



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 9653/1
Permit Holder:	Arc Infrastructure Pty Ltd
Duration of Permit:	From 22/07/2022 to 22/07/2024

The permit holder is authorised to clear *native vegetation* subject to the following conditions of this permit.

PART I – CLEARING AUTHORISED

1. Clearing authorised (purpose)

The permit holder is authorised to clear *native vegetation* for the purpose of a temporary laydown area.

2. Land on which clearing is to be done

Lot 108 on Deposited Plan 400167, Kwinana Beach

3. Clearing authorised

The permit holder must not clear more than 0.1 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

PART II – MANAGEMENT CONDITIONS

4. Avoid, minimise, and reduce impacts and extent of clearing

In determining the *native vegetation* authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending 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.

5. Weed and dieback management

When undertaking any clearing authorised under this permit, the permit holder must take the following measures to minimise the risk of introduction and spread of *weeds* and *dieback*:

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

6. Directional clearing

The permit holder must conduct clearing activities in a slow, progressive manner from south to north or west to east to allow fauna to move into adjacent *native vegetation* ahead of the clearing activity.

PART III - RECORD KEEPING AND REPORTING

7. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	<ul style="list-style-type: none"> (a) the species composition, structure, and density of the cleared area; (b) 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; (c) the date that the area was cleared; (d) the size of the area cleared (in hectares); and (e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 4; and (f) actions taken to minimise the risk of the introduction and spread of <i>weeds</i> and <i>dieback</i> in accordance with condition 5.

8. Reporting

The permit holder must provide to the *CEO* the records required under condition 7 of this permit when requested by the *CEO*.

DEFINITIONS

In this permit, the terms in Table have the meanings defined.

Table 2: Definitions

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
dieback	means the effect of <i>Phytophthora</i> species on native vegetation.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
fill	means material used to increase the ground level, or to fill a depression.
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.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
weeds	means any plant – (a) that is a declared pest under section 22 of the <i>Biosecurity and Agriculture Management Act 2007</i> ; 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.

END OF CONDITIONS



C. Robertson
01.07.2022
11.41AM

Caron Robertson

A/ Manager

NATIVE VEGETATION REGULATION

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

1 July 2022

Schedule 1

Plan 9653/1

The boundary of the area authorised to be cleared is shown in the map below (Figure 1).



Figure 1: Map of the boundary of the area within which clearing may occur



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 9653/1
Permit type:	Purpose permit
Applicant name:	Arc Infrastructure Pty Ltd
Application received:	14 March 2022
Application area:	0.1 hectares of native vegetation
Purpose of clearing:	Industrial laydown area
Method of clearing:	Mechanical
Property:	Lot 108 on Deposited Plan 400167
Location (LGA area/s):	City of Rockingham
Localities (suburb/s):	East Rockingham

1.2. Description of clearing activities

The area proposed is 0.1 hectare strip within a 35 hectare isolated patch of vegetation within the Kwinana Balloon Loop railway directly adjacent to the tracks (see Figure 1, Section 1.5). The vegetation proposed to be cleared is for a temporary laydown pad to allow the installation of safety components and associated materials, and for future maintenance requirements for the railway.

1.3. Decision on application

Decision:	Granted
Decision date:	1 July 2022
Decision area:	0.1 hectares of native vegetation, as depicted in Section 1.5, below.

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 14 days and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix B), relevant datasets (see Appendix F.1), the clearing principles set out in Schedule 5 of the EP Act (see Appendix C), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3). The Delegated Officer also took into consideration the purpose of the application to improve the safety of the railway.

The assessment identified that the proposed clearing may result in:

- the potential introduction and spread of weeds and dieback into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values
- impacts to individual fauna if present within the application area during clearing activities.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing is unlikely to lead to appreciable land degradation, have long-term adverse impacts on environmental values and can be minimised and managed to unlikely lead to an unacceptable risk to environmental values.

