) Neighbourhood education.

#### **1. Establishing the context of the development**

Consider the role the site undertakes within the broader landscape. Koala movement should be considered in terms of the koala habitat on surrounding lots and the likely areas that koalas use to traverse the site and surrounding area.

- Is the site predominately cleared but forms a critical link in its undeveloped state between other areas of koala habitat? (Note: koala habitat can be cleared area and non-remnant vegetation).
- Does the site form part of a recognised bioregional wildlife corridor, local government corridor or rehabilitation or revegetation corridor?
- Has local government identified strategic habitat linkages and areas through local planning processes?
- Is the site adjacent to protected area estate, local government reserve or park?
- Does the site have other significant ecological values (e.g. wetlands)?

#### **2. Undertaking a site assessment**

Refer to Policy 4: *Koala Survey Methodology for Site Assessment*

#### **3. Undertaking constraint analysis and preparation of a layout plan**

Identify opportunities for habitat retention:

- locate buildings, structures and infrastructure within existing cleared or disturbed areas or areas that are of lesser importance to koalas (as determined by site assessment), to the greatest extent practicable; and
- maximise opportunities to retain individual trees, clumps and habitat linkages by integrating with other functions or areas:
  - open space – regional, district, local and pocket parks;
  - road verges; and
  - backyards (e.g. in corners along boundary lines).

#### 4. Identifying detailed design specifications, other measures, considerations and requirements

##### (A) Vegetation management

###### (i) Open space

Open space can provide valuable habitat to koalas. Open space should:

- supplement existing koala habitat through additional plantings of koala habitat trees and the rehabilitation of degraded areas; and
- provide linkages to adjacent habitat.

###### (ii) Vegetation removal

The removal of vegetation during development should involve the following:

- retention of medium sized understorey native species (*Banksia*, *Acacia*, *Callistemon* and *Melaleuca*) that are suitable for small backyards;
- sequential clearing of vegetation to provide sufficient time and space to allow any koala residing in a tree to move to alternative habitat without harm (Refer to Policy 6: *Vegetation clearing practices*);
- careful removal of large single trees to minimise disturbance to surrounding vegetation and landscapes;
- avoiding the placement of fill on the root zone of eucalypts which are to be retained as the fill starves the roots of oxygen and water; and
- removing the minimum number of trees required, to the extent practicable.

###### (iii) On-going vegetation management

Management of retained or rehabilitated vegetation during and post development is important to achieve the long term retention of habitat or habitat links planned in the conceptual stage of the development. The following should be considered:

- design the development to limit high impact activities on koala habitat and retained vegetation;
- manage site works and contractors to ensure against unapproved or accidental removal or tree deaths (e.g. from altered sediment or nutrient loads created during clearing or construction);
- manage road side vegetation to ensure visibility for driver safety;
- plan and implement fire and weed management strategies with the community and local government to ensure long term actions to reduce the loss of koalas or degradation of koala habitat or its values;
- encourage the planting of native vegetation local to the area and discourage weed planting; and
- place fencing and signage in areas to raise awareness of the importance of habitat for koalas.

Refer also to Policy 6: *Vegetation Clearing Practices*, and Policy 11: *Rehabilitation of Land to Provide Koala Habitat*.

##### (B) Providing for permeability

Permeability of a site or area can be provided for by:

- locating buildings/structures, roads and works to minimise the fragmentation of koala habitat to be retained;
- locating buildings/structures and works in a manner that provides pathways, clearways or climbing routes accessible and safe for koalas around these impediments for koalas traversing the site;

- minimising the creation of large areas that exclude traversing koalas including minimising the area enclosed by koala exclusion fences and erecting only koala sensitive fences on lot boundaries; and
- where new roads are required, including design measures that enable koalas to cross safely;
- retaining koala habitat trees across the site in a manner that provides habitat links and refuges for koalas.

###### (i) Lot layout

- retain koala habitat trees to the greatest extent practicable;
- minimise the need for extensive earthworks and retaining walls;
- incorporate koala exclusion fencing within part of a lot or premises as a component of a whole-of-development strategy to manage dogs;
- incorporate koala-friendly fencing elsewhere; and
- minimise impenetrable areas resulting from building density.

###### (ii) Habitat linkages

The most important characteristics of a habitat link are that it connects two or more areas of habitat, and provides opportunities for koala dispersal and gene flow between koala populations as well as a relatively safe area for residential koala movement and refuge for koalas.

Habitat linkages should be established whenever an opportunity is identified and should incorporate the following principles:

- links are provided to habitat beyond the boundary of the development site;
- multiple links between habitat areas are provided to maximise connectivity;

- links are based on existing natural features, such as watercourses and associated riparian vegetation, and areas of remnant and regrowth vegetation;
- land unsuitable for development, including flood-prone land or steep land is also used to provide links;
- links are made as wide as possible. Links 100m in width or greater are recommended as they minimise ‘edge effects’, but may not be achievable in all circumstances;
- where links include cleared or partially cleared areas, these are revegetated consistent with the pre-clearing species composition;
- where it is impracticable to provide for vegetated linkages, single trees or small clumps of trees are retained or planted across a site to provide temporary shelter; and
- as far as practicable, roads or other service corridors are located outside koala habitat or links between habitat.

### (iii) Fencing – Koala-friendly and koala exclusion

Fences are a major obstacle to koala movement. Koalas become easily confused and disoriented when confronted with a new fence. Increased time spent on the ground increases their vulnerability to dogs (particularly in domestic yards) and traffic. A ‘koala’ friendly fence does not hinder the movement of, nor trap, a koala.

#### Koala-friendly fencing

The following approaches to fence design are aimed at reducing the impact of fences on koala movement and mortality:

- (a) allow koalas to climb easily through or over the fence by:
  - choosing materials, such as timber post-and-rail or chain wire, that a koala can easily grip and climb;

- not stringing wire strands too tightly;
  - using rails or slats that are not more than 15cm wide; and
  - leaving at least a 30cm gap between ground level and the first rail or strand.
- (b) provide a means for koalas to get over a fence that cannot be easily climbed by:
    - installing a timber post leaning against the fence at a 45 degree angle on either side;
    - planting vegetation within very close proximity (branches touching or trunks within one metre of each other) on either side of the fence to provide a natural ladder;
    - installing panels or planks horizontally along the top of the fence to provide a walkway; and
    - building the fence around existing trees and vegetation.

#### Koala exclusion fencing

In some cases, it is advisable to prevent koalas from entering an area that poses a threat to their health and well being. Koala exclusion fencing may be appropriate in a number of instances. These include:

- where a fence is erected within part of a lot or premises to separate domestic dogs from koalas;
- where animals need to be funnelled to ‘safe’ crossing points on, over or under roadways; and
- where intensive construction or ongoing operational activities are underway.

General principles for exclusion fencing are:

- exclusion fencing should not be routinely used as a means of safeguarding koalas from hazards, except for the management of domestic dogs and the protection of koalas from high volume/high speed roadways;

- koala exclusion fences should not be placed on large lot boundaries where such fences could be practicably sited to enclose a much smaller area; and
- erect koala-friendly fences on lot boundaries, except where koala exclusion fences are the only practical way of safeguarding koalas from incompatible uses (or domestic dogs) on a lot.

#### Exclusion fencing to separate dogs and koalas

To separate domestic dogs from koalas, exclusion fencing should:

- only be erected over a maximum of 70 percent of the site/premises or boundary;
- be made of a material that koalas can not easily grip, including, for example, tin panels; and
- have a gap of less than 10cm between the ground and appropriate fencing material.

#### Exclusion fencing for roadways

There are two types of exclusion fencing:

- (a) smooth metal or perspex sheets of at least 50cm in height attached to the top of fencing that koalas can climb. This prevents koalas from gripping and climbing over the fence. These slippery materials can be fitted to the tops of most existing or new fences including chain link; and
- (b) of a floppy topped design. Floppy fencing is designed so that a koala can climb it but it will flop over with the animal’s weight and force it to drop back to the ground on the safe side. These are often made from a chain link material.

Nearby trees and shrubs should be at least three metres away from the exclusion fencing.

### **(C) Rehabilitation of koala habitat**

Rehabilitation of koala habitat should:

- select species to mirror those already occurring naturally in the area, and preferably be propagated from local seed stock (i.e. from seed collected on site or in the local area);
- provide for the planting of trees at a density to mirror surrounding undisturbed areas;
- provide a range of understorey and groundcover species in addition to canopy species to provide a natural environment and ecosystem function of plants suited to the site. Koalas commonly shelter in shadier understorey species such as *Casuarina*, *Banksia*, *Melaleuca* and *Acacia*;
- allow for adequate monitoring and maintenance of planting sites including watering, mulching and weeding until the plants are able to survive without human intervention;
- require trees to be well spaced (minimum three metres apart) in groupings to develop full crowns, rather than dense mass plantings which encourage tall growth;
- as necessary, provide for the use of smaller koala-friendly trees which are less prone to dropping limbs (if compliance with safety and infrastructure requirements is an issue);
- provide for rehabilitation to target those areas where koalas are experiencing significant levels of mortality from dogs and cars;
- provide for the restoration of degraded areas to mirror former landscape;
- develop roadside verges with koala habitat trees in residential streets with low speed limits; and
- limit revegetation of low shrubs and ground cover along State-controlled roads to allow for greater visibility of koalas crossing the road.

### **(D) Landscaping**

General principles for landscaping are:

- plants used for landscaping should comprise 70 percent of Australian plants of which 50 percent are native to the locality and include trees of the genera *Eucalyptus*, *Corymbia*, *Angophora*, *Lophostemon* or *Melaleuca* known to be favoured by koalas (except where trees of these species are inappropriate for the site because of their size or intolerance of the ground or soil conditions);
- species composition should reflect that of the site (pre-clearing) or adjacent areas;
- landscaping should not impede the spatial movement of koalas (for example, dense hedges that would act as a fence and restrict the movement of koalas); and
- landscaping should not adversely impact on the surrounding environment and ecological values.

### **(E) Local government roads**

Refer to Policy 12: *Local road placement, design and upgrade*.

### **(F) Community infrastructure and utility services**

Community infrastructure and utility services such as power and telecommunications, sewerage, water supply and stormwater drainage should be appropriately located and designed to minimise the impact on koala habitat and movement. In particular, buildings, other structures or utility services should:

- (a) be located in existing cleared areas to the greatest extent practicable;
- (b) avoid, where possible, crossing or fragmenting important habitat areas;
- (c) for utility services, be co-located to the greatest extent practicable and share utility trenches where possible;

- (d) adopt appropriate construction techniques (refer to 7. Construction techniques)
- (e) include measures to provide for the safe movement of koalas where required (refer to 4 (B) Providing for permeability); and
- (f) minimise the use of koala exclusion fencing, except where it applies to roads and in the achievement of (e).

### **(G) Dog management**

Domestic dog attacks on koalas in backyards are known to result in high koala mortality. A number of opportunities exist to address dog-related koala mortality. These include:

- creating dog free estates using covenants or community title to prohibit in perpetuity the keeping of dogs, or limiting of the breed/size of dog allowed to be kept in Koala Habitat Areas;
- containing dogs to the house or a portion of the yard at night when koalas are most active; or
- using koala exclusion fencing (refer to 4(B)(iii) Fencing).

## 5. Defining development envelopes

Development envelopes should be established at the Material Change of Use or Reconfiguration of Lot stage and established to:

- (a) minimise the development footprint;
- (b) be located in cleared areas that do not support koala habitat trees with a height greater than 4m; or a trunk with a diameter greater than 10cm at 1.3m above the ground;
- (c) incorporate all activities, buildings or structures, driveways, landscaping, fencing or infrastructure; and
- (d) limit impacts on adjacent areas outside of the envelope.

Development envelopes may not be appropriate in all areas or circumstances, e.g. Urban Koala Areas.

## 6. Road design

A significant threat to koalas in Queensland is injury sustained from strikes by vehicles. To effectively mitigate the impact of roads, a combination of approaches need to be applied including:

- (a) strategic location of road corridors to ensure significant habitat areas are not dissected or further fragmented;
- (b) strategies to minimise vehicle–animal interaction;
- (c) reducing the speed of vehicles and using other traffic calming measures;
- (d) increasing drivers' visibility of koalas; and
- (e) raising public awareness of those areas where koalas are more likely to frequently cross roads.

Strategies used in road location and design should have regard to the spatial location of habitat (and cleared

areas) and habitat type, the number of vehicles likely to use the proposed roads, the anticipated vehicle speeds, and the likely volumes of traffic between the hours of 6pm and 6am.

### Designing New Roads

Roads that have higher speed limits (such as State-controlled roads) should include measures to minimise the risk to koalas crossing the roads, where the roads pass through or are adjacent to koala habitat.

Roads should be designed to limit speed and collisions and to provide appropriate crossings for koalas. Management practices used during the planning, design, construction and operational phases may alleviate some of the impacts of roads on koala populations. The Queensland Department of Main Roads has produced the document *Fauna Sensitive Road Design - Volume 1: Past and Existing Practices*, which suggests that the following key principles, if employed, are likely to have a positive influence on fauna populations:

- avoid major habitat areas;
- avoid bisecting large habitat areas where possible;
- minimise clearing;
- retain or establish vegetated habitat linkages; and
- include appropriate structures that assist the safe movement of a wide range of fauna across, over and under roads.

Road design and landscaping should also assist with the detection of koalas on roads. (Refer to Policy 12: *Local road placement, design and upgrade*.)

Where the dissection of koala habitat cannot be avoided, mitigation approaches should be implemented. These might include exclusion fencing, which prevents koalas moving to certain areas, and guidance to safe

crossings with enforced traffic calming and low speed limits, underpasses, culverts or bridges. In general, where roads dissect areas of significant habitat, the road should be as narrow as possible, and edges should be replanted with suitable native species. In contrast, vegetated corridors that link core habitat areas should be as wide as possible (Main Roads, 2004).

### Road design and construction techniques

Taking these factors into account, the following road design and construction techniques can be implemented as appropriate according to the road function:

- (a) Using koala exclusion fencing along the road to direct koalas to:
  - overpasses, underpasses or culverts; or
  - designated koala crossings with the following features:
    - (a) increased lighting and warning signs;
    - (b) speed reduction devices;
  - road crossings that are narrow, raised and painted; and
  - trimmed vegetation at crossing points to increase visibility.
- (b) Reducing vehicles speeds on roads other than State-controlled roads by incorporating:
  - curving and winding road sections;
  - speed reduction devices;
  - awareness signs;
  - signed low speed limits (residential roads); and
  - other traffic calming devices.

### Existing roads and safe crossings

Where available, records can be used to identify sections of roads that have an unacceptably high number of koala deaths. Once identified, these roads can be targeted for lower speed limits, traffic calming, exclusion fencing, increasing visibility, and awareness programs to provide a safe

crossing point. Exclusion fencing can be designed to deter koalas and other fauna from moving through some areas that may lead them to roads or can guide them to a safe crossing point.

There are various methods of alerting drivers to a changed traffic environment and to the need to reduce speed to increase reaction time. These actions will also provide a safer environment for people and can enhance the streetscape appearance within the developed area. Methods include:

- rumble strip crossings;
- road painting;
- adequate lighting to enhance visibility for drivers;
- enforced speed limits that are signed and slower when koalas are most active e.g. 6am–6pm and August–December;
- speed bumps;
- the use of appropriately designed over- and under-passes;
- narrowing the road at the crossing point and planting koala food/habitat trees at the narrower point to provide refuge for koalas while providing visibility for drivers;
- curving and winding roads to reduce speeds. Straight roads encourage speed and movement of cars; and
- planting trees on small islands in the middle of a road.

Where it is desirable to have higher speed limits for the purposes of ‘moving people’, crossings will not be ‘safe’ and so other methods that allow for the safe movement of koalas should be employed.

## 7. Construction techniques

The impact of construction works on koalas and koala habitat can be minimised by the following actions (though is not restricted to):

- staging or limiting site disturbance and vegetation removal to only the area and stage necessary for construction purposes (progressive staging);
- using protective fencing to avoid accidental damage to retained native vegetation and to prevent stockpiling gravel and other materials near the root zone of trees;
- conducting the clearing of trees sequentially and under the guidance of a koala spotter (Refer to Policy 6: *Vegetation clearing practices*);
- not conducting any operations between the hours of 6pm and 6am;
- safeguarding koalas from dangerous equipment and works using koala exclusion fencing, if required—refer to 4(B) Providing for permeability;
- effectively controlling dogs on site; and
- landscaping and/or revegetating the site where works have been completed as soon as possible (progressive landscaping/rehabilitation) (Refer to Policy 11: *Rehabilitation of land to provide koala habitat*).

## 8. Extractive industry

Extractive industry can result in the temporary or permanent loss of koala habitat from the site. The following koala sensitive development measures will assist in minimising the loss of koala habitat:

- appropriate siting of ancillary buildings, structures and other works—refer to 5. Defining development envelopes;

- facilitate koala movement across the site—refer to 4(B) Providing for permeability;
- minimise the area enclosed by koala exclusion fencing and erecting only koala friendly fences on lot boundaries—refer to 4(B) (iii) Fencing;
- where new roads are required, including design measures that enable koalas to cross safely—refer to 6. Road design;
- ensure construction techniques minimize the impact on koalas and their habitat—refer to 7. Construction techniques;
- conduct operations in a manner that minimises deterrents to koala movement at night (e.g. the effective control of dogs, noise and traffic); and
- progressively staged and rehabilitation of the site, involving:
  - (a) staging the operation to reflect reasonable overall operational needs; and
  - (b) limiting the extent of tree clearing to that required for each stage and its ancillary requirements; and
  - (c) other measures outlined in Policy 6: *Vegetation Clearing Practices* and Policy 11: *Rehabilitation of land to provide koala habitat*.

