ECOLOGY | BIOBANKING | OFFSETS | BUSHFIRE

Our Ref: 1635
Date: 27 April 2018

KOBY DEVELOPMENT CONSULTANTS

ATTENTION: **RYAN FALKENMIRE**

Via Email: ryan@kobydc.com.au

Dear Ryan,

RE: **KOALA HABITAT INVESTIGATIONS**
600 MACLEAY VALLEY WAY, SOUTH KEMPSEY, NSW

At the request of Koby Development Consultants, Anderson Environment & Planning (AEP) herewith provide considerations of potential impacts upon the state and federally-listed threatened species, *Phascolarctos cinereus* (Koala), to inform the Gateway Process for a proposed redevelopment of the above site into a Highway Service Centre type development.

From a preliminary concept plan it is expected that the development would require the removal of a relatively small amount of disturbed remnant native vegetation, with the remainder of the development footprint being cleared and / or highly disturbed and managed.

The site lies within *"Area Subject to Koala Management Plan"* in the Kempsey Local Environment Plan (2013) and is classed as *"Preferred Koala Habitat –Secondary B* **(PKH)** - *Vegetation communities and/or associations wherein Primary food tree species are absent, habitat containing secondary and supplementary food tree species only" in* the *Comprehensive Koala Plan of Management for Eastern Portion of Kempsey Shire LGA* (2011) (the KCPoM).

The above classifications are addressed in this assessment, as well as consideration of offset strategies under federal and state legislation and **s4 Planning Provisions** of the KCPoM.

The site was inspected by AEP on 12 April 2018, and searches were conducted for visual signs of Koala, assessment of Preferred Koala Feed Trees (PKFTs) as well as a targeted search in accordance with the *Spot Assessment Technique* (SAT).

The Site

The site occurs within the Kempsey Local Government Area (LGA) and is identified as Lot 200 DP 1177619. The entire site covers approx. 3.9ha. The land is zoned "RU2 – Rural Landscape" as per Kempsey LEP 2013.

Most of the site is highly degraded, with scattered canopy trees and managed understorey. The ground layer was generally under-scrubbed up to the trunks of trees or with piles of metal and other waste emplaced (**see photos below).** The northern section of the site contains regrowth native vegetation in "moderate condition", with an understorey of native shrubs, grasses and forbs, however *Lantana camara* (Lantana) is present throughout this area and there are small piles of dumped material present.

The Proposal

The proposed Highway Service Centre development is to occupy the southern part of the site, with a development footprint of approx. 2.9ha comprising under-scrubbed vegetation and partly-cleared land currently utilised for the storage of waste metal and scrap materials. Approx. 1.8ha of moderately disturbed and under-scrubbed remnant native vegetation would be cleared as part of the proposed development.

Vegetation

Regional Vegetation Mapping (GHD 2007) identified vegetation within the north of the site as *"Dry Foothills Blackbutt – Turpentine Forest"* (DFBTF) and "*Cleared / disturbed areas".*

Site inspection confirmed the above, although the majority of the development footprint was found to be in a highly disturbed state, and the boundaries between the two states were revised based on ground truthing, with an increase in area in cleared / disturbed areas of approx. 1.0ha (see **Figure 1).**

Within the proposed development footprint, the vegetation generally presented as isolated mature canopy trees, while ground and shrub layer vegetation was almost completely absent due to under-scrubbing and placement of large scrap metal and other waste piles abutting tree trunks.

Within the watercourse in the proposed development footprint, native vegetation was dominated by weeds including *Ageratina adenophora* (Crofton Weed), *Lantana camara* (Lantana), *Cyperus eragrostis* (Nutgrass) and *Ipomoea cairica* (Coastal Morning Glory).

There was an absence of mature trees (>25cm dbh) in general in the remnant vegetation in the north of the site, indicating logging and / or clearing of the area approx. 30± years ago, that has not been recently under-scrubbed. In this area, indicative DFBTF trees (*E. pilularis* (Blackbutt), *Syncarpia glomulifera subsp. glomulifera* (Turpentine) and *Allocasuarina torulosa* (Forest Oak) along with understorey species *Breynia oblongifolia* (Coffee Bush), *Imperata Cyclindrica* (Blady Grass), *Lomandra longifolia* (Spiny-headed Mat-rush) and *Dianella caerulea* (Blue Flax Lily).

