GROUND TRUTHING OF ENVIRONMENTAL VALUES FOR LOT 4 FLYNN DRIVE, NEERABUP

Prepared for
City of Wanneroo

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Cover photo	(Clockwise from top left) Winter Bell (*Blancoa canescens*), *Banksia menzeisii*, TEC *Banksia attenuata* woodland over species rich shrubland (SCP20a), Carnaby's Black Cockatoo © Eco Logical Australia, 2009 – 2012.

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Abbreviations

ABBREVIATION	DESCRIPTION
ARRP	*Agriculture and Related Resources Protection Act 1976*
ELA	Eco Logical Australia
FCT	Floristic Community Type
NIA	Neerabup Industrial Area
TEC	Threatened Ecological Community

1 Introduction

This report outlines the results of ground truthing undertaken with regards to vegetation description, vegetation condition and fauna habitat, based on previous fauna surveys conducted by RPS (2006) and ATA Environmental (2007).

1.1 BACKGROUND

The City of Wanneroo is pursuing resource extraction and industrial land development on approximately 210 ha of land at Lots 4, 41 and 1002 Flynn Drive as well as Part Lots 53 and 2692 (hereafter referred to as Lot 4 Flynn Drive) in Neerabup (the Project Area; **Figure 1**) and is seeking to progress towards having the required subdivision planning and environmental approvals in place to proceed. The site forms part of the Neerabup Industrial Area (NIA), and Meridian Business Park within that (**Figure 2**).

The site includes open woodland over degraded pasture, Jarrah and Banksia woodland over mixed low shrubland and a small amount of Tuart woodland. The site contains potential habitat for several threatened species including the federally listed Endangered Carnaby's Black-cockatoo and Graceful Sun Moth (*Synemon gratiosa*).

The following flora and fauna surveys have been undertaken on land considered part of Lot 4 Flynn Drive and form the basis of this ground truthing work:

- RPS Bowman Bishaw Gorham (2006) – Neerabup Industrial Area: Vegetation and Flora Surveys
- ATA Environmental (2007) – Flora, vegetation and vertebrate fauna assessment Neerabup Industrial Area (NIA), Neerabup.

1.2 PURPOSE OF REPORT

The following presents the results of ground truthing of specific environmental values previously identified by RPS (2006) and ATA Environmental (2007). As these surveys were completed between five and six years ago, the surveys were to ensure currency of data.

The environmental values assessed were:

- vegetation communities and their extent
- vegetation condition
- occurrence of Dieback (*Phytophthora cinnamomi*)
- Declared plants listed under the *Agriculture and Related Resources Protection Act 1976* (ARRP Act)
- fauna habitat types
- Carnaby's Black-cockatoo (*Calyptorhynchus latirostris*) significant trees, foraging and roosting habitat consistent with Department of Sustainability, Environment, Water, Populations and Communities guidance statement (DSEWPaC 2011).

