



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 9267/1
Permit Holder:	City of Wanneroo
Duration of Permit:	From 23 July 2021 to 23 July 2026

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 an access road, sand mining and an industrial development.

2. Land on which clearing is to be done

Mather Drive Road Reserve (PIN 11800514), Neerabup

3. Clearing authorised

The permit holder must not clear more than 1.15 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:

- (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.

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.

PART III - RECORD KEEPING AND REPORTING

6. 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	<ol 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);(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 weeds and dieback in accordance with condition 5.

7. Reporting

The permit holder must provide to the *CEO* the records required under condition 6 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.
fill	means material used to increase the ground level, or to fill a depression.
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)
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



Meenu Vitarana

A/MANAGER

NATIVE VEGETATION REGULATION

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

30 June 2021

Schedule 1

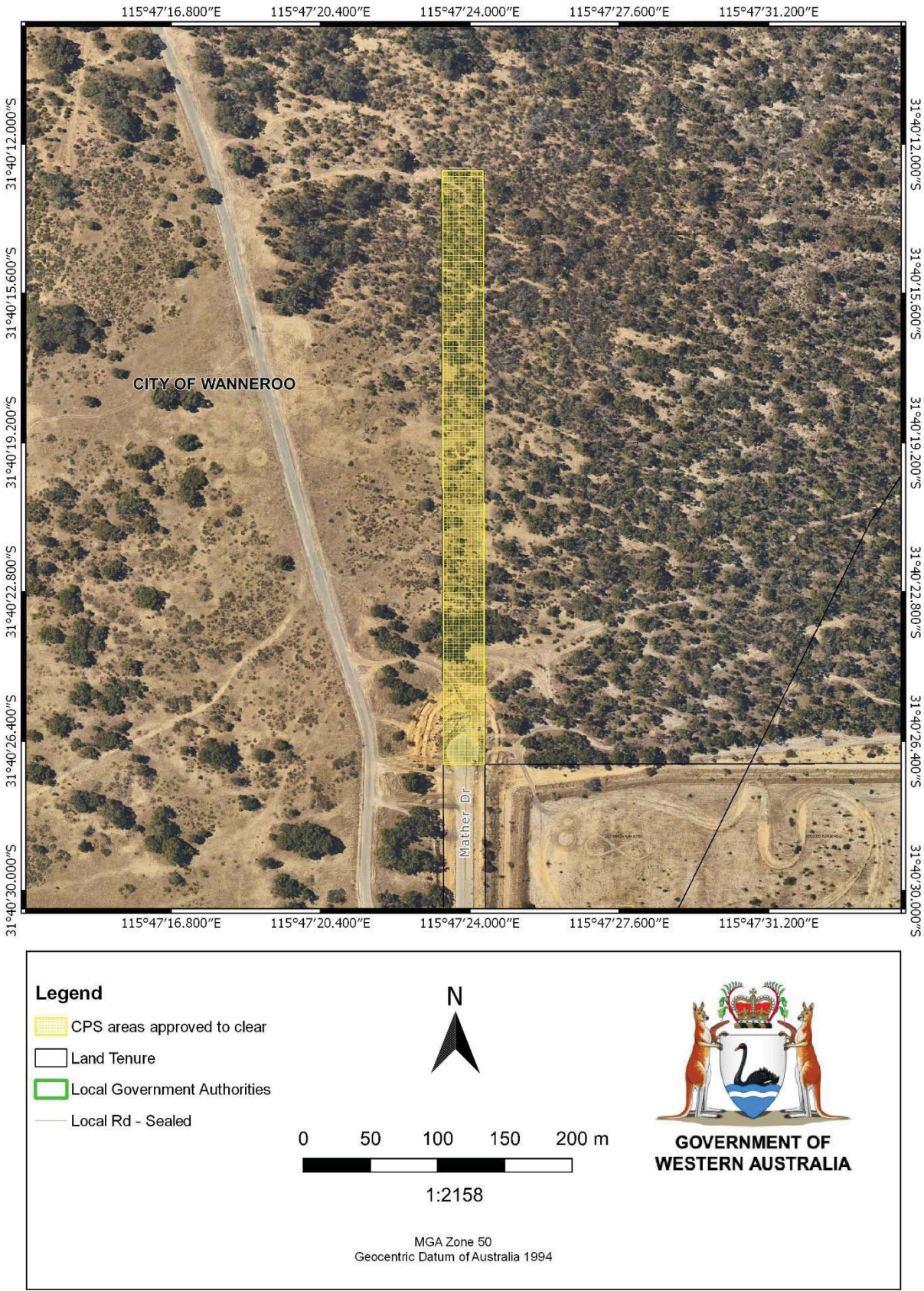


Figure 1: Map of the boundary of the area within which clearing may occur



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 9267/1
Permit type:	Purpose permit
Applicant name:	City of Wanneroo
Application received:	16 April 2021
Application area:	1.15 hectares of native vegetation
Purpose of clearing:	Access road, sand mining, final use industrial development
Method of clearing:	Mechanical
Property:	Mather Drive Road Reserve (PIN 11800514)
Location (LGA area/s):	City of Wanneroo
Localities (suburb/s):	Neerabup

1.2. Description of clearing activities

The vegetation proposed to be cleared is contained within a single contiguous area approximately 442 metres long and 26 metres wide (see Figure 1, Section 1.5). The application area will be initially used for the purpose of vehicle access into Lot 9003, after which it will be mined for sand and levelled out such the land will eventually become part of the Neerabup Industrial Area.