The moderate condition regrowth native vegetation in the north of the site allowed confirmation of GHD 2007 vegetation classification of *Dry Foothills Blackbutt – Turpentine Forest*.

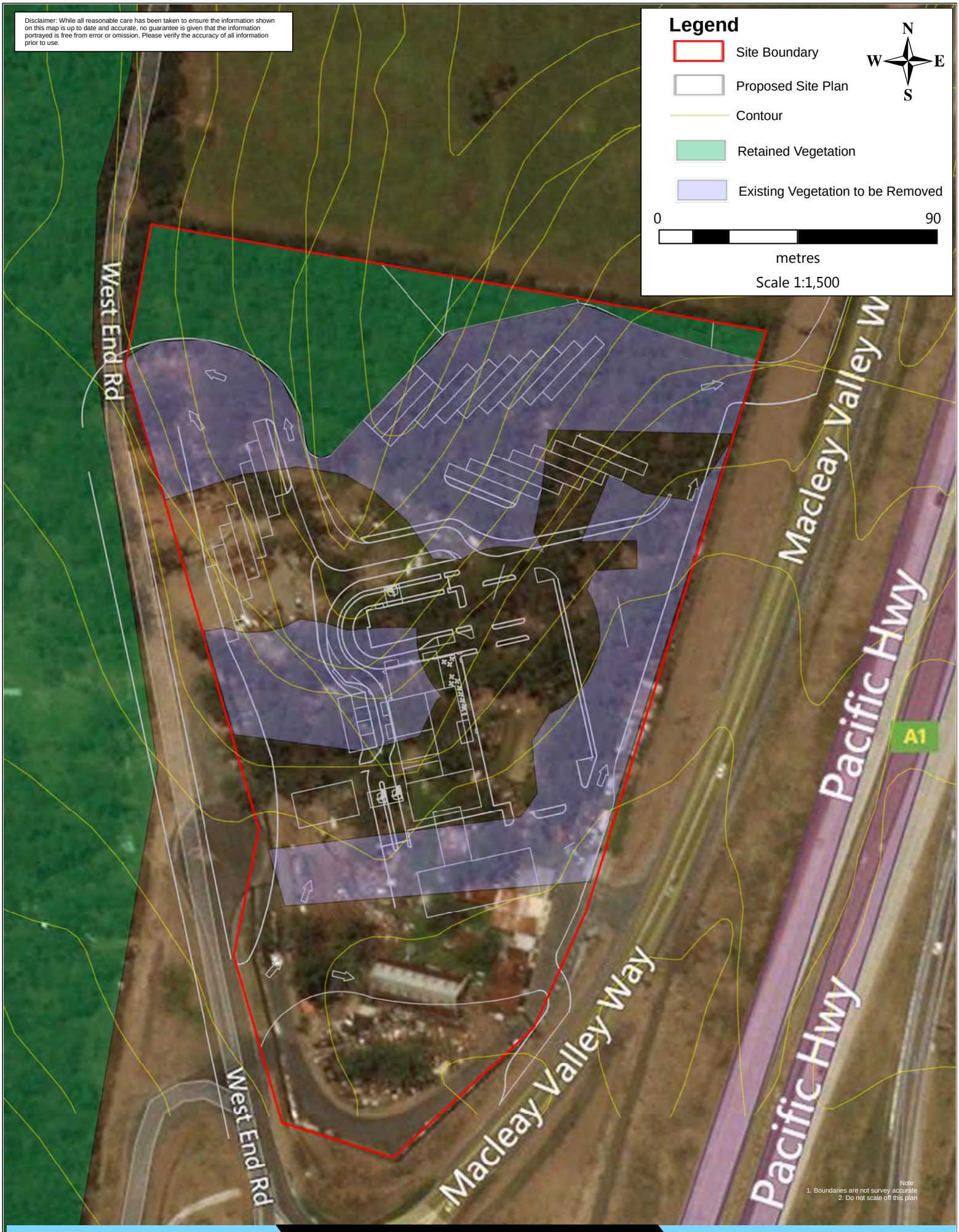
Plates 1-3 overleaf show the state of vegetation and level/s of disturbance within the site, and **Figure 1** shows vegetation mapping modified by ground truthing.