## 9. Covenants/community title/community management statements

Covenants or body corporate titles facilitate the continued co-existence of people and wildlife and may be used to include reductions, bans or curfews on domestic dogs, restrictions on the clearing of trees, and the regulation of fencing or other infrastructure.

Covenants or body corporate titles may be used, for example, to achieve the following:

- Covenants or body corporate titles can be used to retain habitat on properties, regulate clearing practices or to minimise hazards for koalas arising from dogs, fences and swimming pools; and
- Covenants can be included in the contract of sale for future residents (use statutory covenants) in relation to domestic animals, tree clearing, species for landscaping etc.

Community management statements may provide an opportunity to inform covenants and community title processes in achieving koala conservation measures.

### **10. Community education and awareness**

Community education and awareness may involve strategies targeted at specific features or areas of residential estates, or broader strategies that are relevant to all residents of a local government area. It may involve or include actions such as:

#### **(a) Swimming pool design**

While koalas can swim, they can become trapped in swimming pools and drown. To address this threat, swimming pool design should include:

- having a rope of not less than 30mm diameter that hangs in the pool, extending below water level, and is securely anchored outside the pool, or,
- the pool is constructed with a 'beach' type access where the pool water is level with part of the surrounding pavement, allowing koalas to move out of the pool; and
- provide koala exclusion fencing around the pool. While fencing is a mandatory requirement for swimming pools in Queensland, many fences may not necessarily exclude koalas, particularly small juveniles.

#### **(b) Neighbourhood education**

Developments designed with koala sensitive development measures should incorporate education strategies to gain co-operation, perpetuate or achieve desired outcomes. These should include:

- informing potential buyers that the development has been designed to be sensitive to koalas and their habitat. Marketing may include reference to the significance of the area;
- regularly reminding residents of their obligations under covenants/ community titles, or best practice initiatives, such as (a) above; and
- incorporating interpretive signage throughout the development to identify koala habitat and/or koala habitat trees.

*This policy was accurate at the time the Koala Plan was declared. A current version of this policy can be found at [www.epa.qld.gov.au](http://www.epa.qld.gov.au)*

## Policy 2: Offsets for net benefit to koalas and koala habitat

### 1. Purpose

This policy provides a framework and direction for the use of environmental offsets to provide net benefit for koala conservation for unavoidable development in high quality koala habitat in south-east Queensland, as required by the koala conservation criteria contained in the *Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006–2016*.

In situations where there is an unavoidable need for development of certain types to impact on the most vital areas of koala habitat identified in the SEQ Regional Plan, i.e. Koala Conservation Areas (KCAs) and Koala Sustainability Areas (KSAs), the principle of net benefit is used to require actions that are aimed at supporting an overall improvement in the long-term viability of koala populations in the wild. The requirement to provide a net benefit can be met by using offsets to provide an action (or actions) beneficial to koalas and koala habitat such as planting of cleared habitat or securing vegetated habitat that is under threat from development. The process for applying net benefit offsets to koalas and koala habitat is detailed in Annex 1. Annex 2 contains definitions relevant to this policy.

This policy will be supported by a guideline to be developed by the Environmental Protection Agency to assist local authorities, proponents and others involved in its implementation.

### 2. What this policy applies to

#### 2.1 What development?

This policy applies within a KCA or a KSA to the following development where it is not a development commitment:

- a material change of use under the Integrated Planning Act for extractive industry within a Key Resource Area; or
- community infrastructure within a KCA or a KSA that can demonstrate an overriding need in the public interest for a location in a KCA or KSA.

The policy will be applied when development applications are assessed, when community infrastructure is designated or as provided for in memorandums of understanding with relevant State Government agencies.

#### 2.2 What impacts?

This policy focuses on the unavoidable impact of development proposals on the quantity, quality and connectivity of koala habitat on the development site, otherwise referred to as the *residual habitat impact* or *RHI*.

This policy does not require the provision of offsets for non-habitat based impacts such as vehicle related mortality.

Any measure that avoids, reduces, mitigates or rectifies habitat impact on the development site will reduce the *RHI*, regardless of whether it is something the proponent would be required to do anyway.

#### 2.3 What offsetting actions?

Whilst the development impacts required to be offset under this policy are restricted to habitat loss, the offsetting actions that can be taken to demonstrate net benefit are not. Preference is given to habitat

protection and restoration measures, but other actions, such as projects to reduce vehicle mortality on koalas, are able to count towards meeting the required value of the offset package.

### 3. Net benefit objective

The policy objective is that development which must impact on important koala habitat requires a net benefit large enough to ensure that it contributes significantly to the recovery of koalas in SEQ Region.

The *required value of the offset package* is 1.5 times the value of the RHI for that proportion of an offset package that comprises high quality habitat measures and 2.5 for the balance of the offset package. To be classified as being of high quality for the purposes of this policy, habitat measures must be in or adjoining the same KCA, KSA, or contiguous KCA/ KSA cluster as the development impact and must involve either protecting habitat that can be cleared (without an obligation for replacement) under an existing development approval or improving habitat values through rehabilitation of cleared areas.

It is normal for offset values of greater than 1.0 to be required, even where the goal is just to replace whatever is lost. This takes into account the risk and uncertainty involved in providing benefits through an offset. However in this case, the 1.5 and 2.5 figures also reflects the high value of the koala habitat to which they apply and the importance of this habitat in protecting the koala from localised or widespread extinction in SEQ.

The net benefit equation is therefore:  
*Required value of offset package = (1.5 x Residual habitat impact x Proportion of high quality habitat measures) + (2.5 x Residual habitat impact x Proportion of non high quality habitat measures)*

## 4. Factors that influence the calculation of RHI

### 4.1 Quantity of habitat lost

The greater the area of habitat lost the greater the *RHI*.

### 4.2 Suitability of habitat lost

The more intact the habitat lost and the higher its connectivity value in allowing koalas to move between other habitat areas, the greater the *RHI*. For the purposes of this policy these two factors are combined as one, habitat suitability. Habitat suitability falls into one of three categories; low, medium or high. The characteristics of each of these categories are detailed in Annex 3. A *suitability weighting* of 0.4 is assigned to low suitability habitat, a weighting of 0.7 is assigned to medium suitability habitat and a weighting of 1.0 is assigned to high suitability habitat.

All habitat within KCAs and KSAs is considered to provide connectivity.

### 4.3 Duration of loss

The longer the duration of loss the higher the *RHI*. Any loss of vegetation that is to be re-established within three years of clearing to vegetation and landform that will provide equivalent habitat when regrown is only considered a temporary loss. It is included in the calculation of *RHI* with a *duration weighting* of 0.5, whereas a *duration weighting* of 1.0 is applied to all permanent loss.

### 4.4 Calculating RHI

*RHI* is calculated as follows:

$$RHI \text{ (in habitat units)} = \text{area of loss (in hectares)} \times \text{suitability weighting} \times \text{duration weighting.}$$

Where the habitat maintained by a development is not homogenous in terms of its suitability and/or the

duration of loss, a separate calculation is required for all areas that have a common *suitability weighting* and *duration weighting*. Where there is more than one such calculation they are then added together to determine a single *RHI* for the development.

#### Example

If a development will require:

- the permanent loss of 5 hectares of low suitability habitat;
- the permanent loss of 3 hectares of high suitability habitat; and
- the temporary loss of 4 hectares high suitability habitat;

the *RHI* would be calculated as follows:  $RHI = (5 \times .4 \times 1) + (3 \times 1 \times 1) + (4 \times 1 \times .5) = 7$  habitat units

## 5 Factors that influence the value of a proposed offset package

### 5.1 Quantity of habitat gained

The larger the area of intact habitat or rehabilitation offered the higher the value of the offset.

### 5.2 Suitability of habitat gained

The greater the intactness and value for koala movement of the habitat or rehabilitation offered as an offset, the greater the value or suitability of that offset. The same suitability weighting scale as used for habitat loss is used for habitat gain.

### 5.3 Existing habitat vs rehabilitation

Existing vegetation that is already effective habitat is a more valuable offset than rehabilitation because of the timelag involved for rehabilitation to become effective. Hence planting/rehabilitation/regrowth is assigned a *timelag weighting* of 0.5 when calculating the value of the offset. Existing habitat is assigned a *timelag weighting* of 1.0.

### 5.4 Location of habitat gained

The preferred approach is for *habitat measures* supplied as offsets to provide direct benefit to the impacted population. However, recognising this may not always be feasible, there is considerable flexibility allowed in where *habitat measures* are provided.

In general, *habitat measures* at least equal (in *habitat units*) to the *RHI* of the project must be provided in areas that will provide direct benefit to the impacted population.

*Habitat measures* on lots within or adjoining the KCA or KSA (or contiguous KCA/KSA cluster) in which the development is occurring are deemed to be of direct benefit to the koala population being impacted on.

The balance of *habitat measures* required may be provided elsewhere in the SEQ region.

A higher proportion of *habitat measures* may be accepted elsewhere where it can be demonstrated that no feasible options exist to provide the full value of the *RHI* locally (i.e. within or adjoining the KCA, KSA, or contiguous KCA/KSA cluster).

However this discretion is not available where peer reviewed evidence indicates that the resultant impact of the development will be critical to the long term survival of koalas in the KCA, KSA or contiguous KCA/KSA cluster.

### 5.5 Overall proportion of habitat measures

*Habitat measures* (irrespective of location) must comprise at least 50 percent of the *required value* of the offset package.

## 5.6 Protection for habitat measures

As a general principle, habitat must be under threat of losing its current value to koalas to count towards an offset under this policy. However cleared land to be planted or otherwise rehabilitated as an offset measure does not have to be under threat.

Remnant vegetation under the Vegetation Management Act is not generally considered to be under threat for the purposes of this policy and will not count towards an offset unless existing development rights exist that would allow it to be cleared.

The securing of habitat under threat within KCAs and KSAs, or the rehabilitation of cleared sites within these areas, is encouraged as part of offset packages to consolidate and enhance the integrity of these important habitat areas.

Any *habitat measure*, whether intact habitat or rehabilitation, must be secured permanently from loss to be counted as an offset. Protection may be achieved either by:

- a covenant under the *Land Act 1994* or the, *Land Title Act 1994*;
- a conservation agreement under the Nature Conservation Act;
- inviting declaration of an area of high conservation value under the Vegetation Management Act (that identifies vegetation that cannot be cleared);
- gifting the area to the State (if acceptable to the EPA) or local government for the purpose of inclusion in the protected area or parkland estate.

The conditions stated in the agreement or covenant must specify responsibilities for monitoring, maintenance and management of the site.

Land does not necessarily need to be purchased and retained by a developer, as long as a protection agreement with the land's owner and any necessary offset actions are secured. For example, with third-party agreement, an offset could consist of revegetation that is undertaken on private land owned by a third-party. The area would still need to be protected in perpetuity with a covenant. Similarly, land may be purchased, protected with a covenant, and re-sold for use compatible with the conditions of the covenant.

It is acceptable for a measure that meets a separate offset requirement pertaining to the development in question (for example under the Vegetation Management Act) to count towards an offset provided under this policy.

## 5.7 Value of non-habitat measures

The value of *non-habitat measures* will be assessed on a case-by-case basis. As more experience is gained it will be possible to quantify standard and transparent values for the more common offsets in this category.

The value assigned to a *non-habitat measure* will be based on the size and duration of its contribution to the conservation of koalas.

A *non-habitat measure* must benefit koalas in District A.

## 5.8 Calculating the value of an offset package

The value of a proposed offset package is assessed as follows:

*Value of offset package (in habitat units) = (area of habitat gained (ha) x suitability weighting x timelag weighting) + value of non-habitat measures (in habitat units)*

Where *habitat measures* proposed as part of an offset package are not homogenous in terms of their suitability and/or timelag, a separate calculation is required for all areas that have a common suitability and timelag weighting. Where there is more than one such calculation they are then added together to calculate an overall value for *habitat measures*.

This is then added to the value of any *non-habitat measures* to determine the full value of the offset package.

## 6 Determining the acceptability of the offset package

In general, an offset package will be acceptable if:

- the total value of the proposed *offset package* is at least equal to the required value of the *offset package* (i.e. 1.5 times the assessed *RHI* of the development for that proportion of the proposed *offset package* comprising high quality *habitat measures* and 2.5 times the assessed *RHI* of the development for that proportion of the proposed *offset package* not comprising high quality *habitat measures*).
- the total value of *habitat measures* proposed is no less than 50 percent of the *required value of the offset package*; and
- the value of *habitat measures* of direct benefit to the population being impacted on is no less than the assessed *RHI* of the development, except where otherwise provided within this policy (refer to 5.4 Location of habitat gained).

A development to which this policy applies has not complied with it unless and until the means for future delivery of the *required value of the offset package* has been secured through an *offset agreement* as required below.

## 7. Implementation of this policy

Project proponents will be responsible for proposing and then securing approved offsets. Information such as the EPA's Koala Habitat Suitability Mapping data may be used to assist proponents to determine appropriate land offset sites. The consideration of offsets will be on a case-by-case basis and linked to the IDAS process.

Proponents may discuss offset requirements and proposed *offset packages* at pre-lodgement meetings.

Information on the proposed *offset package* must be provided with the development application. An application without a proposed *offset package* may be the subject of an information request.

The EPA will be responsible for assessing and determining the acceptability of a proposed *offset package* where it holds concurrence powers for koala conservation in relation to a development or as specified in memorandums of understanding with relevant State Government agencies. It will do so based on expert knowledge of the quality and connectivity of *habitat measures* and the value of *non-habitat measures* in abating threats to koala populations in District A.

The relevant local authority will be responsible for assessing and determining the suitability of a proposed *offset package* for other developments to which this policy applies. The EPA will provide specialist advice and support to local authorities to assist them undertake this function. The guideline referred to under section 1 of this policy will also provide assistance to local authorities.

The *offset package* must be secured via an approved *offset agreement* between the applicant and either the EPA or

local authority, depending on which is the assessment manager. The *offset agreement* will consist of a memorandum of agreement for government agencies and community bodies and a deed of agreement for private developers. This *offset agreement* will not form part of any development approval issued to the applicant although it will be finalised in conjunction with it. The *offset agreement* will be separately enforceable in the event that the required *offset package* is not delivered and in the case of private developers will generally utilise a financial guarantee.

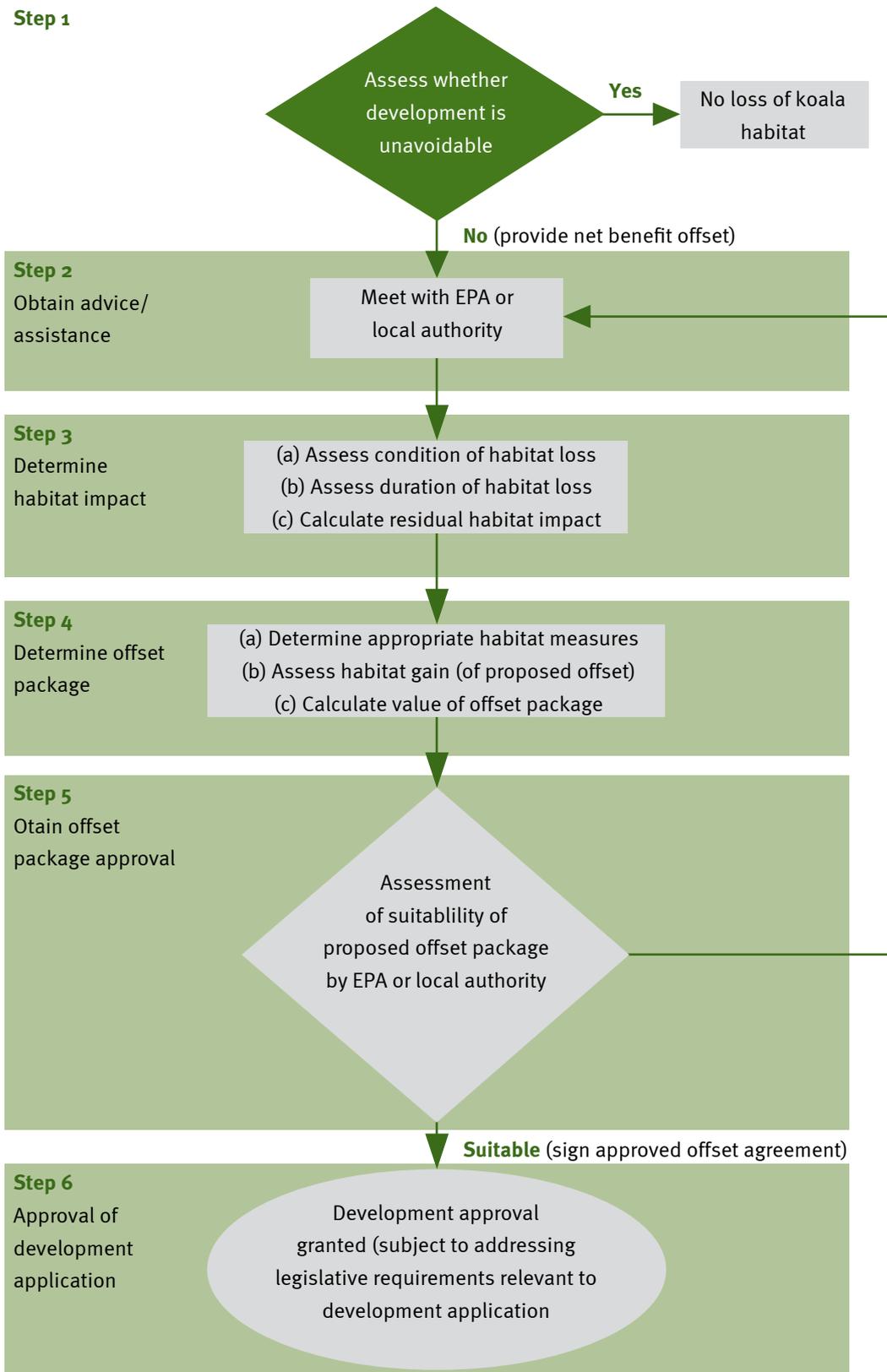
To remove any doubt, a developer is not required to deliver the required offset (e.g. purchase and secure habitat with a covenant) prior to receiving development approval, however an *offset agreement* must be in place before development approval is granted. The requirement to provide offsetting measures under an *offset agreement* will be conditional upon development approval being granted.

