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Emerge contact: Tom Atkinson

1 February 2023

Attention: Matt Cousins
Development Manager
Qube Wattleup Development Pty Ltd
Suite 3, Level 1
437 Roberts Road
SUBIACO WA 6008

Delivered by email to: Matt@qubeproperty.com.au

Dear Matt

FLORA, VEGETATION AND FAUNA ASSESSMENT – LOT 805 WATTLEUP ROAD, HAMMOND PARK

This letter provides a summary of flora, vegetation and fauna values within Lot 805 Wattleup Road in Hammond Park (referred to hereafter as the 'site').

1 INTRODUCTION

The site is approximately 3.2 hectares (ha) in size and is located approximately 25 kilometres south of the Perth Central Business District within the City of Cockburn, as shown in **Figure 1**.

No environmental assessments are known to have previously been prepared for the site. Therefore, Qube Wattleup Development Pty Ltd engaged Emerge to undertake an assessment of the flora, vegetation and fauna values within the site.

2 FIELD SURVEY

An ecologist from Emerge visited the site on 6 January 2023 to conduct the flora, vegetation and fauna field survey. During the survey the site was traversed on foot and the composition of vegetation was recorded. Vegetation condition was mapped using the Keighery (1994) scale.

Habitat values for conservation significant flora species and plant communities and fauna species was assessed, with particular attention to vegetation that may provide habitat for threatened species of black cockatoo (DCCEEW 2022)[1].

Following the survey, a list of native species and a limited selection of the non-native species recorded was compiled. Plant communities, vegetation condition and black cockatoo habitat was mapped across the site.

[1] *Zanda latirostris* (Carnaby's cockatoo), *Calyptorhynchus banksii naso* (forest red-tailed black cockatoo) and *Zanda baudinii* (Baudin's cockatoo).

3 RESULTS

3.1 General

Review of historical aerial imagery indicates that the site was cleared between 1965 and 1970 (WALIA 2023). Successive episodes of native vegetation regrowth and re-clearing appear to have occurred within the southern portion of the site from that period until present. Scattered native plants currently occur across portions of the site, in conjunction with a variety of non-native trees, shrubs and understorey plants. Non-native trees, shrubs and understorey plants dominate the remainder of the site.

3.2 Flora

A total of 25 flora taxa were recorded within the site comprising 11 native and 14 non-native species. Non-native planted and weed species were observed throughout the site but an exhaustive species list was not compiled. Species recorded within the site have been provided as **Attachment 1**.

No threatened or priority flora were recorded in the site and none are considered likely to occur due to a lack of suitable habitat.

3.3 Vegetation

One plant community, **non-native**, was identified within the site comprising a closed forest of predominantly non-native, planted *Eucalyptus* spp. over low closed non-native grassland and forbland (**Plate 1**). Occasional native plants (small trees, shrubs and forbs) are scattered across the site as shown in **Plate 2**. Additionally, a single *Eucalyptus gomphocephala* tree occurs which was recorded as native, but that could have been planted.

A number of *Casuarina obesa* and *Eucalyptus rudis* trees occur in the site, which are considered planted (and non-native to the site) based on landform and conditions.

The extent of **non-native** vegetation and location of native shrubs and forbs is shown in **Figure 2**.

*Plate 1: Plant community **non-native** in 'completely degraded' condition*

Plate 2: Example scattered native shrubs and forbs

The **non-native** vegetation was mapped as 'completely degraded' according to the Keighery (1994) scale as shown in **Figure 3**.

No threatened or priority ecological communities (TECs/PECs) are considered to occur within the site.

The federally-listed 'banksia woodlands of the Swan Coastal Plain' threatened ecological community (TEC) and the state-listed priority ecological community (PEC) of the same name occur in the adjoining landholding to the west of the site. Ostensibly, the two *Banksia attenuata* trees and associated native shrubs and forbs within the south-western portion of the site might be considered to form part of this adjacent patch of banksia woodlands of the Swan Coastal Plain TEC/PEC[2]. These native plants were not identified as TEC/PEC as they comprise a relatively minor amount of vegetation. Nevertheless, it is acknowledged that they are remnants that are associated with the adjacent banksia woodland vegetation.

3.4 Fauna Habitat

The fauna habitat values within the site are limited by the historical removal of native vegetation and subsequent land use. The habitat in the site is of low value to native ground dwelling species due to lack of remnant native understory vegetation. However, the predominantly non-native trees over grassland represents a woodland type habitat which may be utilised by native fauna, in particular widespread and common bird and smaller reptile species.