1.3. Decision on application

Decision:	Granted
Decision date:	30 June 2021
Decision area:	1.15 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 one submission was received. Consideration of matters raised in the public submission is summarised in Appendix A.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix B), relevant datasets (see Appendix F), the findings of flora and fauna surveys (see Appendix E) 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 will result in:

- impacts to up to 1.15 hectares of vegetation that provides significant foraging habitat for Carnaby's cockatoo;

- impacts to vegetation that may provide non-significant habitat for other threatened, priority and other specially protected fauna species;
- impacts to up to 1.15 hectares of vegetation that may be consistent with the EBPC Act listed Banksia TEC and BC Act listed Banksia PEC.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined that impacts of the proposed clearing can be minimised and managed to be unlikely to lead to an unacceptable risk to environmental values. The applicant has suitably demonstrated avoidance and minimisation measures, and offsets provided under other approvals suitably counterbalance the impacts to Carnaby's cockatoo foraging habitat and the Banksia TEC (see Section 4).

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

- Avoid and 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 map

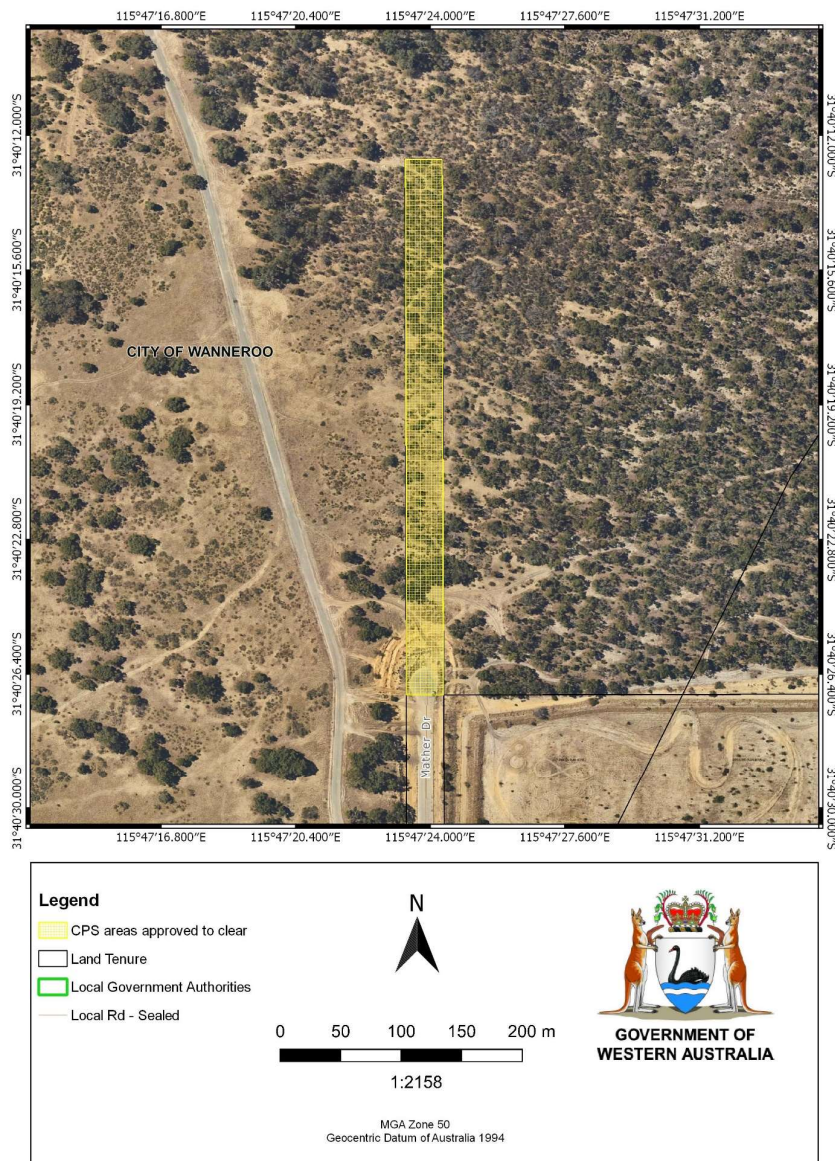


Figure 1 - Map of the application area. The area crosshatched yellow indicates the area authorised to be cleared under the granted clearing permit.

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 principle of intergenerational equity
- the polluter pays principle
- 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)

Relevant policies considered during the assessment include:

- *Environmental Offsets Policy* (2011)

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)
- *Environmental Offsets Guidelines* (August 2014)
- 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 avoidance of clearing:

- The application area is being prepared as an Industrial Area and there are no alternatives to avoid or minimise the amount of clearing that will occur. This area is surrounded by an area that will be completely cleared and approved by both DWER (CPS 6359/3) and the Commonwealth Department of Agriculture, Water and the Environment (EPBC 2017/3479).