## 8. Koala offsets bank

A koala offsets bank is being developed by the Queensland Government. This bank does not currently exist. When it is in place, project proponents will have the choice of utilising it or the process described in section 7 above to discharge their responsibilities to provide net benefit offsets. This policy will be updated to outline how the bank will operate once it is established.

*This policy was accurate at the time the Koala Plan was declared. A current version of this policy can be found at [www.epa.qld.gov.au](http://www.epa.qld.gov.au)*

# Annex 1 The process for applying net benefit offsets to koala and koala habitat



# Annex 2 Glossary

For the specific purpose of this policy the following definitions apply:

**Doesn't provide connectivity:** The impacted area does not appear to enable koala movement between vegetated areas. The offset does not enable koala movement between areas.

**Duration weighting:** A weighting related to the length of time a development impacts on habitat that is used in the calculation of the *RHI*.

**Habitat measures:** Offset measures relating to the securing of habitat or the rehabilitation and securing of habitat.

**Habitat units:** The measure used to underpin the net benefit requirement. Habitat units are used in this policy to allow an objective, quantitative comparison to be made between the impact of a development and the value of offsets proposed to deliver the net benefit.

**High Quality Habitat Measures:** Habitat measures in or adjoining the same KCA, KSA, or contiguous KCA/ KSA cluster as the development impact and involving either the protection of habitat that can be cleared (without an obligation for replacement) under an existing development approval or improving habitat values through rehabilitation of cleared areas.

**Intact habitat:** Areas where 80 percent or more of the area is vegetated.

**Koala habitat:**

- (a) a woodland where koalas currently live; or
- (b) a partially or completely cleared area that is used by koalas to cross from one woodland where koalas currently live to another woodland where koalas currently live; or

- (c) a woodland where koalas do not currently live if the woodland:
  - (i) primarily consists of koala habitat trees; and
  - (ii) is reasonably suitable to sustain koalas.

**Non-habitat measures:** Offset measures other than those related to the securing or rehabilitation of habitat that abate threats to koala populations. These could include measures that reduce road mortality, dog attacks or disease.

**Offset agreement:** An agreement between either the EPA or a local authority and an applicant that creates an obligation to deliver an offset package should a development be approved.

**Offset package:** The term used to describe one or more measures used to provide the net benefit to koalas required under this policy. It does not include on-site measures used to avoid, reduce, mitigate or rectify the effects of a development.

**Partially cleared habitat:** Areas where between 20 percent and 80 percent of the area is vegetated.

**Predominantly cleared habitat:** Less than 20 percent of the area is vegetated.

**Proportion of High Quality Habitat Measures:**  $\text{Habitat unit value of High Quality Habitat Measures} / (\text{RHI} \times 1.5)$  or;  $1 - \text{Proportion of non High Quality Habitat Measures}$ .

**Proportion of Non High Quality Habitat Measures:**  $\text{Habitat unit value of non High Quality Habitat Measures} / (\text{RHI} \times 2.5)$  or;  $1 - \text{Proportion of High Quality Habitat Measures}$ .

**Provides connectivity:** The area of habitat allows for koala movement. Therefore, an impact will inhibit koala movement between vegetated areas; an offset will enable movement between vegetated areas.

**Rehabilitation:** Planting or otherwise re-vegetating cleared areas, enhancing existing vegetation on a site through planting or other measures.

**Required value of offset package:** A quantitative measure of what the value of an offset package must be (measured in *habitat units*) to deliver net benefit under this policy.

**Residual Habitat Impact (RHI):** A quantitative measure (measured in habitat units) of those impacts that remain once all direct steps to avoid, reduce, mitigate and rectify the effects of a development on the site have been employed. It includes both permanent and long term temporary impacts (such as the loss of effective habitat while replanted areas regrow).

**Suitability weighting:** A weighting related to the quality and connectivity value of habitat that is used in the calculation of the *RHI* as well as when assessing the value of proposed offsets.

**Timelag weighting:** A weighting related to the length of time that it takes for a *habitat measure* to provide effective habitat that is used when assessing the value of proposed *habitat measures*.

**Vegetation:** Trees and other woody plants. Excludes grass and other ground cover.

# Annex 3 Habitat suitability

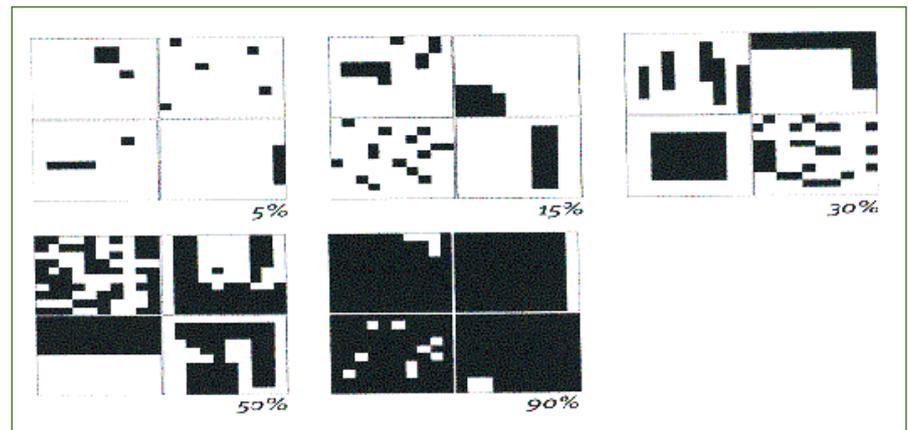
Suitability category	Habitat Condition	Suitability weighting
High	<ul style="list-style-type: none"> <li>Intact &amp; provides connectivity</li> </ul>	1.0
Medium	<ul style="list-style-type: none"> <li>Intact &amp; doesn't provide connectivity</li> <li>Partially cleared &amp; provides connectivity</li> </ul>	0.7
Low	<ul style="list-style-type: none"> <li>Predominantly cleared &amp; provides connectivity</li> </ul>	0.4

## Data available to assist in defining habitat condition

- Determine the percentage vegetation coverage using either the presence of remnant vegetation as identified in the Regional Ecosystem (RE) mapping, or presence of the Statewide Landcover and Trees Study (SLATS) classes of 'native vegetation' or any class of 'regrowth'. Where there is overlap between the REs and SLATS then the REs take precedence.
- A PDF map of RE data is available at [www.epa.qld.gov.au/REMAPS](http://www.epa.qld.gov.au/REMAPS). Enter either a lot plan or co-ordinate location.
- SLATS data is available for purchase on CD from any DNRM service centre. For further information see the NRM website at [http://www.nrm.qld.gov.au/products/cat\\_services.php?category=552&description=Digital+Vegetation+%28incl+SLATS%29+Data](http://www.nrm.qld.gov.au/products/cat_services.php?category=552&description=Digital+Vegetation+%28incl+SLATS%29+Data)

## Vegetation coverage

The diagrams below provide guidance on patterns for different percentage coverage of vegetation.



Source: Department of Primary Industries and Fisheries 2004

*This policy was accurate at the time the Koala Plan was declared. A current version of this policy can be found at [www.epa.qld.gov.au](http://www.epa.qld.gov.au)*

### **Policy 3: Determining overriding need in the public interest**

#### ***Purpose***

The purpose of this policy is to:

- identify criteria relevant to determining overriding need in the public interest for a location within the Koala Conservation and Koala Sustainability Areas.

#### ***When this policy applies***

This policy only applies to uncommitted community infrastructure located within Koala Conservation Areas and Koala Sustainability Areas.

#### ***Relevant information***

To determine an overriding need in the public interest an applicant must establish:

- (a) that there is no suitable alternative location outside of a Koala Conservation Area or Koala Sustainability Area;
- (b) the overall social, economic and environmental benefits of the development outweigh:
  - (i) any detrimental impact upon the natural values of the site;
  - (ii) conflicts with the desired outcomes of the SEQ Regional Plan;
  - (iii) conflicts with the *Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006–2016*; and
- (c) whether the community would experience significant adverse economic, social or environmental impacts if the development proposal were not to proceed.

The following do not establish an overriding need in the public interest:

- (a) activities or uses with relatively few locational requirements; or
- (b) interests in or options over the site; or
- (c) the site's ownership or availability.

*This policy was accurate at the time the Koala Plan was declared. A current version of this policy can be found at [www.epa.qld.gov.au](http://www.epa.qld.gov.au)*

## **Policy 4: Koala survey methodology for site assessment.**

### **Purpose**

The purpose of this policy is to:

- identify an appropriate koala survey methodology for assessing the abundance and distribution of koalas for use in site assessment; and
- assist with the interpretation of results.

### **Ecological assessment**

The aim of an ecological assessment is to determine the ecological features and processes of a site (through flora, fauna and vegetation community/ regional ecosystem surveys).

Assessment of koala habitat and the abundance and distribution of koalas should occur concurrently with other surveys so that there is an accurate and complete appraisal of the site. The methodology and results of the complete ecological assessment, information on the potential impacts on the features and processes, and recommended mitigation measures should be presented in an Ecological Assessment Report.

### **Personnel**

Personnel undertaking ecological site assessments should have appropriate qualifications in an environmental science or related discipline, and/or provide evidence of expertise in the identification of flora, fauna and regional ecosystems. Personnel should also have previous experience in conducting flora, fauna or ecological assessments, with skills in koala detection and eucalypt identification being desirable.

### **Koala survey methodology**

The most accurate method of determining habitat quality with respect to koalas or other fauna is to determine if the animal is residing there. Other indicators of good koala habitat such as soil and foliage analysis or species of tree present are too conflicting to consider as reliable methods.

Surveys of actual animal sightings, rather than the more indirect methods of koala presence such as faecal pellet surveys, scratch markings etc., should be undertaken. Sites that are less than 50ha can be searched in their entirety. Surveys should be conducted according to the method adopted by Dique et al. 2003a:

- The site should be divided into manageable transects, the width dependent on the number of people conducting the search.
- Observers (approximately five) spaced approximately 15m apart should walk a fixed compass bearing, maintaining the same pace as adjacent searchers for operational efficiency.
- Observers should be equipped with binoculars, compass, map and at least one GPS unit per team.
- Every tree in a transect should be searched and data collected for all koalas sighted.
- The observers at each end of a transect can use flagging tape at appropriate intervals to mark transect edges, thereby assuring that the next transect is run off the last one and that no area is left unsearched.

Sites greater than 50ha are considered too large to completely search and instead require the use of a sampling strategy. The inherent idea of sampling is to use a reliable sampling methodology in areas that cannot be

entirely searched to get an estimate of the density of animals on the site. Transects should be uniformly positioned across the site at a constant compass bearing in an effort to sample the site in as unbiased a manner as possible. This may include positioning the direction of the transects so as to not follow entire creek lines or gullies or ridge tops, but to have transects start on a ridge top and continue through gullies and across creek lines in an effort to survey a cross section of each vegetation/habitat type.

### **Data collection**

Koala surveys may need to be repeated to get an accurate representation of koala distribution and density across the site.

The following information pertaining to each koala sighting should be collected:

- Age class: Adult, sub-adult (2–4kg) or juvenile (less than one year old, less than 2kg, not yet independent).
- Reproductive status: The presence of a pouch young, back young, or no young associated with an adult female.
- Health status: Healthy, or showing signs of Chlamydia such as cystitis (wet, stained bottom) and/or conjunctivitis (red or swollen eyes discharging pus), or other indicators of poor health such as discharges from nose or mouth, wasted or emaciated appearance etc.
- Tree species that the koala is sighted in: The collection of fruit and a leaf sample from trees will assist in the identification of unknown species by a botanist or with the use of reference material.
- Koala location: Using a map and/or GPS unit, the location of each koala should be plotted on a map to gain an overall distribution of koalas on the site.

A description of the habitat used by koalas should be provided. Habitat use can be determined through direct observations of animals and supplemented with indirect means using signs of past koala occupation (scratches or faecal pellets).

### **Interpretation of results**

#### **Resident or transient animals**

- Adult koalas will likely be permanent residents of the site. Very few adult animals will disperse from an undisturbed area.
- Sub-adult animals may be temporary residents of the site as this group have a high dispersal probability.
- Juvenile animals are usually sighted in association with an adult female, and will remain on site until sub-adult.

#### **Health of the population**

- A healthy population should have less than 20 percent Chlamydia related disease.
- A high incidence of cystitis will result in a lower breeding rate in the population.
- Habitat loss and disturbance will likely increase the expression of disease in a koala population.

#### **Presence and location of koala habitat**

- The presence of koalas on a site usually indicates the presence of koala habitat.
- If koalas were distributed in a uniform pattern across the site, then the entire site is being utilised by these animals, and any proposed development should endeavour to minimise the disturbance to this habitat.
- If a patchy distribution of koalas was recorded, it is necessary to determine what features of the site can account for this. The main factor contributing to a patchy

distribution of koalas will be the result of a change in vegetation type from one area to the other. This should be adequately described and categorised as part of the vegetation survey component of the ecological assessment and may include changes in the distribution of tree species, tree age, tree density or changes to the geographical characteristics of the area.

- The absence of koalas on a site does not stop it from being important to local koala populations. Sites may not contain any koalas at the time of the survey, but other indicators of koala use such as faecal pellets and scratch marks would indicate that koalas are using the area, whether it be a portion of a larger home range, or as a habitat link to adjacent areas.

### **Additional Information**

#### **Permits**

Specific requirements for scientific purposes permits for wildlife surveys can be obtained from the EPA. Contact ecoaccess on 1300 368 326 or visit [www.epa.qld.gov.au](http://www.epa.qld.gov.au)

#### **Koala survey data**

Local governments may maintain a database of koala and other fauna sightings gained from ecological assessments. Site specific survey information should be provided to local government in an electronic format to assist in the maintenance of this database. Similarly, local government data may be disseminated to the EPA in a suitable format for inclusion in its databases.

*This policy was accurate at the time the Koala Plan was declared. A current version of this policy can be found at [www.epa.qld.gov.au](http://www.epa.qld.gov.au)*

## Policy 5: Requirements for the translocation and release of koalas

### Purpose

The purpose of this policy is to:

- identify instances where translocation will be considered;
- identify the requirements and procedures for the translocation and release of koalas; and
- define release procedures for translocated animals and koalas under a rehabilitation permit.

### Translocation

#### Approval for translocation

Translocation of koalas will be considered only for scientific purposes, such as securing the viability of a population. Considerable scientific evidence is required to demonstrate the need for translocation.

Translocation will not be considered for non-scientific endeavours, such as the removal of animals from land undergoing development. Refer to Policy 6: *Vegetation clearing practices* in this instance. Unapproved translocation constitutes an offence under the *Nature Conservation Act 1992*.

#### Introduction to new areas

Translocation of koalas into areas outside of their natural range is prohibited and constitutes an offence under the *Nature Conservation Act*. No approvals will be given to introduce koalas to new areas or areas outside their known natural range.

#### Re-introduction and re-stocking

Translocation for the purpose of re-introduction or re-stocking purposes must:

- be carried out under an approved scientific purposes permit;

- demonstrate that it is necessary for the viability of regional koala populations;
- follow the *National Koala Conservation Strategy for translocations of koalas in Australia (ANZECC 1998)*, and the release procedures outlined in this policy;
- be supported by research into population status and dynamics demonstrating the need for such a program. The research must demonstrate that population viability in the target area is so threatened that it may lead to severe population decline and probable extinction, and that no other options are available to address this. The research must demonstrate that the habitat in the target area is suitable to support a viable koala population and that such re-introduction will not adversely impact on resident koalas or other species occupying that habitat. Research into the genetic make-up of the source animals must show that they are suitable animals for re-introduction or re-stocking in the target area, and, conversely that the program will not lead to adverse outcomes through the introduction of highly divergent genotypes;
- demonstrate that the population is not likely to decline for other reasons; and
- include ongoing monitoring to demonstrate the adjustment of the koalas to their new habitat and any occurrence of impacts on other species.

#### Augmentation of genetic variation

Translocation for genetic augmentation purposes must:

- be conducted under an approved scientific purposes permit;
- follow the procedures outlined in the *National Koala Conservation Strategy for translocations of koalas*

*in Australia (ANZECC 1998)*, and the release procedures outlined in this policy;

- be supported by research into population genetics demonstrating the need for such a program and that no other options (e.g. assisted reproductive technologies) are available to address this. The research must demonstrate that genetic variation in the target area is so low that it may affect fitness and lead to population decline. Research into the genetics of the source animals must show that they are suitable animals for augmentation of genetic variation in the target area, and, conversely that the program will not lead to adverse outcomes through the introduction of highly divergent genotypes;
- demonstrate that it is necessary for the viability of the population; and
- demonstrate that the population is not likely to decline for other reasons.

#### Translocation to other existing habitat

The translocation of koalas to other existing habitat is prohibited, except under:

- an approved scientific purposes permit; or
- approved recovery program.