No black cockatoo breeding habitat currently occurs in the site. The *Eucalyptus gomphocephala* tree within the site had a diameter at breast height (DBH) greater than 500 mm, and so this tree meets the definition of a 'potential nesting tree' (DCCEEW 2022)[3]. None of the *Eucalyptus* spp. trees within the site contained hollows suitable for use by black cockatoos for nesting.

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[2] According to the *Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community)* (DoEE 2016)

[3] 'Potential nesting trees' for black cockatoos are defined by *DCCEEW (2022)* as trees that "*have a suitable diameter at breast height (DBH) to develop a nest hollow, but do not have hollows. For most species of trees, suitable nest hollows are only found in live trees with a DBH of at least 500 mm. Trees suitable to develop a nest hollow in the future are 300-500 mm DBH*".

A total of 0.93 ha of vegetation that may be considered black cockatoo foraging habitat is present within the site. The two *Banksia attenuata* and one *Eucalyptus gomphocephala* trees represent a minor amount of native foraging habitat (<0.1 ha). The predominant foraging species within the site are non-native (exotic) and include **Pinus* sp. and **Eucalyptus camaldulensis* trees, which provide limited foraging value. No evidence of foraging by black cockatoos was recorded during the survey. Foraging habitat is shown in **Figure 4**.

Summary and closing

Outcomes of the flora and vegetation and fauna habitat assessment are as follows:

- The site has been historically cleared and currently has limited flora, vegetation and fauna values.
- One **non-native** plant community was mapped across the site in 'completely degraded' condition. Occasional native plants (small trees, shrubs and forbs) are scattered across the site and a single *Eucalyptus gomphocephala* tree occurs that was recorded as native, but that could have been planted.
- The predominately non-native trees over non-native grasses and forbs in the site provide woodland habitat that is suited to common and widespread native fauna species and in particular birds and small reptiles.
- The site does not currently contain breeding habitat for threatened species of black cockatoo. However, the *Eucalyptus gomphocephala* tree qualifies as a 'potential nesting tree'. Trees in the site provide a minor foraging resource for black cockatoos comprising predominantly non-native (exotic) foraging habitat of limited value. No evidence of foraging or roosting by black cockatoos was recorded in the site.

We trust that this letter provides a sufficient summary of the flora, vegetation and fauna habitat values within the site. Should you have any questions regarding the content of this report, please do not hesitate to contact the undersigned.

Yours sincerely
Emerge Associates

Tom Atkinson
PRINCIPAL ENVIRONMENTAL CONSULTANT

Encl: Figure 1: Site Location
Figure 2: Vegetation Extent
Figure 3: Vegetation Condition
Figure 4: Black Cockatoo Foraging Habitat
Attachment 1 – Flora Species List

General References

Department of Climate Change, Energy, the Environment and Water (DCCEEW) 2022, *Referral guideline for 3 WA threatened black cockatoo species*.

Department of Environment and Energy (DoEE) 2016, *Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community*, Canberra.

Department of Sustainability Environment Water Populations and Communities (DSEWPaC) 2012, *EPBC Act referral guidelines for three threatened black cockatoo species: Carnaby's cockatoo (endangered) Calyptorhynchus latirostris, Baudin's cockatoo (vulnerable) Calyptorhynchus baudinii and Forest red-tailed black cockatoo (vulnerable) Calyptorhynchus banksii naso*, Commonwealth of Australia, Canberra.

Keighery, B. 1994, *Bushland Plant Survey: A guide to plant community survey for the community*, Wildflower Society of WA (Inc), Nedlands.

Western Australian Land Information Authority (WALIA) 2023, *Landgate Map Viewer Plus*.

