



# Koala Assessment Report

**Koala Habitat Protection SEPP  
Assessment**

Loxford Project Management Pty Ltd

22 February 2022



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# 1. Introduction

GHD Pty Ltd (GHD) has been engaged by Loxford Project Management Pty Ltd (Loxford Project Management) to prepare this Koala Assessment Report (KAR) to accompany a development application (DA) for a residential subdivision at Cessnock Road, Gillieston Heights ('the proposal', refer to Figure 1.1).

The 57.9 ha proposal site is located within part of the buffer zone surrounding the former Hydro Aluminium Smelter site and is currently subject to a rezoning proposal that would result in the land being rezoned from RU2 (Rural Landscape) land zoning to R1 zoning (General Residential).

This report has been prepared in accordance with the requirements of the State Environment Planning Policy (SEPP) (Koala Habitat Protection) 2021, referred to as "Koala SEPP 2021".

The Koala SEPP 2021 aims to encourage the conservation and management of areas of natural vegetation that provide habitat for koalas to support a permanent free-living population over their present range and reverse the current trend of koala population decline.

The Koala SEPP 2021 applies to all lands within the Maitland LGA except lands zones RU1 Primary Production, RU2 Rural Landscape or RU3 Forestry.

As there is no approved Koala Plan of Management (KPoM) for the Maitland LGA the Koala SEPP 2021 applies to the proposal site as:

- the size of land, including any adjoining parcels of land owned, is more than 1 hectare
- property is within a local government area the Koala SEPP 2021 applies to (proposed R1 zoning in the Maitland LGA)
- the development requires development consent from council

Under the Koala SEPP 2021 council requires the proposal site to be assessed and koala habitat assessment undertaken by a suitably qualified ecologist (as defined by the SEPP) prior to consent for a DA. The objective of the koala habitat assessment is to determine whether the development is likely to have any impact on koalas or koala habitat. The purpose of this report is to summarise the findings of the Koala habitat assessment.

## 1.1 Scope and limitations

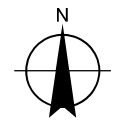
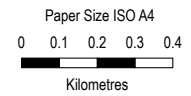
This report: has been prepared by GHD for Loxford Project Management Pty Ltd and may only be used and relied on by Loxford Project Management Pty Ltd for the purpose agreed between GHD and Loxford Project Management Pty Ltd as set out in section 1 of this report.

GHD otherwise disclaims responsibility to any person other than Loxford Project Management Pty Ltd arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section(s) 5 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.



**Loxford Project Group Pty Ltd**  
**Regrowth Kurri Kurri – Maitland LGA**  
**Koala Assessment Report**

Project No. **12527690**  
 Revision No. **0**  
 Date **22/02/2022**

Map Projection: Transverse Mercator  
 Horizontal Datum: GDA 1994  
 Grid: GDA 1994 MGA Zone 56

**Site map**

**Figure 1.1**

## 2. Methodology

The ecological values of the proposal site were assessed by a suitably qualified and experienced ecologist through a combination of desktop review and a field survey. The desktop assessment involved a review of existing government databases and mapping as detailed in Section 2.2. The field assessment was undertaken using methodology detailed in Section 2.3.

### 2.1 Staff qualifications

This assessment was completed by Alex Yates in accordance with requirements of the Koala SEPP 2021. A technical review was undertaken by Arien Quin (accredited BAM assessor). Field surveys were completed by Luke O'Brien, Alex Yates and Brendan Ryan (OMVI). All staff involved in preparing this assessment have appropriate qualifications and experience undertaking koala surveys.

Qualifications and experience of staff involved in this assessment are provided in Table 2.1.

*Table 2.1 Qualifications and experience of ecologists involved in koala assessment*

Name	Position	Qualifications	Relevant Experience
Arien Quin	Senior Ecologist	BA/BSc Accredited BAM Assessor	14+ years
Ben Lewis	Senior ecologist (Zoologist)	B. App. Sc	20+ years
Luke O-Brien	Fauna Ecologist	BEnvSc BSc (Hons)	5+ years
Alex Yates	Zoologist	BEnvScMgt (Hons)	2+ years

### 2.2 Desktop

The following information sources were used during the desktop assessment to gain an appreciation of the existing environmental values and review whether there are any historical records of koala occupation within or surrounding the site.

