GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 9807/1

File Number: DWERVT10569

Duration of Permit: From 24 October 2022 to 24 October 2024

PERMIT HOLDER

Australia Western Railroad Pty Ltd

LAND ON WHICH CLEARING IS TO BE DONE

Lot 511 on Deposited Plan 41203, Kwinana Beach

Lot 512 on Deposited Plan 41203, Kwinana Beach

AUTHORISED ACTIVITY

The permit holder must not clear more than 1.6 hectares of *native vegetation* within the areas cross-hatched yellow in Figure 1 and Figure 2 of Schedule 1.

CONDITIONS

1. 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:

(a) avoid the clearing of *native vegetation*;

(b) minimise the amount of *native vegetation* to be cleared; and

(c) reduce the impact of clearing on any environmental value.

2. 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;

(c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

3. 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	(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 1994/2020 (GDA94/2020), 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); (e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 1; and (f) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 2.

4. Reporting

The permit holder must provide to the *CEO* the records required under condition 3 of this permit when requested by the *CEO*.

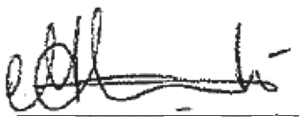
DEFINITIONS

In this permit, the terms in Table 1 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 *Environmental Protection Act 1986*.
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.
fill	means material used to increase the ground level, or to fill a depression.
dieback	means the effect of *Phytophthora* species on native vegetation.
department	means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	*Environmental Protection Act 1986* (WA)
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 *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.

END OF CONDITIONS



Meenu Vitarana
A/MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

30 September 2022

SCHEDULE 1

The boundary of the area authorised to be cleared is shown in the maps below (Figures 1 and 2).

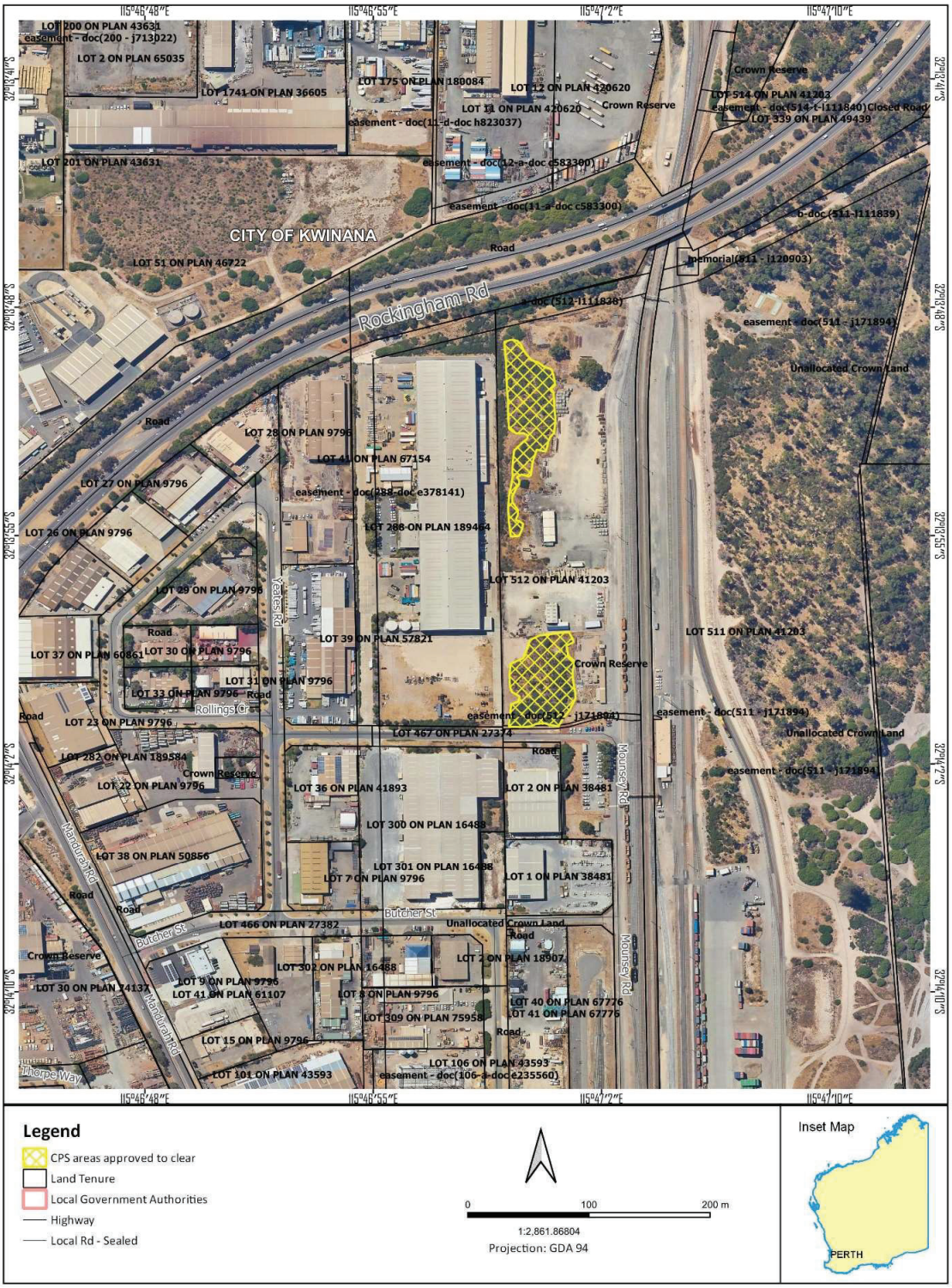


Figure 1: Map of the boundary of the northernmost areas within which clearing may occur