It is noted that an area encompassing the proposed clearing was approved by the Commonwealth Department of the Environment (now Department of Agriculture, Water and the Environment) subject to conditions on 2 June 2014 (EPBC 2017/3479), including:

- The implementation of a Construction Environmental Management Plan (City of Wanneroo, 2020) which includes the following mitigation measures:
 - Collection and reuse of topsoil, mulched cleared vegetation, seed and woody debris where appropriate;
 - Use of a qualified fauna handler during all site activities and if native animals are at risk of being impacted, halt construction until fauna have moved on or are removed by a qualified fauna handler;
 - Weed and dieback management measures; and
 - Erosion management measures.
- Provision of funds to the Department of Parks and Wildlife (now Department of Biodiversity of Conservation and Attractions) for the acquisition of a 492 ha offset property in the vicinity of Gingin ("Gingin site") (as per the most recent variation to the approval in June 2019);
- The development and approval of a Conservation Area Management Plan for one 50.03 hectare area adjoining the development ("Conservation Area") and one 4.04 hectare area in Wanneroo ("Mary Street site") (as per the most recent variation to the approval in June 2019).

In May 2017, DWER granted permit 6359/3, approving the clearing of a 156.156 hectare area adjacent to the CPS 9267/1 application area, which conditioned:

- the provision of funds to DPAW for the Gingin site conditioned in the EPBC approval (Condition 8);
- giving of conservation covenants for the protection and management of the vegetation in perpetuity for the Conservation Area and Mary Street sites conditioned in the EPBC approval (Conditions 6 and 7).

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 Appendix C) identified that the risk of impacts of the proposed clearing from biological values (fauna and flora) and land resources. 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: Vegetation within the application area (*Eucalyptus marginata*, *Banksia attenuata* and *Allocasuarina fraseriana* woodland) is likely to provide foraging habitat for threatened black cockatoo species *Calyptorhynchus latirostris* (Carnaby's cockatoo), *Calyptorhynchus banksii naso* (Forest red-tailed black cockatoo) and *Calyptorhynchus baudinii* (Baudin's cockatoo) recorded within the local area (Valentine and Stock, 2008 and DSEWPC, 2012). Black cockatoos may forage within 20 kilometres of a night roost site and 12 kilometres from a breeding site (DotEE, 2017), and there are 84 known night roost sites within a 20 kilometre radius and 17 known white tailed black cockatoo breeding locations within a 12 kilometre radius of the application area. The application area is also within the known range of Carnaby's cockatoo, although not within the known range of Baudin's cockatoo or the forest red-tailed black cockatoo. Given the above, it is considered likely that Carnaby's cockatoo would forage upon vegetation within the application area, and possible that the forest red-tailed black cockatoo and Baudin's cockatoo may also utilise vegetation for foraging. Although identified to be of "poor" quality (Natural Area Management, 2021c), the clearing of 1.15 hectares of this vegetation type is still considered likely to have a significant impact upon Carnaby's cockatoo in the context of vegetation remaining within the highly cleared Swan Coastal Plain. Refer to Section 4 for discussion regarding offsets to mitigate these impacts.

No trees with hollows suitable for black cockatoo breeding are present within the application area (Terrestrial Ecosystems, 2018) and as such the proposed clearing is not likely to impact the availability of black cockatoo breeding habitat. While some trees within the application area may be of sufficient size to provide roosting habitat for black cockatoo species, given the lack of suitable habitat trees and the extent of the application area, it is considered unlikely that the application area would provide significant roosting habitat for black cockatoos.

The threatened bee species *Hesperocolletes douglasi* (Douglas's broad-headed bee) was recorded in a survey undertaken in 2015 in an area of almost pristine Banksia Woodland approximately 9.6 kilometres from the application area (Arnold, Murphy, Didham and Houston, 2019). Based on the outcomes of the survey, it was concluded that without further successful collections it cannot yet be claimed that Banksia Woodland is definitive habitat for *H. douglasi*, and that the species may be a generalist forager since it was carrying pollen from a diverse set of plant species (Pille Arnold, Murphy, Didham and Houston, 2019). While *H. douglasi* could use vegetation within the application area as habitat, given the largely Degraded condition of the vegetation, the extent of the application area, presence of other Banksia woodlands in the local area, and that the bee may not even be restricted to Banksia woodlands, the proposed clearing is therefore unlikely to significantly impact habitat for *H. douglasi*.

One record of the threatened *Dasyurus geoffroi* (chuditch, western quoll) is present within the local area, however it is noted that this record is a fossil, and that chuditch have not been recorded in much of the Swan Coastal Plain since the 1930s (Department of Environment and Conservation, 2012a). As such, while vegetation may provide suitable habitat for the chuditch, it is unlikely that chuditch would actually utilise the application area, and the proposed clearing is considered unlikely to significantly impact this species.