Any application for a scientific purposes permit must be supported by a minimum three-year research and monitoring program. The elements of the research and monitoring program must include:

- monitoring the status of the animal before and after translocation, including health and reproductive status, movement patterns and habitat use; and
- determining the impacts of translocation on koala populations as well as other wildlife and habitats at the release site.

### **Release procedures – translocated koalas**

Release of animals for translocation purposes must be managed to improve their chances of survival. Procedures must include the following:

- Timing of the release of animals must be considered carefully, with release preferably taking place in the non-breeding season between March and June.
- Detailed surveys should be undertaken of koala populations at the release site to determine preferred habitat, and usage of the area by koala populations.
- Soft release methods should be used, where animals are kept in housing on site (preferably in an open air, semi-natural enclosure surrounding a small number of trees on the site) and supplemented with local leaf for at least two weeks while their condition is monitored prior to release.
- Post-release animal monitoring should be conducted to determine survival, health and reproductive status and impacts on habitat at the release site.

### **Relocation to other existing habitat – rehabilitated koalas**

A koala kept under a rehabilitation permit must be returned to ‘an appropriate natural habitat’ unless the chief executive (EPA) directs otherwise (*Nature Conservation Regulation 1994*).

For a koala, an appropriate natural habitat is as close as practical to the original place of capture. This provides the best prospects for the koala’s survival. Release sites should be within one kilometre of the capture site, but no greater than five kilometres from the capture site.

If a suitable location at or near the capture site is not possible due to a

total loss of habitat, authorisation must be obtained from the EPA for release at another site. Alternative release sites must match the habitat at the site the animal came from and include extensive forested areas or a connection to such areas. The release site must be in the general district that the koala originated from.

Hand-reared animals with no previous experience of the capture site due to being captured or rescued at a very young age, must be released within five kilometres of the capture site to minimise the impact of accumulated loss of individuals in the local area.

### **Release procedures – rehabilitated koalas**

Release of rehabilitated koalas must follow the procedures for release outlined in the *Code of Practice: Care of orphaned, sick or injured protected animals* and be carried out by EPA staff or volunteers affiliated with the Moggill Koala Hospital, or by staff or volunteers of other private koala hospitals (refer to Policy 9: *Requirements for private koala hospitals*).

### **Additional Information**

#### **Permits**

Specific information and requirements relating to permits issued under the *Nature Conservation Act 1992* can be obtained from the EPA. Contact ecoaccess on 1300 368 326 or visit [www.epa.qld.gov.au](http://www.epa.qld.gov.au)

*This policy was accurate at the time the Koala Plan was declared. A current version of this policy can be found at [www.epa.qld.gov.au](http://www.epa.qld.gov.au)*

## Policy 6: Vegetation clearing practices

### Purpose

The purpose of this policy is to:

- identify when and where there is a requirement for sequential vegetation clearing and the presence of a koala spotter;
- outline best practice approaches for clearing of vegetation where koalas may be present.

### Background

Felling trees within koala habitat can result in the death of, or serious injury to koalas that are present in those trees or in trees adjacent to those trees being cleared.

### Applicability of the policy

This policy is applicable to all vegetation clearing occurring within Koala Districts A and B as prescribed by the *Nature Conservation (Koala) Conservation Plan 2006*.

### Requirements

The *Nature Conservation (Koala) Conservation Plan 2006* contains provisions relating to how koala habitat trees are to be cleared in Koala Districts A and B to ensure against the injury of resident koalas.

It is a requirement of a person authorised to fell trees, or that person's delegate, to ensure all clearing of koala habitat trees in Koala District A and B is undertaken using a sequential clearing technique. In addition, all koala habitat trees being cleared in a koala habitat area within District A must be in the presence of a koala spotter.

Under *Nature Conservation (Koala) Conservation Plan 2006* sequential clearing means:

- (1) clearing of trees is carried out in a way that ensures koalas living in or near the area being cleared (the clearing site) have enough time to move out of the clearing site without human intervention, including in particular, for a clearing site with an area of more than 6ha, by:
  - (a) carrying out the clearing in stages; and
  - (b) ensuring not more than the following is cleared in any one stage:
    - (i) for a clearing site with an area of 6ha or less—50 percent of the site's area;
    - (ii) for a clearing site with an area of more than 6ha—3ha or 3 percent of the site's area, whichever is the greater; and
  - (c) ensuring that between each stage there is at least one period of 12 hours that starts at 6p.m. on a day and ends at 6a.m. on the following day, during which no trees are cleared on the site; and
- (2) clearing of trees is carried out in a way that ensures, while the clearing is being carried out, 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; and
- (3) no tree in which a koala is present, and no tree with a crown overlapping a tree in which a koala is present, is cleared.

A koala spotter means a person who has demonstrated experience in locating koalas in koala habitats or conducting fauna surveys.

Prior to the commencement of, and during felling operations, it is the responsibility of the koala spotter to identify trees in which a koala is

present and any trees where their crown overlaps trees in which a koala is present and convey this information to the person(s) conducting the clearing.

### Best practice approaches

The EPA encourages a best practice approach to all vegetation clearing where koalas may be present to ensure injury or harm of potentially resident koalas is limited to the greatest possible extent.

### Sequential clearing

Sequential clearing can be achieved by a variety of means. Many of these approaches will be site specific. However, the following methods are recommended:

- (1) The thinning, or partial removal, of vegetation on a site that has a known koala presence is recommended, at least for the initial stage of clearing. This provides the opportunity for koalas utilising the site to occupy some of their current home range and allow animals an extended period of adjustment to the clearing. This can be achieved, particularly at future residential development sites, by:
    - (a) the sequential thinning of trees in each progressive stage of development, where the density of vegetation on the site is reduced (by approximately 50 to 70 percent), the remainder of which is retained throughout the site and is removed only when required to build on an individual lot;
    - (b) timing the thinning so that a minimum of one month of no disturbance is achieved after thinning and before lots are developed; and
- staging the thinning so that there is compliance with the sequential clearing provisions of the *Nature Conservation (Koala) Conservation Plan 2006*.

- (2) The direction of sequential clearing should be away from threatening processes or hostile environments, and towards any retained vegetation or habitat links, ensuring:
- (a) koalas are not pressured, through loss of habitat, to cross roads or move through developed or disturbed areas, such as residential areas or areas that require movement of greater than 100m over cleared ground to reach suitable habitat;
  - (b) koalas are not left occupying an 'island' of habitat between hostile environments, such as a road and a cleared area, unless there are no other more suitable habitat areas in which to direct koalas; and
  - (c) koalas can safely leave the site of clearing and relocate to adjacent habitat.

### Koala spotters

- (1) It is recognised that koalas are distributed widely across the landscape and are often found in areas outside designated koala habitat areas. This may include Koala Living Areas and areas that are not mapped as koala habitat. It is strongly recommended that, as a best practice approach, a koala spotter be engaged at any sites where there is a known, or likely, koala presence.
- (2) It is the responsibility of the person authorised to fell trees, or that person's delegate, to appoint a koala spotter prior to the commencement of clearing operations.
- A person is likely to be suitably qualified as a koala spotter if they have:

- worked with koalas in their natural habitat — by conducting koala surveys, koala monitoring, or involved with koala rescue, for example; or
- experience in fauna surveys or fauna spotting in koala habitat areas.

- (3) A koala spotter is not to be involved in the clearing of vegetation while they are responsible for identifying koalas present on the site.

Koalas can be difficult to see, even to the trained eye, and particularly when resting in the tops of tall leafy trees. Koalas can also jump from one tree to another. Consequently, continual surveillance of koalas present on the site is likely to be required during clearing operations to ensure against accidentally felling or interfering with a tree that has a resident koala.

- (4) A koala spotter is not to physically move koalas from a tree in which they are residing to another location. Each tree identified by the koala spotter as being a risk to koalas if felled, should not be felled, damaged or interfered with until the koala has moved from the felling site of its own volition.

### Granting clearing approvals

The clearing of vegetation may require an approval under the Integrated Planning Act (schedule 8), a local government planning scheme, or a local government local law.

Any approval associated with the clearing of vegetation within Districts A and B should be given in consideration of the potential presence of koalas.

Where appropriate, it is recommended to either directly include conditions, based on the practices set out in this policy, or provide additional information with any approval regarding the requirements under the *Nature Conservation (Koala) Conservation Plan 2006* for the clearing of koala habitat trees.

*This policy was accurate at the time the Koala Plan was declared. A current version of this policy can be found at [www.epa.qld.gov.au](http://www.epa.qld.gov.au)*

## **Policy 7: Koala habitat assessment and mapping**

### **Purpose**

The purpose of this policy is to:

- provide direction to local governments on koala habitat assessment and mapping;
- outline the methodology for koala habitat assessment and mapping;
- achieve consistency in the identification of koala habitat; and
- identify the requirements and process for obtaining endorsement of a local government koala habitat map.

### **Background**

In the South East Queensland Bioregion, the koala has been listed as a vulnerable species under the Nature Conservation Act. The State Government, through the SEQ Regional Plan and Koala Plan, has mapped the known important koala areas in the South East Queensland region. These areas have been designated as Koala Habitat Areas and consist of Koala Conservation Areas, Koala Sustainability Areas and Urban Koala Areas.

In order to halt the significant decline in koala populations and reduce the high level of threats it is imperative to protect and restore a diversity of koala habitats and populations throughout the region. For this reason, local government is encouraged to identify and map koala habitat, and include Koala Habitat Areas within their planning schemes.

While koala habitat is generally regarded as bushland or a type of forest/woodland habitat, systematic field surveys, radio-tracking and large numbers of incidental records indicate that koalas are also utilising other environments, such as urban and

agricultural areas to breed and establish home ranges. While the conservation value of forested areas with a high density of koalas is obvious, lower density, fragmented, or developed habitats are also important, particularly as such areas may provide habitat links and allow gene-flow, home range movements or dispersal of koalas across the landscape.

Koalas have little difficulty traversing open ground, therefore koala habitat areas may include cleared areas. These cleared areas are important in maintaining landscape permeability and in providing day-to-day movement and dispersal habitat. Consequently, potential habitat may include cleared, regrowth as well as remnant vegetation within a range of urban, rural and agricultural environments.

Koala habitat assessment and mapping should involve the following series of steps:

### **A. Koala habitat assessment and mapping**

- (1) estimation of koala distribution and abundance;
- (2) koala habitat assessment and mapping; and
- (3) preparation of a habitat assessment and mapping study;

### **B. Koala Habitat Area classification and statutory processes**

- (4) classification of Koala Habitat Areas and Koala Living Areas;
- (5) State Government endorsement of local government koala habitat map; and
- (6) incorporation of koala habitat mapping into planning scheme processes.

## **A. Koala habitat assessment and mapping**

### **1. Estimation of koala distribution and abundance**

The procedure for estimating koala distribution and abundance involves:

- (a) obtaining vegetation mapping data;
- (b) vegetation stratification;
- (c) determining survey sites;
- (d) koala survey methodology;
- (e) koala ecology and population dynamics (optional); and
- (f) population monitoring (optional).

#### **(a) Obtaining vegetation mapping data**

Vegetation mapping data should be obtained to assist in the delineation or stratification of vegetation/habitat types. This data may include regional ecosystem vegetation mapping, Statewide Landcover and Trees Study (SLATS) data (including satellite imagery, landcover mapping, landcover change reports, Foliage Projective Cover (FPC) mapping), and any other relevant mapping including that undertaken by the local government.

#### **(b) Vegetation stratification**

Vegetation mapping data should be used to determine the broad vegetation types across the local government area. These broad vegetation types will assist in determining how the area will be stratified prior to conducting koala surveys. Vegetation types that are not generally known to support koalas, such as rainforest and pine forest plantations, should be delineated but do not need to be surveyed. However, areas that may support lower densities of koalas such as some urban areas should be delineated and surveyed.

Two possible approaches to vegetation stratification may include a general landcover approach, or a more refined regional ecosystem approach.

### General landcover approach

The general landcover approach is based on the delineation of broad landcover/land use to define strata. This approach is more suited to an area that has a high diversity of regional ecosystems or heterogeneity and where it would be difficult to obtain enough samples to achieve statistical significance.

For this approach, suggested strata may include the following (sourced from Dique et al. 2004):

#### (1) Bushland

- contiguous or large areas of native vegetation that may include remnant and non-remnant/regrowth containing many eucalypt species used by koalas for food and shelter; and
- patches generally larger than 10oha.

#### (2) Remnant bushland<sup>6</sup>

- fragmented native vegetation which may include remnant and non-remnant/regrowth containing eucalypt species that are used by koalas for food shelter and as habitat links; and
- patches generally 10ha–100ha.

#### (3) Urban

- includes residential development, schools and small parks;
- important in maintaining landscape permeability and in providing day-to-day movement and dispersal habitat as well as opportunities for individual and genetic movement across habitat zones; and
- scattered trees, grass and native vegetation patches less than 10ha in the urban zone.

#### (4) Rural

- isolated patches of trees, clumps, scattered or individual trees often with an open understorey; and
- areas utilised for grazing or cropping.

### Refined regional ecosystem approach

A more refined approach to the identification of strata involves the use of regional ecosystems. This approach could be used to sample sub-regions or individual regional ecosystems. It is particularly suited to areas which have fewer regional ecosystems and/or a less complex landscape, thereby making it possible to obtain representative samples at a high enough sampling intensity within each regional ecosystem.

#### (c) Determining survey sites

For each stratum determine the location and number of survey sites. The number of survey sites will depend on the diversity of regional ecosystems and landforms. For each stratification, ensure survey sites are replicated a suitable number of times; randomly located within each stratum; and spread geographically across the region. The number of survey sites must representatively sample both the landscape and a proportion of the koala population and ideally needs to be able to detect at least a 20–25 percent change in the population. For example, surveys in the Koala Coast were conducted using the general approach due to the area's heterogeneity. The survey sites represented eight percent of the Koala Coast study area and representatively sampled 16 percent of the koala population. These survey estimates would be able to detect a 20 percent change in koala abundance if the surveys were repeated (Dique et al. 2004).

In general, sampling more survey sites within a study area will increase the accuracy of abundance estimates, while repeated surveys at higher koala density sites will increase the precision of density estimates for those sites (Caughley & Sinclair 1994). Therefore it may be necessary to review the sampling as surveys progress and compare the densities and variance. If the variance is larger than 20–25 percent, then further subdivision of the strata should be considered with the aim of reducing the variance within strata. Consequently the number of sites needs to be a compromise between accuracy and logistical constraints (e.g. time, money, effort etc.).

### Survey site planning

Determine the proportion of the site to be surveyed. This will depend on the koala density, distribution and required survey precision as well as time and logistical restraints. Studies in the Koala Coast suggest that higher density sites require greater sampling intensity than low density sites to maintain a similar level of precision. Consequently, a minimum of 30 percent of each site was sampled in bushland and remnant bushland. Sites that are less than 50ha can be searched in their entirety. Urban sites employed total counts with 100 percent of the site surveyed (Dique et al. 2001).

Determine the positioning of transects on the site. Transects should be uniformly positioned across the site at a constant compass bearing in an effort to sample the diversity of the site in an unbiased manner. This may include positioning the direction of the transects so as to not follow entire creek lines, gullies or ridge tops, but to survey a cross section of each vegetation/habitat type.

<sup>6</sup>Remnant bushland, as used here, has no reference to the meaning of 'remnant' under the *Vegetation Management Act 1999*.

## Survey personnel

Personnel should have previous experience or expertise in conducting fauna, flora or ecological assessments of a site. Skills in koala detection and eucalypt identification are essential. Evidence of qualifications and experience should form part of the completed Koala Habitat Assessment and Mapping Study.

## (d) Koala survey methodology

Koala surveys should be undertaken using scientifically accepted methodologies, such as strip transect, line transect, total counts or other methods as appropriate.

## South East Queensland Bioregion

Surveys targeting the sighting of actual animals must be undertaken, rather than the indirect or index methods of estimating koala abundance such as faecal pellet surveys, or scratch markings etc. While an index may be useful in determining relative abundance or in monitoring populations over time, an estimate of absolute abundance is also needed. By then establishing the relationship between the index and actual koala population, the index can be calibrated for use as an indicator of absolute abundance.

General koala survey methodologies for conducting strip transect, line transect and total counts described in Dique et al. (2003a, 2004) and aspects of survey accuracy, precision and variance are described in Dique et al. (2001). It is recommended that these papers be used as a guide to conducting koala surveys.

- Surveys are best undertaken during the months of August and September as this allows the easy detection of breeding females due to the presence of young on their backs (back young). Small young are difficult to detect while still in

the pouch unless the mother is handled and the pouch inspected. The next preferred survey period is March and April when the young are generally independent of their mother.

- For each survey site estimate the density of the number of independent koalas detected (not including dependent young) for each hectare of bushland searched.

A general methodology for conducting a strip transect survey would include:

- trained observers (usually five), are spaced 15m apart, and walk a fixed bearing, searching all trees for koalas within each 60m transect;
- any koalas detected outside the boundaries of the transects are not included in the analysis of density;
- note koala scats, scratchings or other evidence, such as skulls within (and outside) the transect. These data can be used to supplement those of the survey and determine koala 'presence' and actual habitat utilisation. If no koalas are sighted and there is no other evidence of koalas, this should also be recorded. However it is not possible to determine if koalas are absent from a site without repeated surveys over a period of years; and
- determine koala sightability and estimate sightability factors for each stratum, depending on the density of the vegetation and the experience and expertise of the observers. Koalas are a cryptic species and often difficult to detect during surveys. Koala surveys tend to under-estimate koala density because koalas may remain unseen and consequently mark-resight or other studies are necessary to estimate koala sightability and to calculate a correction factor. The overall koala abundance can then

be adjusted accordingly. Studies in the Koala Coast using radio-collared koalas suggest 16 percent of koalas are not detected by experts (Dique et al. 2001). Other studies in the region have found that the proportion of koalas missed during bushland surveys may be slightly higher at 29 percent (Hasegawa, 1995).