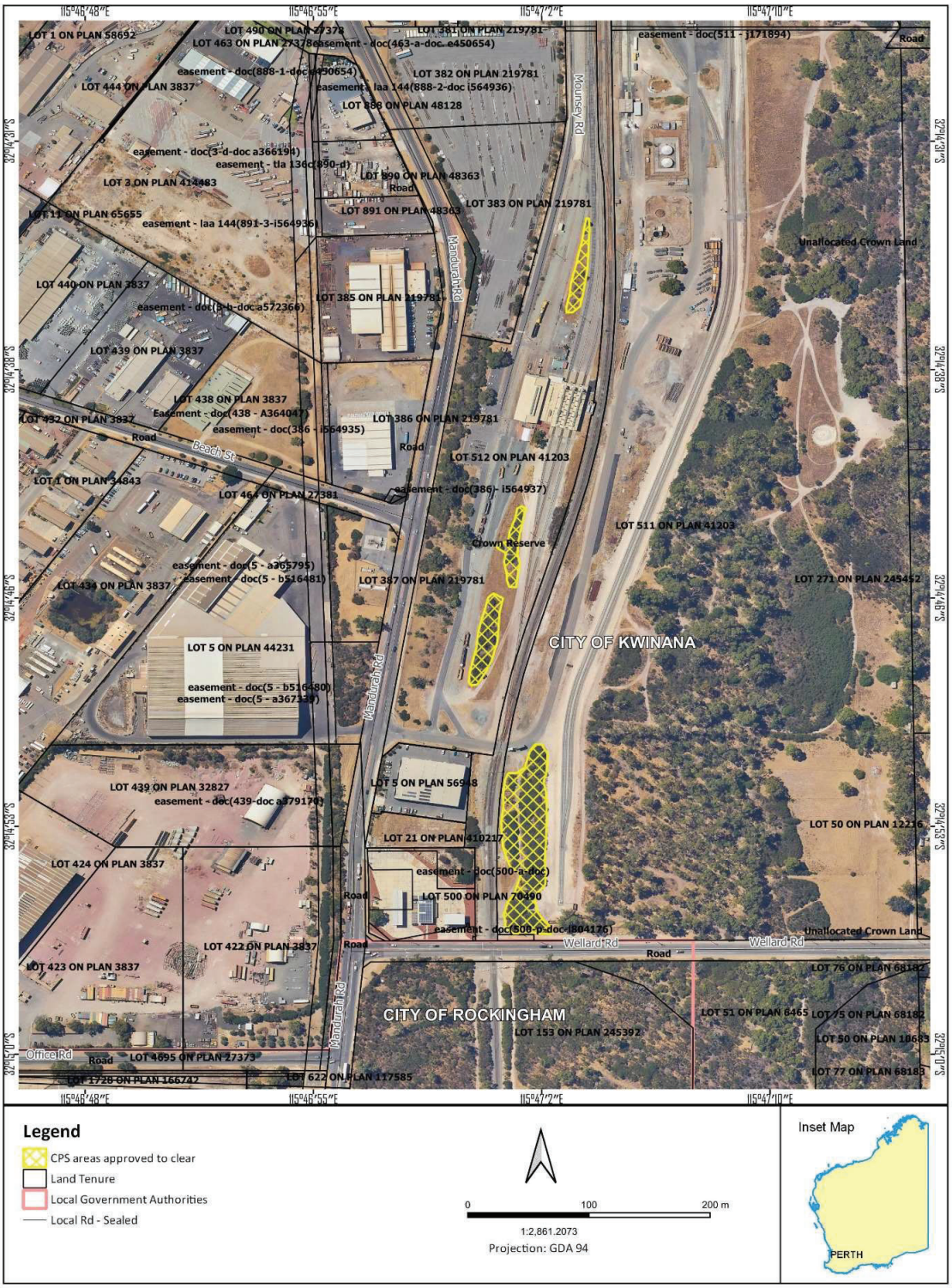


Figure 2: Map of the boundary of the southernmost areas within which clearing may occur

Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 9807/1
Permit type:	Area permit
Applicant name:	Australia Western Railroad Pty Ltd
Application received:	12 July 2022
Application area:	1.6 hectares of native vegetation
Purpose of clearing:	Expanding rail depot operations
Method of clearing:	Mechanical
Property:	Lot 511 and Lot 512 on Deposited Plan 41203
Location (LGA area/s):	City of Kwinana
Localities (suburb/s):	Kwinana Beach

1.2. Description of clearing activities

The vegetation proposed to be cleared is distributed across six separate areas (see Figures 1 and 2, Section 1.5). The clearing will facilitate expansion of rail depot operations, including construction of an asset team yard, side entry boom gate, two workshops and a rail crossing.

1.3. Decision on application

Decision:	Granted
Decision date:	30 September 2022
Decision area:	1.6 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 21 days and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix A), relevant datasets (see Appendix E), the findings of a flora and vegetation survey and black cockatoo habitat assessment (see Appendix D), 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 assessment identified that the proposed clearing:

- is unlikely to impact significant breeding, roosting or foraging habitat for black cockatoo species, or habitat for other conservation significant fauna species.
- is unlikely to impact conservation significant flora.

- Impacts vegetation which may comprise the tuart woodland Priority Ecological Community (PEC), however impacts to this PEC are not likely to be significant.

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 significantly impact the environmental values listed above and the applicant has suitably demonstrated avoidance and minimisation measures.

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

- avoid, minimise to reduce the impacts and extent of clearing; and
- Take hygiene steps to minimise the risk of the introduction and spread of weeds.