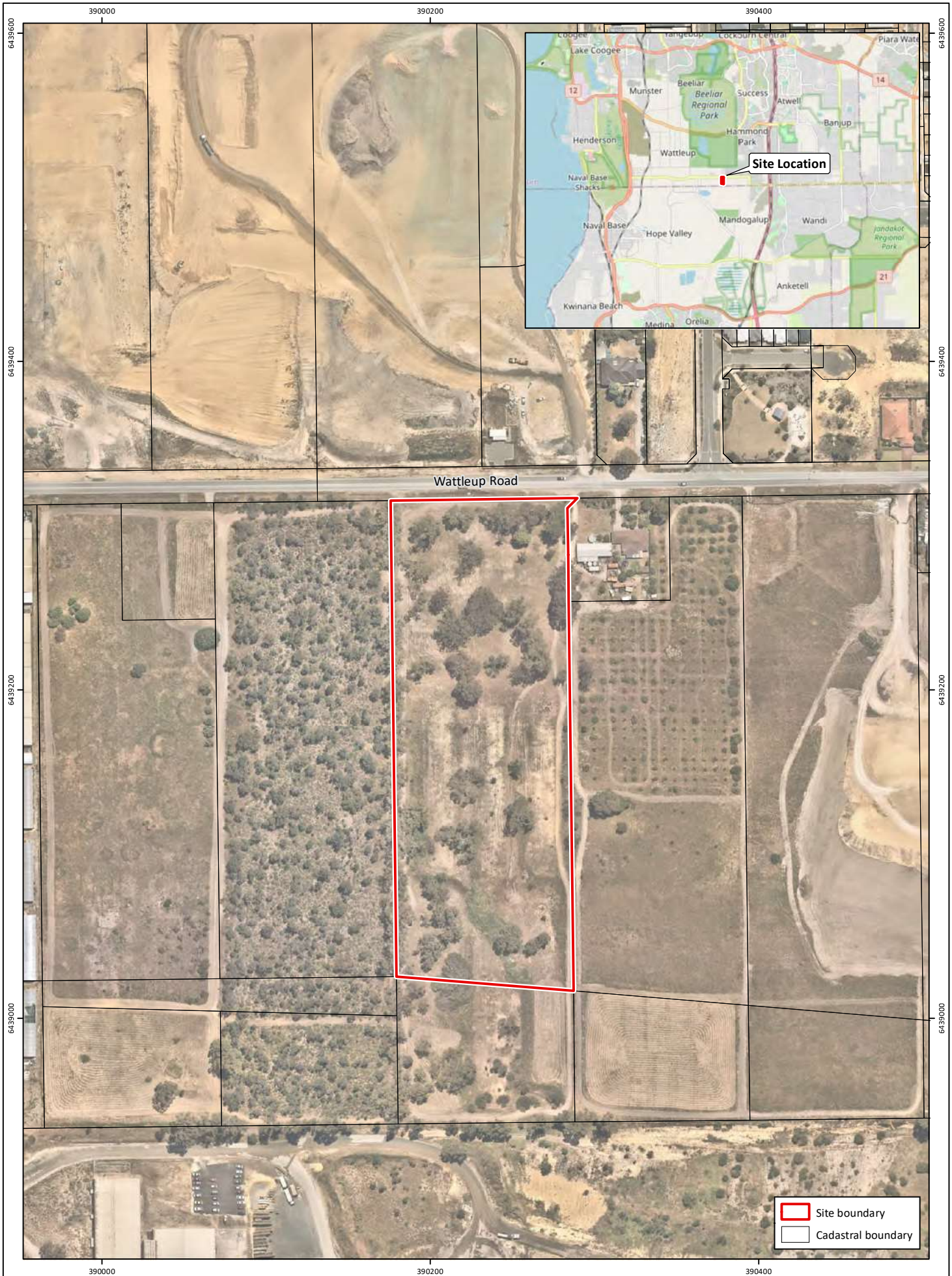

Figure 1: Site Location

Project:	Flora, Vegetation and Fauna Assessment Lot 805 Wattleup Road, Hammond Park
Client:	QUBE Wattelup Development Pty Ltd

