Ecological Assessment – Potential Offset Site

Department of Transport and Main Roads

Eton Range Realignment Project
Blue Mountain Road, Eton Range

November 2015

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Blue Mountain Road, Eton Range

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Prepared for:

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EXECUTIVE SUMMARY

The Department of Transport and Main Roads is assessing a potential offset site to support regional populations of Phascolarctos cinereus *(Koala) to compensate for the impacts of the Eton Range Realignment Project. This project has been referred to the Commonwealth Department of Environment and declared a controlled action (2015/7552). The Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory only) is protected under the* Environment Protection and Biodiversity Conservation Act 1999*. An ecological assessment was required to identify the quality of the proposed site and to gauge its suitability as an offset for the impacts of the proposed project.*

An assessment was undertaken in November 2015 to evaluate the proposed offset site and to quantify using a metric. The assessment found:

- *Moderate to poor habitat as identified by a Modified BioCondition metric;*
- *Good site context in relation to the landscape in which the site is situated;*
- *Medium to High levels of Koala activity; and*
- *Mild to moderate levels of external threats.*

This report presents the findings of the ecological assessment by Kleinfelder. The findings have been discussed to give further understanding and context to the site to assist the proposal by the Department of Transport and Main Roads.

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1. INTRODUCTION

As the Eton Range Realignment Project (ERRP) has the potential to impact the local Koala (*Phascolarctos cinereus*) population, Kleinfelder was commissioned by the Department of Transport and Main Roads (TMR) to conduct an ecological assessment of a proposed offset site to compensate for those potential impacts.

The proposed offset site (75ha) is situated in a road reserve along Blue Mountain Road on the Eton Range, 55km south west of Mackay **(Figure 1)**. A study area of increased size was identified to get a broader understanding of assessable attributes. The study area is approximately 200ha and encompasses the proposed offset site. The study area consists of sclerophyll woodland situated over rises composed of igneous rock set amongst alluvial plain deposits.

1.1 SCOPE

The ecological assessment aims to evaluate the study area and to quantify using a metric. Field work was undertaken on 12 and 13 November 2015 to assess:

- Site condition;
- Site context; and
- Species stocking rates.

The raw data will be used to establish the suitability of the site to support the recovery of the Koala population in the region and to compensate for the impacts of the proposed project. This report presents the findings of the ecological impact assessment.

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Locality

Queensland Department of Transport & Main Roads
Eton Range Realignment – Potential Offset Site
Ecological Assessment

FIGURE:

1

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1.2 LEGISLATION

This project was undertaken in accordance with, and/or consideration of, the following Acts and Regulations:

- Commonwealth:
    - *Environment Protection and Biodiversity Conservation Act 1999*.
- State:
    - *Nature Conservation Act 1992*;
    - *Nature Conservation (Wildlife) Regulation 2006*;
    - *Land Protection (Pest and Stock Route Management) Act 2002*; and
    - *Vegetation Management Act 1999.*

Further information regarding these Acts and Policies, along with their application to this project, can be found in **Appendix 1**.

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2. METHODOLOGY

As per the EPBC '*How to use the Offsets Assessment Guide*', assessment of the proposed offset site and its suitability to compensate for the impacts of the ERRP to the Koala is comprised of three components. They are used to determine the condition of the habitat, the importance of the site within the landscape, and the current Koala activity levels. Each component is quantifiable and can be combined to produce an overall assessment score of the quality of the proposed offset for the Koala.

2.1 SITE CONDITION

Site condition reflects habitat quality in relation to the ecological requirements of the Koala and considers vegetation condition and structure, the diversity of habitat species, and other parameters (e.g. logging, grazing and bushfire). Site condition assessment considers Koala Habitat Rank and the Modified BioCondition scores.

2.1.1 Koala Habitat Rank

Koala Habitat Rank is to be assessed by Central Queensland University based on information provided in this report. It ranks the relationship of food species to their position in the landform and their overall suitability to support Koalas.