1.5. Site maps

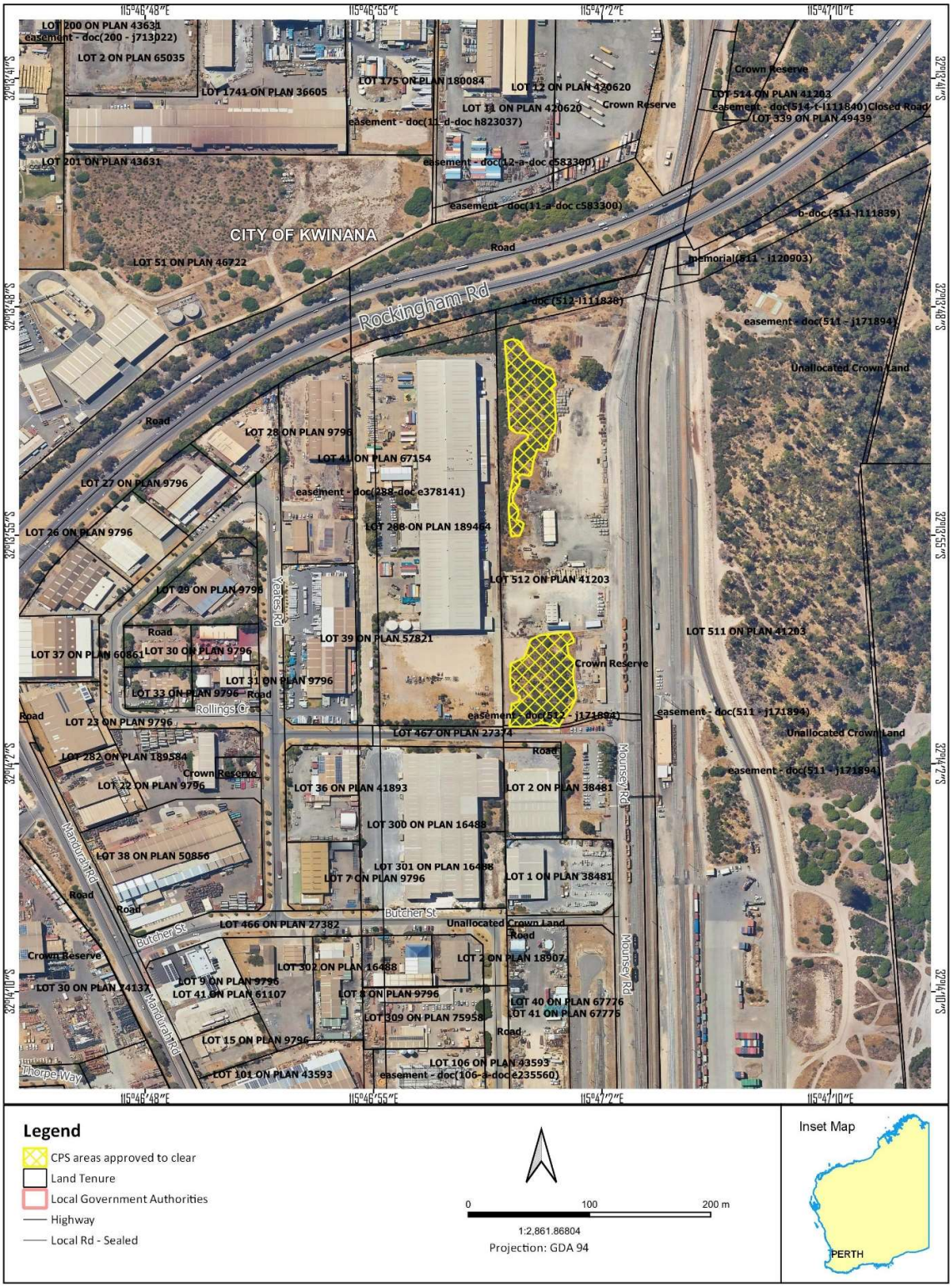


Figure 1. Map of the northernmost application areas. The areas crosshatched yellow indicate the areas authorised to be cleared under the granted clearing permit.

Figure 2. Map of the southernmost application areas. The areas crosshatched yellow indicate 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 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the 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)
- *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)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2016)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

The applicant advised the following in regards to consideration of avoidance and mitigation measures:

> The location of the proposed clearing area has been selected with consideration of the existing environment and quality of native vegetation. As such, the development has been located in a degraded areas and has avoided areas of TEC or which provide potentially suitable breeding habitat for black cockatoos.
>
> Given the proposed clearing areas are within a broader area of already cleared and industrially developed land, incidental impacts to the surrounding environment are not expected. The proposed clearing will be undertaken in a manner that effectively manages dust and hygiene, and that will avoid impacts to retained vegetation and fauna in the surrounding area. Management actions will include:
>
> - Ensure suitably qualified wildlife spotter/handler is on call during clearing works;
> - Stabilise cleared areas with methods such as wetting, mulching, or other sealing material; and
> - Clearly marking the vegetation required to be cleared (Australia Western Railroad, 2022).

Noting the above in the context of the proposed clearing, 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 A) 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 Appendix B) identified that the risk of impacts of the proposed clearing to biological values (fauna and flora) required further consideration. 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 (fauna) - Clearing Principles (a) and (b)

Assessment

Noting the habitat requirements, distribution of the recorded species and vegetation type and condition present within the application area, it was considered that the application area is likely to comprise suitable habitat for the following conservation significant fauna species:

- *Zanda latirostris (previously Calyptorhynchus latirostris)* (Carnaby's cockatoo) (Endangered);
- *Calyptorhynchus banksii naso* (Forest red-tailed black cockatoo) (Vulnerable);
- *Lerista lineata* (Perth slider, lined skink) (Priority 3);
- *Isoodon fusciventer* (Quenda, southwestern brown bandicoot) (Priority 4); and
- *Falco peregrinus* (Peregrine falcon) (Other specially protected).