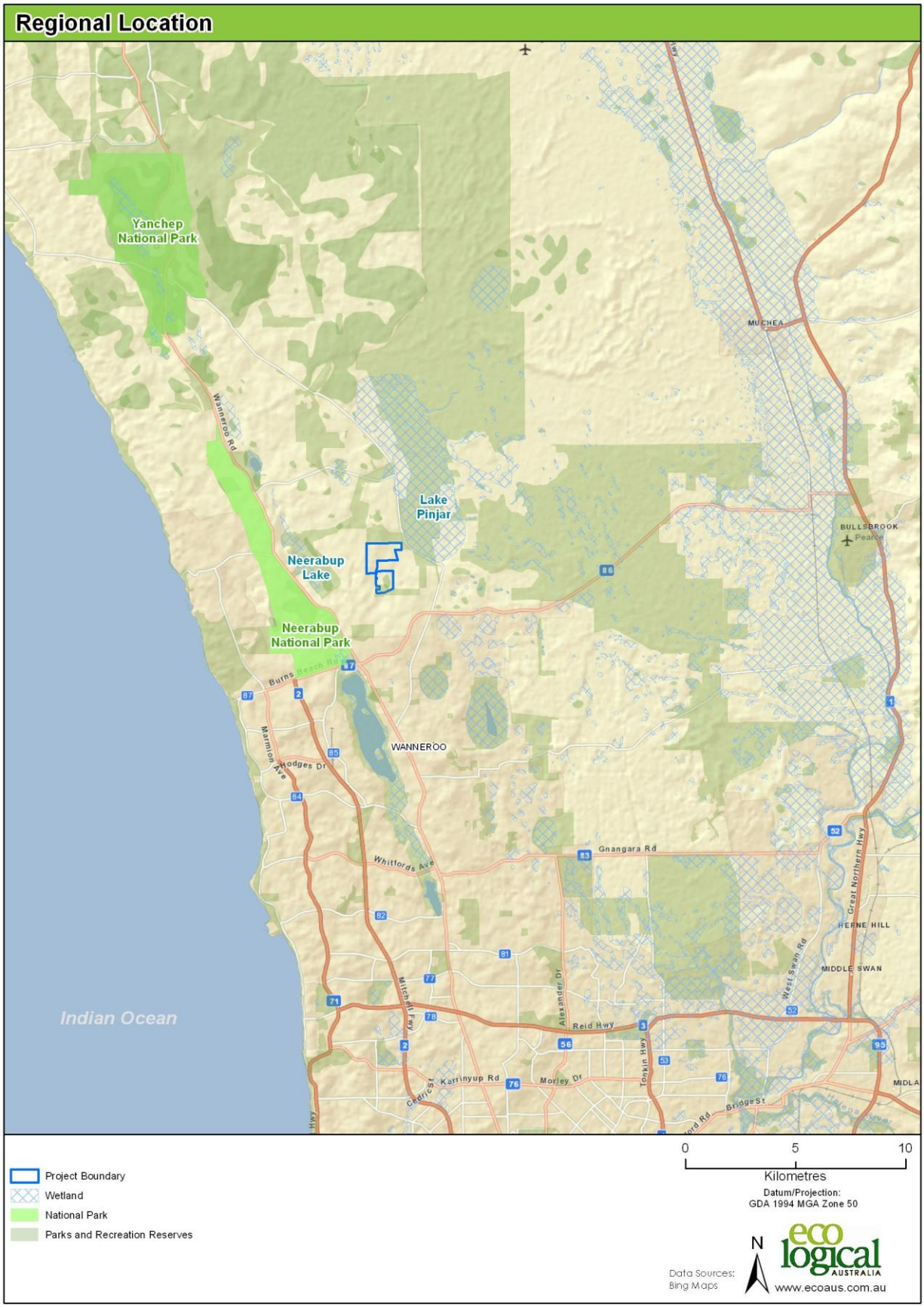

Figure 1: Regional location of Project Area

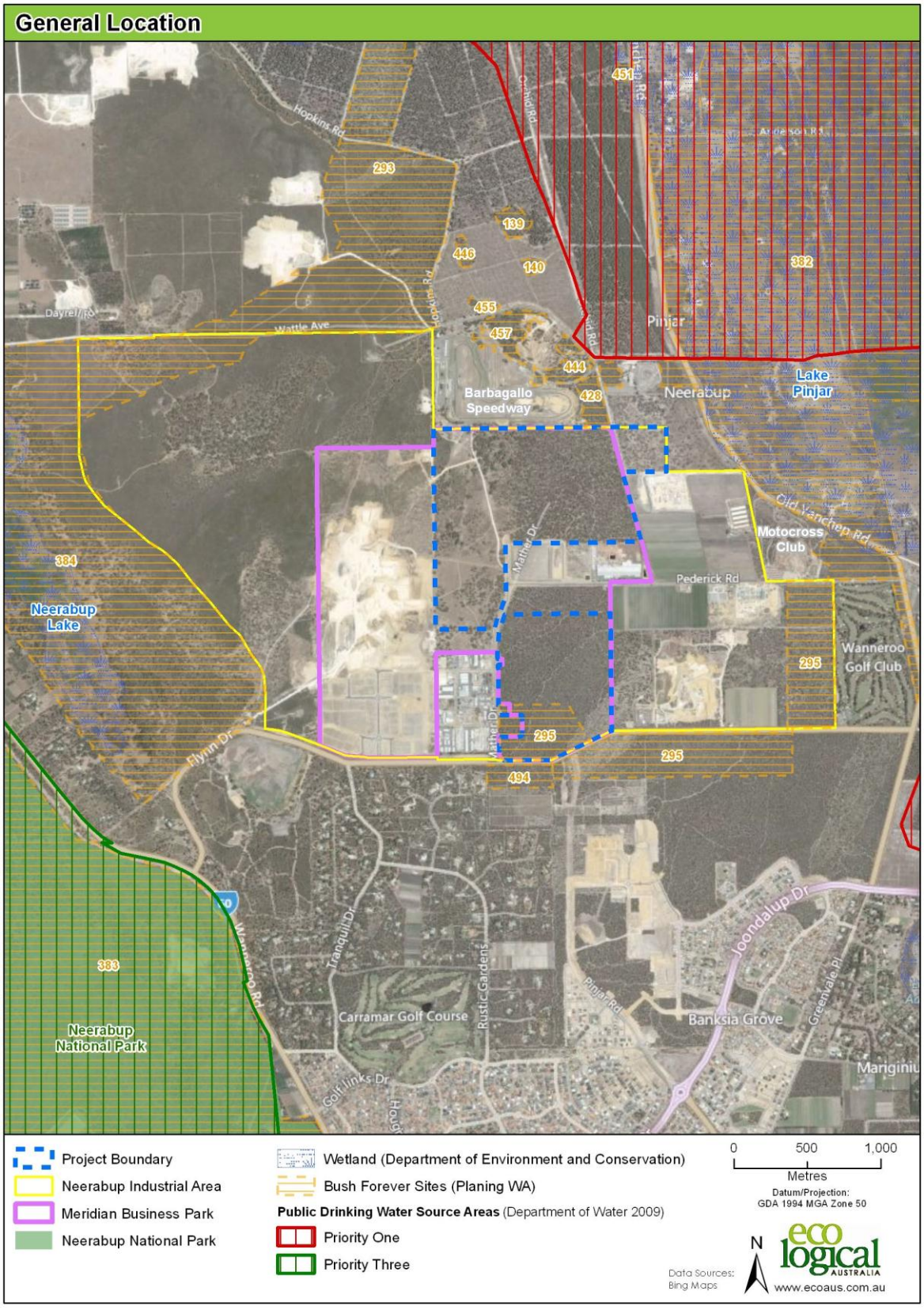

Figure 2: General location of Project Area

2 Methods

The following environmental values of Lot 4 Flynn Drive were assessed by Robert Browne-Cooper (Senior Zoologist) and Joel Collins (Senior Botanist) on the 1st August 2012.

2.1 FLORA

Vegetation communities previously mapped by RPS (2006) and ATA Environmental (2007) were ground truthed to validate extent, composition and accuracy of mapping by walking through vegetation communities and assessing their mapped boundaries. These vegetation structural classes were based on Keighery (1994). Each vegetation community was then ground truthed to validate the vegetation condition score assigned during the previous assessments by RPS (2006) and ATA Environmental (2007), using the Bush Forever vegetation condition scale (Government of Western Australia 2000). Vegetation condition can change over time and therefore the condition score required re-assessment to determine if the condition score was still current and to observe any changes in condition through any threatening processes.

A visual assessment for the presence of Dieback was completed across the Project Area. Opportunistic observations for Declared Plants, listed under the ARRP Act, were also completed.

2.2 FAUNA

Potential foraging habitat for Black Cockatoos was ground truthed based on habitat mapping previously undertaken by RPS (2006) and ATA Environmental (2007). Ground truthing was undertaken to validate extent, composition and accuracy of habitat mapping by walking through vegetation communities and assessing their mapped boundaries. Foraging and breeding habitat was identified based on the *Environment Protection and Biodiversity Conservation Act 1999* draft referral guidelines for Black Cockatoo species (DSEWPaC 2011). Potential foraging habitat was identified based on presence of known foraging plant species.

Potential breeding habitat was validated based on the presence of known breeding tree species with DBH (diameter at breast height) of greater than 50 centimetres. Trees of this size are considered to be of sufficient size to potentially have suitable sized nesting hollows for Black Cockatoos. Previously identified and mapped potential breeding trees (ATA Environmental 2007) were visited and additional habitat trees recorded where identified.

3 Results

The following results were recorded after completing the ground truthing of environmental values of Lot 4 Flynn Drive.