The application area may also provide suitable habitat for the following priority and other specially protected species:

- *Austrosaga spinifer* (spiny katydid (Swan Coastal Plain));
 - Habitat - Known to hide in shrubs and sing at night (Rentz, 1993)
- *Hylaeus globuliferus* (woolybush bee);
 - Habitat - Associated with *Banksia attenuata*, amongst other native plants (Houston 2018)
- *Idiosoma sigillatum* (Swan Coastal Plain shield-backed trapdoor spider);
 - Habitat - Burrows of this species usually occur in Banksia woodland and heathland on sandy soils (Rix et al, 2018);

- *Isoodon fusciventer* (Quenda, southwestern brown bandicoot):
 - Habitat: Scrubby, swampy vegetation with low, dense understorey, located nearby water courses, pasture, or forest/woodland (Department of Environment and Conservation, 2012b);
- *Neelaps calonotos* (Black-striped snake, black-striped burrowing snake)
 - Habitat: On dunes and sand-plains vegetated with heaths and Eucalypt/Banksia woodlands, where it shelters in the upper layers of loose soil beneath leaf litter at the base of trees and shrubs (Wilson and Swan, 2008).
- *Notamacropus irma* (Western brush wallaby)
 - Habitat: A range of habitats, including open forest and woodland, mallee, heathland, low open grasses and scrubby thickets, but favour open grassy areas and are absent in forests where dense understorey is present (IUCN Red List, 2018).
- *Synemon gratiosa* (graceful sunmoth):
 - Habitat: Sedgeland, heathlands, woodlands and sometimes in open parts of the forest where their 'foodplants' are found. Breeds on two species of Lomandra mat-rushes (*L. maritima* and *L. hermaphrodita*) (Department of Environment and Conservation, 2011).
- *Falco peregrinus* (peregrine falcon):
 - Habitat: 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 (Australian Museum, 2019).

Given the vegetation within the application area is largely Degraded, the extent of the application area, and the presence of other remnant native vegetation in the local area and adjacent to the proposed Neerabup Industrial Area, the proposed clearing is unlikely to have a significant impact upon these species.

Conclusion: Based on the above assessment, the proposed clearing will result in impacts to up to 1.15 hectares of foraging habitat for Carnaby's cockatoo (refer to Section 4 for further details). It is considered that these impacts can be managed by the application of a suitable offset.

While the application area may also provide habitat for other threatened, priority and other specially protected fauna species, the proposed clearing is not likely to have significant impacts upon these species.

Conditions: No conditions required.

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

Assessment: The application area may provide suitable habitat for the threatened flora species *Caladenia huegellii*, as well as other priority flora species (refer to Table B.3, Appendix B) (Western Australian Herbarium, 1998-). However, while these species were identified in as present within the local area in a desktop assessment conducted as part of a flora survey conducted within the application area (Natural Area Consulting Management Services, 2021a) they were not recorded in the associated field survey. Given this, and the largely Degraded condition of the application present within the application area, it is considered unlikely that the proposed clearing would impact upon these species.

The flora survey (Natural Area Consulting Management Services, 2021) identified the presence of vegetation consistent with community SCP 28 within the application area, which is part of the "Supergroup 4 – Uplands centred on Spearwood and Quindalup Dunes" identified within the Approved Conservation Advice for the Banksia Woodlands of the Swan Coastal Plain ecological community (Banksia TEC) listed as Threatened under the EPBC Act (Department of the Environment and Energy (2016)). While an assessment of vegetation within the application area has not been compared with all the key diagnostic characteristics for the Banksia TEC (as per Section 2.2 of the Approved Conservation Advice), given the description of the vegetation, the vegetation present within the application area may be consistent with Banksia TEC vegetation, and therefore also the BC Act listed priority ecological community of the same name. It is noted that while the Environmental Impact Assessment provided to support this application (Natural Area Consulting Management Services, 2021b) states that the Mather Drive Road Reserve does not meet the condition and patch size to be considered a TEC, when considering the vegetation surrounding the application area, the application area may fall within a larger patch of the TEC. Accordingly, the proposed clearing may impact up to 1.15 hectares of the EPBC Act listed Banksia TEC and BC Act listed Banksia TEC. Refer to Section 4 for discussion regarding offsets to mitigate these impacts.

It is noted that the application area falls within an area mapped as the Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain EPBC Act listed TEC and BC Act listed PEC. However, as no tuart trees were found in the flora survey conducted within the application area (Natural Area Consulting Management Services, 2021a), it is unlikely that this ecological community is present within the application area.

Conclusion: Based on the above assessment, the proposed clearing may result in impacts to up to 1.15 hectares of the EBPC Act listed Banksia TEC and BC Act listed Banksia PEC. It is considered that these impacts can be managed by the application of a suitable offset provided under other approvals (refer to Section 4 for further details).

The proposed clearing is not likely to have significant impacts upon other threatened or priority ecological communities or threatened or priority flora species.

Conditions: No conditions required.

3.2.3. Land resources - Clearing Principle (g)

Assessment: Soils within the application area are identified as having a high risk of wind erosion. Advice received from the Commissioner of Soil and Land Conservation (2007) for a previous clearing permit application over the area states "the soils are potentially erodible and clearing the large area is likely to cause wind erosion", although noting that the Commissioner was referring to a much larger area encompassing the application area.