The following data should be collected for each koala sighted:

1. Koala location: Using a map and/or GPS unit, the location of each koala should be plotted on a map to gain an overall distribution of koalas on the site;
2. Description of the tree in which they were sighted: Tree species, tree height, koala height in tree, Diameter at Breast Height (DBH) and tree crown diameter;
3. Age class: Adult, sub-adult (approx. 2–4kg, not yet breeding) or juvenile (less than 1 year old, less than approx. 2kg, not yet independent);
4. Reproductive status: The presence or absence of young; and
5. Health status: Healthy, or showing signs of Chlamydia or other indicators of poor health such as discharges from nose/mouth, wasted/emaciated in appearance etc.

## Areas of extremely low koala density outside the South East Queensland Bioregion

In areas of extremely low density, the indirect or index methods of estimating koala abundance may be more appropriate considering the large amount of effort that may be required to locate enough animals to get usable data. The reliability of survey results may also be compromised in habitat that reduces the sightability of animals, such as tall complex layered forests. In these instances, survey methods should be discussed with the EPA to ensure scientific rigour and appropriateness.

### **(e) Koala ecology and population dynamics studies (optional)**

It is recommended that where possible, detailed koala ecology and population dynamics are studied in collaboration with universities or other research bodies (refer to Research and monitoring section).

Information on ecology and population dynamics is important to the management of the koala and to ensure the long-term viability of populations. The collection of baseline habitat and population information during koala surveys provides an important monitoring tool and allows for an assessment of management strategies over time.

### **(f) Population monitoring**

In order to assess the success of conservation and management measures it is recommended that, subject to available resources, monitoring of habitat and koala populations is undertaken as part of a broader koala research program. Effective monitoring requires the establishment of performance targets and indicators. Subsequent assessment of habitat and repetition of koala surveys is a requirement. It is only through the process of repeated surveying that population change, true absence of koalas, or success of management measures can be determined.

## **(2) Koala habitat assessment and mapping**

### **Koala habitat assessment matrix**

The results of the koala survey and habitat assessment will provide an indication of the distribution and abundance of koalas and koala habitat within each stratum. The results will also guide the subdivision of the strata into broad zones for the ranking of koala habitat (e.g. A, B, C, D).

Zone A designates areas with the highest koala habitat values and/or densities, Zone B — medium habitat values and/or densities, and C — lower habitat values and/or densities etc. Depending on the range of habitat values or known koala densities within a study area, additional designations may be used (e.g. E, F, or G).

These broad zone designations are then applied to each stratum to form the koala habitat assessment matrix. The matrix is a ranking of koala habitat across the study area. An example of such a ranking process, including descriptions, is set out in Table 13.

In this example, when the 'A' habitat zone is applied to the bushland, bushland remnant and urban strata, the result is 1A, 2A and 3A categories. These categories correspond to the best koala habitat and/or densities within each stratum. This process is repeated with all habitat zones to yield a matrix of habitat values.

**Table 13 Koala habitat assessment matrix**  
**Example table only**

Koala habitat zone	Landscape stratum			
	Bushland	Remnant bushland	Rural	Urban
<p><b>A Habitat</b></p> <p><i>Highest koala conservation value</i></p> <p><i>Highest koala habitat values and/or koala densities relative to study area</i></p>	<p><b>1A</b></p> <p>Very large areas of mostly unfragmented bushland. Very large patch sizes. Generally low intensity human habitation. Highest koala habitat values and/or highest koala densities within stratum.</p>	<p><b>2A</b></p> <p>Fragmented bushland with moderate sized patches and low intensity human habitation. Good habitat and/or habitat links. Highest koala habitat values and/or highest koala densities within stratum.</p>	<p><b>3A</b></p> <p>Rural or agricultural areas with scattered patches or clumps of vegetation, often with an open understorey. Provides habitat and habitat linkages between important bushland or remnant bushland areas. May also be located on alluvial flats with important clumps of <i>Eucalyptus tereticornis</i>.</p>	<p><b>4A</b></p> <p>Areas of urban development with important scattered eucalypts in house lots, parks and creek lines. Some important small patches of bushland. High conservation value because this zone sustains a breeding population of koalas that maintain home ranges in the area. Highest koala habitat values and/or koala densities within urban stratum.</p>
<p><b>B Habitat</b></p> <p><i>Medium–high koala conservation value</i></p> <p><i>Generally medium–high koala habitat values and/or koala densities</i></p>	<p><b>1B</b></p> <p>Large bushland areas with limited fragmentation. Relatively low intensity human habitation. Medium–high habitat value and/or koala densities.</p>	<p><b>2B</b></p> <p>Fragmented bushland patches. Smaller sized patches with obvious fragmentation and human habitation. Provides habitat and/or habitat links. Medium koala habitat value and/or koala densities.</p>	<p><b>3B</b></p> <p>Rural or agricultural areas with patches, clumps or scattered individual trees, often an open understorey. May or may not provide habitat and habitat linkages between important bushland or remnant bushland area. Clumps or patches are locally important.</p>	<p><b>4B</b></p> <p>Areas of urban development with scattered eucalypts in house lots, parks and creek lines. Breeding populations present. Provides some opportunities for individual and genetic movement across habitat zones. Medium urban koala habitat value or densities.</p>
<p><b>C Habitat</b></p> <p><i>Low–medium conservation value</i></p> <p><i>Generally low–medium koala habitat values and/or koala densities</i></p>	<p><b>1C</b></p> <p>Areas of relatively intact bushland. Areas of generally low–medium quality koala habitat and/or koala densities.</p>	<p><b>2C</b></p> <p>Fragmented bushland patches that provide important habitat links in a highly modified landscape. Lower koala habitat values and/or koala densities.</p>	<p><b>3C</b></p> <p>Rural or agricultural areas with scattered individual trees with the occasional patch or clump. Provides limited habitat linkage between important bushland or remnant bushland areas.</p>	<p><b>4C</b></p> <p>Areas of urban development with some eucalypts in house lots, parks and creek. Lower urban koala habitat value or densities due to its relative isolation from other koala populations. Human-induced koala mortality is a significant issue in this zone.</p>

**Table 13 Koala habitat assessment matrix  
Example table only (cont)**

Koala habitat zone	Landscape stratum			
	Bushland	Remnant bushland	Rural	Urban
<b>D Habitat</b>  <i>Area of lower conservation value</i>  <i>Generally lower koala habitat values and/or koala densities</i>	<b>1D</b> Smaller areas of relatively intact bushland. Areas of generally lower quality koala habitat and/or lower koala densities.	<b>2D</b> Highly fragmented bushland patches that provided habitat links in a very highly modified landscape. Lower koala habitat values and/or koala densities.	<b>3D</b> Rural or agricultural areas with scattered individual trees. Provides no or very limited habitat linkage between important bushland and/or remnant bushland areas.	<b>4D</b> Areas of urban development with some eucalypts in house lots, parks and creek. Lower urban koala habitat value and/or densities due to relative isolation from other koala populations.
<b>Generally not present</b> <i>Areas with no or limited koala habitat values and/or densities.</i>	Intensely urbanised or agricultural areas where koalas are not known to be present or generally do not occur. May also include some rainforest regional ecosystems in which koalas generally do not occur or that are only used infrequently.  Some areas may function as valuable links or dispersal/movement areas.			

**Koala habitat assessment map**

The results of the koala habitat assessment matrix can now be used to spatially reflect the ranked koala habitat across the study area on a non-cadastral basis. This map is referred to as a koala habitat assessment map.

**(3) Habitat assessment and mapping study**

Upon finalisation of the (1) estimate of koala distribution and abundance and (2) habitat assessment and mapping, the results should be combined to form a complete habitat assessment and mapping study. The study, in the form of a report should, as a minimum, comprise:

- (a) qualifications and experience of those undertaking the koala habitat assessment and mapping;
- (b) stratification methodology, survey methodology and results; and
- (c) koala habitat assessment matrix and koala habitat assessment map.

The complete habitat assessment and mapping study will provide the basis for the endorsement by the State, of

the local government koala habitat map.

**B. Koala Habitat Area classification**

**(4) Classification of Koala Habitat Areas and Koala Living Areas**

Section B relates to Koala District A, however it does not prevent local governments within Koala Districts B and C from undertaking a similar process.

The aim of classifying Koala Habitat Areas is to identify statutory areas for reflection within local government planning schemes. These areas consist of Koala Conservation Areas, Koala Sustainability Areas and Urban Koala Areas. Koala Living Areas, which are non-statutory areas, may also be identified if a local government chooses to do so, however will not be reflected within a local government planning scheme.

Categorising koala habitat into Koala Habitat Areas and Koala Living Areas is

a combined desktop and spatial planning exercise resulting in a cadastrally-based local government koala habitat map.

Koala Habitat Areas and Koala Living Areas can be identified using the following information:

- koala habitat zones obtained from the koala habitat assessment matrix (refer to Table 13);
- statutory, habitat and locational characteristics (refer to Table 14);
- local government planning scheme (i.e. zoning map or equivalent) or other relevant planning instrument (i.e. local growth management strategy); and
- SEQ Regional Plan land use categories and objectives.

**Table 14 Koala Habitat Areas**

Koala Conservation Area	Koala Sustainability Area	Urban Koala Area	Koala Living Area
<b>Statutory, Habitat and Locational Characteristics</b>			
<ul style="list-style-type: none"> <li>• Statutory intent</li> <li>• Located within the Regional Landscape and Rural Production Area under the SEQ Regional Plan</li> <li>• Important koala habitat - critical source areas for the survival and dispersal of koalas across the landscape</li> <li>• Large areas of relatively intact remnant or regrowth eucalypt-dominated forest and woodlands</li> <li>• Area may include cleared areas and areas of fragmented forest and woodlands</li> <li>• Area generally reflects high connectivity between patches</li> <li>• Area contains high koala habitat values and/or generally high koala densities (relative to the local government area)</li> <li>• Habitat contains a mosaic of private lands, public lands and park estate with limited infrastructure or urban development</li> </ul>	<ul style="list-style-type: none"> <li>• Statutory intent</li> <li>• Located within either the Urban Footprint or Rural Living Area under the SEQ Regional Plan</li> <li>• Important koala habitat – critical to the survival and dispersal of koalas across the landscape</li> <li>• Areas of relatively intact and/or fragmented remnant and regrowth eucalypt-dominated forest and woodlands</li> <li>• Area may include cleared areas</li> <li>• Area generally reflects medium/high connectivity between patches</li> <li>• Contains high koala habitat values and/or generally high koala densities (relative to the local government area)</li> <li>• Habitat contains a mosaic of private lands, public lands and park estate. Increase levels of infrastructure and urban development</li> <li>• Habitat may contain open space areas and existing rural residential development</li> </ul>	<ul style="list-style-type: none"> <li>• Statutory intent</li> <li>• Located within either the Urban Footprint or Rural Living Area under the SEQ Regional Plan</li> <li>• Area subject to a recognised urban planning intent within local government planning instruments</li> <li>• May contain patches of fragmented remnant and regrowth eucalypt-dominated woodland</li> <li>• May include cleared areas</li> <li>• Varied levels of connectivity</li> <li>• May contain areas with both high and lower koala habitat values and/or koala densities (relative to the local government area)</li> </ul>	<ul style="list-style-type: none"> <li>• Non-statutory intent</li> <li>• Located within either the Regional Landscape and Rural Production; Rural Living Area or Urban Footprint under the SEQ Regional Plan</li> <li>• Area may support small bushland areas, vegetated creek lines, parks, scattered trees, residential areas with landscaped gardens and cleared areas</li> <li>• Area is known to support pockets of highly fragmented koala habitat and/or lower density koala population</li> <li>• Area may be highly urbanised with a high level of infrastructure provision or be located in a highly modified rural or semi rural environment</li> </ul>

Table 15 provides a worked example of how the above information may be combined to identify Koala Habitat Areas and Koala Living Areas. The number of koala habitat zones (e.g. A–B versus A–F) will influence the extent of each koala classification.

In identifying Koala Habitat Areas and Koala Living Areas, adequate consideration must be given to any relevant planning outcomes or objectives reflected in a local government strategic planning document and/or the SEQ Regional Plan, particularly when proposing additional Koala Sustainability Areas or Urban Koala Areas within the Urban Footprint.

Once the koala classification process is completed, the koala habitat assessment map can be spatially overlaid with the SEQ Regional Plan regional land use categories and local government planning scheme zoning map (or equivalent) to produce a cadastrally-based local government koala habitat map.

#### Approved local government map

A local government map must show the local government area divided into Koala Habitat Areas. It may also show Koala Living Areas. All Koala Habitat Areas must align with cadastral boundaries.

The local government map does not have effect until the map is:

- endorsed by the chief executive; and
- reflected within a temporary local government planning instrument or a local government planning scheme made by the local government.

#### (5) State Government endorsement of local government map

The koala habitat assessment and mapping study must be provided to the State Government for endorsement. Accompanying the study and request for endorsement must be documentation that demonstrates the study has been approved by the relevant local government. Accompanying documentation should also outline the timetable for including the map within either a temporary local planning instrument or local government planning scheme.

Note, the koala habitat assessment and mapping study could be provided to the EPA prior to or as part of the first State interest check when making or amending a local government planning scheme under the Integrated Planning Act. Public consultation for the purposes of the draft local government koala habitat map and the planning scheme/amendment could then occur simultaneously.

In response to local government’s request to amend the State map, the EPA through the chief executive (EPA), will either:

- endorse the local government koala habitat map; or
- enter into discussions with the local government.

Once the local government map is endorsed, the approved local government map may be reflected in either a temporary local planning instrument or local government planning scheme consistent with the requirements of the Integrated Planning Act.

Any subsequent changes to a local government koala habitat map following initial endorsement by the EPA are to be re-submitted for endorsement before the change is included within the planning scheme or temporary local planning instrument.

#### (6) Effect of local government koala habitat map

The local government koala habitat map, once included within the local government planning scheme (or temporary local planning instrument prior to the making or amending of the planning scheme), will be utilised to trigger the assessment of development applications against the koala conservation criteria.

**Table 15 Method of identifying Koala Habitat Areas and Koala Living Areas**  
Example table only

Koala habitat zone (Sourced from matrix)	Regional Landscape and Rural Production Area (SEQ Regional Plan)	Urban Footprint/Rural Living Area (SEQ Regional Plan)	
		Planning scheme or other	Planning scheme or other
<b>A Habitat</b>	Koala Conservation Area	Koala Sustainability Area	Urban Koala Area
<b>B Habitat</b>	Koala Conservation Area	Koala Sustainability Area	Urban Koala Area
<b>C Habitat</b>	Koala Conservation Area	Koala Living Area	Koala Living Area
<b>D Habitat</b>	Koala Living Area or No requirements	No requirements	No requirements
<b>Generally not present</b>	No requirements	No requirements	No requirements

This will include both local government assessment processes and State Government assessment processes. Where additional Koala Conservation Areas and Koala Sustainability Areas have been identified, the EPA will be a concurrence agency for any relevant development applications subsequently made in these areas.

Due to the linkages between the designation of Koala Habitat Areas under the SEQ Regional Plan, the Koala Conservation Plan, and the koala conservation criteria, and with the EPA as concurrence agency, removal of a koala habitat area currently identified in Map 5 of the SEQ Regional Plan will not have statutory effect unless the SEQ Regional Plan is amended. Only additional Koala Habitat Areas will have statutory effect through the local government's planning scheme or a temporary local planning instrument.

The SEQ Regional Plan will seldom be amended. However, if a local government can provide strong evidence to the EPA that an amendment is warranted in relation to the existing Koala Habitat Areas, the EPA will assist the local government in seeking such a change, should the opportunity to amend the SEQ Regional Plan arise.

*This policy was accurate at the time the Koala Plan was declared. A current version of this policy can be found at [www.epa.qld.gov.au](http://www.epa.qld.gov.au)*

## Policy 8: Drafting and amending planning schemes

### Purpose

The purpose of this policy is to:

- provide advice to local government on the making and amending of planning schemes to adequately reflect the Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006–2016 as it relates to planning and development.

### Application of the policy

The policy is applicable to all local government areas identified by the SEQ Regional Plan in the South East Queensland Region. This equates to District A in the Koala Plan. See Annex 1 of the Policy.

While the policy is applicable only to the South East Queensland region or District A, it does not preclude local government within District B or C from electing to apply the policy to achieve koala conservation outcomes.

### Outcomes sought by the policy

The outcomes sought by the policy are:

- reflection of the purposes of the Koala Plan, as they relate to planning and development, reflected in planning schemes;
- reflection of a regionally consistent approach to the reflection of the Koala Plan within planning schemes;
- development identified in Koala Conservation and Koala Sustainability Areas is compatible with the conservation of koalas and koala habitat; and
- structure plans address the conservation of koalas and koala habitat.

### Other considerations

Nothing in the Koala Plan restricts a local government from addressing the planning for and management of koalas and koala habitat in more detail or using more stringent requirements than that required by the Koala Plan.

### Relationship to the South East Queensland Regional Plan 2005–2026

The SEQ Regional Plan, released on 30 June 2005, is a statutory instrument under the *Statutory Instruments Act 1992* and is also a planning instrument under the *Integrated Planning Act 1997*. It has a direct effect in its own right and indirect effect through the amendment and alignment of local government planning schemes and state plans and policies.

The SEQ Regional Plan provides the strategic framework for growth management in the South East Queensland region while also protecting the region's main natural assets.

