



Memorandum

5 June 2020

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Subject	Flora and vegetation assessment – Cockburn Coast redevelopment project	Job no.	12526472

1 Introduction

1.1 Background

Development WA is currently undertaking works to re-align a Western Power asset as part of the Cockburn Coast redevelopment project. The proposed works will require the clearing of native vegetation. In order to clear the vegetation, a Native Vegetation Clearing Permit (NVCP) issued under Part V of the *Environmental Protection Act 1986* will be required. To support the NVCP application, a senior botanist was required to undertake a vegetation survey of the area to identify the vegetation types and assess the vegetation condition. The survey area consisted of four patches with a combined area of 0.12 hectares (ha), the survey area location is illustrated in Figure 1.

1.2 Limitations and assumptions

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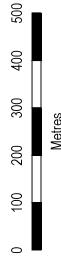
The opinions, conclusions and any recommendations in this memorandum are based on conditions encountered, locations surveyed and information reviewed at the date of preparation of the memorandum. GHD has no responsibility or obligation to update this memorandum to account for additional sampling locations,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

The opinions and conclusions in this memorandum are based on assumptions made by GHD described in this memorandum. GHD disclaims liability arising from any of the assumptions being incorrect.

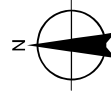
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Paper Size ISO A4



Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 50



Development WA
Flora and Vegetation Assessment

Project No. 12526472

Revision No. 1

Date 26/05/2020

Site Location and Survey Area

FIGURE 1

Data source: Development WA, Proposed Clearing Areas - 20200526, Landgate Locality - 20180319, Roads - 20180126, WAnow, Landgate / SJ.P. Created by p.j.henderson
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2 Field survey methodology

A vegetation assessment of the survey area was completed on 18 February 2020 by GHD Senior Botanist Angela Benkovic. The field survey was undertaken to verify the information obtained from the review of aerial imagery and characterise the broad vegetation types and vegetation condition throughout the survey area. The survey methodology employed included assessing the survey area on foot to describe and map broad vegetation types and their condition through visual observation and photo points.

Data captured for each vegetation patch was similar to that of a relevé and included location, vegetation structure, list of dominant flora species, soil type, landform, vegetation condition and any disturbances. The proportion of flora identified (limited to dominant flora taxa) was considered sufficient for the purpose of the survey.

The out of season survey methodology employed for the vegetation assessment was undertaken with reference to the EPA Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA 2016). The recommended timing for vegetation surveys in the South West Botanical Province is spring (EPA 2016). While this survey was conducted out of season it is considered appropriate for the purposes of the describing the broad vegetation type and dominant species present. The Senior Botanist undertaking the survey, Angela Benkovic, has over 12 years experience in undertaking flora and vegetation surveys and assessment on the Swan Coastal Plain.

2.1 Broad vegetation types

Broad vegetation types were identified and described. Full floristics were not recorded.

The vegetation types were described based on structure, dominant taxa and cover characteristics. The broad vegetation type description is consistent with National Vegetation Information System (NVIS) Level IV or V, where the dominant species for the three traditional strata (upper, mid and ground) are used to describe the association (NVIS Technical Working Group 2017).

2.2 Vegetation condition

The vegetation condition was assessed and mapped in accordance with the vegetation condition rating scale for the South West and Interzone Botanical Provinces of WA (devised by Keighery (1994) and adapted by EPA (2016)).

3 Results

3.1 Vegetation types and condition

Two vegetation types were identified and described in the survey area (Figure 2): VT01 –Tuart Peppermint open woodland and VT02 – Melaleuca Acacia tall shrubland. The two vegetation types are described in detail below

VT01 – Tuart Peppermint low open woodland

The vegetation east of Robb Road was mapped as VT01 – Tuart Peppermint low open woodland and was described as; *Eucalyptus gomphocephala*, *Agonis flexuosus* and **Eucalyptus platypus* low open woodland over *Acacia rostellifera* and *Callitris preissii* tall open shrubland over *Rhagodia baccata* subsp. *baccata* low sparse shrubland over **Lagurus ovatus*, **Avena barbata* and **Bromus diandrus* closed grassland (Plate 1).