The Delegated Officer decided to grant a clearing permit subject to conditions to:

- avoid, minimise to reduce the impacts and extent of clearing
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback
- undertake clearing in a direction way to allow fauna present to move into adjacent habitat.

1.5. Site map

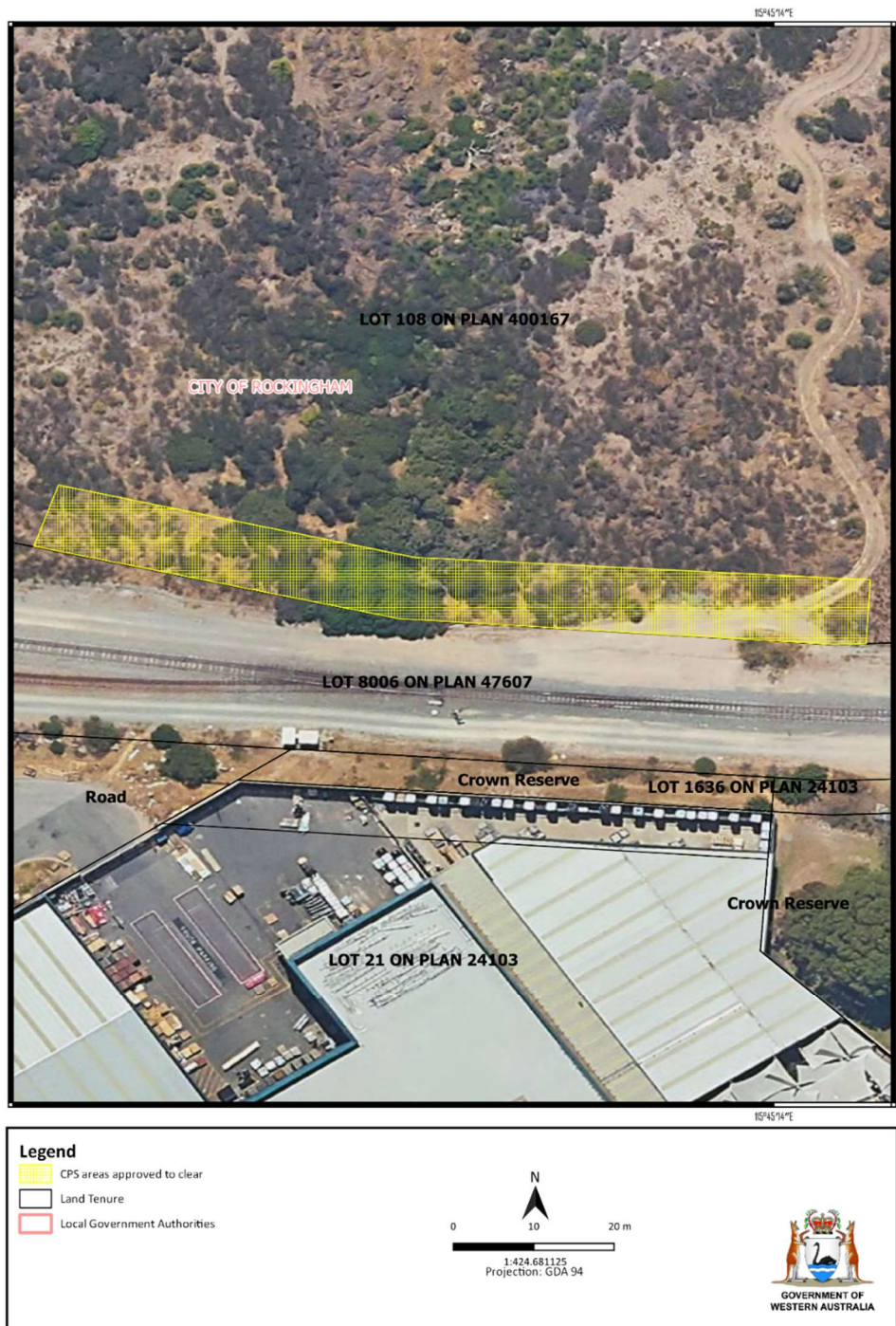


Figure 1: Map of the application area. The area cross hatched yellow indicates the area authorised to be cleared under the granted clearing permit.