Plan Number:
EP20-151(07)--F36

Drawn:	SCM
Date:	31/01/2023
Checked:	SCM
Approved:	TAA
Date:	01/02/2023

N

0 20 40 60
Metres

Scale: 1:3,000@A4

GDA 1994 MGA Zone 50

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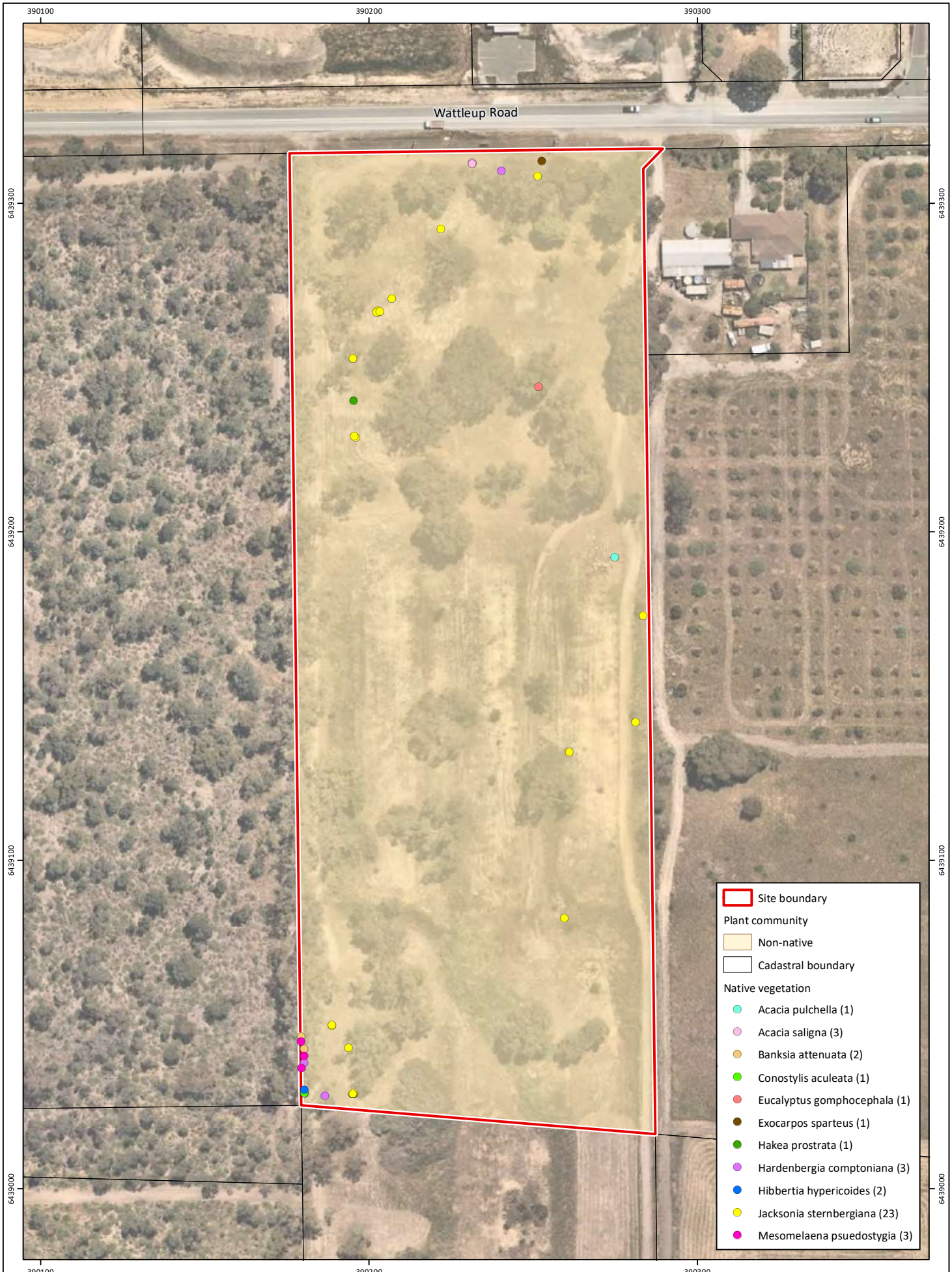

Figure 2: Vegetation Extent

Project: Flora, Vegetation and Fauna Assessment
Lot 805 Wattleup Road, Hammond Park