The SEQ Regional Plan contains a number of policies that are intended to achieve the document's regional vision and strategic direction for the South East Queensland region. Koala conservation policies (section 2.2 Koala Conservation) form part of the regional plan, to assist koala survival through a planning and development approach. This approach uses development assessment, land use planning through planning schemes, and the identification of Koala Habitat Areas and the mapping of koala habitat. The SEQ Regional Plan specifically links to the Koala Plan through a requirement to assess development in defined areas (Koala Habitat Areas) against

koala conservation criteria contained in the *Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006–2016* (Koala Plan).

### Koala Plan

The Koala Plan is Queensland's whole of government document that outlines planning and management outcomes for the koala and koala habitat. These outcomes are focused on the management of threats to koalas and koala habitat and reversing the decline in koala numbers.

The koala was listed as *vulnerable* under the Nature Conservation Act in the South East Queensland Bioregion in March 2004 in recognition of a decline in koala numbers. The level of threat within the bioregion, particularly in south-east Queensland, is due to threatening processes such as habitat loss and fragmentation, disease, car strikes and dog attacks.

### State Government interests

The Koala Plan, as it relates to planning and development, is to be reflected in planning schemes to ensure that the State Government's interests in protecting and managing koalas and koala habitat are applied at a local context when planning for future use and development, and making decisions on development applications. This is achieved when all aspects of a planning scheme are consistent with the Koala Plan to an extent that satisfies the Minister for Local Government and Planning, acting for the State Government on the advice of the Environmental Protection Agency (EPA) and the Department of Local Government, Planning, Sport and Recreation (DLGPSR).

### Achieving the policy outcome through the planning scheme

The policy outcome is achieved when making or amending a planning scheme if the planning scheme or amendment is consistent with Table 16. Table 16 shows the preferred approach that local governments can adopt to reflect Koala Habitat Areas within local government planning

schemes. How the purposes of the Koala Plan, and specifically the Koala Habitat Areas, are reflected, will depend on the structure of the particular planning scheme. The underlying intent of the Koala Plan must be reflected in the overall structure of the planning scheme if different to that identified in Table 16.

**Table 16 Recommended planning scheme approach**

Planning scheme element	Recommended approach	Comments
Desired Environmental Outcomes (DEO)	DEO that provides for the protection of biodiversity and ecological processes.	The DEO may or may not contain specific reference to koalas and koala habitat.
Zones (or equivalent)	<p>1. Koala Conservation and Koala Sustainability Areas reflected as:</p> <ul style="list-style-type: none"> <li>• Rural</li> <li>• Rural conservation</li> <li>• Conservation</li> <li>• Environmental protection</li> </ul> <p>Urban Koala Areas</p> <ul style="list-style-type: none"> <li>• Zonings (or equivalent) consistent with urban intent</li> </ul> <p>OR</p> <p>2. Maintain existing zone/s or similar without increasing development rights that are incompatible with the protection of koalas and koala habitat.</p>	<p>Local government is not required to reduce or restrict existing development rights (development commitments) contained in existing planning schemes.</p> <p>Development rights (development commitments) should not be extended in Koala Conservation or Koala Sustainability Areas unless it is consistent with the purpose of the Koala Plan and overall outcomes for the relevant Koala Habitat Area, as they relate to planning and development.</p> <p>The overall outcomes of each of the Koala Habitat Areas should inform the zone code's (or equivalent) overall and specific outcomes.</p>
Overlay/overlay code	<p>Koala Habitat Area overlay</p> <ul style="list-style-type: none"> <li>• Identify Koala Conservation Area/Koala Sustainability Area/Urban Koala Area cadastral boundaries.</li> </ul> <p>Natural features overlay reflecting:</p> <ul style="list-style-type: none"> <li>• remnant and non-remnant vegetation</li> <li>• corridors</li> </ul> <p>(a) State/regional wildlife corridors;            (b) local ecological corridors; and            (c) rehabilitation/revegetation linkage corridors</p>	Non-remnant vegetation provides important habitat to koalas. Where data on non-remnant vegetation is available, it is recommended this information be reflected and made assessable development.
Assessable development	Development associated with Material Change in Use (MCU), Reconfiguration of a Lot (RoL) and Operational Works identified in Annex 2 is made assessable development.	
Assessment criteria	Refer to section 5 of Koala Plan, koala conservation criteria.	The Koala Habitat Area overall outcomes should inform relevant code's overall outcomes.

**Table 16 Recommended planning scheme approach (cont)**

Planning scheme element	Recommended approach	Comments
Planning scheme policies	Planning scheme policies may incorporate or refer to the following Koala Plan policies/information: <ul style="list-style-type: none"> <li>• Policy 2: <i>Offsets for net benefit to koalas and koala habitat</i></li> <li>• Policy 4: <i>Koala survey methodology for site assessment</i></li> <li>• Policy 6: <i>Vegetation clearing requirements</i></li> <li>• Landscaping requirements in Koala Habitat Areas</li> <li>• Koala friendly/koala exclusion fencing design requirements contained in Policy 1: <i>Koala sensitive development</i></li> </ul>	

***Land designated for community infrastructure***

Under the Integrated Planning Act, the Koala Plan (through the SEQ Regional Plan), must be considered when assessing and designating land for community infrastructure.

*This policy was accurate at the time the Koala Plan was declared. A current version of this policy can be found at [www.epa.qld.gov.au](http://www.epa.qld.gov.au)*

# Annex 1 Local governments to which the policy applies

The policy applies to all local governments listed below.

Beaudesert Shire	Kilcoy Shire
Brisbane City	Laidley Shire
Boonah Shire	Logan City
Caboolture Shire	Maroochy Shire
Caloundra City	Noosa Shire
Esk Shire	Pine Rivers Shire
Gatton Shire	Redcliffe City
Gold Coast City	Redland Shire
Ipswich City	Toowoomba City

## Annex 2 Assessable development

The development activity listed in Column 3 should be reflected as assessable development within Koala Habitat Areas.

Column 1	Column 2	Column 3
Koala Habitat Area	Development	Development activity
<b>Koala Conservation Area and Koala Sustainability Area</b>	Material Change of Use other than a 'domestic activity'	Where development involves: (a) the clearing of native vegetation; or (b) a new building and any reasonably associated structure with a total footprint greater than 500m <sup>2</sup> ; or (c) an extension to an existing building and any reasonably associated structure if the extension has a footprint greater than 500m <sup>2</sup> ; or (d) extracting gravel, rock, sand or soil from an area greater than 5000m <sup>2</sup> , or (e) excavating or filling an area greater than 5000m <sup>2</sup> ; or (f) additional traffic in an area between 6pm on a day and 6am on the following day.
	Reconfiguring a lot	Where development involves: (a) increasing the number of lots; or (b) the clearing of native vegetation.
	Operational work	Where development involves: (a) the clearing of native vegetation; or (b) extracting gravel, rock, sand or soil from an area greater than 5000m <sup>2</sup> , or (c) excavating or filling an area greater than 5000m <sup>2</sup> .
<b>Urban Koala Area</b> where the premises are not — (a) subject to an approved structure plan; or (b) located in a Local Area Plan, Development Control Plan, Master Plan, precinct or other similar local planning instrument which contains koala management measures; or (c) located within a Regional Activity Centre.	Material Change of Use other than a — (a) 'domestic activity' (b) development which is consistent with an existing preliminary approval.	Where development involves: (a) the clearing of native vegetation; or (b) a new building and any reasonably associated structure with a total footprint greater than 500m <sup>2</sup> ; (c) an extension to an existing building and any reasonably associated structure if the extension has a footprint greater than 500m <sup>2</sup> ; or (d) extracting gravel, rock, sand or soil from an area greater than 5000m <sup>2</sup> , or (e) excavating or filling an area greater than 5000m <sup>2</sup> .
	Reconfiguring a lot	Where development involves: (a) increasing the number of lots; or (b) the clearing of native vegetation.
	Operational work	Where development involves: (a) the clearing of native vegetation; or (b) extracting gravel, rock, sand or soil from an area greater than 5000m <sup>2</sup> , or (c) excavating or filling an area greater than 5000m <sup>2</sup> .

## Policy 9: Requirements for private koala hospitals

### Purpose

The purpose of this policy is to:

- identify general operating requirements for private koala hospitals;
- outline the recording and reporting requirements; and
- identify the requirements for volunteers working at private koala hospitals.

### General operating requirements

Private koala hospitals must:

- be established under agreement with the EPA,
- hold a valid rehabilitation permit issued under the *Nature Conservation Act 1992*;
- comply with koala rehabilitation and release guidelines developed as part of this Koala Management Program and local government planning requirements; and
- provide individual identification numbers (e.g. microchip) to all koalas handled.

### Recording and reporting requirements

Privately operated hospitals must keep records and provide a monthly report listing all koalas admitted to the hospital to the Manager, Moggill Koala Hospital. The report should include the following information:

- koala record number;
- koala identification number (ear tag or microchip);
- koala name (if applicable);
- size (e.g. adult, sub-adult, juvenile);
- sex;
- date of collection;
- location where koala was found (address, or detailed description);
- weight;

- body score;
- tooth wear;
- description of problem;
- health status;
- reproductive status;
- treatment details;
- fate of koala (died, euthanased, treated, released, etc.);
- date of release;
- specific location of release site for rehabilitated koalas (address, or detailed description); and
- any other information required by the Moggill Koala Hospital for entry to the central database.

### Volunteers

Volunteers at private koala hospitals:

- are to operate under the hospital's rehabilitation permit;
- comply with any applicable rehabilitation and release guidelines (also see Policy 5: *Requirements for the translocation and release of koalas*).

*This policy was accurate at the time the Koala Plan was declared. A current version of this policy can be found at [www.epa.qld.gov.au](http://www.epa.qld.gov.au)*

## Policy 10: SEQ Regional Plan investigation areas

### Purpose

The purpose of this policy is to:

- identify the intent of the Koala Plan for Investigation Areas identified in the SEQ Regional Plan.

### Application of the policy

This policy applies to:

- the Investigation Area land use category identified by the SEQ Regional Plan; and
- State or local government initiating studies into the Investigation Area.

### Investigation Areas

Investigation Areas have not been mapped as Koala Habitat Areas in the Koala Plan however may support koala habitat. Prior to any intensification in land use, the area is to be assessed to determine its importance to koalas.

The outcomes sought for Investigation Areas are:

1. identification of koala habitat prior to, or as part of the Investigation Area planning studies;
  - It is highly desirable that the assessment and mapping of koala habitat occurs as part of a holistic whole-of-shire/city koala habitat and mapping process. This is in preference to an isolated process of habitat assessment and mapping of the Investigation Area only. Should this occur, further advice can be obtained from the EPA if required; and
  - Policy 7: *Koala habitat assessment and mapping* should be used to assess and map koala habitat; and classify Koala Habitat Areas where appropriate.

2. reflection of Koala Habitat Areas in local government planning instruments consistent with Policy 8: *Drafting and amending planning schemes*.

*This policy was accurate at the time the Koala Plan was declared. A current version of this policy can be found at [www.epa.qld.gov.au](http://www.epa.qld.gov.au)*

## **Policy 11: Rehabilitation of land to provide koala habitat**

### **Purpose**

The purpose of this policy is to:

- identify the outcomes sought by a rehabilitation plan within koala habitat;
- provide advice on the rehabilitation of existing cleared or partially cleared koala habitat areas; and
- identify ways of measuring the success of the rehabilitation program.

### **Application of the policy**

This policy applies to the rehabilitation of cleared, denuded or disturbed koala habitat.

### **When to rehabilitate**

Rehabilitation of a site should commence progressively where development is to occur in stages, and as soon as practicable after completion of works for each stage of the development.

### **Rehabilitation plan**

A rehabilitation plan should reflect the following outcomes, as a minimum:

- the collection and propagation of on-site or local seed stock, where possible;
- regeneration with a similar composition of species (type, density and diversity) compared to a relevant reference site or to natural vegetation communities for the site;
- progressive or staged rehabilitation;
- re-contouring and reinstatement of original or appropriate soil profiles;
- erosion minimisation and management;

- a stable final landform which does not prevent, stop or endanger koala movement;
- regular weed maintenance program;
- indicators of rehabilitation success; and
- monitoring of rehabilitated and revegetated areas.

### **Plant species selection and planting**

The plant species to be used in revegetation must be consistent with the pre-clearing regional ecosystem<sup>7</sup> or vegetation community/ies. Propagation from on-site or local seed stock is strongly recommended, particularly where revegetation is undertaken over large areas. Revegetation should occur at similar densities and diversity to that found in on-site pre-clearing regional ecosystems or vegetation communities. Where this information cannot be ascertained, revegetation should reflect a relevant reference site.

### **Monitoring the success of the rehabilitation program**

Monitoring of rehabilitation methods is important for increased efficiency and effectiveness, particularly where long term progressive rehabilitation is planned or there is a need to evaluate performance indicators. A number of methods may be used, depending on the extent of the rehabilitation program. The monitoring of the effectiveness of the rehabilitated area to function as a biophysical system is also important, in addition to monitoring the success of the rehabilitation program to provide koala habitat.

### **Monitoring up to two years after planting**

Monitoring of planted vegetation in the early stages of rehabilitation is necessary to ensure survival. During the two year monitoring period, any planted vegetation that dies is replaced with healthy plant(s) meeting the requirements above. Replacement plants should be planted in the same locality and continue to be monitored.

### **Monitoring up to five years after planting**

Monitoring of the health, growth and survival of plants in the early stages of rehabilitation can determine the most appropriate:

- ground preparation methods—ripping of beds, removing competition from non-native species, mulching, or use of local stockpiled topsoil;
- choice of planting stock—relying on natural regeneration for some aspects of the rehabilitation program, or using tube stock or more advanced plants; and
- planting regimes—the timing of plantings to ensure the best growth rates of plants, or the most effective use of resources (e.g. water) for the survival of plants.

### **Monitoring beyond five years after planting**

Longer term monitoring of the use of rehabilitated areas by koalas is the primary means of measuring the success of efforts to restore koala habitat. While koalas may use young trees for foraging, there is usually not adequate branch formation in which koalas can rest until trees are over five years of age. The success of establishing koala habitat, particularly as trees mature, is reflected by koala use of the area where:

<sup>7</sup>See Regional Ecosystem Description Database (REDDs) that is maintained by the Queensland Herbarium, Environmental Protection Agency, Brisbane. The database is available on the Environmental Protection Agency's website at [www.epa.qld.gov.au/environment/science/herbarium/regional\\_ecosystems](http://www.epa.qld.gov.au/environment/science/herbarium/regional_ecosystems)

- resident koalas are occupying rehabilitated areas at densities that reflect average densities in the local area in undisturbed habitat; and
- evidence of scratch marks or faecal pellets indicate a temporary koala presence.

*This policy was accurate at the time the Koala Plan was declared. A current version of this policy can be found at [www.epa.qld.gov.au](http://www.epa.qld.gov.au)*

## **Policy 12: Local road placement, design and upgrade**

### **Purpose**

The purpose of this policy is to identify a best practice approach to works relating to local road networks to:

- assist with the placement and design of new roads;
- assist with the development and design of upgrades to existing road networks;
- reduce vehicle related koala injury and mortality; and
- minimise koala habitat fragmentation.

### **Background**

Roads fragment habitat, severing habitat links and inhibiting the safe movement and dispersal of koalas. Poorly placed or designed roads can significantly impact on local koala populations. Road related impacts are recognised as a key threatening process in south-east Queensland.

### **Minimise the impacts to koalas and their habitat**

The following principles should be considered when planning new roads or upgrading existing roads:

- avoid bisecting or fragmenting of significant koala habitat or habitat links;
- minimise the loss of habitat;
- mitigate road impacts through appropriate design measures;

### **Assessment of area of proposed road works**

An assessment of the development area should be undertaken to identify any potential impacts to the local and regional koala population. The assessment should:

- identify if the proposed works falls within or is adjacent to a Koala Habitat Area (if within south east

Queensland), important koala habitat, or is a link between habitat areas;

- source koala sightings or road mortality data from the EPA's databases to determine locations of koala road accidents. In lieu of koala distribution and abundance data for the area, community reports of koalas can also provide an indication of the likely presence of koalas in an area;
- determine the movements and habitat use of koalas, where possible; and
- identify mitigation measures for any identified potential impacts.

### **Mitigation measures**

Extensions to existing road networks or the construction of new roads in koala habitat should be designed to achieve the best possible outcomes for koalas where possible. The following best practice measures may not be appropriate in all instances due to technical and economic constraints. Alternative measures may also be suitable to mitigate koala road mortality.

#### **Koala exclusion fencing**

The option to include or exclude koala use of the road should be based on the results of the assessment study. A koala accident 'hotspot' may be identified where a greater than average number of koala accidents per length of road is observed, as compared to the total length of the road or the average number of koala accidents on a similar category of road. Potential future koala hotspots may occur where new roads unavoidably bisect koala habitat or habitat links. To minimise further koala road mortality, it may be necessary to exclude koalas from the road.

To exclude koalas, fencing is necessary and should be:

- of a floppy top design, or smooth metal or perspex sheets of at least 50cm in height attached to the top of fencing that koalas can climb.
- at least three metres away from trees and shrubs;
- monitored at regular intervals to repair damage to fences or remove fallen vegetation that might allow koalas access to the road.

The use of exclusion fencing to keep koalas from sections of roads should only be considered if alternative means for koala movements are provided. Exclusion fencing should serve the dual purpose of excluding koalas from the road and funnelling animals to 'safe' crossing points on, over or under roadways.

#### **Fauna overpasses and underpasses**

Koala overpasses and underpasses may provide opportunities for fauna movement, including koalas. The most common forms of underpasses and overpasses include:

Underpasses

- culverts;
- pipes; and
- bridges or raised structures that allow fauna movement beneath the road;

Overpasses

- land bridges; or
- other structures that may be designed for use by specific type of fauna.