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 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the polluter pays principle
- the principle of intergenerational equity
- 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)
- *Conservation and Land Management Act 1984* (WA) (CALM 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* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

The applicant advised that the laydown is required to be adjacent to the infrastructure to be upgraded and the railway corridor is too narrow for the required development. The applicant has attempted to keep the clearing to a minimum by selecting an area that appears to be in a degraded condition to minimise the amount of native vegetation required for removal.

Further mitigation measures were requested from the applicant due to the presence of the threatened ecological community. The applicant responded demonstrating that they were willing to input conditions to prevent potential wind and water erosion through mulching removed vegetation and placing it back on the cleared area and by implementing swales.

The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix B) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles (see **Error! Reference source not found.**) identified that the impacts of the proposed clearing present a risk to adjacent conservation areas. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

3.2.1. Biological values - Conservation areas - Clearing Principles (d)

Assessment

The proposed clearing is directly adjacent to a mapped Woodlands over sedgelands in Holocene dune swales of the southern Swan Coastal Plain threatened ecological community (TEC) (Figure 1) that is classified as critically endangered by the Government of Western Australia under the *Biodiversity Conservation Act 2016* (BC Act) and endangered by the Australian Government under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).



Figure 2: The proposed clearing is in close proximity to a critically endangered threatened ecological community.

This community occurs within swales between Holocene dunes predominantly on the Rockingham-Belcher Plain, however, also occur north of Perth between Yanchep and Lancelin, and to the south around Dalyellup (DBCA, 2020). Flora species that typically occur within this community include *Acacia rostelifera* (summer-scented wattle), *Acacia saligna* (orange wattle), *Xanthorrhoea preissii* (balga), *Baumea juncea* (bare twigrush), *Ficinia nodosa* (knotted club rush), *Lepidosperma galdiatum* (coastal sword-sedge), and *Poa porphyroclados* (DBCA, 2020).

Photographs of the application area (Appendix E) notes the presence of *Acacia saligna* (orange wattle) within the application area that may indicate the area could be considered part of the TEC despite not being mapped as such, however, the small size of the application, degraded vegetation condition, and large presence of weeds within the area, is it unlikely that the vegetation is representative of the TEC.

A recovery plan developed by the Department of Environment and Conservation (DEC) (2011) identified the specific community as 'occurrence 33' and classified it as very good condition with weed invasion being one of the major threats to the tec's function. The plan also identified that the maintenance of buffers is important to reduce the chance of weed invasion into the tec. The proposed clearing may impact the function of the buffer and introduce weeds and/or dieback into the TEC due to the proximity and species composition of the clearing area.

Post clearing activities related to the construction of the laydown and railway works may see increased vehicle and foot traffic in the area that may impact the habitat values of the TEC by introducing weeds and/or dieback and degrading the vegetation from the movement of vehicles, machinery and people.

Conclusion

Based on the above assessment, the proposed clearing may result in indirect degradation, via the spread of weeds and/or dieback, to the adjacent threatened ecological community and therefore that the proposed clearing may be at variance to clearing principle (d). The Delegated Officer has considered the presence of species found in the TEC present in the clearing area and has determined that the proposed clearing is not likely to be representative of the ecological community.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- weed and dieback management measures will be required to minimise the risk of introducing and spreading weeds into the threatened ecological community.

3.3. Relevant planning instruments and other matters

Development approval

The City of Rockingham advised DWER that the proposed development is classified as 'public works' under the *Public Works Act 1906*, and is therefore exempt from requiring development approvals under the *City of Rockingham Town planning Scheme No. 2*. The Shire did not have any objections to the proposed clearing.

The City of Rockingham noted that approval may be required from the Department of Planning, Land and Heritage under the Metropolitan Region Scheme (MRS) due to the works occurring on freehold land and not on the railway reserve.