The application area is within both the known range of Carnaby's cockatoo and Forest red-tailed black cockatoo (Department of Agriculture, Water and Environment (DAWE), 2022). These species have been known to nest in hollows of live or dead Eucalypt trees, including tuart trees, in the Swan Coastal Plain (DAWE, 2022). For most species of trees, including tuart, suitable nest hollows are only found in live trees with a diameter at breast height (DBH) of at least 50 centimetres, with a DBH of 30 centimetres or greater considered suitable to develop a nest hollow in the future (DAWE, 2022). A black cockatoo habitat survey (Strategen, 2022) found no trees with a DBH greater than 50 centimetres within the proposed clearing areas, and as such the proposed clearing is unlikely to impact current black cockatoo breeding habitat. It is also noted that only 0.06 ha of the proposed clearing areas contain tuart vegetation, with the remainder comprising *Acacia rostellifera* shrubland, and as such the proposed clearing is also unlikely to significantly impact future black cockatoo breeding habitat. While both of these species may also roost in tuart trees, noting that black cockatoo species prefer larger eucalypt trees for roosting, the application area is unlikely to contain significant roosting habitat for black cockatoo species.

Most of the application area is mapped as *Acacia rostellifera* vegetation (VT2), classed by Strategen (2022) as “Very Poor” quality habitat for Carnaby’s cockatoos and “Nil” for forest red-tailed black cockatoo. As such, the vegetation within the application area is not woodland or forest dominated by *Eucalyptus* species, marri or proteaceous plant species (DAWE, 2022), and is unlikely to contain plant species utilised by Carnaby’s cockatoo. Tuart trees, present within vegetation type VT1, may provide some foraging value (although less preferred as a foraging species) for forest red-tailed black cockatoo (DAWE, 2022), and Strategen (2022) has classed this vegetation type as providing “Moderate” quality foraging habitat for Carnaby’s cockatoos. However, aerial imagery and photographs of the application area indicates there are no large tuart trees likely to be present within the 0.06 hectare area of vegetation classed as VT1, with other vegetation species within this mapped vegetation unit (primarily *Acacia rostellifera*) unlikely to provide good foraging habitat for black cockatoo species (DAWE, 2022 and Groom, 2011). Noting the above, the proposed clearing is considered unlikely to significantly impact foraging habitat for black cockatoos.

Vegetation within the application area is also considered likely to provide habitat for the Perth slider, quenda and peregrine falcon, noting the habitat requirements and distributions of these species:

- **Perth slider** shelters in leaf litter and upper layers of loose sand at bases of shrubs, inside spoil heaps and inside stick-ant nests (Bush et al, 1995).
- **Quenda** inhabit dense scrubby, often swampy, vegetation with dense cover and adjacent forest and woodland (DPAW, 2012).
- **Peregrine falcon** are found in most habitats, from rainforests to the arid zone and at most altitudes, from the coast to alpine areas. It requires abundant prey and secure nest sites and prefers coastal and inland cliffs or open woodlands near water and may even be found nesting on high city buildings (Australian Museum, 2020). This species is widespread, highly mobile and is found in various habitats.

Noting the small extent of the proposed clearing areas and their fragmented nature, the proposed clearing is not likely to result in significant impacts to habitat for these species.

Conclusion

Based on the above assessment, the proposed clearing is unlikely to impact significant breeding, roosting or foraging habitat for black cockatoo species, or habitat for other conservation significant fauna species.

Conditions

No fauna management conditions required.

3.2.2. Biological values (flora) - Clearing Principles (a), (c) and (d)

Assessment

Noting the habitat requirements and distribution of the recorded species, the vegetation type and condition present within the proposed clearing areas and results of a flora and vegetation survey (Strategen, 2022) it was considered that the application area is likely to comprise suitable habitat for the following conservation significant flora species:

- *Acacia* sp. Binningup (G. Cockerton et al. WB 37784) (Priority 1)
- *Austrostipa mundula* (Priority 3)
- *Caladenia huegelii* (Threatened)
- *Dodonaea hackettiana* (Priority 4)

- *Eucalyptus foecunda* subsp. *foecunda* (Priority 4)
- *Jacksonia sericea* (Priority 4)
- *Pimelea calcicola* (Priority 3)

A flora and vegetation survey (Strategen, 2022) included a search for *Caladenia huegelii*, *Dodonaea hackettiana* , *Jacksonia sericea* and *Pimelea calcicola* in areas of known habitat, and these species were not found. *Acacia* sp. Binningup, *Austrostipa mundula* and *Eucalyptus foecunda subsp. foecunda* have all been recorded in sand or sand over limestone amongst tuart vegetation (Western Australian Herbarium, 1998-) and as such the application area may provide suitable habitat for these species. Although these species were not specifically searched for, it is considered unlikely that these species would occur noting the following:

- The Degraded nature of the vegetation present;
- That understorey species were almost completely absent within the areas proposed to be cleared, with only occasional native species other than tuart trees and *Acacia rostellifera* scrub (Strategen, 2022); and
- *Acacia* sp. Binningup and *Eucalyptus foecunda subsp. foecunda*, due to their growth habitat, would have been easily discernible during the survey of the relatively small clearing extent.

Noting the above, it is considered unlikely that the proposed clearing will impact conservation significant flora species.

A 0.06 hectare area within the areas proposed to be cleared is part of a 0.2 hectare patch of vegetation containing species consistent with the Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain EPBC Act listed Threatened ecological community (tuart TEC) and BC Act listed Priority 3 ecological community (tuart PEC). However, noting the size and condition of this patch, it does not meet the key diagnostic criteria to be considered an occurrence of the tuart TEC (Threatened Species Scientific Community (TSSC), 2019). A determination of the tuart PEC is usually based on affinity of vegetation data with known Floristic Community Types as defined by Gibson et al. (1994), and this analysis has not been done due to insufficient species diversity (Strategen, 2022). It is noted that the tuart vegetation to be cleared is of a small extent (0.6 hectares), in Degraded condition and contains no tuart trees with a DBH greater than 50 centimetres. Furthermore, although considered to be part of a larger patch, this patch is a small (0.2 hectares), isolated pocket of vegetation in Degraded condition. As such, even if the tuart PEC were to be present, impacts of the clearing to the conservation status of this PEC would be considered minimal.

Conclusion

Based on the above assessment, the proposed clearing is unlikely to impact conservation significant flora. While an area of tuart PEC (but not the TEC) may be present within the areas proposed to be cleared, impacts to the tuart PEC are not likely to be significant.