Plate 1 – Looking south; mature trees, scrap metal and managed understorey

Plate 2 - Looking east; mature trees with managed understorey in the centre of the site.

Plate - Looking north; towards moderate condition regrowth vegetation across cleared and disturbed area in the centre of the site.

Plate - Moderate condition native regrowth; north of site.



AEP

Title: Figure 1 - Vegetation Mapping

Location: Kempsey NSW

Client: KDC

Date:April 2018

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Local Koala Records

A search of the NSW OEH database revealed three Koala records within approx. 1km of the site (from 2002, 2003 & 2014) and 97 records within the wider 100km^2 locality, mostly in the nearby Kalateenee and Maria River State Forests.

Consideration of "Comprehensive Koala Plan of Management for Eastern Portion of Kempsey Shire LGA"

The CKPoM is consistent with the State Recovery Plan for the Koala, approved in 2008 and has been prepared in accordance with *State Environmental Planning Policy No 44* (Koala Habitat Protection) (SEPP44) and thus shares the primary aim of:

> *" …the proper conservation and management of areas of natural vegetation that provide habitat for koalas to ensure a permanent free-living population over their present range and reverse the current trend of koala population decline".*

Under CKPoM, the site is classified as:

> *"Preferred Koala Habitat-Secondary B - Vegetation communities and/or associations wherein Primary food tree species are absent, habitat containing secondary and supplementary food tree species only".*

The Spot Assessment Technique

Applying the SAT (Phillips & Callaghan, 2011):

1. Locate and uniquely mark with flagging tape a tree (the centre tree) that meets one or more of the following selection criteria:

a) A tree of any species beneath which one or more *P. cinereus* faecal pellets have been observed; and/or

b) A tree in which a *P. cinereus* has been observed; and/or

c) Any other tree known or considered to be potentially important for *P. cinereus*, or of interest for other assessment purposes.

2. Identify and uniquely mark the 29 nearest trees to the centre tree, and

3. Undertake a search for *P. cinereus* faecal pellets beneath each of the 30 marked trees based on a cursory inspection of the undisturbed ground surface within a distance of 100 centimetres around the base of each tree, followed (if no faecal pellets are initially detected) by a more thorough inspection involving disturbance of the leaf litter and ground cover within the prescribed search area.

Strict adherence to the 1m search area is a fundamental component of the SAT methodology, as it is this distance that both optimises the probability of success in terms of actually finding Koala faecal pellets, while at the same defining a workable search area .

Koala Investigations

As described above, due to the level of site management, underscrubbing and waste placement mentioned previously, identification of all canopy trees was not possible outside of remnant moderate condition vegetation in the northern part of the site. This also hindered the efficacy of SAT investigations, with the basal area of most trees in the south of the site unable to be fully assessed.

The adapted SAT methodology employed to ground-truth Koala presence is described below:

- A mature Stringybark likely *E .microcorys* (70cm dbh) was identified in the centre of the site within the development footprint to commence SAT search;
- 29 nearest trees with reasonable access to 1m base perimeter were searched. A systematic search for Koala faecal pellets beneath each of the marked trees based on inspection of the undisturbed ground surface within 1m of the base of the tree;
- No faecal pellets were initially detected so a more thorough inspection involving disturbance of the leaf litter and ground cover around each tree area was applied; and
- A maximum of two person minutes per tree was dedicated to the search.

Under s4.6 of CKPoM, a stadia survey of preferred koala habitat food trees that may be impacted by the proposed development or rezoning application must be undertaken and submitted with the DA or Rezoning Application. In this instance, identification of trees within the development footprint was problematic due to levels of disturbance and management of the area therein.

Interpretation of Koala Activity Levels

While the activity SAT level for the site was 0%, CKPoM mapping requires that assessment and pathway provisions of CKPoM be applied, requiring consideration within the assessment process of the removal of approx. 1.8ha of mapped PKH under the proposed development.