The Applicant advised that they are not required to obtain approvals under the MRS.

Aboriginal sites

No Aboriginal sites of significance have been mapped within the application area and the closest site is 1.7 kilometres from the proposed clearing. 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.

End

Appendix A. Additional information provided by applicant

Information	Description
Request for information: avoidance and mitigation measures	Avoidance and mitigation measures for impacts associated with adjacent vegetation provided by Arc Infrastructure Pty Ltd and incorporated under section 3.1 of this report.
Development approvals under the Metropolitan Regional Scheme (MRS)	Arc Infrastructure advised that no MRS approvals are required.

Appendix B. Site characteristics

B.1. Site characteristics

Characteristic	Details
Local context	<p>The area proposed to be cleared is located within a patch of remnant native vegetation within the Swan Coastal Plain Bioregion (IBRA). The application area is surrounded by both industrial and residential land uses and is directly adjacent to railway utilised by local industry. The proposed clearing area is 0.1 hectares and is mapped within an Environmentally Sensitive Area.</p> <p>Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 27.6 per cent of the original native vegetation cover.</p>
Ecological linkage	No Ecological linkages are mapped within the application area. The nearest is a Perth Regional Ecological Linkage located 1.4 kilometres away. Aerial imagery shows the areas between the link and proposed clearing are largely developed industrial and residential.
Conservation areas	<p>The application is located within an Environmentally Sensitive Area that is a buffer for a Threatened Ecological Community.</p> <p>The proposed area does not fall within a conservation covenant, regional park, or DBCA areas of interest. The closest conservation area is a Bush forever site 1.5 kilometres away that is separated by an industrial area.</p>
Vegetation description	<p>The mapped vegetation type described and mapped by Webb et al. (2016) is the Quindalup Complex:</p> <ul style="list-style-type: none"> A coastal dune complex consisting mainly of two alliances - the strand and fore-dune alliance and the mobile and stable dune alliance. Local variations include the low closed forest of <i>Melaleuca lanceolata</i> (Rottnest Teatree) - <i>Callitris preissii</i> (Rottnest Island Pine), the closed scrub of <i>Acacia rostellifera</i> (summer-scented Wattle) and the low closed <i>Agonis flexuosa</i> (peppermint) forest of Geographe Bay. <p>Photographs supplied by the applicant indicate the vegetation within the proposed clearing area consists of shrubland and grassland. Two species of native vegetation are identified within the application area: <i>Acacia saligna</i> (orange wattle) and <i>Acacia cyclops</i> (coastal wattle). Representative photos are available in Appendix E. Webb et al. (2016) describes <i>A. cyclops</i> as a typical species within the Quindalup complex.</p> <p>Two species of non-native vegetation were also identified within the application area: <i>Nicotiana glauca</i> (tree tobacco) and <i>Zanthoxylum piperitum</i> (Japanese pepper).</p>
Vegetation condition	<p>Photographs supplied by the applicant indicate the vegetation within the proposed clearing area is in degraded condition, described as:</p> <ul style="list-style-type: none"> 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>The full Keighery (1994) condition rating scale is provided in Appendix D. Representative photos are available in Appendix E.</p>