Conditions

Standard weed and dieback management conditions.

3.3. Relevant planning instruments and other matters

The City of Kwinana advised DWER that the proposed clearing is local government approvals are not required, and that the vegetation proposed to be cleared is wholly located within a Regional Reserve for Railways under the Metropolitan Region Scheme (MRS), which means the clearing/development is exempt from requiring planning approval under the City's LPS2. The City has no record of a planning application or referral being received for the clearing of the land (City of Kwinana, 2022).

The proposed clearing areas falls within Contaminated Sites (ID 13591 and 13592) classified as "Contaminated – Remediation required", with hydrocarbons present in soil and groundwater beneath an area within the site. The proposed clearing areas are located to the north and directly adjacent and south of the impacted area. An Ongoing Site Management Plan (OSMP) is in place which outlines management measures for any activity (such as excavation) that may disturb soil contamination and provides for ongoing groundwater monitoring in the impacted areas. The site is considered to be suitable for ongoing commercial/industrial land use and DWER has no objection to the proposed clearing from a contamination perspective (DWER, 2022).

Several Aboriginal sites of significance have been mapped within the local area, but not within the application area. 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. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	The areas proposed to be cleared are isolated patches of native vegetation in the intensive land use zone of Western Australia. The two northernmost areas are within a rail depot property immediately west of a railway line and are surrounded by cleared land and buildings, with a small amount of remnant native vegetation surrounding the northernmost area. The four southernmost areas are located between railway lines present to the west and east. Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 31 per cent of the original native vegetation cover.
Ecological linkage	The areas proposed to be cleared are approximately 350 m west of a Perth Regional Ecological Linkage Area (Del Marco et al, 2004). Given that they are isolated patches, the areas proposed to be cleared are not part of a local ecological linkage.
Conservation areas	The closest conservation area to the areas proposed to be cleared is an un-named reserve 2.2 km south.
Vegetation description and condition	A vegetation survey (Strategen JBS&G (Strategen), 2022) indicate the vegetation within the proposed clearing area consists of the following vegetation types: • VT1 - *Eucalyptus gomphocephala* mid woodland over *Acacia rostellifera* tall shrubland over mixed grassland and herbland of weedy species; and • VT2 - *Acacia rostellifera* shrubland over herbland of introduced species. This is consistent with the mapped vegetation types: • Northern areas - Cottesloe Complex-Central and South (52), which is described as Mosaic of woodland of *Eucalyptus gomphocephala* (Tuart) and open forest of *Eucalyptus gomphocephala (*Tuart) - *Eucalyptus marginata* (Jarrah) - *Corymbia calophylla* (Marri); closed heath on the Limestone outcrops; and • Southern areas - Quindalup Complex (55), which is described as 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 *Melaleuca lanceolata* (Rottnest Teatree) - *Callitris preissii* (Rottnest Island Pine), the closed scrub of *Acacia rostellifera* (Summer-scented Wattle) and the low closed *Agonis flexuosa* (Peppermint) forest of Geographe Bay (Heddle et al, 1980). The mapped vegetation types retain approximately 32 and 61 per cent of their original extents respectively (Government of Western Australia, 2019). Strategen (2022) indicates the vegetation within the proposed clearing area is in Degraded to Completely Degraded (Keighery, 1994) condition, described as: • 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. Areas of vegetation with the above vegetation types and conditions are as follows:

<table>
<tr><th>Characteristic</th><th>Details</th></tr>
<tr><td></td><td>
<table>
<tr><th>Vegetation type</th><th>Area in Completely Degraded Condition (ha)</th><th>Area in Degraded Condition (ha)</th><th>Total Area</th></tr>
<tr><td>Cleared</td><td>0.22</td><td>0</td><td>0.22</td></tr>
<tr><td>VT1</td><td>0</td><td>0.06</td><td>0.06</td></tr>
<tr><td>VT2</td><td>0</td><td>1.32</td><td>1.32</td></tr>
<tr><td>Total</td><td>0.22</td><td>1.38</td><td>1.60</td></tr>
</table>
Mapping from Strategen (2022) is available in Figures D-1 and D-2, Appendix D and photographs are available in Figures D-5 to D-8, Appendix D.
</td></tr>
<tr><td>Climate</td><td>Rainfall: 800 mm
Evapotranspiration: 800 mm</td></tr>
<tr><td>Topography</td><td>Topography is relatively flat across the areas proposed to be cleared, ranging from 6 m AHD to 7 m AHD.</td></tr>
<tr><td>Soil description</td><td>The soil is mapped as Quindalup South Qf2 Phase (211Qu__Qf2), described as relict foredunes and gently undulating beach ridge plain with deep uniform calcareous sands.</td></tr>
<tr><td>Land degradation risk</td><td>Soils in the application area have a moderate risk of wind erosion, and a low risk of other land degradation issues.</td></tr>
<tr><td>Surface water</td><td>The areas proposed to be cleared are approximately 250 m west of a resource enhancement sumpland and approximately 2.3 km east of the Indian Ocean. No watercourses are mapped within the vicinity of the areas proposed to be cleared.</td></tr>
<tr><td>Groundwater</td><td>Groundwater salinity: 500-1000 mg/L TDS
Hydrogeology: Surficial Sediments - Shallow Aquifers (limestone, calcrete lithology)
The areas proposed to be cleared are within the Cockburn Groundwater Area proclaimed under the Rights in Water and Irrigation Act 1914.
The historical maximum groundwater level within the areas proposed to be cleared is approximately 3 m AHD, and as such depth to groundwater is likely to be at least approximately 3 to 4 m.</td></tr>
<tr><td>Flora</td><td>There are records of 4 threatened and 18 priority flora species within the local area, of which nine species were recorded within the same mapped soil and/or vegetation type or considered by Strategen (2022) as being possible to occur. One of these species, Priority 4 species Eucalyptus foecunda subsp. foecunda, is mapped as being recorded within the second northernmost area proposed to be cleared, however from the description associated with this record, it is unlikely that this individual was actually recorded within the area proposed to be cleared.
A flora survey (Strategen, 2022) did not record any conservation significant flora species within the areas proposed to be cleared.</td></tr>
<tr><td>Ecological communities</td><td>There are records of 11 priority ecological communities within the local area, the closest of which to the application area is the Tuart (Eucalyptus gomphocephala) woodlands and forests of the Swan Coastal Plain Priority 3 ecological community located approximately 0.7 km southeast of the southernmost area proposed to be cleared.
A flora survey (Strategen, 2022) determined that vegetation within the areas proposed to be cleared is not consistent with a conservation signifciant ecological community, including the Tuart (Eucalyptus gomphocephala) woodlands and forests of the Swan Coastal Plain threatened ecological community.</td></tr>
<tr><td>Fauna</td><td>There are records of 18 threatened, 14 priority, one conservation dependent, 22 migratory and one other specially protected fauna species within the local area, the closest of which is threatened species Calyptorhynchus latirostris (Carnaby's cockatoo) recorded approximately 0.2 km west of the second northernmost area proposed to be cleared.
A fauna habitat survey (Strategen, 2022) did not find any trees with a diameter of 500 mm or greater at breast height (i.e. large enough to be considered potential breeding trees for breeding by black cockatoo species) within the areas proposed to be</td></tr>
</table>