3.1 FLORA

3.1.1 Vegetation communities

The vegetation communities previously mapped by RPS (2006) were ground truthed with the following results:

- The Threatened Ecological Community (TEC) '*Banksia attenuata* woodland over species rich dense shrublands' Floristic Community Type (FCT) 20a (Gibson et al. 1994) mapped by RPS (2006) as EmBaBmAf north of Flynn Drive is considered to be an accurate description of the vegetation extent and composition
- The vegetation community EmBAf is considered to be an accurate description of the vegetation extent and composition across the majority of Lot 4 except for an area of cleared vegetation that was not represented in the RPS (2006) mapping. This area is east of the north-south track that continues from Mather Drive. This cleared area is shown in **Figure 3** and **Figure 4**.
- The vegetation community CcBgBa located in the northern section of Lot 4 was not completely consistent with the extent and composition described by RPS (2006). The vegetation description did not include *Eucalyptus marginata*, *Allocasuarina fraseriana* and *Jacksonia sternbergiana,* which were present and form part of the structural vegetation layers. This vegetation community also extends west over the north-south track that continues from Mather Drive (**Figure 3** and **Figure 4**) into vegetation community ScEmAf previously mapped by ATA Environmental (2007).

The vegetation communities previously mapped by ATA Environmental (2007) were ground truthed with the following results:

- The vegetation community EmLW west of Mather Drive was considered to be an accurate description of the vegetation extent and composition, however, the description did not include the weed species **Ehrharta calycina* (Perennial Veldt Grass) that was present as an open grassland and should be included in the vegetation description as it forms a dominate species in the understorey. Additional areas of EmLW have been included in the area as they were previously mapped as cleared (**Figure 3** and **Figure 4**)
- The vegetation community ScEmAf west of the north-south track that continues from Mather Drive was not completely consistent with the extent and composition described by ATA Environmental (2007). The vegetation description did not include *Corymbia calophylla* and *Banksia attenuata,* which were present and form part of the overstorey. The vegetation description did not include the understorey species *Hakea prostrata, Grevillea vestita* subsp. *vestita* and *Hibbertia hypericoides,* which were present throughout the community. The dominate overstorey species *Eucalyptus marginata* was also previously listed as being scattered, however, this cover should be recorded as Scattered to Open Woodland. It was also noted that ATA Environmental (2007) listed *Hakea*

amplexicaulis as part of the vegetation community, however, only *Hakea prostrata* was observed in the community. It was noted that no quadrats were established in this vegetation community

- The additional vegetation community *Eucalyptus gomphocephala* open woodland was also recorded along the western boundary of ScEmAf. This community was not previously mapped by ATA Environmental (2007). This additional community forms part of the vegetation community EgOW previously mapped in the north-west corner of Lot 4 (**Figure 3** and **Figure 4**)
- The vegetation community EgOW in the north-west corner of Lot 4 was considered to be an accurate description of the vegetation extent and composition
- The vegetation community EtNfOW west of Orchid Road was considered to be an accurate description of the vegetation extent and composition
- The vegetation community ErAfMpOW west of Orchid Road was considered to be an accurate description of the vegetation extent and composition.

3.1.2 Vegetation condition

The vegetation condition previously mapped by RPS (2006) and ATA Environmental (2007) was ground truthed with the results shown in **Figure 5**. In general, most of the vegetation condition was consistent with the previous mapping. Differences include EmBaBmAf being scored as Excellent, compared with the previous score of Very Good (RPS 2006); CcBgBa being scored as Good, compared with the previous score of Completely Degraded (ATA Environmental 2007); and a section of Good vegetation condition in ScEmAf, previously all mapped as Degraded by ATA Environmental (2007).

3.1.3 Dieback and Declared plants

A visual assessment for the presence of Dieback (*Phytophthora cinnamomi*) was completed across the Project Area. In the northern half of Lot 4, within the vegetation community EmBAf, recently dead *Banksia* species were observed scattered across the community. While the presence of Dieback cannot be eliminated until further sampling and testing is conducted, it appears that the deaths may be as a result of changes in hydrology and/or declining rainfall. Other susceptible species, such as *Xanthorrhoea preissii*, were not affected.

Opportunistic observations for Declared Plants, listed under the ARRP Act, did not record any Declared plants, such as Bridal Creeper (**Asparagus asparagoides*) and Arum Lily (**Zantedeschia aethiopica*).