Characteristic	Details
Climate and landform	The climate of the area is warm and temperate (Mediterranean). The mean rainfall of the area is around 610 millimetres. The application area sits low within the landscape sitting at approximately 4 metres elevation.
Soil description	<p>The soil type within the application area is mapped as Quindalup South Qf3 Phase and Quindalup South Qf 2 Phase.</p> <p>Most of the proposal falls within the Quindalup South Qf3 Phase which is described as relict foredunes forming a plain with prominent ridges and swales composed of deep calcareous sands with variable organic matter. The swales are commonly occupied by swamps.</p> <p>The Quindalup South Qf2 Phase, like Qf3, is composed of relict foredunes and deep calcareous sands, however, is described as a gently undulating beach ridge plain, and is topographically higher than Qf 3.</p>
Land degradation risk	<p>The application area has the following land degradation risks:</p> <ul style="list-style-type: none"> • 10-30% of map unit has a high to extreme wind erosion risk – 80% of area • 30-50% of map unit has a high to extreme wind erosion risk – 20% of area • <3% of map unit has a high to extreme water erosion risk • 3-10% of map unit has a moderate to very high waterlogging risk – 80% of area • <3% of map unit has a moderate to very high waterlogging risk – 20% of area • <3% of map unit has a high subsurface acidification risk or is presently acid • 3-10% of map unit has a high to extreme phosphorus export risk – 80% of area • <3% of map unit has a high to extreme phosphorus export risk – 20% of area • <3% of map unit has a moderate to high salinity risk or is presently saline <p>All of the land degradation risks were mapped as low with the exception of wind erosion which present a medium risk.</p>
Waterbodies	The desktop assessment and aerial imagery indicated that no waterbodies transect the area proposed to be cleared. The nearest waterbody is a resource enhancement wetland located 164 metres away.
Hydrogeography	<p>The application area is within the Coastal Plain hydrological zone and Murray River Basin (DPIRD, 2019).</p> <p>The application is mapped within the Cockburn Groundwater Area under the <i>Rights in Water and Irrigation Act 1914</i> (RIWI Act).</p> <p>Groundwater salinity level (Total Dissolved Solids) is mapped as 500-1000 milligrams per litre (fresh water).</p>
Flora	<p>There are eight conservation significant flora species found in the local area, none of these species are mapped within the application area. The nearest record being one specimen of <i>Jacksonia sericea</i> (waldjumi) 2.2 kilometres away and is categorised as a priority four species.</p> <p>Four flora species were recorded within the application area, none of which are threatened or priority flora species.</p>
Ecological communities	<p>Five Threatened Ecological Communities and five Priority Ecological Communities were recorded in the local area.</p> <p>The closest record is 20 metres away and is a Woodlands over sedgeland in Holocene dune swales of the southern Swan Coastal Plain (original description; Gibson et al. (1994) community listed as 'Critically Endangered' by DBCA under the BC Act and 'Endangered' under the EPBC Act.</p> <p>Photographs provided by the applicant (Appendix E) identifies <i>Acacia saligna</i> (orange wattle), a species known to be indicative of the community (DBCA, 2020)</p>
Fauna	1,191 fauna of conservation significance across 45 species were recorded in the local area, the nearest record being <i>Calyptorhynchus latirostris</i> (Carnaby's cockatoo) found 530.57 metres away from the application area. The closest known black cockatoo roost site is 4 kilometres away from the proposed clearing.

Characteristic	Details
	The application area does not provide foraging, roosting or breeding habitat for black cockatoos.

B.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion*					
Swan Coastal Plain	1,501,221.93	579,813.47	38.62	222,916.97	14.85
Vegetation complex**					
Quindalup Complex	54,573.87	33,011.64	60.49	5,994.64	10.98

*Government of Western Australia (2019a) **Government of Western Australia (2019b)

B.3. Flora analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Acacia sp. Binningup</i> (G. Cockerton et al. WB 37784)	P1	Y	N	Y	5.3	1	N/A
<i>Dodonaea hackettiana</i> (Hackett's hopbush)	P4	N	N	Y	4.8	3	N/A
<i>Jacksonia sericea</i> (waldjumi)	P4	Y	N	N	2.3	1	N/A
<i>Lachnagrostis nesomytica subsp. paralia</i>	P1	N	N	Y	8.6	1	N/A
<i>Pimelea calcicola</i>	P3	Y	Y	Y	3.5	2	N/A
<i>Sphaerolobium calcicola</i>	P3	Y	Y	Y	6.5	1	N/A
<i>Stylidium ireneae</i>	P4	Y	Y	N	9.1	1	N/A