While scattered specimens of the primary Koala food tree *Eucalyptus microcorys* (Tallowwood) were found as a sub-dominant component of the canopy, the level of disturbance to the understorey and isolated nature of the vegetation (being bounded by the roundabout to the south, West End Road to the west, Macleay Valley Way and the Pacific Highway to the east and cleared lands to the north) suggests that the proposed development

area is largely unsuitable and considered unlikely to be utilised by the local Koala population.

Offset Strategy

Ground truthing of the site estimated that the current proposed development concept plan would involve the removal of approx. 1.8ha of disturbed native vegetation from the site, which while mapped as PKH, is considered unsuitable for the local Koala population given its isolation and the close proximity of ongoing threats (i.e. vehicle strike).

Following initial evaluation and consideration of the ecological approvals pathways available for this project, it is apparent that the level of vegetation removal will trigger the clearing threshold under the *Biodiversity Conservation Act 2016* (BC Act), and hence an assessment utilising a Biodiversity Assessment Report (BDAR) will be required, with associated offsetting.

Whilst it is noted that the CKPoM requires the loss of Koala habitat to be compensated for via the securement of lands on-site, the small size of the site does not allow for this to occur. Furthermore, considering the unsuitability of the site as Koala habitat for the local population, it is considered that purchasing / retiring suitable Biobanking Credits (see below) would fulfil the habitat compensation measures of the CKPoM. Biobanking is further considered in the section below.

Preliminary BioBanking Investigations:

Vegetation mapped for the site has been classified to a Plant Community Types (PCTs) using the VIS Database, and approximated plot data was generated for the community based on Aerial Photograph Interpretation and preliminary field observations.

Preliminary calculations undertaken have revealed the following approximate credit requirements as applicable to the current proposal:

Table 1: Preliminary Ecosystems Credits Required

BioBank Plant Community Type (PCT)	Clearing (ha)	Credits Required for Development
PCT 690: Blackbutt – Tallowwood dry grassy open forest of the Central parts of the North Coast Bioregion	1.8	48

NB: BioBank Koala credits may be required in addition to PCT 690.

The retirement of 1.8ha of PCT690 credits will result in approx. 12ha of offsets, which would satisfy offset provisions required in CKPoM s4.12 (2 times area removed).

The requirement to 'retire' the estimated 48 credits can be either achieved in a variety of ways including:

- Establishing offsite Stewardship Site(s) that generate required credit types and numbers;
- Paying into the Biodiversity Conservation Fund;
- Purchasing suitable on-market credits and retiring them; and/or
- Combination/s of the above.

Recommendations

Retention and rehabilitation of approx. 0.5ha of remnant native vegetation within the north of the site (**see Figure 1)**, connected with PKH to the west under a Revegetation Plan as described in the **CKPoM 4.9(e)** may allow for part of the "avoid and minimise" considerations to be met in this regard.

Other Considerations

Note that approval under other environmental legislation or policy instruments is a likely requirement for the development. Such likely approvals are:

- The Commonwealth *Environment Protection & Biodiversity Conservation Act 1999* (EPBC Act);
- The level of vegetation removal will trigger assessment under *Biodiversity Conservation Act 2016* (BC Act); and
- The *Water Management Act 2000*.

We trust that the information presented herewith is suitable for your purposes at this stage. Should you require any further details or clarification, please do not hesitate to contact the writer.

Yours faithfully,
ANDERSON ENVIRONMENT & PLANNING

IAN BENSON
SENIOR ECOLOGIST

References

Anderson Environment and Planning. (2017). *Ecological Overview & Bushfire Considerations 600 Macleay Valley Way, South Kempsey.* Unpublished report for KDC Development Consultants, Newcastle NSW.

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New South Wales Government. (2013) *Kempsey Local Environmental Plan 2013 - Koala Management Plan Mapping.* Viewed April, 2018 at https://www.legislation.nsw.gov.au/#/view/EPI/2013/712/maps#KMP.

Phillips, S. & Callaghan, J. (2011). Mitchell, D. 2003. *The Spot Assessment Technique: a tool for determining localised levels of habitat use by Koalas Phascolarctos cinereus.* Australian Koala Foundation, Brisbane, Queensland. *Australian Zoologist* 35 (3) 774-780.