The following should be considered when designing or installing underpasses or overpasses to enhance koala usage or improve conservation outcomes:

- Dry cell culverts or other structures installed in culverts or pipes avoid waterlogging of the underpass and allow continuous unimpeded use of the underpass by koalas. For example, the placement of raised

interconnecting logs through an underpass will reduce the threat of predation and provide a means of koala access in times of inundation;

- Underpasses that are as large in diameter as possible are generally more conducive to koala use;
- Land bridges, landscaped to reflect the surrounding environment, provide the most natural means of koala movement;
- Locate underpass or overpass structures in areas of high koala movement. This is especially important where koalas are known to use habitat on either side of the road as part of a home range, or where there is a habitat link to other koala habitat areas; and
- Trial underpass and overpass structures to determine potential effectiveness before installation and monitor the outcomes to determine success. This may involve collaborative partnerships with other organisations or bodies.

### Residential estates

Roads are designed, where appropriate, to:

- limit traffic speeds by:
  - curving and winding road sections, where appropriate;
  - speed reduction or other traffic calming devices;
  - signed low speed limits (residential roads); and
  - koala movement awareness signs.
- retain or create interlocking tree canopies over roads;
- incorporate trees within traffic islands and streetscapes, such as areas designated for slow points; and
- allow minor deviations in roads and driveways to retain important trees (these measures may also assist with traffic calming).

### Other mitigation measures

To allow koalas unimpeded access to the road, or access to crossing points, the road and surrounding environment should be made as koala friendly as possible to avoid road accidents (refer to Policy 1: *Koala sensitive development*) and include the following mitigation strategies:

- signage or other road treatments to alert drivers to the presence of koalas. Signage should be designed in consultation with the Department of Main Roads to achieve a consistent approach to design;
- enhanced lighting to make koalas on road more visible to drivers;
- landscaping treatments to improve the visibility of koalas entering the road way. For example, regularly mowed road verges (where habitat trees are retained) or plantings in median strips with lower branches removed allow koalas to be seen before entering the carriage way;
- in situ public awareness strategies such as reflectors, audible lines or painted zones on roads to alert drivers to koala crossing points. This is critical if animals are to be funnelled to certain sections of roads via exclusion fencing; and
- monitoring measures for effectiveness e.g. zones with speed reductions.

### General monitoring

Evidence of the successful use of an underpass, overpass or crossing point is often required before resources are invested in this cause. In lieu of baseline data, mitigation measures often are not installed, as there is no assurance of desired outcomes. Trialing and monitoring of the success of mitigation measures is the primary means of gathering baseline data necessary to evaluate the effectiveness of a particular strategy or structural

design. Where resources permit, it is recommended that:

- Trials are set up with an appropriate experimental design to allow interrogation and analysis of data;
- Monitoring of koala use of underpass or overpass structures or crossing points in situ to confirm the success of the strategy;
- Trials and monitoring programs are developed in consultation with other relevant organisations or bodies.

*This policy was accurate at the time the Koala Plan was declared. A current version of this policy can be found at [www.epa.qld.gov.au](http://www.epa.qld.gov.au)*

# Glossary

**Chief executive (EPA):** means the chief executive of the department in which the *Nature Conservation Act 1992* is administered.

**Clear:** see the *Integrated Planning Act 1997*, schedule 10.

**Committed development** means a Development commitment

**Community infrastructure:** see *Integrated Planning Act 1997*, schedule 5.

**Concurrence agency:** see *Integrated Planning Act 1997*, schedule 10.

**Conservation agreements** means a conservation agreement under section 45 of the *Nature Conservation Act 1992*.

**Development application:** see the *Integrated Planning Act 1997*, schedule 10.

**Development commitment:** means any of the following:

- (a) a development with a current development approval; or
- (b) a material change of use clearly consistent with:
  - (i) if within the Regional Landscape and Rural Production Area, Rural Living Area, Investigation Area — the regulatory provisions of the SEQ Regional Plan; and the purposes of codes (or equivalent policy intents) of the relevant zone (or equivalent) and any applicable overlays in the relevant planning scheme; or
  - (ii) if within the Urban Footprint — the purposes of codes (or equivalent policy intents) of the relevant zone (or equivalent) and any applicable overlays in the planning scheme; or
- (c) reconfiguring a lot consistent with:

- (i) if within the Regional Landscape and Rural Production Area, Rural Living Area, Investigation Area — the regulatory provisions of the SEQ Regional Plan; and the purposes of codes (or equivalent policy intents) of the relevant zone (or equivalent) and any applicable overlays in the relevant planning scheme; or
- (ii) if within the Urban Footprint — the purposes of codes (or equivalent policy intents) of the relevant zone (or equivalent) and any applicable overlays in the planning scheme; or
- (d) building or operational work:
  - (i) arising from and necessarily associated with a valid development approval for a material change of use or reconfiguring a lot; or
  - (ii) consistent with the planning scheme; or
  - (iii) that is a development consistent with a community infrastructure designation.

**Domestic activity** means the construction or use of a single residence on a lot and any reasonably associated building or structure. Examples of a building or structure that could be reasonably associated with a single residence include:

- a caretakers residence,
- granny flat, or
- building or structure used for a home business.

**Extractive industry development:** means assessable development that is for:

- (a) the extraction and processing of extractive resources for use in infrastructure or construction; and
- (b) activities associated with the extraction and processing.

However, extractive industry development does not include the extraction of rock in slab form for a building or monument.

**Footprint:** of a building and associated structure, or an extension of an existing building and associated structure, means the total area of land developed for the building and structure, or the extension, including, for example, the areas covered by following:

- (a) the floor area of the building and structure or the extension;
- (b) landscaping and fencing for the building and structure or the extension;
- (c) a car park, driveway or other facility associated with the building and structure or the extension.

**General development:** means any assessable development with the exception of a domestic activity, extractive industry or community infrastructure.

**Habitat linkage:** means koala habitat that allows for and promotes the movement of koalas into, within, or out of an area.

**Key resource area:** means an area identified as a key resource area in a State planning policy about extractive resources made under the *Integrated Planning Act 1997*, chapter 2, part 4.

**Koala:**

- (a) means a mammal of the species *Phascolarctos cinereus* and
- (b) includes the reproductive material of a mammal mentioned in paragraph (a).

**Koala classification:** means a Koala Conservation Area, Koala Sustainability Area, Urban Koala Living Area or Koala Living Area.

**Koala Coast:** means the geographical area comprising portions of Redland Shire, Brisbane City and Logan City as identified in the repealed State Planning Policy 1/97:Conservation of Koalas in the Koala Coast.

**Koala Conservation Area:** means

- each part of the State shown on the SEQ map as a koala conservation area; and
- if a local government has an approved local government map for its area—each part of the local government’s area shown on the map as a koala conservation area.

**Koala conservation criteria:** means development assessment criteria applied to or within a Koala Habitat Area.

**Koala district:** means:

- koala district A; or
- koala district B; or
- koala district C.

**Koala district A:** means the area described in schedule 1, section 1 of the *Nature Conservation (Koala) Conservation Plan 2006*.

**Koala district B:** means the area described in schedule 1, section 2 of the *Nature Conservation (Koala) Conservation Plan 2006*.

**Koala district C:** means the area described in schedule 1, section 3 of the *Nature Conservation (Koala) Conservation Plan 2006*.

**Koala habitat:** means

- a woodland where koalas currently live; or
- a partially or completely cleared area that is used by koalas to cross from one woodland where koalas currently live to another woodland where koalas currently live; or
- a woodland where koalas do not currently live if the woodland:

- primarily consists of koala habitat trees; and
- is reasonably suitable to sustain koalas.

**Koala Habitat Area** means:

- a Koala Conservation Area; or
- a Koala Sustainability Area; or
- an Urban Koala Area.

**Koala habitat tree:** means a tree of any of the following genera:

- Angophora*;
- Corymbia*;
- Eucalyptus*;
- Lophostemon*; and
- Melaleuca*.

**Koala habitat values:** means those characteristics of an area that make it suitable as habitat or refuge for koalas. These characteristics include the nature, extent, condition and connectivity of an area and its relation to other areas of habitat.

**Koala Living Area** means:

- generally — each part of the State shown on Map 3 as a Koala Living Area; and
- if a local government has prepared a local government koala habitat map for its area — each part of the area shown on its map as a Koala Living Area.

**Koala spotter:** means a person who has demonstrated experience in locating koalas in koala habitats or conducting fauna surveys.

**Koala sensitive development:** means development that reflects the integration of targeted planning, design, construction and operational measures which avoid (where possible), minimise and mitigate the impacts associated with development and associated infrastructure, on koalas and koala habitat. It creates permeable environments that:

- provide for the safe movement of koalas within and across the landscape; and
- reduces the threats to koalas.

**Koala Sustainability Area:** means

- each part of the State shown on the SEQ map as a Koala Sustainability Area; and
- if a local government has an approved local government map for its area—each part of the local government’s area shown on the map as a koala sustainability area.

**Local government road:** see the *Transport Infrastructure Act 1994*.

**Nature refuge:** a nature refuge is a signed conservation agreement between the landholder and the Queensland Government to preserve an area of land valued for its significant biodiversity and/or cultural heritage. Once the conservation agreement is signed, the land has permanent protection, even if the landholder sells the land.

**Net benefit to koalas and koala habitat:** an overall improvement in the long term viability of koala populations in the wild.

**Offset:** an offset is an action in conservation undertaken by an applicant to compensate for an adverse environmental impact elsewhere.

**Other development:** means development other than an extractive industry or community infrastructure.

**Predominantly cleared habitat:** means areas where less than 20 percent of the area is vegetated.

**Prescribed natural habitat:** means

- (a) for a koala taken from the wild, or a koala that is the progeny of a koala taken from the wild:
- (i) the area within 1 km of where the koala was taken, but only if at least part of the area is koala habitat; or
  - (ii) if subparagraph (i) does not apply — any koala habitat to the extent it is within 5km of where the koala was taken; or
- (b) for another koala — a koala habitat, research into which shows the following:
- (i) the release of the koala into the koala habitat will not adversely affect any species of wildlife in the koala habitat;
  - (ii) the genetic make-up of the koala is similar to the genetic make-up of koalas currently living in the koala habitat.

**Prescribed release conditions:** for the release of a koala, means: all of the following:

- (a) the koala is to be released into a koala habitat;
- (b) research about the koala and the koala habitat shows the following:
  - (i) the release of the koala into the koala habitat will not adversely affect any species of wildlife in the koala habitat;
  - (ii) the genetic make-up of the koala is similar to the genetic make-up of koalas currently living in the koala habitat;
- (c) the release of the koala into the habitat is a key component of the research project for which the application for the permit, under which the koala is to be released, is made;
- (d) the research project provides for the recapture of the koala if the chief executive (EPA) requires the recapture.

**Regional Activity Centre:** see SEQ Regional Plan.

**Regrowth:** means vegetation that is not remnant vegetation under the *Vegetation Management Act 1999*.

**Rehabilitation permit:** means a permit to allow particular persons to care for and rehabilitate:

- (a) a sick, injured or orphaned protected animal; or
  - (b) a protected animal whose habitat has been, or will be, destroyed by human activity or a natural disaster;
- under the *Nature Conservation (Wildlife) Regulation 1994*.

**Remnant vegetation:** see *Vegetation Management Act 1999*.

**Scientific purposes permit:** means a permit allowing particular persons to take, keep or use a protected, international or prohibited animal only for conducting scientific research for a genuine scientific purpose, under the *Nature Conservation (Wildlife) Regulation 1994*.

**SEQ map:** means map 5 of the SEQ Regional Plan.

**SEQ region:** means the SEQ region as described in the *Integrated Planning Act 1997*, section 2.5A.2

**SEQ Regional Plan:** means the *South East Queensland Regional Plan 2005-2006* made under the *Integrated Planning Act 1997*.

**Sequential clearing:** see the *Nature Conservation (Koala) Conservation Plan 2006*, section 15.

**Source areas:** means areas which are the least fragmented, highest density habitat areas where the koala populations with high birth rates and low disease incidence from which koalas disperse into adjoining areas.

**State map:** see the *Nature Conservation (Koala) Conservation Plan 2006*, section 10.

**Structure Plan:** see SEQ Regional Plan.

**Translocation:** means the deliberate transfer of a koala from a natural population or release of a koala that has been taken from the wild into a part of the wild that is not a prescribed natural habitat for the koala.

**Trust for Nature:** means the not-for-profit organisation sponsored by the EPA and which is currently operating a revolving fund with funds provided by the Queensland Government. The Trust for Nature seeks philanthropic support for its activities for a variety of sources in an ongoing manner.

**Uncommitted development:** means development that is not a development commitment.

**Urban activity:** see SEQ Regional Plan.

**Urban Koala Area:** means

- (a) each part of the State shown on the State map as an Urban Koala Area; and
- (b) if a local government has an approved local government map for its area—each part of the local government's area shown on the map as an Urban Koala Area.

**Vulnerable:** means as defined under s78(2) of the *Nature Conservation Act 1992*.

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Queensland

# Nature Conservation (Koala) Conservation Plan 2006

## Subordinate Legislation 2006 No. ...

made under the

*Nature Conservation Act 1992*

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## **Part 1 Preliminary**

### **1 Short title**

This conservation plan may be cited as the *Nature Conservation (Koala) Conservation Plan 2006*.

### **2 Commencement**

This conservation plan commences on 1 September 2006.

### **3 Relationship with declared management intent—Act, s 121**

Section 121(2)<sup>1</sup> of the Act does not apply to this plan.

### **4 Main purposes of plan and how they are to be achieved**

- (1) The main purposes of this plan are—
  - (a) to promote the continued existence of viable koala populations in the wild; and
  - (b) to prevent the decline of koala habitats, including by providing for the rehabilitation of cleared or otherwise disturbed koala habitats; and
  - (c) to promote future land use and development that is compatible with the survival of koala populations in the wild.
- (2) The main purposes are to be achieved by—
  - (a) dividing the State into 3 koala districts based on the management strategies that are to be applied to each district; and
  - (b) prescribing the objective for each koala district; and
  - (c) prescribing, for the SEQ regional plan, section 2.2.2, criteria against which assessable development in a koala habitat area must be assessed; and

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1 Section 121 (Plan replaces interim or declared management intent) of the Act

- (d) providing for the preparation of a map by the chief executive to show koala habitat areas in the State; and
- (e) prescribing requirements for clearing vegetation in particular areas; and
- (f) prescribing additional restrictions on the grant of particular licences or permits for koalas, including, in particular, licences or permits allowing the release of koalas into the wild.

## **5 Interpretation**

- (1) The dictionary in schedule 2 defines particular terms used in this plan.
- (2) Subject to subsection (1), and unless this plan provides otherwise, terms used in it have the meaning given in the Wildlife Management Regulation.
- (3) To remove any doubt, it is declared that subsection (2) also applies to the following, as applied to the Wildlife Management Regulation under section 5 of that regulation—
  - (a) a definition under the Administration Regulation;
  - (b) a provision of the Administration Regulation that aids the interpretation of a term used in that regulation.

## **Part 2 Provisions relating to koala districts and koala habitat areas**

### **Division 1 Koala districts**

#### **6 State includes koala districts**

- (1) The State includes the following wildlife districts for koalas—
  - (a) koala district A;

- (b) koala district B;
  - (c) koala district C.
- (2) A wildlife district may include 1 or more koala habitat areas.

## 7 Objective for koala districts

The objective for each koala district is to ensure, having regard to the nature and extent of koala populations in the district, appropriate measures are adopted to achieve the purposes of this plan mentioned in section 4(1), including measures that—

- (a) monitor koala populations in the district and threats to their survival; and
- (b) monitor and review the effectiveness of conservation measures for koalas and koala habitats in the district; and
- (c) provide education and management strategies to help manage threats to the survival of koala populations in the wild, including, for example, threats caused by dog attacks or vehicle strikes.

## Division 2 Development in koala habitat areas

### 8 Criteria applying to koala habitat areas

- (1) The koala management program contains criteria, called the koala conservation criteria, applying to assessable development in a koala habitat area.
- (2) In this section—

***koala management program*** means the document called ‘Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006-2016’, prepared by the chief executive and held by the department.

*Note—*

A copy of the management program may be inspected, free of charge—

- (a) on the department’s website; and

- (b) during office hours on business days, at the department's central office or any of the department's regional offices.

## **9 Relevance of koala conservation criteria**

- (1) This section—
  - (a) is included for information purposes only; and
  - (b) does not state all the matters that must be considered for assessing, under the *Integrated Planning Act 1997*, a development application for development in a koala habitat area.

### *Notes—*

- 1 The *Integrated Planning Act 1997*, section 3.3.15, states the matters against which a concurrence agency must assess a development application.
  - 2 The *Integrated Planning Act 1997*, section 3.5.4, states the matters against which an assessment manager must assess a part of a development application requiring code assessment.
  - 3 The *Integrated Planning Act 1997*, section 3.5.5, states the matters against which an assessment manager must assess a part of a development application requiring impact assessment.
- (2) Under the *Integrated Planning Act 1997*, particular SEQ local governments, as the assessment manager for a development application, must assess the application against the SEQ regional plan.
  - (3) The SEQ regional plan, section 2.2.2, provides for the assessment of development in a koala habitat area against the koala conservation criteria.
  - (4) Under the *Integrated Planning Act 1997*, the chief executive, as the assessment manager, or a concurrence agency, for a development application, must assess the application against the laws that are administered by, and the policies that are reasonably identifiable as policies applied by, the chief executive and that are relevant to the application.
  - (5) Each koala conservation criterion represents a policy applied, under the Act, by the chief executive for the conservation of koalas or koala habitats in a koala habitat area.