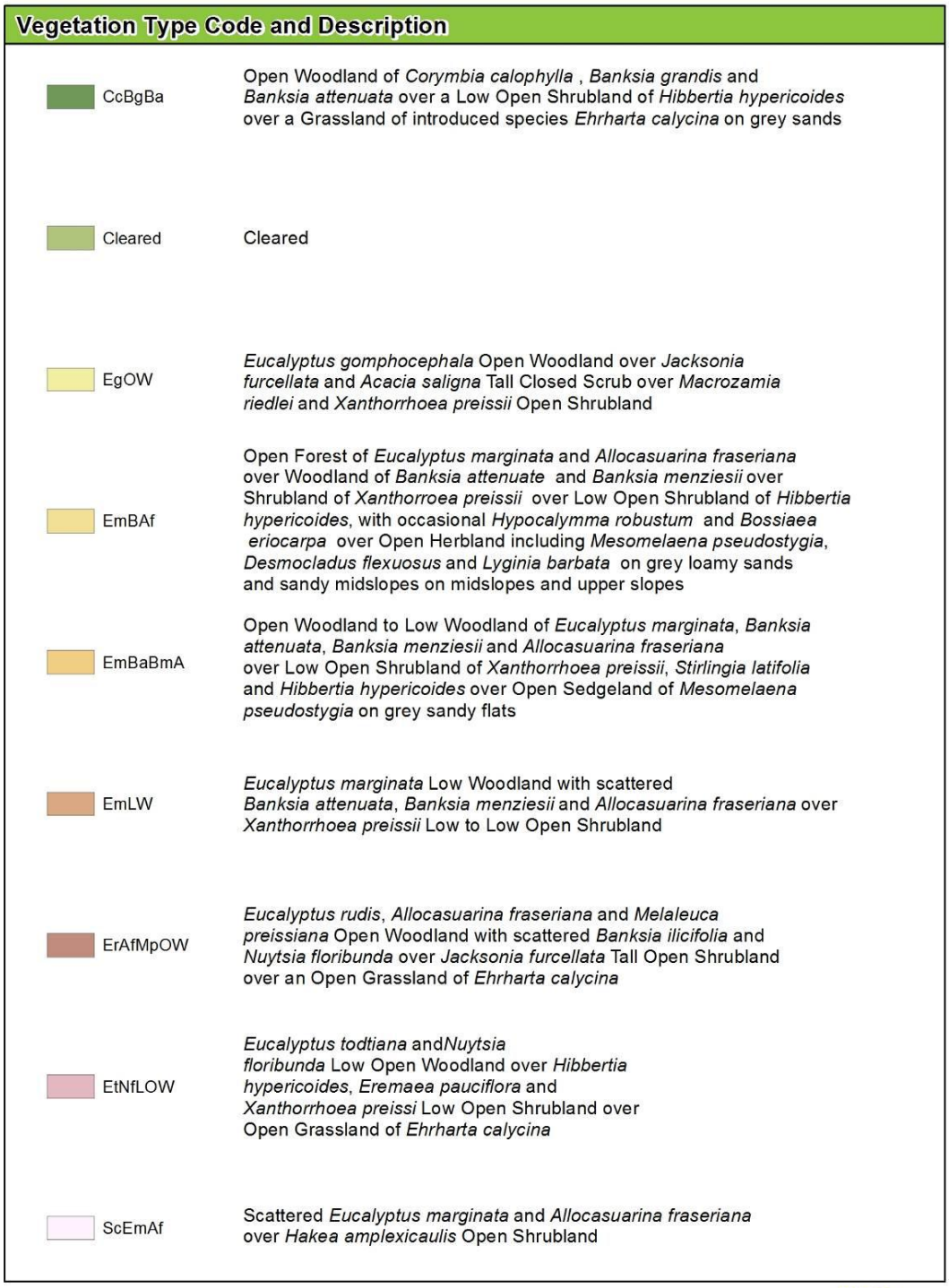

Figure 3: Vegetation Type Code and Description

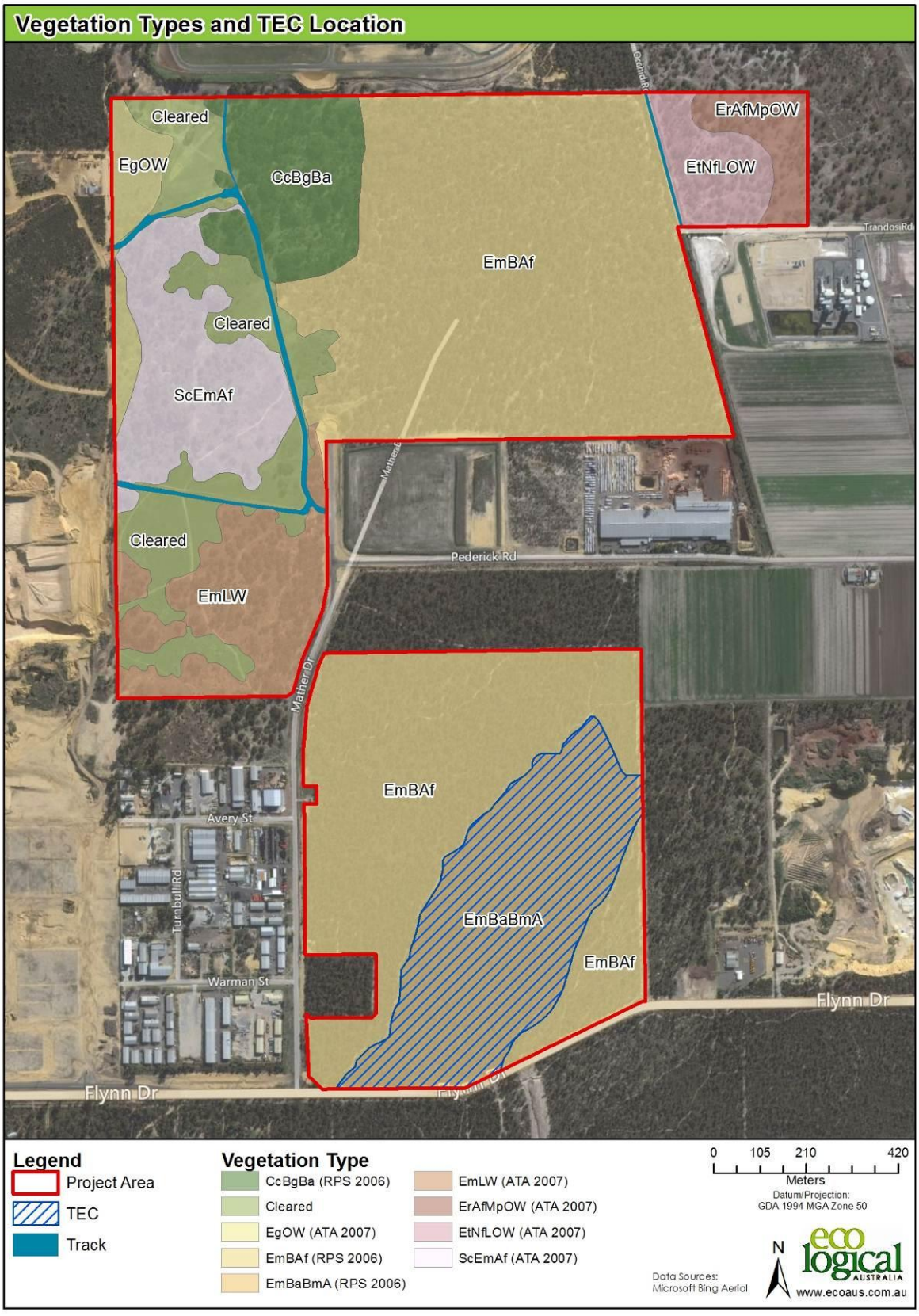

Figure 4: Vegetation Communities and TEC location

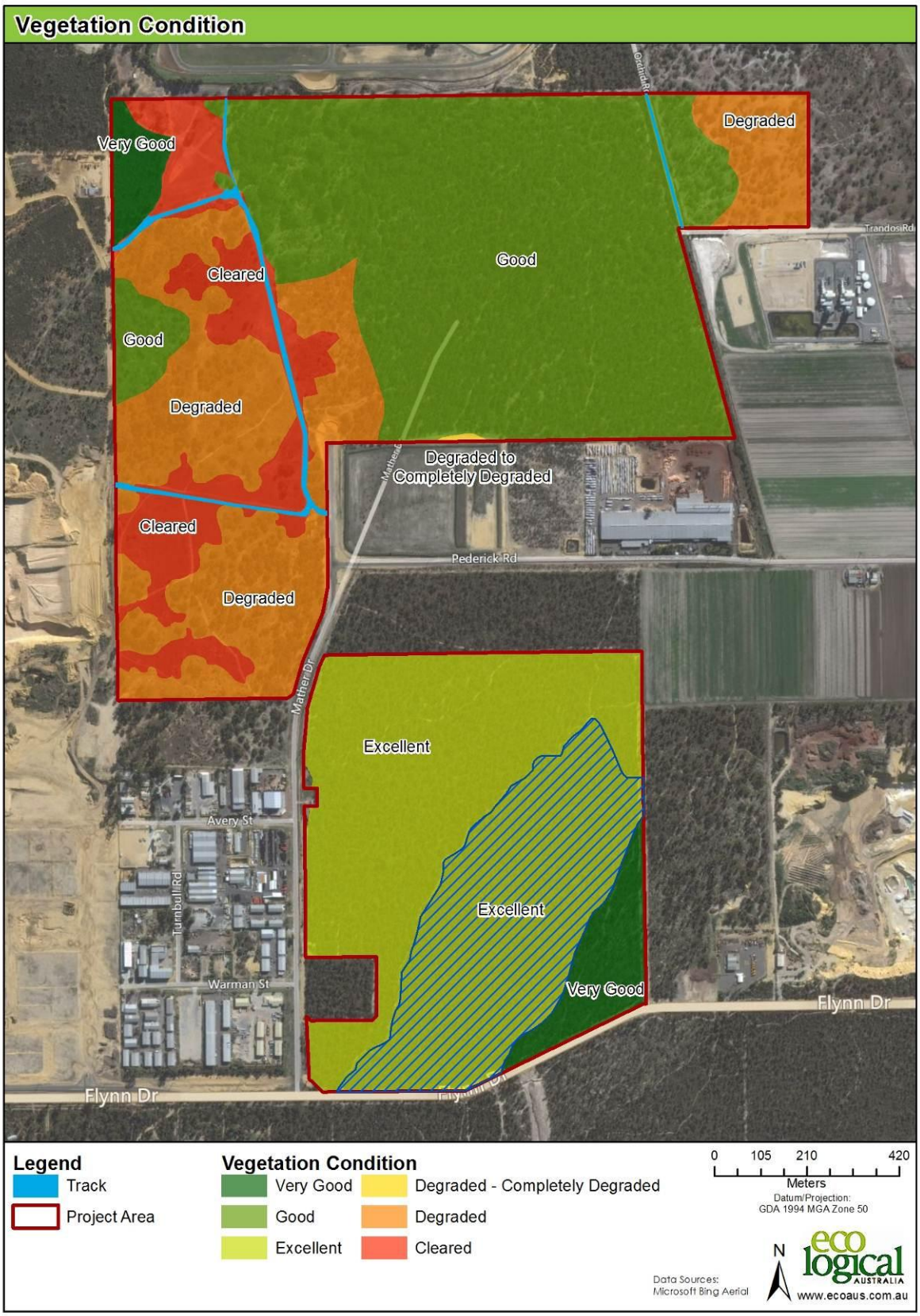

Figure 5: Vegetation Condition

3.2 FAUNA

3.2.1 Black Cockatoo foraging habitat

The site inspection showed that on the whole, the vegetation communities previously mapped by ATA Environmental (2007) were accurate in terms of foraging habitat for Black Cockatoos. Some minor amendments included slight vegetation boundary adjustments and the addition of foraging plant species. Vegetation communities in both the northern and southern portions of Lot 4 contain extensive foraging habitat including Marri, Jarrah and a range of Banksia species. Carnaby's Black Cockatoos are known to feed frequently in remnant bushland within the vicinity of Lot 4 (ELA 2009), and this species was observed feeding within Lot 4 during the site inspection. Foraging habitat for Black Cockatoos is presented in **Figure 6**.

3.2.2 Potential Black Cockatoo breeding habitat

The site inspection identified an additional 28 potential Black Cockatoo breeding trees, in comparison to the 15 trees originally mapped by ATA Environmental (2007) (**Figure 6**). However, there were a number of other trees observed on-site that could also be potential breeding trees. In order to map the locations of all potential breeding trees, a systematic and thorough search of Lot 4 is required.

