



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

| | |
|-------------------------------|--|
| Purpose Permit number: | CPS 8945/1 |
| Permit Holder: | Western Australian Land Authority T/A Development WA |
| Duration of Permit: | 3 October 2020 – 3 October 2025 |

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I – CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of works associated with the relocation of overhead powerlines and installation of underground lines.

2. Land on which clearing is to be done

Lot 803 on Plan 400872, North Coogee

3. Area of Clearing

The Permit Holder must not clear more than 0.104 hectares of native vegetation within the area cross-hatched yellow on attached Plan 8945/1.

4. Application

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

PART II – MANAGEMENT CONDITIONS

5. Avoid, minimise and reduce the impacts and extent of clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:

- avoid the clearing of native vegetation;
- minimise the amount of native vegetation to be cleared; and
- reduce the impact of clearing on any environmental value.

6. Dieback and weed control

When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds* and *dieback*:

- clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- ensure that no *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

7. Wind Erosion Management

The Permit Holder must commence works no later than one (1) month after undertaking the authorised clearing activities to reduce the potential for wind erosion.

8. Revegetation

- (a) The permit holder must retain the vegetative material and topsoil removed by clearing authorised under this permit and stockpile the vegetative material and topsoil in an area that has already been cleared;
- (b) The permit holder must, at an *optimal time* within twelve (12) months following completion of activities outlined under condition 1, *revegetate* the areas that are no longer required for the purpose for which they were cleared under this permit by:
 - (i) laying the vegetative material and topsoil retained under condition 8(a) on cleared areas;
 - (ii) deliberately *planting* and/or direct seeding native vegetation seeds that will result in a similar species composition and density of native vegetation to pre-clearing vegetation types in that area.

PART III - RECORD KEEPING AND REPORTING

9. Record keeping

The Permit Holder must maintain the following records in relation to the clearing of native vegetation authorised under this Permit:

- (a) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
- (b) the date(s) that the area was cleared;
- (c) the size of the area cleared (in hectares);
- (d) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 5 of this Permit;
- (e) actions taken to minimise the risk of the introduction and spread of *dieback* and *weeds* in accordance with condition 6 of this Permit;
- (f) actions taken to *revegetate* vegetation in accordance with condition 8 of this permit.

10. Reporting

The Permit Holder must produce the records required under condition 9 of this Permit when required by the *CEO*.

DEFINITIONS

The following meanings are given to terms used in this Permit:

CEO means the Chief Executive Officer of the Department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*;

dieback means the effect of *Phytophthora* species on native vegetation;

fill means material used to increase the ground level, or fill a hollow;

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

optimal time means the period from May to August for undertaking planting;

planting means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species;

revegetate means the re-establishment of a cover of local provenance native vegetation in an area using methods such as natural regeneration, direct seeding and/or planting, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.

weed/s means any plant -

- (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*;
or
- (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or
- (c) not indigenous to the area concerned.