- BioNet Atlas database was searched to retrieve historical records for Koalas previously observed in the vicinity of the site. The geographical range used for the search was a 2.5 km buffer zone around the site. (DPE 2022a)
- Threatened biodiversity profile search online database was searched for threatened species listed under the BC Act (DPIE 2022b).
- Atlas of Living Australia was searched used to review specific locations, collection date and details of Koala records. (Atlas of Living Australia 2022).
- Regrowth – Kurri Kurri Stage 1 Biodiversity Development Assessment Report (GHD 2022a).
- Draft Vegetation Management Plan Regrowth - Kurri Kurri – Precinct 1 (GHD 2022b).

Note that the DA factsheet for the Koala SEPP 2021 state that for the Central Coast Koala Management Area, historical koala occupation should be determined by considering koala records within the last 18 years that occur within 2.5 km of the site (DPIE 2021).

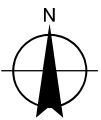
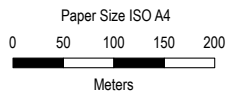
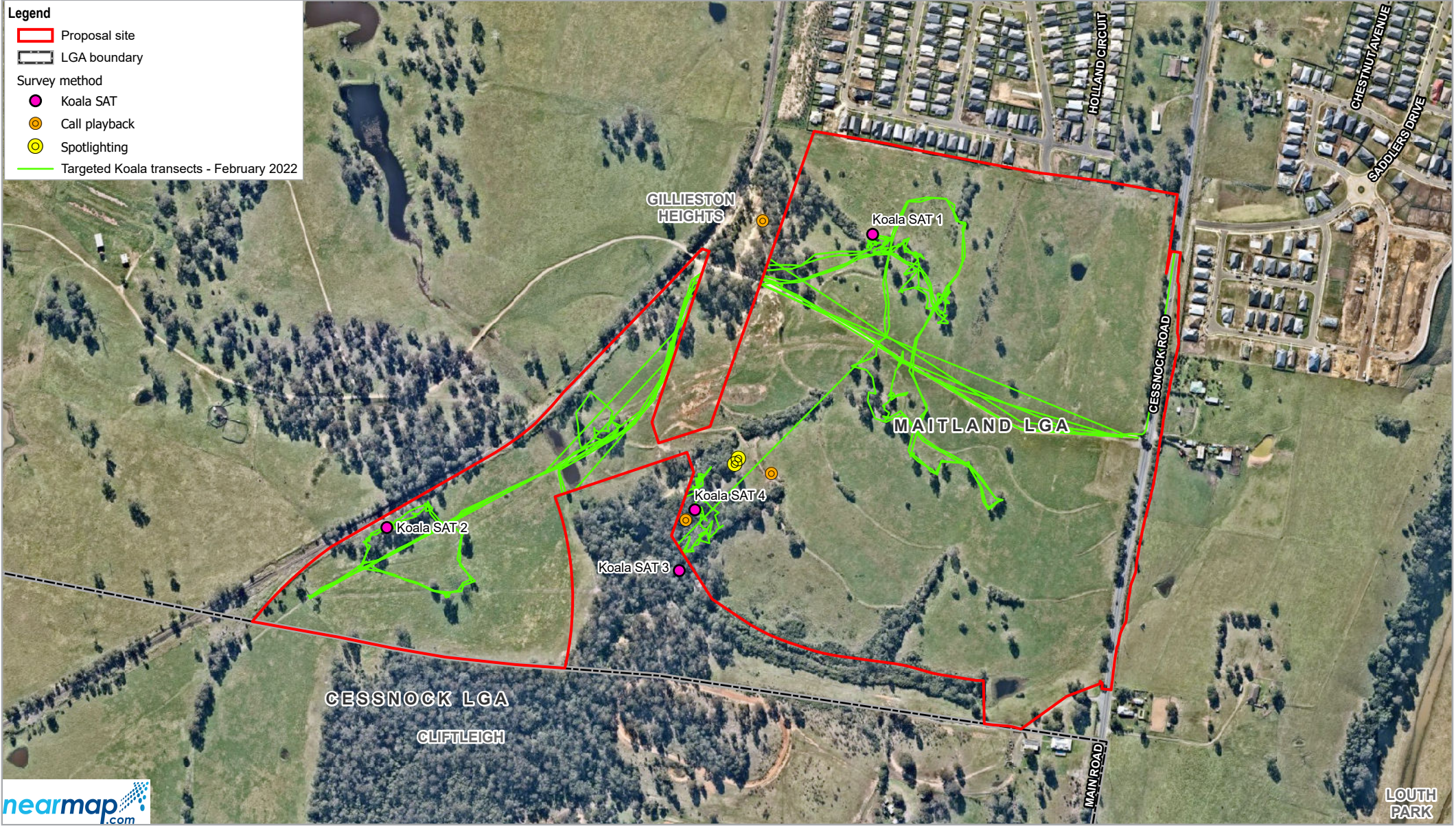
### 2.3 Field survey