(6) In this section—

**SEQ local government** means a local government for an area in the SEQ region.

### **Division 3                    Map for koala habitat areas**

#### **10            Chief executive must prepare map**

- (1) The chief executive must prepare a map (the *State map*) for the State.
- (2) The State map may consist of a series of maps, including, for example, a separate map in the series for each part of the State.

#### **11            Areas shown on map**

- (1) The State map must show each urban koala area in the State.
- (2) The State map may also show—
  - (a) how the State is divided into koala districts; and
  - (b) koala conservation areas and koala sustainability areas in the State.
- (3) If the State map shows koala conservation areas and koala sustainability areas in the State, the map must—
  - (a) show, as a koala conservation area, each part of the State shown as a koala conservation area on the SEQ map; and
  - (b) show, as a koala sustainability area, each part of the State shown as a koala sustainability area on the SEQ map.
- (4) Subsection (3) does not limit the chief executive's power to identify, and show on the State map—
  - (a) another part of the State in the SEQ region as a koala conservation area if the part is shown as a koala conservation area on an approved local government map for a local government's area; or

- (b) another part of the State in the SEQ region as a koala sustainability area if the part is shown as a koala sustainability area on an approved local government map for a local government's area; or
- (c) a part of the State that is not in the SEQ region as a koala conservation area or koala sustainability area.

## 12 When map must be amended

- (1) This section applies if—
  - (a) either—
    - (i) the chief executive approves a local government map as accurately showing koala habitat areas (the *approved map*); or
    - (ii) the SEQ map or an approved local government map for a local government's area (each a *relevant map*) is amended; and
  - (b) an area shown as a koala habitat area, or shown as not being a koala habitat area, on the State map is inconsistent with how the area is shown on—
    - (i) the approved map; or
    - (ii) a relevant map as amended.

### *Examples—*

- 1 An area shown on the State map as an urban koala area is shown as a koala sustainability area on the SEQ map as amended.
  - 2 An area not shown as a koala habitat area on the State map is shown as an urban koala area on a local government map approved by the chief executive as accurately showing koala habitat areas.
- (2) The chief executive must, as soon as practicable, amend the State map to make it consistent with the approved map, or the relevant map as amended.
  - (3) Subsection (4) applies—
    - (a) if the State map is inconsistent with an approved local government map for a local government's area, and the

nature of the inconsistency is that a part of the State (the *changed part of the State*) is either—

- (i) shown as an urban koala area on the State map and not shown as an urban koala area on the approved local government map; or
  - (ii) shown as an urban koala area on the approved local government map and not shown as an urban koala area on the State map; and
- (b) until the chief executive amends the State map under subsection (2).
- (4) The State map is taken to have been amended in a way that reflects how the changed part of the State is shown on the approved local government map.

*Examples for subsection (4)—*

- 1 If the changed part of the State is shown as not being an urban koala area and no other category of koala habitat area on the approved local government map, the State map is taken to show the changed part as not being an urban koala area or any other koala habitat area.
- 2 If the changed part of the State is shown as being a koala sustainability area on the approved local government map, the State map is taken to show the changed part as being a koala sustainability area.

### **13 When map may be amended**

- (1) The chief executive may amend the State map if the chief executive reasonably believes further information about koalas shows that—
- (a) the existing classification of a part of the State as an urban koala area is not, or is no longer, appropriate; or
  - (b) a part of the State that is not a koala habitat area should be classified as an urban koala area.
- (2) However, subsection (1) does not apply to a part of the State to which an approved local government map for a local government's area applies.

**14 Map available for inspection**

The chief executive must make a copy of the State map available for inspection by the public, free of charge—

- (a) on the department's website;<sup>2</sup> and
- (b) during office hours on business days, at—
  - (i) the central office of the department;<sup>3</sup> and
  - (ii) each regional office of the department.

**Part 3 Clearing in particular areas****15 Sequential clearing in koala district A or B**

- (1) A person clearing koala habitat trees in koala district A or koala district B must ensure the clearing is carried out in a way that complies with the sequential clearing conditions.

Maximum penalty—120 penalty units.

- (2) This section applies in addition to any other requirement applying to the clearing under an Act.
- (3) In this section—

*sequential clearing conditions* means all of the following conditions—

- (a) that clearing of trees is carried out in a way that ensures koalas on the area being cleared (the *clearing site*) have enough time to move out of the clearing site without human intervention, including in particular, for clearing sites with an area of more than 3ha, by—
  - (i) carrying out the clearing in stages; and

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2 At the commencement of this section, the department's website was at <www.epa.qld.gov.au>.

3 At the commencement of this section, the department's central office was at 160 Ann Street, Brisbane.

- (ii) ensuring not more than the following is cleared in any 1 stage—
    - (A) for a clearing site with an area of 6ha or less—50% of the site's area;
    - (B) for a clearing site with an area of more than 6ha—3ha or 3% of the site's area, whichever is the greater; and
  - (iii) ensuring that between each stage and the next there is at least 1 period of 12 hours that starts at 6p.m. on a day and ends at 6a.m. on the following day, during which no trees are cleared on the site;
- (b) that clearing of trees is carried out in a way that ensures, while the clearing is being carried out, 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;
  - (c) that no tree in which a koala is present, and no tree with a crown overlapping a tree in which a koala is present, is cleared.

## 16 **Koala spotter needed for clearing in koala habitat area**

- (1) This section applies to a person clearing, in a koala habitat area, koala habitat trees that have a trunk with a diameter of more than 10cm at 1.3m above the ground.
- (2) The person must ensure the clearing is carried out in the presence of a koala spotter who has the primary role of locating koalas in the trees for the person.

Maximum penalty—120 penalty units.

- (3) This section applies in addition to any other requirement applying to the clearing under an Act.
- (4) In this section—

***koala spotter*** means a person who has demonstrated experience in locating koalas in koala habitats or conducting fauna surveys.



**19 Restriction on grant of wildlife authorities allowing release of koalas into the wild**

The chief executive can not grant a wildlife authority, other than a wildlife exhibitor licence, a rehabilitation permit or a scientific purposes permit, that allows the holder of the authority, or a relevant person for the holder, to release into the wild a koala that has been bred or kept in captivity.

*Note—*

Under the Wildlife Management Regulation, section 343(1)(a), it is an offence for a person to release into the wild an animal that has been bred in captivity.

However, under the Wildlife Management Regulation, section 343(2)(a), the offence does not apply if the release is authorised under an Act, including a licence, permit or other authority granted under an Act.

**20 Restriction on grant of wildlife exhibitor licence or rehabilitation permit allowing release of koalas into the wild**

- (1) The chief executive can not grant a wildlife exhibitor licence or a rehabilitation permit authorising the holder of the licence or permit, or a relevant person for the holder, to release a koala that has been taken from the wild into a part of the wild that is not a prescribed natural habitat for the koala.

*Note—*

Under the Wildlife Management Regulation, section 343(1)(b), it is an offence for a person to release an animal into an area of the wild that is not a prescribed natural habitat for the animal.

However, under the Wildlife Management Regulation, section 343(2)(a), the offence does not apply if the release is authorised under an Act, including a licence, permit or other authority granted under an Act.

- (2) The chief executive can not grant a wildlife exhibitor licence or a rehabilitation permit authorising the holder of the licence or permit, or a relevant person for the holder, to release into the wild a koala that has been bred in captivity unless—
- (a) the koala is the progeny of a koala that was taken from the wild; and

- (b) the chief executive is reasonably satisfied the koala is capable of surviving in the wild.

*Note for subsection (2)—*

Under the Wildlife Management Regulation, section 343(1)(a), it is an offence for a person to release into the wild an animal that has been bred in captivity.

However, under the Wildlife Management Regulation, section 343(2)(a), the offence does not apply if the release is authorised under an Act, including a licence, permit or other authority granted under an Act.

## **21 Restriction on grant of scientific purposes permit allowing release of koalas into wild**

- (1) The chief executive can not grant a scientific purposes permit authorising the holder of the permit, or a relevant person for the holder, to release a koala that has been taken from the wild unless—
- (a) the koala is to be released into a prescribed natural habitat for the koala; or
- (b) the chief executive is reasonably satisfied the prescribed release conditions for the release of the koala are satisfied.

*Note—*

Under the Wildlife Management Regulation, section 343(1)(b), it is an offence for a person to release an animal into an area of the wild that is not a prescribed natural habitat for the animal.

However, under the Wildlife Management Regulation, section 343(2)(a), the offence does not apply if the release is authorised under an Act, including a licence, permit or other authority granted under an Act.

- (2) The chief executive can not grant a scientific purposes permit authorising the holder of the permit, or a relevant person for the holder, to release a koala that has been bred in captivity unless—
- (a) the chief executive is reasonably satisfied the prescribed release conditions for the release of the koala are satisfied; or

- (b) the chief executive is otherwise reasonably satisfied the koala is capable of surviving in the wild.

*Note for subsection (2)—*

Under the Wildlife Management Regulation, section 343(1)(a), it is an offence for a person to release into the wild an animal that has been bred in captivity.

However, under the Wildlife Management Regulation, section 343(2)(a), the offence does not apply if the release is authorised under an Act, including a licence, permit or other authority granted under an Act.

## Part 5 Amendment of plan

### 22 Amendment of plan

An amendment of any of the following types may be made to this plan by amendment under section 124(2)(c)<sup>4</sup> of the Act—

- (a) an amendment of section 8 or 9;<sup>5</sup>
- (b) an amendment of a provision in part 2, division 3,<sup>6</sup> about the State map;
- (c) an amendment of a provision in part 3<sup>7</sup> about clearing koala habitat trees;
- (d) an amendment of schedule 2, definition *koala conservation area*, *koala sustainability area* or *urban koala area*, if the amendment is necessary because of an amendment of the SEQ map or an approved local government map for a local government's area;

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4 Section 124 (Amendment of plans) of the Act

5 Section 8 (Criteria applying to koala habitat areas) or 9 (Relevance of koala conservation criteria)

6 Part 2 (Provisions about koala districts and koala habitat areas), division 3 (Map for koala habitat areas)

7 Part 3 (Clearing in particular areas)

- (e) an amendment that is consequential to an amendment, omission or insertion mentioned in paragraph (a), (b), (c) or (d).

## Schedule 1 Koala districts

schedule 2, definitions *koala district A*, *koala district B* and *koala district C*

### 1 Koala district A

Koala district A consists of the areas of the following local governments—

Beaudesert, Boonah, Brisbane, Caboolture, Caloundra, Esk, Gatton, Gold Coast, Ipswich, Kilcoy, Laidley, Logan, Maroochy, Noosa, Pine Rivers, Redcliffe, Redland, Toowoomba.

### 2 Koala district B

Koala district B consists of the areas of the following local governments—

Biggenden, Bundaberg, Burnett, Cherbourg, Cooloola, Crows Nest, Gayndah, Hervey Bay, Isis, Kilkivan, Kolan, Maryborough, Miriam Vale, Murgon, Nanango, Perry, Tiaro, Woocoo.

### 3 Koala district C

Koala district C consists of the areas of the following local governments—

Aramac, Atherton, Balonne, Banana, Barcaldine, Barcoo, Bauhinia, Belyando, Bendemere, Blackall, Booringa, Bowen, Broadsound, Bungil, Burdekin, Cairns, Calliope, Cambooya, Cardwell, Charters Towers, Chinchilla, Clifton, Dalby, Dalrymple, Douglas, Duaringa, Eacham, Eidsvold, Emerald, Etheridge, Fitzroy, Flinders, Gladstone, Goondiwindi, Herberton, Hinchinbrook, Ilfracombe, Inglewood, Isisford, Jericho, Johnstone, Jondaryan, Kingaroy, Livingstone, Longreach, Mackay, Mareeba, Millmerran, Mirani, Monto, Mount Morgan, Mundubbera, Murilla, Murweh, Nebo, Paroo, Peak Downs, Pittsworth, Quilpie, Rockhampton, Roma, Rosalie, Sarina, Stanthorpe, Tambo, Tara, Taroom, Thuringowa, Townsville, Waggamba, Wambo, Warroo, Warwick, Whitsunday, Woorabinda, Wondai, Yarraban.

## Schedule 2 Dictionary

section 5(1)

**Administration Regulation** means the *Nature Conservation (Administration) Regulation 2006*.

**approved local government map**, for a local government's area, means a local government map for the area that—

- (a) has been approved by the chief executive as accurately showing koala habitat areas; and
- (b) is included in—
  - (i) the local government's planning scheme; or
  - (ii) a temporary local planning instrument made by the local government under the *Integrated Planning Act 1997*, chapter 2, part 1, division 4.

**assessable development** see the *Integrated Planning Act 1997*, schedule 10.

**assessment manager** see the *Integrated Planning Act 1997*, section 3.1.7.

**clear** see the *Integrated Planning Act 1997*, schedule 10.

**concurrence agency** see the *Integrated Planning Act 1997*, schedule 10.

**development application** see the *Integrated Planning Act 1997*, schedule 10.

**koala**—

- (a) means a mammal of the species *Phascolarctos cinereus*; and
- (b) includes the reproductive material of a mammal mentioned in paragraph (a).

**koala conservation area** means—

- (a) each part of the State shown on the SEQ map as a koala conservation area; and

## Schedule 2 (continued)

- (b) if a local government has an approved local government map for its area—each part of the local government’s area shown on the map as a koala conservation area.

**koala conservation criteria** means the koala conservation criteria mentioned in section 8.

**koala district** means—

- (a) koala district A; or
- (b) koala district B; or
- (c) koala district C.

**koala district A** means the area described in schedule 1, section 1.

**koala district B** means the area described in schedule 1, section 2.

**koala district C** means the area described in schedule 1, section 3.

**koala habitat** means—

- (a) a woodland where koalas currently live; or
- (b) a partially or completely cleared area that is used by koalas to cross from 1 woodland where koalas currently live to another woodland where koalas currently live; or
- (c) a woodland where koalas do not currently live, if the woodland—
  - (i) primarily consists of koala habitat trees; and
  - (ii) is reasonably suitable to sustain koalas.

**koala habitat area** means—

- (a) a koala conservation area; or
- (b) a koala sustainability area; or
- (c) an urban koala area.

**koala habitat tree** means a tree of any of the following genera—

- (a) *Angophora*;

## Schedule 2 (continued)

- (b) *Corymbia*;
- (c) *Eucalyptus*;
- (d) *Lophostemon*;
- (e) *Melaleuca*.

***koala sustainability area*** means—

- (a) each part of the State shown on the SEQ map as a koala sustainability area; and
- (b) if a local government has an approved local government map for its area—each part of the local government’s area shown on the map as a koala sustainability area.

***local government map*** means a map prepared by a local government and showing koala habitat areas in the local government’s area.

***prescribed natural habitat*** means—

- (a) for a koala taken from the wild, or a koala that is the progeny of a koala taken from the wild—
  - (i) the area within 1km of where the koala was taken, but only if at least part of the area is koala habitat; or
  - (ii) if subparagraph (i) does not apply—any koala habitat to the extent it is within 5km of where the koala was taken; or
- (b) for another koala—a koala habitat, research into which shows the following—
  - (i) the release of the koala into the koala habitat will not adversely affect any species of wildlife in the koala habitat;
  - (ii) the genetic makeup of the koala is similar to the genetic makeup of koalas currently living in the koala habitat.

***prescribed release conditions***, for the release of a koala, means all of the following conditions—

- (a) that the koala is to be released into a koala habitat;

## Schedule 2 (continued)

- (b) that research about the koala and the koala habitat shows the following—
  - (i) the release of the koala into the koala habitat will not adversely affect any species of wildlife in the koala habitat;
  - (ii) the genetic makeup of the koala is similar to the genetic makeup of koalas currently living in the koala habitat;
- (c) that the release of the koala into the habitat is a key component of the research project for which the application for the permit, under which the koala is to be released, is made;
- (d) that the research project provides for the recapture of the koala if the chief executive requires the recapture.

**SEQ map** means map 5 of the SEQ regional plan.

**SEQ region** means the SEQ region as described in the *Integrated Planning Act 1997*, section 2.5A.2

**SEQ regional plan** means the SEQ regional plan made under the *Integrated Planning Act 1997*.

**State map** see section 10(1).

**this plan** means this conservation plan.

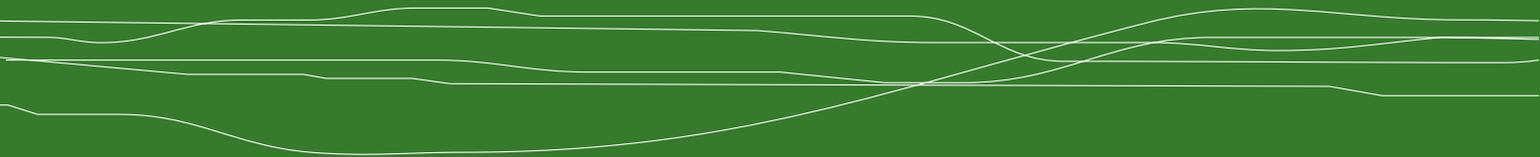
**urban koala area** means—

- (a) each part of the State shown on the State map as an urban koala area; and
- (b) if a local government has an approved local government map for its area—each part of the local government's area shown on the map as an urban koala area.

**Wildlife Management Regulation** means the *Nature Conservation (Wildlife Management) Regulation 2006*.

## ENDNOTES

- 1 Approved by the Governor in Council on . . .
- 2 Notified in the gazette on . . .
- 3 Laid before the Legislative Assembly on . . .
- 4 The administering agency is the Environmental Protection Agency.



**Nature Conservation  
(Koala) Conservation Plan 2006**

**and Management Program 2006 - 2016**

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