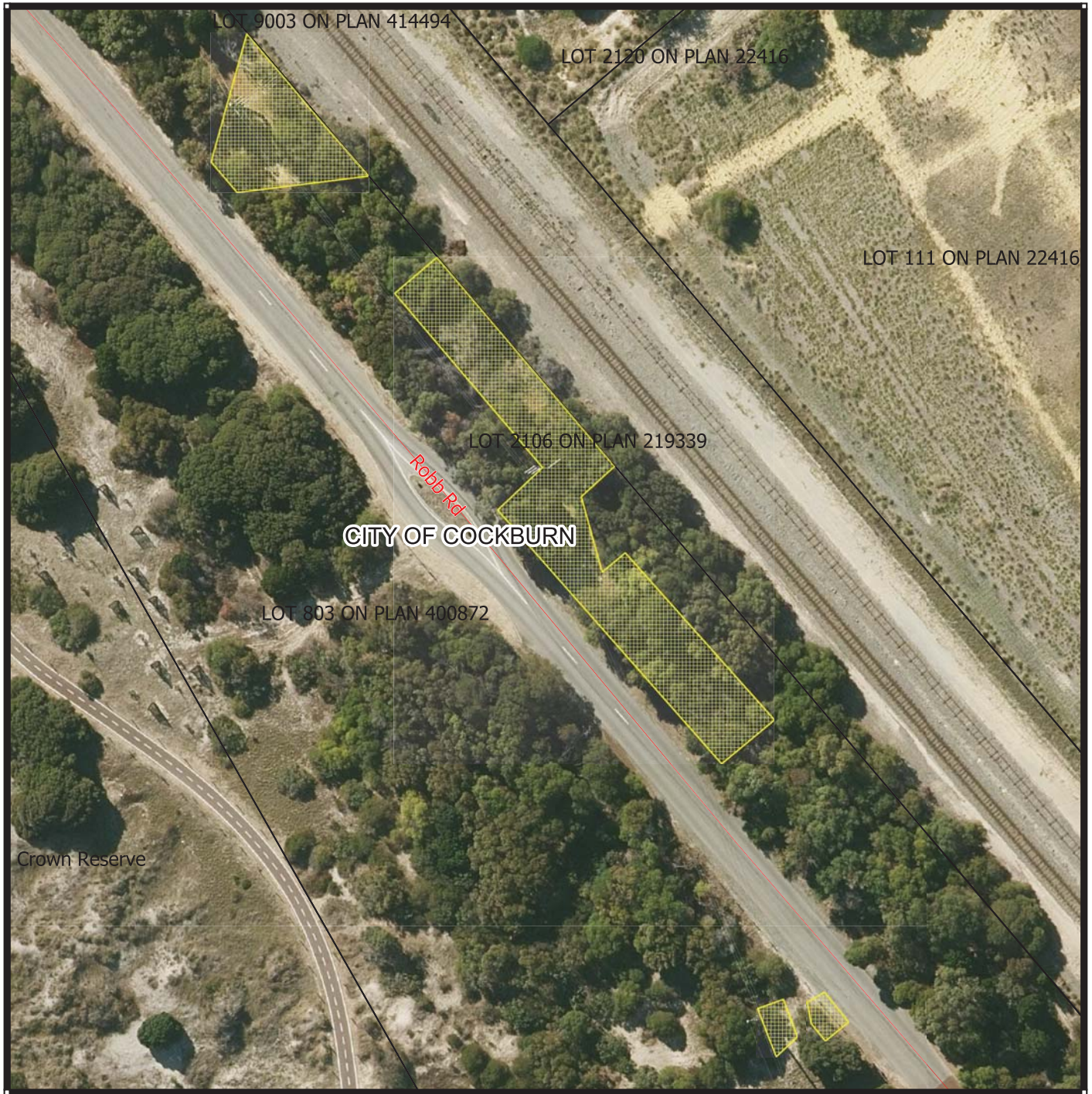
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Ryan Mincham
MANAGER
NATIVE VEGETATION REGULATION

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

10 September 2020

Plan 8945/1




Legend

-  CPS areas approved to clear
-  Road Centrelines
-  Land TenureLGATE - 226
-  Local Government Authorities



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MGA Zone 50
Geocentric Datum of Australia 1994


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Officer delegated under section 20 of the
Environmental Protection Act 1986





Clearing Permit Decision Report

1. Application details and outcome

1.1. Permit application details

| | |
|-------------------------------|---|
| Permit number: | CPS 8945/1 |
| Permit type: | Purpose permit |
| Applicant name: | Western Australian Land Authority T/A Development WA |
| Application received: | 17 June 2020 |
| Application area: | 0.104 hectares (ha) of native vegetation within a 0.121 ha envelope |
| Purpose of clearing: | Utilities – underground power installation |
| Method of clearing: | Mechanical |
| Property: | Lot 803 on Plan 400872, North Coogee |
| Location (LGA area/s): | City of Cockburn |
| Localities (suburb/s): | North Coogee |

1.2. Description of clearing activities

The vegetation applied to be cleared is distributed across four separate areas adjacent to Robb Road in North Coogee, within the City of Cockburn. The purpose of this clearing is to relocate overhead powerlines and replace them with underground lines. This clearing is required to provide a temporary deviation of the overhead power line (see Figure 1, Section 1.5).