Characteristic	Details
	cleared, although trees of this diameter, several of which contained suitable breeding hollows, were found nearby the areas proposed to be cleared (refer to Figure D-3, Appendix D). Strategen (2022) determined that foraging habitat for Carnaby's cockatoo and forest red-tailed black cockatoo within the areas proposed to be cleared could be classed as nil, very poor and moderate (refer to Figures D-3 to D-4 in Appendix D).

A.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					
Heddle vegetation complex 52**	45,299.61	14,567.87	32.16	6,606.12	14.58
Heddle vegetation complex 55**	54,573.87	33,011.64	60.49	5,994.64	10.98
Local area					
10km radius	25,484.49	7,977.48	31.30	-	-

*Government of Western Australia (2019a)

**Government of Western Australia (2019b)

A.3. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix E), and biological survey information, impacts to the following conservation significant flora species required further consideration.

Species name	Conservation status	Suitable habitat features?	Suitable vegetation type?	Suitable soil type?	Distance of closest record to application area (km)	Number of known records (total)	Number of records within local area	Are surveys adequate to identify?
Acacia sp. Binningup (G. Cockerton et al. WB 37784)	P1	Y	Y	Y	5.9	13	1	N
Austrostipa mundula	P3	Y	Y	Y	5.2	15	1	N
Caladenia huegelii	T	Y	N	N	5.9	42	9	Y
Diuris drummondii	T	N	Y	N	9.4	53	1	N
Dodonaea hackettiana	P4	Y	Y	Y	1.5	31	15	Y
Eucalyptus foecunda subsp. *foecunda*	P4	Y	Y	Y	0.0	70	3	N
Jacksonia sericea	P4	Y	N	N	3.2	62	1	Y
Pimelea calcicola	P3	Y	Y	Y	3.3	31	2	Y
Sphaerolobium calcicola	P3	N	Y	Y	8.2	21	1	N

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

A.4. Fauna analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix E), and biological survey information, impacts to the following conservation significant fauna species required further consideration.

Species name	Conservation status	Suitable habitat features? [Y/N]	Distance of closest record to application area (km)	Number of records within local area	Most recent record within local area	Are surveys adequate to identify?
Calyptorhynchus banksii naso (forest red-tailed black cockatoo)	VU	Y	1.0	36	2020	Y
Zanda latirostris (Carnaby's cockatoo)	EN	Y	0.2	291	2018	Y
Falco peregrinus (Peregrine falcon)	OS	N	1.9	8	2011	NA
Isoodon fusciventer (Quenda, southwestern brown bandicoot)	P4	Y	0.3	648	2020	NA
Lerista lineata (Perth slider, lined skink)	P3	Y	1.5	18	2015	NA

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

* A further 21 records of Calyptorhynchus sp. 'white-tailed black cockatoo' (white-tailed black cockatoo) are present within the local area which are likely to comprise this species

A.5. Ecological community analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix E), and biological survey information, impacts to the following conservation significant ecological communities required further consideration.

Community name	Conservation status	Suitable habitat features?	Suitable vegetation type?	Suitable soil type?	Distance of closest record to application area (km)	Number of known records in local area	Are surveys adequate to identify?
Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain	P3	Y	Y	Y	0.7	134	Y

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

A.6. Land degradation risk table

Risk categories	*Land Unit 1*
Wind erosion	M2: 30-50% of the map unit has a high to extreme hazard
Water erosion	L1: <3% of the map unit has a very high to extreme hazard
Salinity	L1: <3% of the map unit has a moderate or high hazard or is presently saline
Subsurface Acidification	L1: <3% of the map unit has a high susceptibility
Flood risk	L1: <3% of the map unit has a moderate to high hazard
Water logging	L1: <3% of the map unit has a moderate to very high to risk
Phosphorus export risk	L1: <3% of the map unit has a high to extreme hazard