As a condition of their EPBC Approval encompassing the proposed clearing (EPBC 2017/8053), the applicant is required to implement a Construction Environmental Management Plan during which includes the following measures to mitigate impacts from erosion:

- Earthwork slopes and batters that are subject to water run off or wind erosion are to be stabilised as soon as practicable after completion. Stabilisation must occur within seven days and may include hydromulch or another similar stabilisation technique as a temporary measure, but batters and slopes should ultimately be stabilised with mulch and vegetation or hard landscaping;
- Water trucks are to water down unsealed roads during operation to reduce dust lift;
- Water trucks are to be available at all times during operation to water the site on the observation of dust lift;
- Implementation of a dust monitoring program.

Given the above and noting the extent of the proposed clearing, the proposed clearing is unlikely to result in significant land degradation from wind erosion.

Conclusion: Based on the above assessment, the proposed clearing is not likely to result in land degradation impacts from wind erosion.

Conditions: No conditions required.

3.3. Relevant planning instruments and other matters

Other relevant authorisations required for the proposed land use include:

- Approval under the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act)

The proposed clearing was referred to the Commonwealth Department of the Environment (DotE)(EPBC 2007/3479) included under the broader Meridian Business Park Industrial development, and it was determined that the clearing was a 'controlled action' due to its potential impacts to Carnaby's black cockatoos. The DotE approved the 'controlled action' on 2 July 2014 subject to conditions (refer to Section 3.1 for further details).

No Aboriginal sites of significance have been mapped 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.

4 Suitability of offsets

Residual impacts from proposed clearing

Through the detailed assessment outlined in Section 3.2 above, the Delegated Officer has determined that the clearing will have the following significant residual impacts:

- 1.15 hectares of vegetation providing foraging habitat for Carnaby's cockatoo; and
- 1.15 hectares of vegetation possibly consistent with the EBPC Act listed Banksia Woodlands of the Swan Coastal Plain TEC (Banksia TEC).

Existing offsets – Carnaby's foraging habitat

It is noted that an area encompassing the proposed clearing for the Meridian Business Park Industrial development was approved by the Commonwealth Department of the Environment (now Department of Agriculture, Water and the Environment), subject to conditions to offset impacts to Carnaby's cockatoo foraging habitat, on 2 June 2014 (EPBC 2017/3479), including:

- Provision of funds to the Department of Parks and Wildlife (now Department of Biodiversity of Conservation and Attractions) for the acquisition of a 492 ha offset property in the vicinity of Gingin ("Gingin site") (as per the most recent variation to the approval in June 2019);
- The development and approval of a Conservation Area Management Plan for one 50.03 hectare area adjoining the development ("Conservation Area") and one 4.04 hectare area in Wanneroo ("Mary Street site") (as per the most recent variation to the approval in June 2019).

In May 2017, DWER granted permit 6359/3, approving the clearing of a 156.156 hectare area adjacent to the CPS 9267/1 application area, which conditioned the following to offset impacts to Carnaby's cockatoo foraging habitat:

- the provision of funds to DPAW for the Gingin site conditioned in the EPBC approval (Condition 8);
- giving of conservation covenants for the protection and management of the vegetation in perpetuity for the Conservation Area and Mary Street sites conditioned in the EPBC approval (Conditions 6 and 7).

Accordingly, the Delegated Officer determined that an offset to counterbalance the significant residual impacts to black cockatoo foraging habitat had already been taken into consideration and provided for in the offsets required under CPS 6359/3 and EPBC approval EPBC 2017/3479.

Existing offsets – Banksia TEC

The EPBC approval and CPS 6359/3 did not consider the presence of the EPBC Act listed Banksia TEC within the application area, and as such offsets for the TEC present within the application area were not considered under these assessments. However, it is noted that vegetation in the adjacent Conservation Area site for which the City of Wanneroo has given a conservation covenant as part of CPS 6359/3 and EPBC approval EPBC 2017/3479 consists of "Open Forest to Woodland of *Allocasuarina fraseriana* and *Eucalyptus marginata* over Low Woodland to Low Open Woodland of *Banksia menzeisii* and *Banksia attenuata* over *Xanthorrhoea preissii* and *Stirlingia latifolia* Shrubland over *Hibbertia hypericoides*, *Eremaea pauciflora* var. *pauciflora* and *Bossiaea eriocarpa* Low Shrubland over *Mesomelaena pseudostygia*, *Hyalosperma cotula* and *Podotheca gnaphalioides* Open Sedge/Herbland" in mostly Very Good to Excellent (Keighery, 1994) condition (Terratree, 2016). This vegetation, similar but in better quality to that present within the application area, is considered to be representative of the Banksia TEC (Terratree, 2016). As such, it is considered that the offset provided for in the EPBC approval and CPS 6359/3 is also sufficient to counterbalance the significant residual impacts to the Banksia TEC resulting from the proposed clearing of the application area.

End

Appendix A. Details of public submissions

One submission was received regarding the proposed clearing and is summarised below.