1.3. Decision on application and key considerations

| | |
|-----------------------|--|
| Decision: | Granted |
| Decision date: | 10 September 2020 |
| Decision area: | 0.104 hectares (ha) of native vegetation, as depicted in Section 1.5, below. |

1.4. Reasons for decision

This clearing permit application was made in accordance with section 51E of the *Environmental Protection Act 1986* (EP Act) and was received by the Department of Water and Environmental Regulation (DWER) on 17 June 2020. DWER advertised the application for public comment and no submissions were received.

In undertaking their assessment, and in accordance with section 51O of the EP Act, the Delegated Officer has given consideration to the Clearing Principles in Schedule 5 of the EP Act (see Appendix B), relevant planning instruments, and any other pertinent matters they deemed relevant to the assessment (see Section 3).

In particular, the Delegated Officer has determined that:

- the clearing will impact on a priority ecological community (PEC), however, based on the vegetation condition and size of the application area, the impacts to the PEC are not considered significant;
- the risk of land degradation can be suitably mitigated through permit conditions requiring works to commence within one month of clearing, and revegetation to be undertaken upon the completion of works;
- the applicant has suitably demonstrated avoidance and minimisation measures (see Section 3.1).

In determining to grant a clearing permit subject to conditions, the Delegated Officer found that the proposed clearing is not likely to lead to an unacceptable risk to the environment.

1.5. Site map



Figure 1. Map of the application area. The areas cross-hatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

2. Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.3), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

1. the precautionary principle;
2. the principle of intergenerational equity; and
3. the principle of the conservation of biological diversity and ecological integrity;

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

The applicant noted on the application form that alternative development envelopes that utilise existing cleared areas, or areas with sparser vegetation were considered. The development envelope of the central transmission pole was altered from original plans to exploit areas of previously cleared land and minimise further clearing. The north and south development envelopes were unable to be changed due to project logistics. This adequately demonstrated that all reasonable efforts had been taken to avoid and minimise potential impacts of the clearing on environmental values.

3.2. Assessment of environmental impacts

In assessing the application in accordance with section 51O of the EP Act, the Delegated Officer has examined the application and site characteristics (Appendix A) and considered whether the clearing poses a risk to environmental values. The assessment against the Clearing Principles is contained in Appendix B.

This assessment identified that the clearing may pose a risk to the environmental values of biological values and land and water resources, and that these required further consideration. The detailed consideration and assessment of the clearing impacts against the specific environmental values is provided below. Where the assessment found that the clearing presents an unacceptable risk to environmental values, conditions aimed at controlling and/or ameliorating the impacts have been imposed under sections 51H and 51I of the EP Act. These are also identified below.

3.2.1. Environmental value: biological values (flora) – Clearing Principles (a) to (d)

Assessment: A total of 0.101 ha of the proposed clearing area was determined to be representative of Tuart (*Eucalyptus gomphocephala*) woodlands of the Swan Coastal Plain (Tuart Woodlands PEC), listed as Priority 3 under the BC Act and Critically Endangered under the EPBC Act. The vegetation proposed to be cleared does not meet the minimum patch size to be considered a nationally protected ecological community (under the EPBC Act), however, is still representative of the Tuart Woodlands PEC under the BC Act. The proposed clearing of 0.101 ha of degraded vegetation consistent with the Tuart Woodlands PEC was determined to not be a significant impact to the persistence of this ecological community.

The remaining 0.003 ha of vegetation within the clearing envelope may be representative of two priority ecological communities, namely Acacia shrublands on taller dunes, southern Swan Coastal Plain or Northern Spearwood shrublands and woodlands. However, based on the small size, and degraded condition it was determined to not be significant.

Outcome: Based on the above assessment, the Delegated Officer has determined that the proposed clearing is considered **acceptable** in relation to this environmental value. The revegetation to minimise land degradation risk will also mitigate the minor impacts to the above biological values.

3.2.2. Environmental value: land and water resources – Clearing Principles (f), (g), (i) and (j)

Assessment: Based on the mapped soil type, distance from the coast and topography, the proposed clearing may lead to wind erosion unless managed appropriately. Despite the risk of wind erosion, the potential land degradation

impacts are relatively low given the small size of the application area. However, considering advice provided regarding the contamination of the site, and the associated risk to human health (see section 3.3), a higher level of management has been adopted to minimise the potential for land degradation impacts.