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		

Assessment against the clearing principles	Variance level	Is further consideration required?
Principle (a): *"Native vegetation should not be cleared if it comprises a high level of biodiversity."* Assessment: The areas proposed to be cleared are not likely to contain significant flora, fauna or habitat for fauna. While the application area incudes a small patch of the tuart PEC, noting it is an isolated patch of vegetation in Degraded condition, impacts to the conservation status of this PEC is considered minimal.	Not likely to be at variance	Yes Refer to Sections 3.2.1 and 3.2.2 above
Principle (b): *"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."* Assessment: Based on the above assessment, the proposed clearing is unlikely to impact significant breeding, roosting or foraging habitat for black cockatoo species, or habitat for other conservation significant fauna species.	Not likely to be at variance	Yes Refer to Section 3.2.1
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: The areas proposed to be cleared are unlikely to contain flora species listed under the BC Act.	Not likely to be at variance	Yes Refer to Section 3.2.2, above.
Principle (d): *"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."* Assessment: The areas proposed to be cleared contain vegetation species consistent with the *Tuart (Eucalyptus gomphocephala)* woodlands and forests of the Swan Coastal Plain EPBC Act listed threatened ecological community, however does not meet other criteria so as to be considered an occurrence of this community.	Not likely to be at variance	Yes Refer to Section 3.2.2, above.
Environmental value: significant remnant vegetation and conservation areas		
Principle (e): *"Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."* Assessment: 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 prior to the year 1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001). The extents of the mapped vegetation types and native vegetation in the local area are consistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.	Not likely to be at variance	No
Principle (h): *"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."* Assessment: 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.	Not likely to be at variance	No
Environmental value: land and water resources		

Assessment against the clearing principles	Variance level	Is further consideration required?
Principle (f): *"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."* Assessment: No wetlands or watercourses are located within the areas proposed to be cleared and the vegetation present is not consistent with riparian vegetation.	Not likely to be at variance	No
Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."* Assessment: The mapped soils are moderately susceptible to wind erosion. Noting the extent of the areas proposed to be cleared and the condition of the vegetation, the proposed clearing is not likely to have an appreciable impact on land degradation.	Not likely to be at variance	No
Principle (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."* Assessment: Given the distance to the nearest surface waterbodies and the extent of the clearing, the proposed clearing is unlikely to impact surface or ground water quality.	Not likely to be at variance	No
Principle (j): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."* Assessment: 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. Given the distance to the nearest waterbodies, the proposed clearing is unlikely to contribute to waterlogging.	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. 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 (1994).

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.

Condition	Description
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 and photographs

Figure 5: Vegetation type

Figure D-1 – Vegetation types present within the areas proposed to be cleared (Strategen, 2022)

Figure 6: Vegetation condition

Figure D-2 – Vegetation types present within the areas proposed to be cleared (Strategen, 2022)

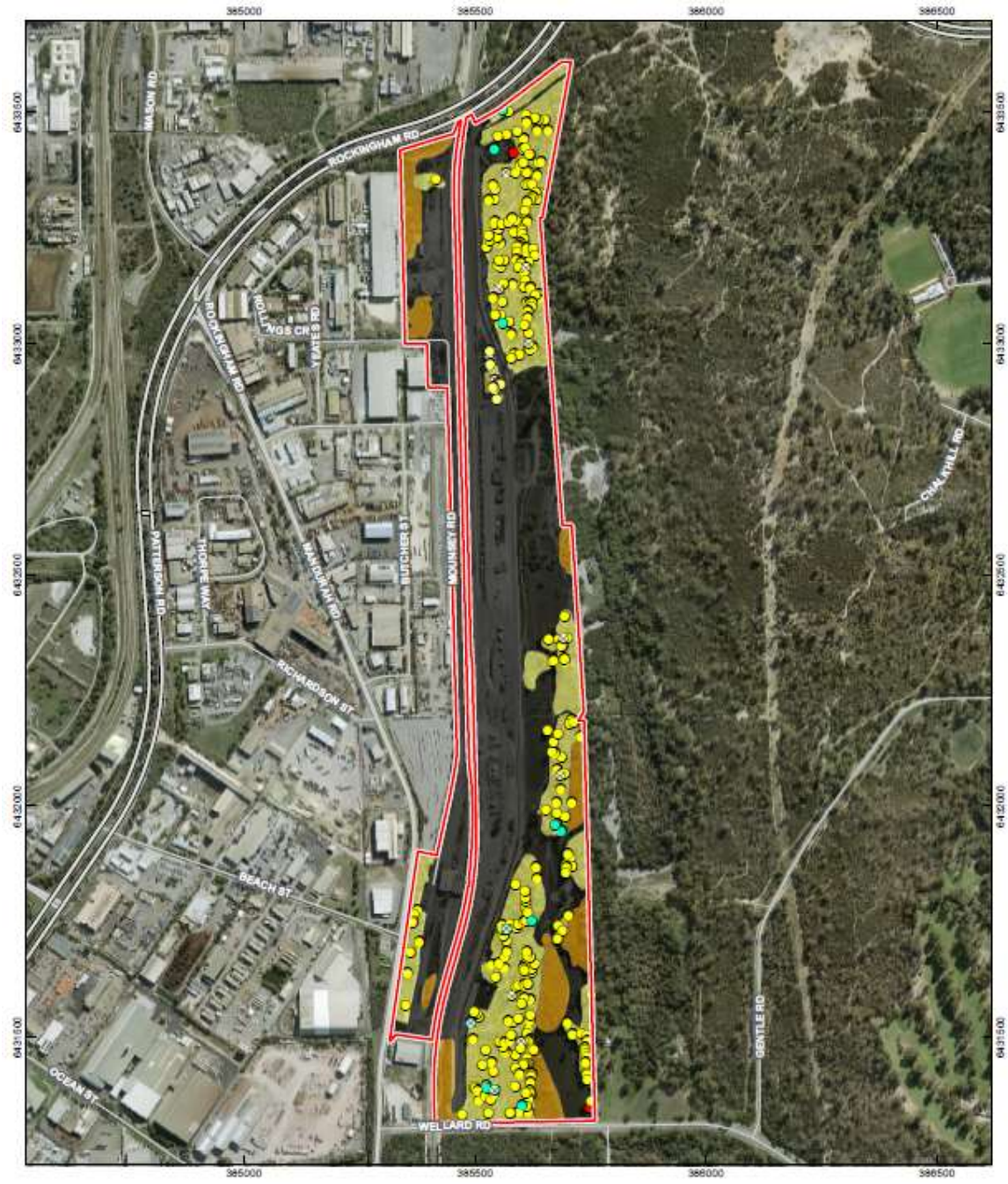


Figure 8: Black cockatoo habitat

Figure D-3 – Black cockatoo habitat present within the areas proposed to be cleared (Strategen, 2022)