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

B.4. Fauna analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Calidris canutus</i> (red knot)	EN	N	N	8.50	1	N/A
<i>Calidris ferruginea</i> (curlew sandpiper)	CR	N	N	4.62	12	N/A
<i>Calidris tenuirostris</i> (great knot)	CR	N	N	7.06	3	N/A
<i>Calyptorhynchus banksii naso</i> (forest red-tailed black cockatoo)	VU	N	N	3.28	32	N/A
<i>Calyptorhynchus baudinii</i> (Baudin's cockatoo)	EN	N	N	1.96	1	N/A
<i>Calyptorhynchus latirostris</i> (Carnaby's cockatoo)	EN	N	N	0.53	132	N/A
<i>Calyptorhynchus sp.</i> 'white-tailed black cockatoo' (white-tailed black cockatoo)	EN	N	N	3.28	10	N/A
<i>Hydromys chrysogaster</i> (water-rat, Rakali)	P4	N	N	6.64	1	N/A

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Idiosoma sigillatum</i> (Swan Coastal Plain shield-backed trapdoor spider)	P3	N	Y	2.15	15	N/A
<i>Isodon fusciventer</i> (quenda, southwestern brown bandicoot)	P4	N	Y	0.72	421	N/A
<i>Ixobrychus dubius</i> (Australian little bittern)	P4	N	N	5.2	1	N/A
<i>Lerista lineata</i> (Perth slider, lined skink)	P3	N	N	4.68	20	N/A
<i>Neelaps calonotos</i> (black-striped snake, black-striped burrowing snake)	P3	N	N	3.87	7	N/A
<i>Notamacropus eugenii derbianus</i> (tammar wallaby)	P4	N	Y	8.70	81	N/A
<i>Notamacropus Irma</i> (Western brush wallaby)	P4	N	N	4.73	3	N/A
<i>Numenius madagascariensis</i> (Eastern curlew)	CR	N	N	5.21	2	N/A
<i>Oxyura australis</i> (blue-billed duck)	P4	N	Y	4.18	67	N/A
<i>Sternula nereis nereis</i> (fairy tern)	VU	N	N	7.32	4	N/A
<i>Synemon gratiosa</i> (graceful sunmoth)	P4	Y	N	9.30	1	N/A
<i>Thalassarche chlororhynchos</i> (Atlantic yellow-nosed albatross)	VU	N	N	7.86	1	N/A
<i>Thalassarche chrysostoma</i> (grey-headed albatross)	VU	N	N	4.68	2	N/A
<i>Thinornis rubricollis</i> (hooded plover, hooded dotterel)	P4	N	N	5.37	3	N/A
<i>Westralunio carteri</i> (Carter's freshwater mussel)	VU	N	N	7.76	6	N/A

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

B.5. Ecological community analysis table

Community name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	P3	N	N	N	7.84	172	N/A
<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))	VU	Y	N	Y	4.90	23	N/A
<i>Melaleuca huegelii</i> - <i>Melaleuca systena</i> shrublands on limestone ridges (floristic community type 26a as originally described in Gibson et al. (1994))	EN	N	N	N	9.50	1	N/A
Microbial community of a coastal saline lake (Lake Walyungup)	P1	N	N	N	9.68	1	N/A
Northern Spearwood shrublands and woodlands	P3	N	N	N	3.78	4	N/A
Sedgeland in Holocene dune swales of the southern Swan Coastal Plain (floristic community type 19 as originally described in Gibson et al. (1994))	CR	N	Y	Y	4.29	6	N/A
Stromatolite like microbialite community of coastal freshwater lakes (Lake Richmond)	CR	N	N	N	4.58	1	N/A
Subtropical and Temperate Coastal Saltmarsh	P3	N	N	N	6.65	2	N/A
Tuart (<i>Eucalyptus gomphocephala</i>) woodlands and forests of the Swan Coastal Plain	P3	N	N	Y	1.24	107	N/A
Woodlands over sedgelands in Holocene dune swales of the southern Swan Coastal Plain (original description; Gibson et al. (1994).	CR	N	Y	Y	0.02	18	N/A