Outcome: Based on the above assessment, the Delegated Officer has determined that the proposed clearing is considered **acceptable subject to relevant conditions (see below)** in relation to this environmental value.

Conditions: To address the above impacts, the following conditions will be added to the permit:

- No clearing of native vegetation unless works commence within one month of the authorised clearing being undertaken to minimise wind erosion risk;
- Revegetation of cleared areas upon the completion of works.

3.3. Relevant planning instruments and other matters

The proposed clearing area is within a contaminated site (Site 63480) classified as *remediated for restricted use*. Advice received from the Science and Planning (Contaminated Sites) branch of DWER recommends an appropriate management plan to address any risks associated with ground disturbing activities that may disturb the soil should be prepared (DWER, 2020). This should include an undetected contamination/unexpected finds protocol, measures to control any dust generation and characterisation of any waste for disposal to an approved landfill facility (DWER, 2020). Contingency measures that should be addressed when carrying out works at the site are outlined in section 14 of the '24787R McTaggart Cove and Former Lot 2110 on Plan 219363, North Coogee (Lots 800, 802, 803, 1957, 1818, 2064, 313 and 314 North Coogee) Site Management Plan' (GHD, March 2015), available from the City of Cockburn.

A direct interest letter was sent to the City of Cockburn; the City have no objections to the proposed clearing (City of Cockburn, 2020).

There is one registered Aboriginal Heritage site in close proximity to the application area (approximately 30 m), Robb Jetty Camp (3707). It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972* (WA) and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

Appendix A – Site characteristics

The information provided below describes the key characteristics of the area proposed to be cleared and is based on the best information available to DWER at the time of this assessment. This information was used to inform the assessment of the clearing against the Clearing Principles, contained in Appendix B.

1. Site characteristics

| Site characteristic | Details |
|------------------------|---|
| Local context | The proposed clearing areas are part of a coastal strip of remnant vegetation, with Port Coogee Marina and associated infrastructure located approximately 1 km to the south of the application area and the Fremantle Port approximately 2 km north of the application area. This strip of vegetation may act as an ecological linkage in the landscape; however, continuous vegetation between Robb Road and the coastline will not be impacted, with vegetation to the west of the proposed clearing being retained (Figure 1). Spatial data indicates the local area (10 km radius of the proposed clearing area) retains approximately 14.94% of the original native vegetation cover. |
| Vegetation description | <p>A vegetation survey undertaken to inform the clearing permit application indicates the vegetation within the proposed clearing area to consist of Tuart Peppermint low open woodland and Melaleuca Acacia tall shrubland, with approximately 97 per cent of the vegetation mapped as Tuart Peppermint woodland (GHD, 2020). The full survey descriptions and mapping are available in Appendix D.</p> <p>This is consistent with the mapped vegetation type: Cottesloe Complex-Central and South, which is characterised by a mosaic of woodland of <i>Eucalyptus gomphocephala</i> (Tuart) and open forest of <i>Eucalyptus gomphocephala</i> (Tuart) - <i>Eucalyptus marginata</i> (Jarrah) - <i>Corymbia calophylla</i> (Marri); closed heath on the Limestone outcrops (Heddel <i>et al.</i>, 1980).</p> |
| Vegetation condition | <p>A vegetation survey undertaken to inform the clearing permit application (GHD, 2020) indicates the vegetation within the proposed clearing area is in a degraded (Keighery, 1994) condition, which is described as: basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.</p> <p>The full Keighery condition rating scale is provided in Appendix C; representative photos are available in Appendix D.</p> |
| Soil description | The soil is mapped as Quindalup dunes (211Qu_S13), which is characterised by calcareous sand - white, medium-grained, rounded quartz and shell debris, well sorted, of eolian origin (Schoknecht <i>et al.</i> , 2004). |
| Land degradation risk | The proposed clearing area has a high mapped risk of water repellence. Based on the close proximity to the coastline, the proposed clearing may be impacted by wind erosion. |
| Waterbodies | The desktop assessment and aerial imagery indicated that the closest wetland or watercourse to the proposed clearing area is 1.35 km. As the application area is located 100 m from the coastline, it is highly unlikely that there are any associated wetlands or watercourses. |
| Vegetation extent | <p>The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).</p> <p>Within constrained areas (areas of urban development in cities and major towns) on the Swan Coastal Plain, the threshold for representation of the pre-clearing extent of a</p> |