The was 0.101 ha of VT01 mapped within the survey area, however this patch is part of a larger remnant of Tuart Peppermint open woodland that is < 2 hectares (ha). Most of the Tuart trees within the area had not been burnt but had experienced some kind of historical trauma that had caused them to die off but were growing back. All the Tuart trees had a diameter at breast height (DBH) between 15 cm < 50 cm. The understorey (vegetation < 3 m) was dominated by weedy grasses with < 4 native species recorded within a 0.01 ha sample size.



Plate 1 VT01 – Tuart Peppermint low open woodland

VT02 – Melaleuca Acacia tall shrubland

The vegetation west of Robb Road was mapped as VT02 – Melaleuca Acacia tall shrubland, there was 0.003 ha within the survey area and was described as; Scattered *Eucalyptus decipiens* over *Melaleuca lanceolata* and *Acacia rostellifera* tall shrubland over *M. huegelii* low sparse shrubland over *Spinifex longifolius*, **Avena barbata* and **Bromus diandrus* closed grassland (Plate 2).



Plate 2 VT02 – Melaleuca Acacia tall shrubland

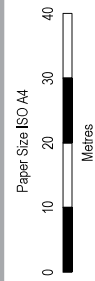
Vegetation condition

The vegetation condition throughout the survey area was recorded as Degraded (Figure 2). The vegetation has been subjected to edge effects from road and rail infrastructure, spot fires, rubbish dumping and high weed cover which has resulted in reduced species diversity and composition.

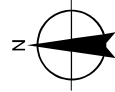
3.2 Conservation Significant Communities

Based on the results of the desktop searches, dominant species, landform features and field observations, one conservation significant ecological community was identified within the survey area. VT01 is considered representative of the Tuart (*Eucalyptus gomphocephala*) woodlands of the Swan Coastal Plain (SCP), listed as a Priority 3 Priority Ecological Community (PEC) by the Department of Biodiversity, Conservation and Attractions (DBCA).

VT01 did not meet the biotic and patch size/condition thresholds defined by the Department of the Agriculture, Water and the Environment (DAWE 2019) to be considered the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) listed Tuart (*Eucalyptus gomphocephala*) woodland and forests of the SCP Threaten Ecological Community (TEC). The difference between the Tuart TEC and Tuart PEC is that the PEC has no minimum condition or patch size thresholds.



Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 50



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Vegetation Types, Condition and Conservation Significant Community

FIGURE 2



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4 Conclusion

Referring to the 10 clearing principles for native vegetation under Schedule 5 of the EP Act. The proposed clearing of 0.087 ha of VT01 - Tuart Peppermint low open woodland, may be at variance to Principle (a) - *Native vegetation should not be cleared if it comprises a high level of biological diversity.*

VT01 is considered representative of the Tuart (*Eucalyptus gomphocephala*) woodlands of the SCP PEC, which may typically be associated with a high level of diversity. However this particular patch of vegetation is in degraded condition, with limited biological diversity. The understorey does not comprise of a high level of biodiversity as it was dominated by weedy grasses with no more than 4 native species recorded within a 0.01 ha sample size.

There were no Black Cockatoo potential habitat trees (Tuart trees > 500 mm DBH) recorded from the survey area. Additionally the survey area lies 2 km north of Woodman Point Regional Park, which has like for like vegetation in better condition.

Therefore, given the small extent of proposed clearing and the degraded nature of the remnant vegetation present this clearing is unlikely to be at variance to the other clearing principles or result in an unacceptable significant impact to the environment.



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5 References

Department of the Environment and Energy (DotEE) (2019). Approved Conservation Advice (incorporating listing advice) for the Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain ecological community. Canberra: Department of the Environment and Energy, retrieved February 2020 from:

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Keighery, BJ 1994, Bushland Plant Survey: A Guide to Plant Community Survey for the Community, Nedlands, Australia, Wildflower Society of Western Australia (Inc.).

NVIS Technical Working Group 2017. Australian Vegetation Attribute Manual: National Vegetation Information System, Version 7.0, Department of the Environment and Energy, Canberra