3.2.3 Graceful Sun Moth habitat

During the site inspection, Banksia woodland vegetation communities within Lot 4 were identified as potential breeding habitat for the Graceful Sun Moth, based on the presence of *Lomandra hermaphrodita* in the northern portion of the site. It is understood that a Graceful Sun Moth survey has previously been undertaken by City of Wanneroo personnel and no individuals were recorded during that survey (conducted between March and April).

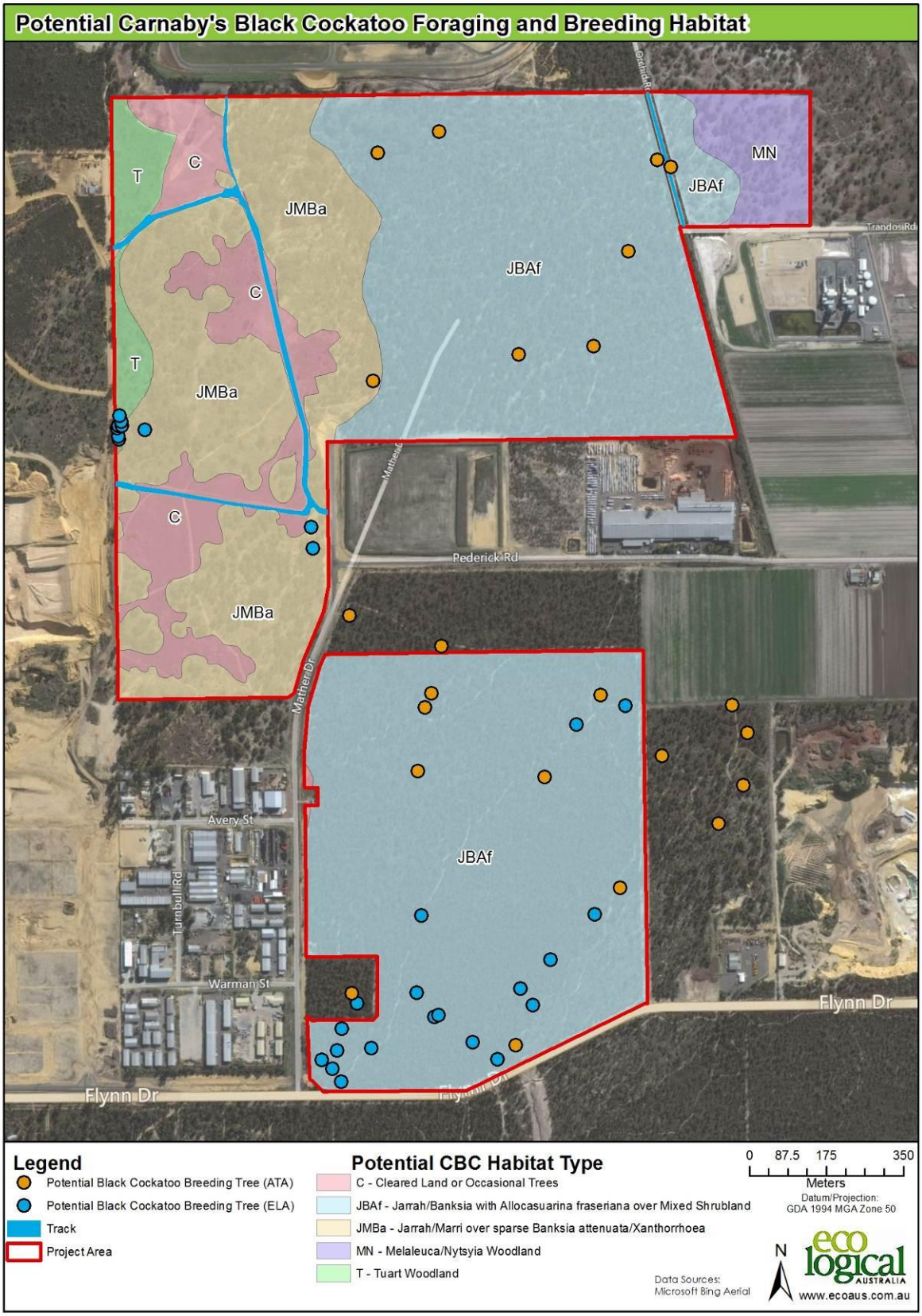

Figure 6: Potential foraging and breeding habitat for Black Cockatoos

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