Excellent	High density of species suitable for foraging by black cockatoos (i.e. foliage cover of suitable species >60%) and presence of food sources at several strata (i.e. canopy, midstorey and understorey).
Good	High density of species suitable for foraging by black cockatoos (i.e. foliage cover of suitable species >60%) but food sources only present at one or two strata (i.e. canopy and midstorey).
Moderate	Moderate foraging value density of species suitable for foraging by black cockatoos (i.e. foliage cover of suitable species 20-40%) and food sources only present at one or two strata (i.e., canopy and midstorey).
Poor	Low density of species suitable for foraging by black cockatoos (i.e. foliage cover of suitable species 10 - 20%) and presence of food sources at only one stratum (i.e. canopy).
Very Poor	Very low density of species suitable for foraging by black cockatoos (i.e. foliage cover of suitable species < 10%) and presence of food sources at only one stratum (i.e. canopy).
Nil	Cleared areas - no suitable vegetation present.

Figure D-4 – Definitions of black cockatoo foraging habitat quality within the areas proposed to be cleared (Strategen, 2022)

Figure D-5 – Vegetation in northernmost application area (note large tree to left of railway is not within application area) (Aurizon, 2022)

Figure D-6 – Vegetation in northernmost application area (Aurizon, 2022)

Figure D-7 – Vegetation in one of the southern application areas (Aurizon, 2022)

Figure D-8 – Vegetation in one of the southern application areas (Aurizon, 2022)

Appendix E. Sources of information

E.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
- Wheatbelt Wetlands Stage 1 (DBCA-021)

Restricted GIS Databases used:

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

E.2. References

Australia Western Railroad Pty Ltd (2022). *Clearing permit application CPS 9807/1*, received 12 July 2022 (DWER Ref: DWERDT630144).

Aurizon (2022). *Photographs of vegetation within CPS 9807/1 application area*, received 23 September 2022 (DWER ref: DWERDT664339).

Australian Museum (2020). Peregrine Falcon. Government of New South Wales. Available at: https://australianmuseum.net.au/learn/animals/birds/peregrine-falcon/.

Bush, B., Maryan, B., Browne-Cooper, R. and Robinson, D. (1995). *A Guide to the Reptiles and Frogs of the Perth Region.* University of Western Australia Press.

City of Kwinana (2022) *Advice for clearing permit application CPS 9807/1*, received 12 September 2022 (DWER Ref: DWERDT657728).

Commonwealth of Australia (2001) *National Objectives and Targets for Biodiversity Conservation 2001-2005*, Canberra.

Del Marco, A., Taylor, R., Clarke, K., Savage, K., Cullity, J. and Miles, C. (2004). *Local Government Biodiversity Planning Guidelines for the Perth Metropolitan Region.* Western Australian Local Government Association and Perth Biodiversity Project, Perth.

Department of Agriculture, Water and the Environment (DAWE) (2022). *Referral guideline for 3 WA threatened black cockatoo species: Carnaby's Cockatoo, Baudin's Cockatoo and the Forest Red-tailed Black cockatoo.* Department of Agriculture, Water and the Environment, Canberra, February

Department of Environment and Conservation (DEC) (2012). *Fauna profiles - Quenda* Isoodon obesulus *(Shaw, 1797).* Department of Environment and Conservation, Western Australia.

Department of Environment Regulation (DER) (2013). *A guide to the assessment of applications to clear native vegetation*. Perth. Available from: https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf.

Department of Primary Industries and Regional Development (DPIRD) (2022). *NRInfo Digital Mapping. Department of Primary Industries and Regional Development.* Government of Western Australia. URL: https://maps.agric.wa.gov.au/nrm-info/ (accessed 25 August 2022).

Department of Water and Environmental Regulation (DWER) (2019). *Procedure: Native vegetation clearing permits*. Joondalup. Available from: https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits_v1.PDF.

Department of Water and Environmental Regulation (DWER) (Contaminated Sites) (2022). *Contaminated Sites branch advice for clearing permit application CPS 9807/1*, received 8 September 2022 (DWER Ref: DWERDT656132).

Environmental Protection Authority (EPA) (2016). *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment*. Available from: http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey_Dec13.pdf.

Environmental Protection Authority (EPA) (2016). *Technical Guidance – Terrestrial Fauna Surveys.* Available from: https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/Tech%20guidance-%20Terrestrial%20Fauna%20Surveys-Dec-2016.pdf.

Government of Western Australia (2019) *2018 South West Vegetation Complex Statistics. Current as of March 2019*. WA Department of Biodiversity, Conservation and Attractions, Perth, https://catalogue.data.wa.gov.au/dataset/dbca

Government of Western Australia. (2019) *2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019.* WA Department of Biodiversity, Conservation and Attractions. https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics

Groom, C. (2011). *Plants used by Carnaby's Black Cockatoo.* Department of Environment and Conservation, Perth.

Heddle, 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.

Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68) *Atlas of Australian Soils*, Sheets 1 to 10, with explanatory data. CSIRO and Melbourne University Press: Melbourne.

Schoknecht, N., Tille, P. and Purdie, B. (2004) *Soil-landscape mapping in South-Western Australia – Overview of Methodology and output*s Resource Management Technical Report No. 280. Department of Agriculture.

Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) *Native Vegetation in Western Australia, Extent, Type and Status*. Resource Management Technical Report 249. Department of Agriculture, Western Australia.

Western Australian Herbarium (1998-). *FloraBase - the Western Australian Flora*. Department of Biodiversity, Conservation and Attractions, Western Australia. https://florabase.dpaw.wa.gov.au/ (Accessed 25 August 2022)