A GHD ecologist undertook a field survey of the site on 14 February 2022. Survey conditions at the time were hot and clear, with a daily maximum of 29.5 degrees Celsius. No rainfall was recorded. The area surveyed included the proposal site and surrounding area, including vegetation along the drainage line located to the south of the proposal site.

The methodologies employed during the field survey included targeted searches for koala pellets and spotlighting (see Figure 2.1). Targeted searches for koala pellets were undertaken using the Spot Assessment Technique (SAT) (Phillips and Callaghan, 2011). The searches were undertaken at four representative locations across the site. This provided information on the relative utilisation of areas by koalas. The field survey also included an assessment of trees within the site to determine if they were species listed as koala use tree species within the Central Coast Koala management area present within the site (as listed in Schedule 2 of the Koala SEPP 2021) and their relative abundance.

Previous field surveys completed in November 2019 and February 2020 within the proposal site were also used to inform the Koala habitat assessment. These surveys included spotlighting, call playback and active searches for koala scats.

- Legend**
- Proposal site
  - LGA boundary
  - Survey method**
  - Koala SAT
  - Call playback
  - Spotlighting
  - Targeted Koala transects - February 2022



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**Survey effort**

**Figure 2.1**



## 3. Results

Surveys completed on the 14 February 2021 recorded generalist fauna species within the proposal site including Eastern Grey Kangaroos, common birds and reptile species, including Australian Magpie, Noisy Miner, Australian Wood Duck and Lace Monitor. Grey-crowned Babblers, listed as vulnerable under the Biodiversity Conservation Act 2016 (BC Act), were observed in the vegetation subject to a VMP south of the proposal site.

### 3.1 Koala habitat and records

The habitat values for koala vary across the site, based on the structural complexity and the level of existing disturbance. The majority of the proposal site has been cleared and used for agriculture (cattle grazing) and comprises exotic grassland. There are small patches of Spotted Gum - Red Ironbark - Narrow-leaved Ironbark - Grey Box shrub-grass open forest (PCT 1600) occurring as scattered trees over a highly disturbed, under scrubbed understorey or areas of regrowth. Along the southern boundary of the site there are areas of remnant Grey Gum - Rough-barked Apple shrubby open forest (PCT 1591) in the riparian corridor of a drainage line (refer Figure 3.1). These small patches of remnant native vegetation consisting of PCTs 1600 and 1591 occurs along the outer edge of a larger patch of vegetation that extends south from the proposal site and borders the Heddon Greta and Clifftleigh residential housing estates.

Some scratches were recorded on the trunks of trees within the study area; however, these scratches were more typical of those made by a Lace Monitor (see Photo 1). One Lace Monitor was observed on an *Angophora floribunda* (Rough-barked Apple). No scratches resembling those made by a koala were observed during the field survey.

No koala scats were recorded during SAT assessments. The only scats recorded on site were macropod scats (see Photo 2). No koalas or signs of koala occupation were observed during the field survey.

The NSW BioNet Atlas identified one historical koala record within 2.5 km of the site (refer Figure 3.2). This record was recorded in 2004 (18 years ago), 1.9 km south of the proposal site. However, this record has a locational accuracy of 10,000 metres. BioNet records with a locational accuracy of more than 1,000 metres are excluded from consideration under the SEPP (DPIE 2021). The next closest record is located approximately 3.5 km southeast of the site from 2000.