Client: QUBE Wattelup Development Pty Ltd

Plan Number:
EP20-151(07)--F37

Drawn:	SCM
Date:	31/01/2023
Checked:	SCM
Approved:	TAA
Date:	01/02/2023

N

0 10 20 30
Metres

Scale: 1:1,500@A4

GDA 1994 MGA Zone 50

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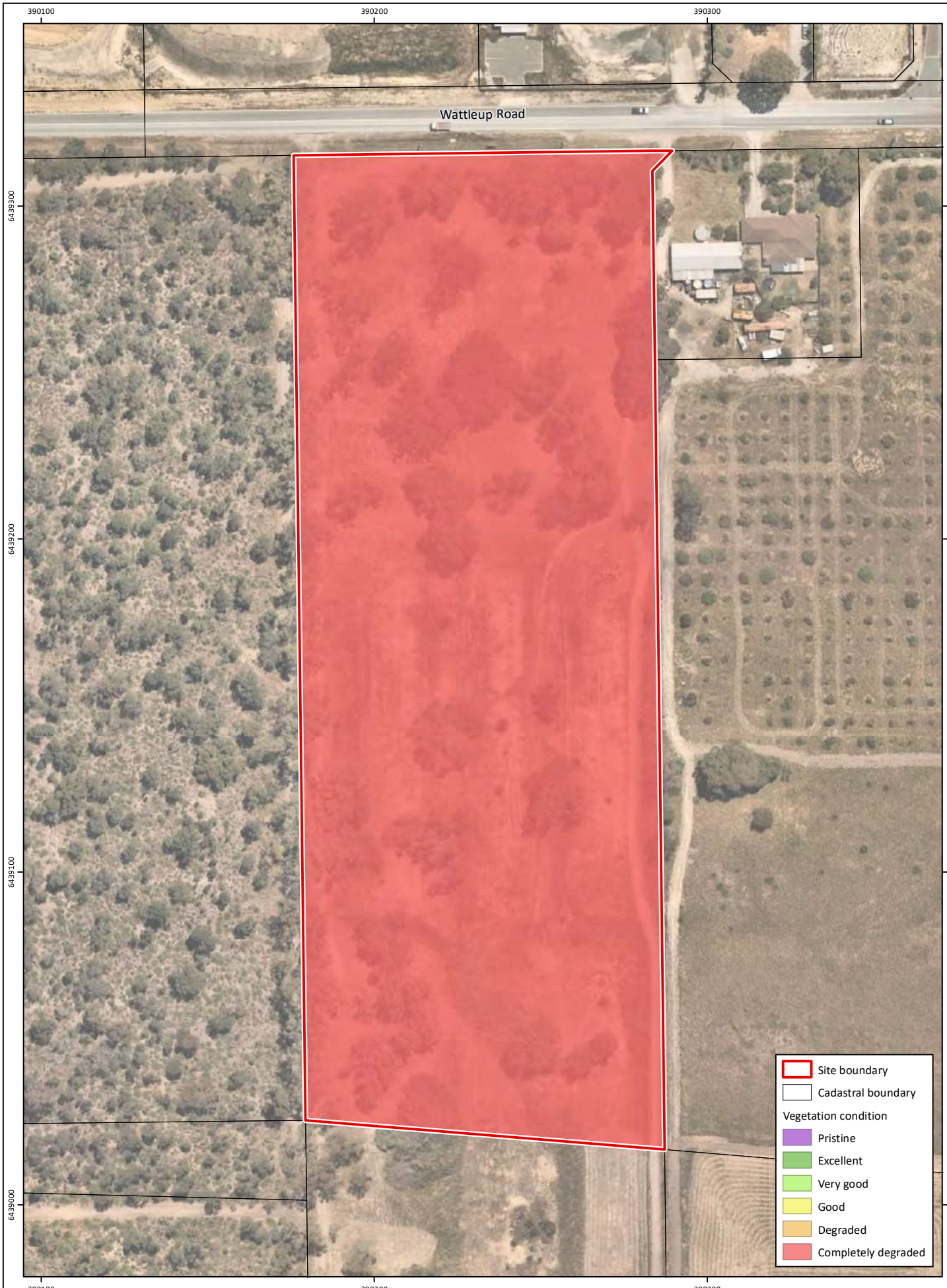

Figure 3: Vegetation Condition

Project: Flora, Vegetation and Fauna Assessment
Lot 805 Wattleup Road, Hammond Park

Client: QUBE Wattelup Development Pty Ltd

Plan Number:
EP20-151(07)--F38

Drawn:	SCM
Date:	31/01/2023
Checked:	SCM
Approved:	TAA
Date:	01/02/2023

N

0 10 20 30
Metres

Scale: 1:1,500@A4

GDA 1994 MGA Zone 50

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Figure 4: **Black Cockatoo Foraging Habitat**

Project: Flora, Vegetation and Fauna Assessment
Lot 805 Wattleup Road, Hammond Park

Client: QUBE Wattelup Development Pty Ltd

Plan Number:
EP20-151(07)--F39

Drawn:	SCM
Date:	31/01/2023
Checked:	SCM
Approved:	TAA
Date:	01/02/2023

N

0 10 20 30
Metres

Scale: 1:1,500@A4

GDA 1994 MGA Zone 50

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Family	Status	Species
Casuarinaceae		
	Pl	*Casuarina obesa*
Cupressaceae		
	*	*Cupressus sp.*
Cyperaceae		
		Mesomelaena pseudostygia
Dilleniaceae		
		Hibbertia hypericoides
Fabaceae		
		Acacia pulchella
		Acacia saligna
		Hardenbergia comptoniana
		Jacksonia sternbergiana
Haemodoraceae		
		Conostylis aculeata
Myrtaceae		
	*	*Chamelaucium uncinatum*
	*	*Corymbia ficifolia*
	*	*Eucalyptus botryoides*
	*	*Eucalyptus camaldulensis*
		Eucalyptus gomphocephala
	Pl	*Eucalyptus rudis*
Pinaceae		
	*	*Pinus ?pinaster*
Poaceae		
	*	*Avena barbata*
	*	*Bromus sp.*
	*	*Cynodon dactylon*
	*	*Ehrharta calycina*
	*	*Eragrostis curvula*
Proteaceae		
		Banksia attenuata
		Hakea prostrata
Santalaceae		
		Exocarpos sparteus
Verbenaceae		
	*	*Phyla nodiflora*

*=non-native, Pl=planted