| Site characteristic | Details |
|---|--|
| | <p>particular native vegetation complex is 10 per cent (EPA, 2008). The application area is classified as a constrained area.</p> <p>Remnant vegetation within the Swan Coastal Plain Bioregion and the mapped vegetation complex remain above the Commonwealth objective of 30 per cent (see Appendix B – 3). Remnant vegetation within the City of Cockburn and within the local area (10 km radius of the proposed clearing area) retain coverage below the Commonwealth objective, but above the EPA’s modified threshold (see Appendix B – 3).</p> |
| Conservation areas | <p>The nearest conservation area is a Department of Biodiversity, Conservation and Attractions (DBCAs) Freehold Lot, located 430 metres east of the application area.</p> <p>Bush Forever Site 247, Manning Lake and Adjacent Bushland, is located 750 metres east of the application area.</p> |
| Conservation significant flora | A total of 32 conservation significant flora and fungi species have been recorded within the local area. Five of these species have been recorded in coastal habitat which may be consistent with the application area, and are outlined below (Western Australian Herbarium, 1998 -). |
| Conservation significant fauna | A total of 76 conservation significant fauna species have been recorded in the local area, of which 45 are shorebirds/waders, nine are aquatic species and three are associated with wetlands. Other species were determined to be unlikely to be present due to the lack of recent records in the Perth Metropolitan Region, or lack of specific habitat requirements (e.g. <i>Lomandra maratima</i> for Graceful Sun Moth). As no trees within the proposed clearing area have suitable habitat features to support black cockatoo roosting or breeding and no flora species were identified as comprising high foraging values, the proposed clearing is not likely to impact these species. Overall, it was determined that the habitat within the proposed clearing area may be suitable for four fauna species, outlined in the table below. |
| Conservation significant ecological communities | A total of six conservation significant ecological communities have been recorded in the local area, of which three have some consistencies with the vegetation proposed to be cleared. An additional Priority Ecological Community was identified as having the potential to occur within the application area. These communities have been discussed below. |

2. Flora, fauna and ecosystem analysis

With consideration for the site characteristics set out above, relevant datasets (Appendix E), and biological survey information (Appendix D), the following conservation significant flora and fauna species, and ecological communities have been further considered to determine if the proposed clearing may impact them.

| Species | Conservation Code | Distance of closest record (kilometres) | Comments |
|--|-------------------|---|--|
| Flora | | | |
| <i>Austrostipa mundula</i> | Priority 3 | 6.42 | Local record historic (1907). |
| <i>Beyeria cinerea</i> subsp. <i>cinerea</i> | Priority 3 | 7.70 | Recorded in association with <i>Olearia axillaris</i> and <i>Melaleuca systena</i> ; these species are not present in application area. Not recorded in association with Tuarts. |
| <i>Grevillea olivacea</i> | Priority 4 | 5.04 | The record in the local area is noted as planted. Associated with limestone heathland, not Tuart woodland |