Previous field surveys were completed in November 2019 and February 2020 to assess whether the site would be considered important habitat for koalas. Results of these surveys determined that the site does not contain important habitat for the koala as there are no recent records within or near to the proposal site and no evidence was found of koalas utilising the site during targeted surveys completed for the Regrowth – Kurri Kurri Stage 1 BDAR.

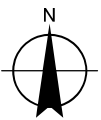
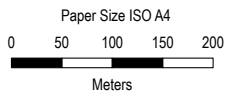
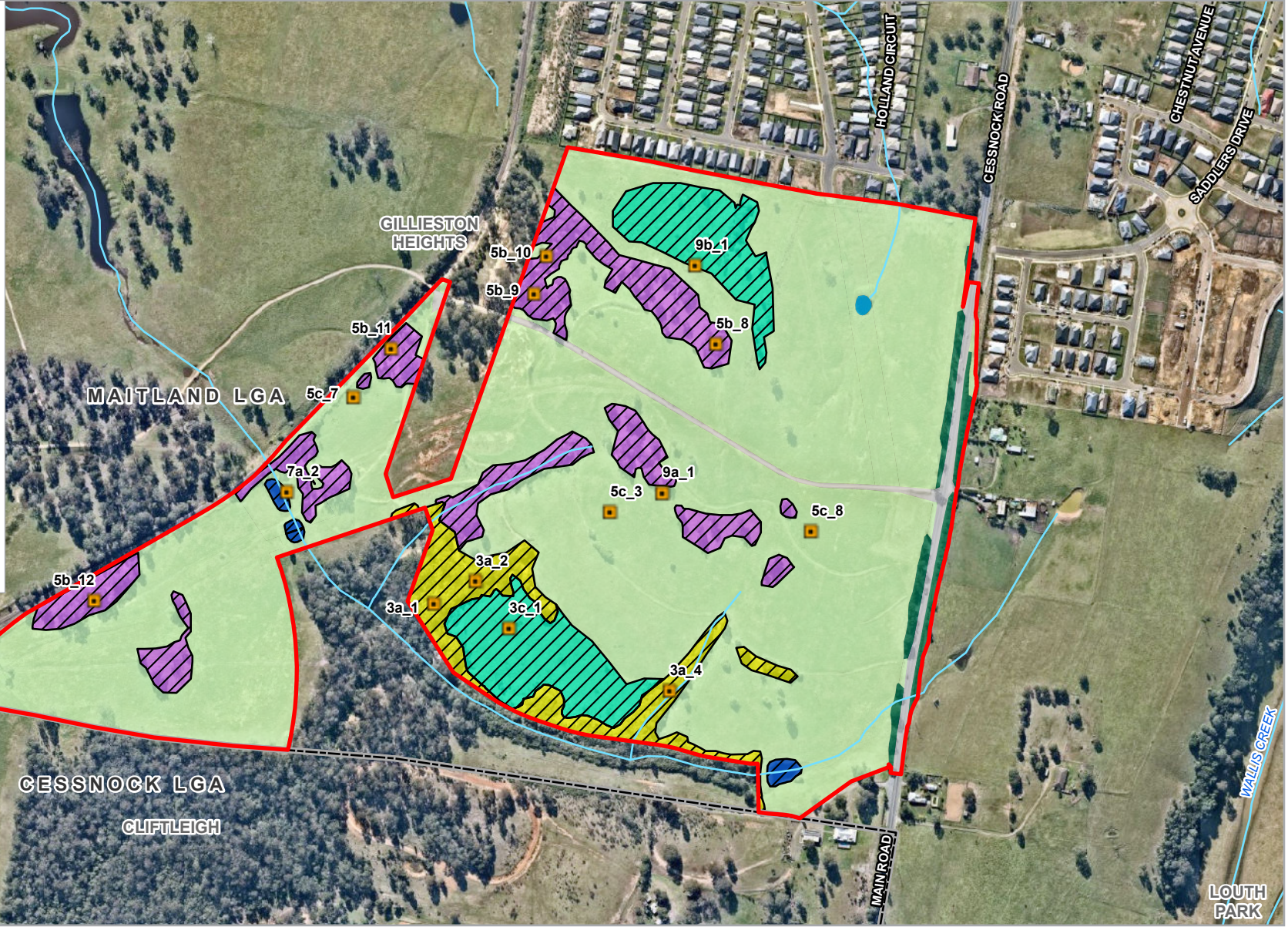