Community name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
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T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

Appendix C. 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></p> <p>The area proposed to be cleared does not contain regionally and locally significant flora, fauna, and habitats.</p> <p>While the site does contain <i>Acacia saligna</i> (orange wattle), a species typically found within the neighbouring threatened ecological community, given the small size of the site and the degraded condition is unlikely to contain a high level of biodiversity or meet the diagnostic criteria to be representative of the TEC.</p>	Not likely to be at variance	No
<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></p> <p>The area proposed to be cleared does not contain roosting, breeding, critical, significant habitat for 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></p> <p>Given its degraded condition (Keighery, 1994) and presence of four identified flora species within the application area, the vegetation proposed to be cleared is unlikely to include or provide habitat for threatened flora.</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></p> <p>A threatened ecological community as defined in the <i>Biodiversity Conservation Act 2016 section 5(1)</i>; or (b) any other ecological community listed, designated or declared as threatened, endangered or vulnerable under or for the purposes of a written law; or (c) a listed threatened ecological community as defined in the <i>Commonwealth Environment Act Section 528</i>;</p> <p>The proposed clearing is in close proximity to a Woodlands over sedgeland in Holocene dune swales of the southern Swan Coastal Plain (original description; Gibson et al. (1994) TEC that is listed as 'Critically endangered' under the BC Act and 'Endangered' under the EPBC Act.</p> <p>The proposed clearing area does contain <i>Acacia saligna</i> (orange wattle) a species that can be indicative of the threatened ecological community, however, due to the condition and composition of the other remaining species in the application area it is unlikely to be representative of this TEC.</p>	May be at variance	Yes Refer to Section 3.2.1., above.

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: significant remnant vegetation and conservation areas		
<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></p> <p>The extent of the mapped vegetation type is 60.49 per cent and the native vegetation in the local area is 27.64 per cent, which is consistent with the modified national objectives and targets for biodiversity conservation in Australia for constrained areas.</p> <p>The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.</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></p> <p>The application area does not occur within a mapped conservation area. The closest conservation area is a Bush forever site 1.5 kilometres from the application area is not likely to have an impact on the environmental values of the conservation area.</p>	Not likely to be at variance	No
Environmental value: 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></p> <p>There are no wetlands or watercourses mapped within the application area. The application is approximately 164 metres away from a mapped resource enhancement wetland. The closes watercourse is a drain approximately three kilometres from the application area.</p> <p>Given the small extent of the application, the distance from the wetland, and the proposed mitigation measures, the proposed clearing is unlikely to impact on- or off-site hydrology and water quality.</p>	Not likely to be at variance	No
<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></p> <p>The mapped soils are moderately susceptible to wind erosion however given the size of the application area the clearing is not likely to lead to appreciable land degradation..</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></p> <p>The clearing area is mapped within the Cockburn Groundwater area, however, given the small size and the intended purpose of the application area, the proposed clearing is unlikely to impact the ground water quality. The proposal is not within a mapped surface water or irrigation district.</p> <p>The presence of a resource enhancement wetland 164 metres from the application area is unlikely to be impacted due to the extent of the clearing and proposed mitigation measures.</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (j)</u>: “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</p> <p><u>Assessment</u>:</p> <p>The mapped soils and topographic contours in the surrounding area do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding.</p> <p>The application area is recorded within 164 metres of a Resource Enhancement Wetland, however, the small size of the proposed clearing and mitigation measures proposed is unlikely contribute to waterlogging.</p>	Not likely to be at variance	No

Appendix D. 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.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

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 E. Photographs of the vegetation

Acacia sp. Likely to be *Acacia cyclops*, Coastal Wattle.



Nicotiana glauca, Tree Tobacco. Weed



Zanthoxylum piperitum, Japanese Pepper Plant. Weed



Figure 3: Site photographs provided by applicant

Appendix F. Sources of information

F.1. GIS databases

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- 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)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Offsets Register – Offsets (DWER-078)

- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

F.2. References

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