| Species | Conservation Code | Distance of closest record (kilometres) | Comments |
|--|--|---|---|
| <i>Hibbertia leptotheca</i> | Priority 3 | 3.85 | All records in local area historic (1897). Some records associated with Tuarts, however perennial species which was not noted in survey. |
| <i>Pimelea calcicola</i> | Priority 3 | 1.49 | Recorded in coastal heathland, associated with limestone. Not recorded in association with Tuarts. |
| Fauna | | | |
| Swan Coastal Plain shield-backed trapdoor spider (<i>Idiosoma sigillatum</i>) | Priority 3 | 3.46 | May provide habitat for species, however determined to not be significant. |
| Quenda, southwestern brown bandicoot (<i>Isodon fusciventer</i>) | Priority 4 | 1.44 | May provide habitat for species, however determined to not be significant. |
| Perth slider, lined skink (<i>Lerista lineata</i>) | Priority 3 | 0.17 | May provide habitat for species, however determined to not be significant. |
| Black-striped snake, black-striped burrowing snake (<i>Neelaps calonotos</i>) | Priority 3 | 5.03 | May provide habitat for species, however determined to not be significant. |
| Forest red-tailed black cockatoo (<i>Calyptorhynchus banksii naso</i>) | Vulnerable | 2.02 | Low to no foraging or roosting habitat based on Commonwealth Guidelines (DEE, 2017). |
| Carnaby's cockatoo (<i>Calyptorhynchus latirostris</i>) | Endangered | 0.56 | No breeding or roosting habitat; very low foraging habitat quality, based on Commonwealth Guidelines (DEE, 2017). |
| Ecological Community | | | |
| Acacia shrublands on taller dunes, southern Swan Coastal Plain | Priority 3 | 22.7 | May have consistencies with VT02, not confirmed |
| <i>Callitris preissii</i> (or <i>Melaleuca lanceolata</i>) forests and woodlands, Swan Coastal Plain (floristic community type 30a as originally described in Gibson et al. (1994)) | Vulnerable | 2.76 | <i>Callitris preissii</i> was recorded within the application area in VT01; however, vegetation dominated by <i>Eucalyptus gomphocephala</i> and <i>Agonis flexuosa</i> . <i>A. flexuosa</i> is not listed as an associated species in the Interim Recovery Plan for this community (DPaW, 2014). |
| Northern Spearwood shrublands and woodlands | Priority 3 | 7.40 | May have consistencies with VT02, not confirmed |
| Tuart (<i>Eucalyptus gomphocephala</i>) woodlands and forests of the Swan Coastal Plain | Priority 3 (Critically Endangered federally) | 1.11 | VT01 is considered representative of this community (GHD, 2020). The application area does not meet patch size for EPBC referral. |

3. Vegetation extent

| | Pre-European extent (ha) | Current extent (ha) | % remaining | Current extent in all DBCA managed land (ha) | % current extent in all DBCA managed land (proportion of pre-European extent) |
|--------------------------------------|--------------------------|---------------------|-------------|--|---|
| IBRA bioregion | | | | | |
| Swan Coastal Plain | 1,501,221.93 | 579,813.47 | 38.62 | 153,954.86 | 10.26 |
| Vegetation complex | | | | | |
| Cottesloe Complex-Central and South, | 45,299.61 | 14,567.87 | 32.16 | 6,606.12 | 14.58 |
| Local government area | | | | | |
| City of Cockburn | 17,087.51 | 4,744.49 | 27.77 | 915.17 | 5.36 |
| Local area | | | | | |
| 10 km radius | 14,917.76 | 2,228.09 | 14.94 | - | - |

Appendix B – Assessment against the Clearing Principles

| Assessment against the Clearing Principles | Variance level | Is further consideration required? |
|---|------------------------------|--------------------------------------|
| Environmental value: biological values | | |
| <p><u>Principle (a):</u> “Native vegetation should not be cleared if it comprises a high level of biodiversity.”</p> <p><u>Assessment:</u> The proposed clearing area is unlikely to contain locally or regionally significant flora or fauna habitat; however, comprises at least one Priority Ecological Community.</p> | May be at variance | Yes Refer to Section 3.2.1 above. |
| <p><u>Principle (b):</u> “Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.”</p> <p><u>Assessment:</u> The proposed clearing area does not contain significant habitat for fauna species, including conservation significant fauna.</p> | Not likely to be at variance | No |
| <p><u>Principle (c):</u> “Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</p> <p><u>Assessment:</u> The proposed clearing area is unlikely to contain habitat for flora species listed under the BC Act.</p> | Not likely to be at variance | No |
| <p><u>Principle (d):</u> “Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.”</p> <p><u>Assessment:</u> The proposed clearing area contains some species that can indicate a threatened ecological community; however, the vegetation community as a whole is not consistent with this community listed as ‘Vulnerable’ under the BC Act 2016.</p> | Not likely to be at variance | No |
| Environmental values: significant remnant vegetation and conservation areas | | |