*Photo 1*      *Monitor scratches*



*Photo 2*      *Macropod scats*

- Legend**
- Proposal site
  - LGA boundary
  - Watercourse
  - BAM vegetation integrity plots
  - Endangered Ecological Community
- Legend**
- Cleared
  - Dam
  - Planted vegetation
  - Zone 1 - PCT1600, Spotted Gum - Red Ironbark - Narrow-leaved Ironbark - Grey Box shrub-grass open forest of the lower Hunter underscrubbed/grazed condition
  - Zone 2 - PCT1600, Spotted Gum - Red Ironbark - Narrow-leaved Ironbark - Grey Box shrub-grass open forest of the lower Hunter - Melaleuca regrowth
  - Zone 3 - PCT1591, Grey Gum - Rough-barked Apple shrubby open forest of the lower Hunter intact condition
  - Zone 4 - PCT1736, Water Couch - Tall Spike Rush Freshwater Wetland of the Central Coast and Lower Hunter
  - VZ5 - Spotted Gum - Red Ironbark - Narrow-leaved Ironbark - Grey Box shrub grass open forest of the lower Hunter (1600\_Exotic)



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**Vegetation zones**

**Figure 3.1**

## 3.2 Core Koala habitat

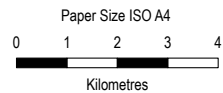
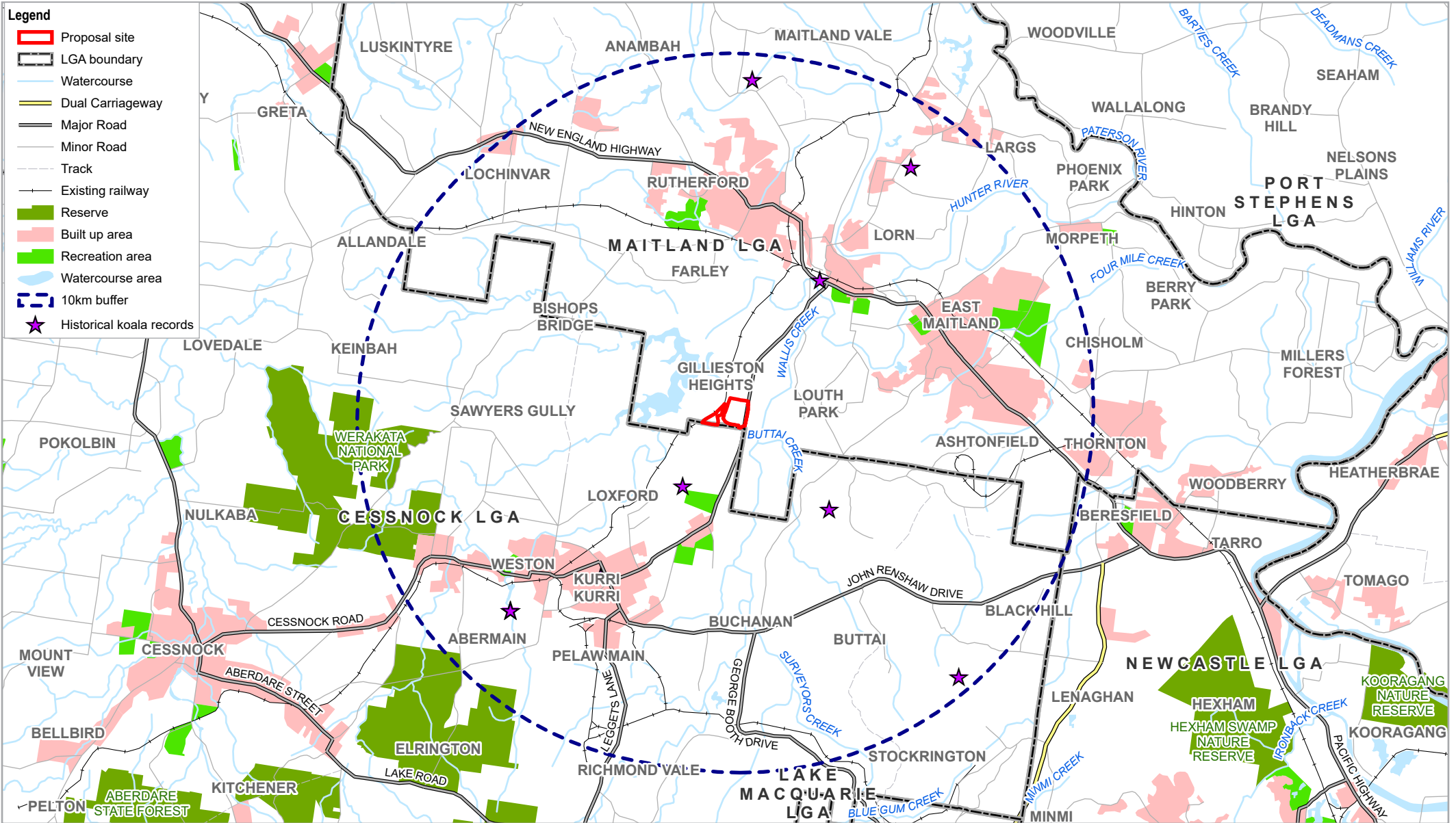
Under the Koala SEPP 2021, 'core Koala habitat' is defined as:

- An area of land which has been assessed by a suitably qualified and experienced person as being highly suitable koala habitat and where koalas are recorded as being present at the time of assessment of the land as highly suitable koala habitat, or
- An area of land which has been assessed by a suitably qualified and experienced person as being highly suitable Koala habitat and where koalas have been recorded as being present in the previous 18 years. 'Recorded' means recorded in the form of BioNet records.

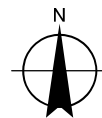
Highly suitable habitat is where 15% or greater of the total number of trees within any Plant Community Type (PCT) are the regionally relevant species of those listed in Schedule 2 of the SEPP.

Koala use tree species listed under Schedule 2 of the SEPP in the Central Coast koala management area identified on site during field surveys include *Corymbia maculata* (Spotted Gum), *Eucalyptus crebra* (Narrow-leaved Ironbark), *Eucalyptus fibrosa* (Red Ironbark), *Eucalyptus punctata* (Grey Gum), *Eucalyptus agglomerata* (Blue-leaved Stringybark) and *Angophora floribunda* (Rough-barked Apple). These small patches of vegetation are considered 'highly suitable habitat' as 15% or greater of the total number of trees within PCT 1600 and PCT 1591 are regionally relevant koala use tree species listed in Schedule 2 of the SEPP. However, based on the results of the desktop review and field survey the site is not considered 'core Koala habitat' because:

- Koalas have not been historically recorded as being present within 2.5 km of the land in the previous 18 years.
- No koalas or signs of koala occupation were recorded as being present during any of the site assessments completed within the proposal site.



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Historical koala records (OEH bionet)