2.1.2 Modified BioCondition Assessment

Habitat condition was assessed using a Modified BioCondition methodology described by Ecological Survey and Management (2013). The modified assessment and scoring metric has been followed to remain consistent with the assessment at the disturbance footprint (ERRP). BioCondition assessment aims to assess the quality of the habitat at the proposed offset site and to quantify it using a metric. The Modified BioCondition assessment scores the following attributes:

- Canopy cover and health;
- Canopy recruitment;
- Canopy height;
- Shrub layer;

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- Ground cover;
- Large trees;
- Fallen logs;
- Weed cover;
- Organic litter;
- Size of patch;
- Connectivity; and
- Context.

The Modified BioCondition assessment used quadrats as described in the BioCondition Assessment Methodology (Eyre *et al*. 2015). Benchmarks developed by the Queensland Herbarium were used when calculating the habitat score. Where an established benchmark was not available, a benchmark was used from the most closely related Regional Ecosystem (RE) for dominant species, structure, and landform.

REs were verified (ground truthed) through tertiary and quaternary assessment consistent with methodology provided by the Queensland Herbarium (Nelder *et al.* 2012). Further information relating to site condition survey methodology can be found in **Appendix 2**.

Final BioCondition class was calculated in accordance with the modified category attributes described by Ecological Survey and Management (2013).

2.2 SITE CONTEXT

Site context refers to the relative importance of a site in terms of its position in the landscape. Landscape context is assessed using different parameters depending on whether the assessment site is within a fragmented landscape (patch size, connectivity, context and corridors), or an intact landscape (Eyre *et al*. 2015). The Brigalow Belt Bioregion is listed as a fragmented landscape, defined as areas where the amount of remnant vegetation is less than 65% (McIntyre and Hobbs 2000). Site context is measured using a suite of parameters to describe the location of the habitat within the surrounding landscape and include:

- Patch size;

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- Connectivity; and
- Context.

As per the EPBC Offsets Guide, threats to the Koala have also been considered when determining the overall site context scores. Observations were recorded during the field assessment to ascertain the level of threats (or lack of) that may affect the recovery of the Koala. Observations included:

- Evidence of mortality by vehicle strike;
- Evidence of mortality by, or the presence of, feral or domestic dogs and dingos;
- Evidence of bushfire;
- Evidence of listed weed species including Weeds of National Significance (WoNS);
- Evidence of other unnatural disturbance, including habitat fragmentation; and
- Evidence of disease.

2.3 SPECIES STOCKING RATE

The Koala Spot Assessment Technique (KSAT) was used to determine Koala activity levels of the study area at six locations. For each KSAT test, thirty habitat trees around a focal tree were assessed by searching for and counting Koala faecal pellets within 1m of the base of the tree trunk for two person minutes and recording the species of each tree. Fifty percent of pellet production is expected to be located within 1m of the tree base (Phillips and Callaghan 2011). Information recorded during KSAT tests included:

- Species of tree;
- Pellet count; and
- Focal tree location (GPS).

Activity levels are categorised as either low (<22.52%), medium (≥22.52% but ≤32.84%) and high (>32.84%) based on the east coast medium-high benchmarks (Phillips and Callahan 2011).

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Habitat trees were defined as trees from the genera *Eucalyptus*, *Angophora*, *Lophostemon*, *Corymbia* and *Melaleuca*, and that are >4 m in height or >10 cm diameter at breast height (DBH).

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3. RESULTS

3.1 SITE CONDITION

Habitat condition scores were calculated using the modified BioCondition methodology for six sites within the study area (**Figure 2**). Four REs were identified during ground truthing; each of these REs have been represented in the BioCondition assessment. As a benchmark for RE11.12.3 is currently not available, the benchmark for RE11.12.1 was used as this was determined to be the most closely related ecosystem on the same landform. Scores for attributes at each site are shown in **Table 1**.

The BioCondition scores of the study area produce an average score of 66.25. Patches of REs 11.3.4, 11.12.3 and 11.3.9 in the northern section of the study area exhibited low condition with score categories of 4. Patches in the southern section of the study area exhibited good condition, with patches of RE11.3.9, 11.3.25 and 11.12.3 scoring in category 2.

RE11.3.4 is listed as Of Concern under the *Vegetation Management Act* (1999), all other regional ecosystems are listed as Least Concern.

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