| Assessment against the Clearing Principles | Variance level | Is further consideration required? |
|--|------------------------------|--------------------------------------|
| <p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u> Given the size and vegetation condition of the proposed clearing and extent of native vegetation in the local area, and considering the modified objective for vegetation retention within constrained areas in which the application area is located, the proposed clearing was determined to not be a significant area of vegetation within an extensively cleared landscape. Vegetation in the proposed clearing area is considered to be part of an ecological linkage, however, the proposed clearing will not significantly impact this linkage function.</p> | Not likely to be at variance | No |
| <p><u>Principle (h):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.”</i></p> <p><u>Assessment:</u> Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas.</p> | Not likely to be at variance | No |
| Environmental values: land and water resources | | |
| <p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u> Given no watercourses or wetlands are recorded in close proximity to the proposed clearing area, the clearing is unlikely to impact on- or off-site hydrology and water quality.</p> | Not likely to be at variance | Yes Refer to Section 3.2.2 above. |
| <p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u> The mapped soils are not highly susceptible to erosion; however, given the close proximity to the coastline, there is a risk that the proposed clearing could exacerbate the potential for wind erosion. The proposed clearing is not likely to cause appreciable land degradation impacts.</p> | Not likely to be at variance | No |
| <p><u>Principle (i):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.”</i></p> <p><u>Assessment:</u> Given the close proximity to the coastline, the proposed clearing is unlikely to significantly impact surface or ground water quality.</p> | Not likely to be at variance | No |
| <p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u> Given the climatic conditions of the Perth Region, the size of the application area and the close proximity coastline, the proposed clearing is unlikely to contribute to increased incidence or intensity of flooding.</p> | Not likely to be at variance | No |

Appendix C – Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Measuring Vegetation Condition for the South West and Interzone Botanical Province (Keighery, 1994)

| Condition | Description |
|---------------------|--|
| Pristine | Pristine or nearly so, no obvious signs of disturbance. |
| Excellent | Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species. |
| Very Good | Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing. |
| Good | Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing. |
| Degraded | Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing. |
| Completely Degraded | The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs. |

Appendix D – Biological survey information excerpts / photographs of the vegetation

Flora and vegetation assessment undertaken by GHD (2020)

Vegetation types:

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).

There 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).