Summary of comments	Consideration of comment
The submitter considers that the Environmental Impact Assessment supporting the application incorrectly concludes that the Banksia Woodland TEC is not impacted by the proposed clearing. This is because the survey identifies the presence of vegetation community SCP 28, which is part of the "Supergroup 4 – Uplands centred on Spearwood and Quindalup Dunes" identified within the Approved Conservation advice for the Banksia Woodland TEC.	DWER notes that the vegetation present within the application area may be consistent with Banksia TEC vegetation (refer to Section 3.2.2 for further details).
The offset package approved under the EPBC licence (2007/3479) was formulated prior to the Banksia Woodlands being listed under the EPBC Act as a TEC in 2016. The offset package was to compensate for loss of Carnaby's cockatoo foraging habitat. While this habitat may also be part of the Banksia Woodland TEC, it is unlikely to be "like for like", which should be the case for offsetting residual impacts to the Banksia Woodland TEC. Therefore the offset packages for CPS 6359/1 should be also reassessed.	It is noted that the assessments for EPBC licence 2007/3479 and CPS 6359/3 (the most recent amendment of CPS 6359/1) did not consider the presence of the Banksia TEC and did not require an offset for this TEC. While the offset package for CPS 6359/3 cannot be changed, DWER has factored the likely presence of this TEC within the proposed clearing area under this application into its assessment and the offset required (refer to Section 4 for more details).

Appendix B. Site characteristics

B.1. Site characteristics

Characteristic	Details
Local context	<p>The area proposed to be cleared is part of an approximately 77 hectare patch of native vegetation that is separated from surrounding native vegetation by tracks and roads. This 77 hectare patch of vegetation falls within an area approved to be cleared under clearing permit CPS 6359/3. The application area is surrounded by native vegetation to the west, north and east, and to Mather Road reserve to the south. The application is in the intensive land use zone of Western Australia.</p> <p>Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 34 per cent of the original native vegetation cover.</p>
Ecological linkage	<p>Bush Forever areas mapped as conceptual linkages within the Gngangara Mound Ecological Linkages framework are located approximately 1.1 km northwest, 1.1 km south and 1.2 km northeast of the application area.</p> <p>The application area is part of a larger area of vegetation that may act as an ecological linkage, however the application area is not an integral part of this linkage, it is noted that this larger area of vegetation is authorised to be cleared under clearing permit CPS 6359/3 as part of the Neerabup Industrial Area development.</p>
Conservation areas	<p>The closest area of DBCA managed land to the application area is the Gngangara-Moore River State Forest located approximately 1 km northeast of the application area. The closest Bush Forever area to the application area (Site 428, State Forest 65 - Pinjar Plantation South Bushland (10), Nowergup/ Yanchep/ Neerabup) is located approximately 630 m northeast of the application area.</p>
Vegetation description	<p>A vegetation survey (Natural Area Consulting Management Services, 2021a) indicates the vegetation within the proposed clearing area consists of <i>Eucalyptus marginata</i>, <i>Banksia attenuata</i> and <i>Allocasuarina fraseriana</i> woodland over <i>Hibbertia hypericoides</i>, <i>Xanthorrhoea preissii</i> and mixed shrubland. Understorey species comprised of <i>Mesomelaena pseudostygia</i>, mixed native herbs and sedges with weedy</p>

Characteristic	Details
	<p>grasses present in more disturbed areas. Representative photos are available in Appendix E.</p> <p>This is partially consistent with the mapped vegetation type:</p> <ul style="list-style-type: none"> Cottesloe Complex-Central and South (52), which is described as 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 (Heddle et. al. 1980). <p>The mapped vegetation type retains approximately 32 per cent of the original extent (Government of Western Australia, 2019b).</p>
Vegetation condition	<p>A vegetation survey (Natural Area Consulting Management Services, 2021a) indicates the vegetation within the proposed clearing area is in Good, Degraded and Completely Degraded (Keighery, 1994) condition, described as:</p> <ul style="list-style-type: none"> 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. <p>The full Keighery (1994) condition rating scale is provided in Appendix D. Vegetation condition mapping is available in Appendix E.</p>
Climate and landform	<p>Rainfall: 800 mm</p> <p>Evapotranspiration: 700 mm</p>
Topography	<p>Elevation within the application area falls from 79 m AHD in the northwest to 70 m AHD in the south.</p>
Soil description	<p>The soil is mapped as Karrakatta Sand Yellow Phase (211Sp_Ky), described as Low hilly to gently undulating terrain. Yellow sand over limestone at 1-2 m. <i>Banksia</i> spp. woodland with scattered emergent <i>E. gomphocephala</i> and <i>E. marginata</i> and a dense shrub layer.</p>
Land degradation risk	<ul style="list-style-type: none"> Flood risk - <3% of the map unit has a moderate to high flood risk Salinity risk - <3% of map unit has a moderate to high salinity risk or is presently saline Phosphorus export risk - 3-10% of map unit has a high to extreme phosphorus export risk Subsurface acidification risk - >70% of map unit has a high subsurface acidification risk or is presently acid Water erosion risk – <3% of map unit has a high to extreme water erosion risk Wind erosion risk – >70% of map unit has a high to extreme wind erosion risk Waterlogging risk - <3% of map unit has a moderate to very high waterlogging risk
Waterbodies	<p>The closest mapped wetland to the application area is Lake Pinjar, a conservation category sumpland wetland, 1.4 km northeast.</p> <p>The closest mapped watercourse to the application area is 4.3 km northeast.</p>
Hydrogeography	<p>Hydrogeology: Surficial Sediments - Shallow Aquifers (sand, gravel lithology)</p> <p>Groundwater salinity: <500 mg/L TDS</p>