Figure 3.2

# 4. Koala Assessment Report principles and criteria

Table 4.1 Koala Assessment Report principles and criteria

<b>Principle 1. Understand Koala habitat values</b>
<b>Criteria 1. The site is established as containing core koala habitat if a site area survey undertaken by a suitably qualified and experienced person has identified the presence of core koala habitat.</b>
Based on the results of this assessment, the site does not contain core koala habitat.
<b>Criteria 2. Further analysis is undertaken in order to understand the broader values of the core koala habitat, including information about the koala population using the habitat and any specific ecological functions the habitat might serve.</b>
No core koala habitat is present within the proposal site. Koala use tree species listed under Schedule 2 of the SEPP including <i>Corymbia maculata</i> (Spotted Gum), <i>Eucalyptus crebra</i> (Narrow-leaved Ironbark), <i>Eucalyptus fibrosa</i> (Red Ironbark), <i>Eucalyptus punctata</i> (Grey Gum), <i>Eucalyptus agglomerata</i> (Blue-leaved Stringybark) and <i>Angophora floribunda</i> (Rough-barked Apple) were identified on site, however no koalas were recorded during targeted surveys, nor were any signs of the species found (scats, scratches etc.) and no accurate historical records are present within 2.5 km of the site.
<b>Principle 2. Avoid intensifying land use in koala habitat areas through appropriate landscape planning and site selection</b>
<b>Criteria 3. Site selection for development takes into account koala habitat values</b>
The location and layout of the proposal has been designed and modified to avoid impacts to areas adjacent to the site that have the best quality vegetation and highest biodiversity values. A range of mitigation measures are also proposed to minimise impacts of the development, including development and implementation of a Vegetation Management Plan (VMP) and Construction Environment Management Plan (CEMP) that would include comprehensive measures to maintain and improve vegetation adjacent to the site, manage habitat clearance, and prevent impacts associated with erosion and sedimentation, weeds, pest, noise light and vibration. These documents would also outline measures for the protection of vegetation to be retained on and adjacent to the site.
<b>Criteria 4. Development avoids the direct loss of core koala habitat within the site area and avoids fragmentation</b>
Based on the results of this assessment no core koala habitat is present within the proposal site. The proposal site is mostly located in already cleared land, the majority of which has been grazed and is dominated by exotic grassland that already comprises a gap in habitat for less mobile or shelter dependent native fauna. A small patch of remnant native vegetation consisting of PCTs 1600 and 1591 occurs along the outer edge of a larger patch of vegetation that extends south from the proposal site and borders the Heddon Greta and Cliffligh residential housing estates. Further west is Wentworth Swamp which adjoins a patch of native vegetation greater than 2,000 ha in area. Connectivity between the subject site and native vegetation to the west has been impacted by the construction of the South Maitland Railway line and the Hunter Expressway.  The vegetation proposed to be removed occurs along the edge of this larger patch of vegetation. The proposal would reduce the size of this patch but would not result in the isolation of any areas of habitat and would make a minor contribution to the degree of habitat fragmentation in the locality. The native vegetation to be removed in the proposal site does not form part of an important connecting link. Clearing of this vegetation would result in a widening of the existing gaps between patches however would not substantially impact habitat connectivity.
<b>Criteria 5. Core koala habitat is excluded from the development footprint</b>
Based on the results of this assessment no core koala habitat is present within the proposal site.
<b>Principle 4. Minimise potential direct impacts to koalas through koala sensitive design</b>
<b>Criteria 6. Development avoids direct impacts to core koala habitat within the site area.</b>
The development would avoid direct impacts to core koala habitat because there is no core koala habitat within the site.
<b>Criteria 7. Where some loss of core koala habitat cannot be avoided (and provided it is consistent with all other criteria), development is designed in a way that retains higher value areas across the site and avoids fragmentation of habitat within the site area and more broadly within the region</b>
As above, the development would avoid direct impacts to core koala habitat. The location and layout of the proposal has been designed and modified to avoid impacts to areas adjacent to the site that have the best quality vegetation and highest biodiversity values. This best quality vegetation is subject to a VMP.

**Criteria 8. Development is undertaken in a way that maintains the potential function of the core koala habitat**

As above, the development would avoid direct impacts to core koala habitat.

**Principle 5. Implement best practice measures for the management of identified risks to koalas.**

**Criteria 9. All relevant indirect impacts to koalas and koala habitat associated with the development are identified**

The proposal would involve the clearing of approximately 2.74 ha of woodland, 4.49 ha of regrowth and 5.50 ha of scattered paddock trees over a highly modified understory. The removal of this vegetation would slightly reduce the available potential foraging habitat for koalas, however given the limited extent and context of this vegetation and extensive areas of alternative foraging habitat within the local area it is highly unlikely that the removal of this vegetation would result in any substantial impacts to koalas.

In the context of the areas of remaining native woodland and wetland vegetation surrounding the proposal site, particularly in the large area proposed to be retained within the Loxford stewardship site, the proposal would remove a very small proportion of available habitat resources for local populations of native fauna. It is unlikely that the proposal would substantially impact on the available habitat resources for local fauna in the locality.

The proposed residential subdivision is likely to increase the risk of dogs attacks and vehicle strike during construction and operation. Mitigation measures would include signposting and enforcement of appropriate speed limits along proposed access roads to reduce the likelihood of vehicle strike and mortality of native fauna. Appropriate fencing would be maintained between the proposal site and areas of adjoining native vegetation. Due to the lack of core koala habitat, no signs of koala occupation recorded on site and no historical koala records within 2.5 km of the site it is unlikely the proposal will directly or indirectly impact koalas.

**Criteria 10. Development uses best practice management measures to address the potential impacts considered likely to pose an increased risk to koalas or their habitat.**

A construction environmental management plan (CEMP) would be required for the construction phase of the proposal. A flora and fauna management sub-plan will be prepared as part of the CEMP to address the potential impacts to koalas and fauna habitat, detailed below.