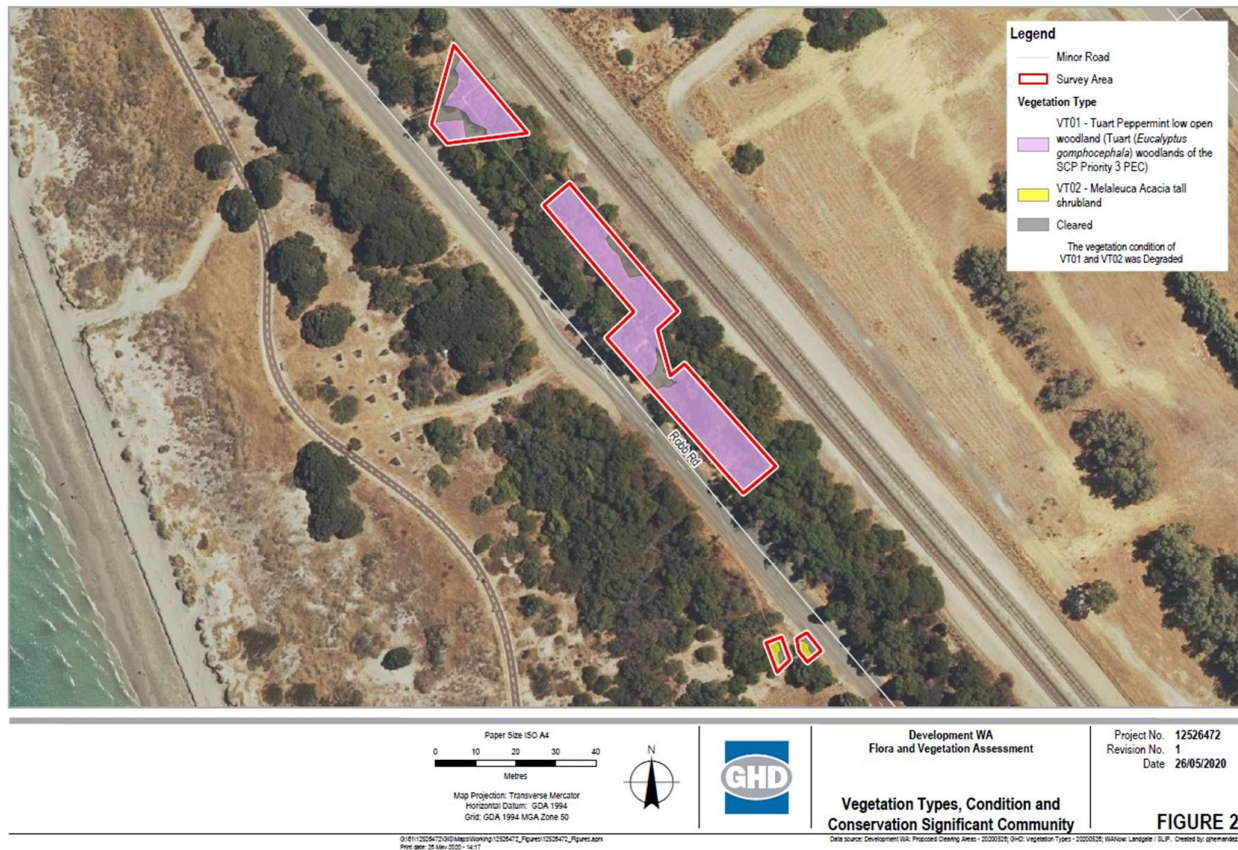
Plate 2 VT02 – Melaleuca Acacia tall shrubland

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.

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 Threatened Ecological Community (TEC). The difference between the Tuart TEC and Tuart PEC is that the PEC has no minimum condition, or patch size thresholds.



Appendix E – References and databases

1. GIS datasets

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- Aboriginal Heritage Places (DPLH-001)
- Contours (DPIRD-073)
- Bush Forever (Regional Scheme – DPLH-022)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Geomorphic Wetlands, Swan Coastal Plain (DBCA-019)
- Groundwater Salinity Statewide (DWER-026)
- IBRA Vegetation Statistics
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Regional Parks (DBCA-026)
- Soil and Landscape Mapping – Best Available

Restricted GIS Databases used:

- Black Cockatoo roosting locations
- Black Cockatoo breeding locations
- ICMS (Incident Complaints Management System) – Points and Polygons
- Remnant vegetation
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

2. References

- City of Cockburn (2020) Supporting Information for clearing permit application CPS 8945/1. City of Cockburn. Received by DWER on 8 August 2020 (DWER Ref: A1920671).
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- Department of the Environment and Energy (DEE) (2017) Revised draft referral guideline for three threatened black cockatoo species: Carnaby's Cockatoo, Baudin's Cockatoo and the Forest Red-tailed Black Cockatoo. Commonwealth of Australia.
- Department of Water and Environment Regulation (DWER) (2020) Contaminated Sites: Comments received for clearing application CPS 8945/1. Department of Water and Environment Regulation, Western Australia. Received on 20 August 2020 (DWER Ref: A1925639).
- Environmental Protection Authority (EPA) (2008) Environmental Guidance for Planning and Development Guidance Statement No 33. Environmental Protection Authority, Western Australia.
- GHD Pty Ltd (GHD) (2020) Flora and vegetation assessment – Cockburn Coast redevelopment project. Supporting information for CPS 8945/1. Unpublished memorandum prepared for DevelopmentWA (DWER Ref: A1915638).
- Hedde, E. M., Loneragan, O. W., and Havel, J. J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Schoknecht, N., Tille, P. and Purdie, B. (2004) Soil-landscape mapping in South-Western Australia – Overview of Methodology and outputs' Resource Management Technical Report No. 280. Department of Agriculture.
- Western Australian Herbarium (1998-). FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions. <https://florabase.dpaw.wa.gov.au/> Accessed May 2018.