Characteristic	Details
	The application is within the Wanneroo Groundwater Area proclaimed under <i>the Rights in Water and Irrigation Act 1914</i> .
Flora	There are records of four threatened and 25 priority flora species within the local area, the closest of which is Priority 4 listed <i>Jacksonia sericea</i> , 2.4 km southwest from the application area.
Ecological communities	There are records of four threatened and nine priority ecological communities (or buffers from ecological communities) mapped within the local area, the closest of which is the Tuart (<i>Eucalyptus gomphocephala</i>) woodlands and forests of the Swan Coastal Plain Priority 4 Ecological Community mapped within the application area.
Fauna	There are records of 18 threatened, 12 priority flora, one conservation dependent, nine migratory and one other specially protected fauna species within the local area, the closest of which is Priority 4 listed <i>Notamacropus irma</i> (Western brush wallaby), 0.5 km south from the application area.

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					
Hedde vegetation complex 52 **	45,299.61	14,567.87	32.16	6,606.12	14.58
Local area					
10 km radius	31,438.78 (excluding ocean)	10,707.65	34.06	-	-

*Government of Western Australia (2019a)

**Government of Western Australia (2019b)

B.3. Flora analysis table

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

Species name	Conservation status	Suitable habitat features?	Suitable mapped vegetation type?	Suitable mapped soil type?	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify?
<i>Acacia benthamii</i>	P2	N	Y	Y	4.9	36	Y
<i>Austrostipa mundula</i>	P3	Y	Y	Y	8.7	15	Y
<i>Baeckea</i> sp. Limestone (N. Gibson & M.N. Lyons 1425)	P1	Y	Y	Y	6.1	20	Y
<i>Caladenia huegelii</i>	T	Y	N	N	8.9	41	Y
<i>Conostylis bracteata</i>	P3	Y	N	Y	6.3	17	Y

Species name	Conservation status	Suitable habitat features?	Suitable mapped vegetation type?	Suitable mapped soil type?	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify?
<i>Cyathochaeta teretifolia</i>	P3	N	N	N	3.7	39	Y
<i>Eucalyptus argutifolia</i>	T	N	Y	Y	2.5	44	Y
<i>Fabronia hampeana</i>	P2	N	Y	Y	6.0	7	Y
<i>Hibbertia leptotheca</i>	P3	N	Y	similar	9.4	37	Y
<i>Jacksonia gracillima</i>	P3	N	Y	similar	8.7	29	Y
<i>Jacksonia sericea</i>	P4	Y	Y	Y	2.4	58	Y
<i>Leucopogon</i> sp. Yanchep (M. Hislop 1986)	P3	Y	Y	similar	8.1	32	Y
<i>Marianthus paralius</i>	T	N	Y	Y	8.5	6	Y
<i>Melaleuca</i> sp. Wanneroo (G.J. Keighery 16705)	T	N	Y	Y	2.7	11	Y
<i>Pimelea calcicola</i>	P3	N	Y	Y	5.8	29	Y
<i>Poranthera moorokatta</i>	P2	Y	N	Y	2.6	8	Y
<i>Sarcozona bicarinata</i>	P3	Y	Y	Y	7.2	5	Y
<i>Stylidium maritimum</i>	P3	N	Y	Y	7.2	44	Y
<i>Stylidium paludicola</i>	P3	N	Y	Y	8.7	34	Y
<i>Styphelia filifolia</i>	P3	Y	N	Y	5.4	36	Y
<i>Thelymitra variegata</i>	P2	Y	N	Y	8.3	24	Y

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

B.4. Fauna analysis table

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

Species name	Conservation status	Suitable habitat features?	Most recent record in local area	Distance of closest record to application area (km)	Number of records in local area	Are surveys adequate to rule out presence?
<i>Austrosaga spinifer</i> (spiny katydid (Swan Coastal Plain))	P2	Y	1982	3.9	2	N
<i>Calyptorhynchus banksii naso</i> (Forest red-tailed black cockatoo)	VU	Y	2020	3.3	5	N
<i>Calyptorhynchus baudinii</i> (Baudin's cockatoo)	EN	Y	2009	5.5	4*	N
<i>Calyptorhynchus latirostris</i> (Carnaby's cockatoo)	EN	Y	2020	0.9	631*	N
<i>Dasyurus geoffroii</i> (chuditch, western quoll)	VU	Y	N/A (fossil)	7.4	1	N
<i>Falco peregrinus</i> (Peregrine falcon)	OS	Y	2013	3.1	9	N
<i>Hesperocolletes douglasi</i> (Douglas's broad-headed bee)	CR	Y	2015	9.6	1	N
<i>Hylaeus globuliferus</i> (woolybush bee)	P3	Y	1996	1.4	9	N
<i>Idiosoma sigillatum</i> (Swan Coastal Plain shield-backed trapdoor spider)	P3	Y	2000	6.1	4	N
<i>Isodon fusciventer</i> (Quenda, southwestern brown bandicoot)	P4	Y	2020	1.7	116	N
<i>Neelaps calonotos</i> (Black-striped snake, black-striped burrowing snake)	P3	Y	2017	6.6	13	N