**Principle 6. Use compensatory measures only where they can be shown to better promote the aim of the SEPP**

**Criteria 11. Compensatory measures are only used once it has been demonstrated that options to avoid, minimise and manage impacts to core koala habitat have been exhausted.**

As above, a wildlife management sub-plan will be prepared and implemented as part of the CEMP to address potential impacts to koalas. No core koala habitat is present within the proposal site.

**Criteria 12. Where there is any direct loss of habitat or compromise in the potential function of a koala habitat area (and provided it is consistent with all other criteria outlined here), suitable compensatory measures are provided.**

As above, a wildlife management sub-plan will be prepared and implemented as part of the CEMP to address potential impacts to koalas. No core koala habitat is present within the proposal site.

**Principle 7. Use adaptive management strategies to monitor, evaluate and deliver appropriate planning outcomes for koalas**

**Criteria 13. The development application includes a monitoring, adaptive management and reporting component against the key outcomes**

A CEMP would be prepared prior to construction and a wildlife management sub-plan will be prepared as part of the CEMP, incorporating recommendations below, and expanding on specific details where necessary. A VMP has been prepared for the proposal and will mitigate potential indirect impacts on adjoining vegetation located along the drainage line to the south of the site. This plan has been submitted to Council for assessment and approval.

The wildlife management sub-plan will be developed and implemented to minimise impacts to fauna during clearing works. This plan will include but not be limited to:

- Prior to the commencement of any work in or adjoining areas of native vegetation (including planted vegetation), a survey would be carried out to mark the construction impact boundary. The perimeter of this area will be fenced using high visibility fencing and clearly marked as the limits of clearing. All vegetation outside this fence line will be clearly delineated as an exclusion zone to avoid unnecessary vegetation and habitat removal. Fencing and signage must be maintained for the duration of the construction period. Fencing should be designed to allow fauna to exit the site during clearing activities.
- For individual trees being retained fencing will protect the entire Tree Protection Zone (i.e. 10 times the diameter of the trunk at breast height).
- Provisions for pre-clearing surveys to identify significant habitat features such as hollow bearing trees, logs and nests
- Protocols for the removal of hollow bearing trees and other identified significant habitat features
- Protocols for the salvage and relocation of fallen logs and hollows (where appropriate)
- Provisions to have suitably qualified ecologist present during vegetation clearing
- Protocols for the appropriate handling, capture and release of fauna
- Provisions for stages vegetation removal to increase the opportunity for fauna to vacate the site and disperse into areas of adjoining habitat to evade injury
- Protocols for post clearing reporting



## 5. Conclusion

Greater than 15 percent of the trees present within the proposal site are listed on Schedule 2 of the Koala SEPP 2021 as koala use tree species. As such the site contains highly suitable koala habitat (as defined by the SEPP). A desktop assessment of nearby historic koala records and site surveys determined that the proposal site does not contain “core koala habitat” as prescribed by the Koala SEPP 2021.

Given the lack of local koala records, the largely disturbed nature of the site and the large areas of alternative “highly suitable koala habitat” present within the locality it is considered unlikely that Koalas would be impacted by the proposal.

## 6. References

Atlas of Living Australia (2022). Accessed at <https://www.ala.org.au/>

DPE (2022a) NSW BioNet Atlas. Accessed at <https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity/nsw-bionet>

DPE (2022b). Threatened biodiversity profile search. Accessed at <http://www.environment.nsw.gov.au/threatenedspecies/>

DPIE (2021). Koala SEPP 2021 Factsheet - development applications. Accessed at <https://www.planning.nsw.gov.au/Policy-and-Legislation/Environment-and-Heritage/Koala-Habitat-Protection-SEPP>

GHD (2022a) Regrowth – Kurri Kurri Stage 1 Biodiversity Development Assessment Report

GHD (2022b) Draft Vegetation Management Plan Regrowth - Kurri Kurri – Precinct 1

Phillips, S. and Callaghan, J. (2011) The Spot Assessment Technique: a tool for determining localised levels of habitat use by Koalas *Phascolarctos cinereus*. *Australian Zoologist* 35(3), 774-780



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