Species name	Conservation status	Suitable habitat features?	Most recent record in local area	Distance of closest record to application area (km)	Number of records in local area	Are surveys adequate to rule out presence?
<i>Notamacropus irma</i> (Western brush wallaby)	P4	Y	2018	0.5	8	N
<i>Synemon gratiosa</i> (graceful sunmoth)	P4	Y	2019	1.4	49	N

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

* An additional 25 records of *Calyptrorhynchus* sp. 'white-tailed black cockatoo' (White-tailed black cockatoo) have been recorded within the local area which may comprise either of these species

B.5. Ecological community analysis table

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

Community name	Conservation status	Suitable vegetation type?	Suitable mapped soil type?	Distance of closest record to application area (km)	Number of known records in local area	Are surveys adequate to identify?
Acacia shrublands on taller dunes	Priority 3	N	Y	7.5	7	Y
Aquatic Root Mat Community Number 1 of Caves of the Swan Coastal Plain	Critically Endangered	N	Y	8.3	3	Y
<i>Banksia attenuata</i> woodlands over species rich dense shrublands (floristic community type 20a as originally described in Gibson et al. (1994))	Endangered	N	Y	0.3	3	Y
Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Priority 3	Y	Y	0.2	376	Y
<i>Banksia ilicifolia</i> woodlands	Priority 3	N	Y	1.9	5	Y
Coastal shrublands on shallow sands	Priority 3	N	Y	8.2	4	Y
<i>Melaleuca huegelii</i> - <i>Melaleuca systema</i> shrublands on limestone ridges (floristic community type 26a as originally described in Gibson et al. (1994))	Endangered	N	Y	0.6	22	Y
Northern Spearwood shrublands and woodlands	Priority 3	N	Y	2.6	14	Y
Southern <i>Eucalyptus gomphocephala</i> - <i>Agonis flexuosa</i> woodlands	Priority 3	N	Y	6.7	1	Y
Tuart (<i>Eucalyptus gomphocephala</i>) woodlands and forests of the Swan Coastal Plain	Priority 3	N	Y	0.0	104	Y

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> Vegetation within the area proposed to be cleared is not likely to contain locally or regionally significant flora, or higher diversity compared</p>	May be at variance	Yes Refer to Sections 3.2.1 and 3.2.2 above

Assessment against the clearing principles	Variance level	Is further consideration required?
to the local area, but may contain a priority ecological community listed under the BC Act (Banksia Woodlands of the Swan Coastal Plain) and foraging habitat for black cockatoo species.		
<p><u>Principle (b):</u> <i>“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.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared contains foraging habitat significant for black cockatoo species and may provide habitat for other conservation significant fauna species.</p>	At variance	Yes Refer to Section 3.2.1 above.
<p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared is unlikely to contain flora species listed under the BC Act.</p>	Not likely to be at variance	Yes Refer to Section 3.2.2 above
<p><u>Principle (d):</u> <i>“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.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared does not contain species indicative of a threatened ecological community listed under the BC Act.</p>	Not likely to be at variance	Yes Refer to Section 3.2.2 above
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> The extents of the mapped vegetation type 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 a critical 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> 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 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> No waterbodies are mapped within or near the application area and the vegetation present within the application area is not consistent with riparian vegetation.</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> The mapped soils are highly susceptible to wind erosion. Noting the extent / of the application area, the condition of the vegetation and management measures committed to by the applicant, the proposed clearing is not likely to have an appreciable impact on land degradation.</p>	Not likely to be at variance	Yes Refer to Section 3.2.3, above.

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (i):</u> "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."</p> <p><u>Assessment:</u> Given the distance to nearby waterbodies, the proposed clearing is unlikely to impact on surface water quality. Given the extent of the clearing and that no Public Drinking Water Sources Areas are recorded within the application area, the proposed clearing is unlikely to impact ground water quality.</p>	Not likely to be at variance	No
<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> 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.</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 (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.
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. Biological survey excerpts and photographs of the vegetation



Figure E-1 - *Eucalyptus marginata*, *Banksia menziesii* and *Banksia attenuata* woodland in application area (Natural Area Consulting Management Services, 2021)



Figure E-2 - *Banksia menziesii* woodland in application area (Natural Area Consulting Management Services, 2021)



Figure E-3 - *Banksia menziesii* and *Eucalyptus marginata* woodland in application area (Natural Area Consulting Management Services, 2021)



Figure E-4 – Vegetation condition mapping in application area (Natural Area Consulting Management Services, 2021)

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)
- Geomorphic Wetlands – Swan Coastal Plain (DBCA-019)
- 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)

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