



# Clearing Permit Decision Report

## 1 Application details and outcome

### 1.1. Permit application details

<b>Permit number:</b>	CPS 9407/1
<b>Permit type:</b>	Area permit
<b>Applicant name:</b>	Cooperative Bulk Handling Limited (hereafter referred to as CBH)
<b>Application received:</b>	25 August 2021
<b>Application area:</b>	0.033 hectares of native vegetation
<b>Purpose of clearing:</b>	Installing new power infrastructure
<b>Method of clearing:</b>	Mechanical removal
<b>Property:</b>	Lot 100 on Deposited Plan 419525
<b>Location (LGA area):</b>	Shire of Carnamah
<b>Localities (suburb):</b>	Carnamah

### 1.2. Description of clearing activities

The applicant proposes to clear up to 0.033 hectares of native vegetation distributed across two separate areas (see Figure 1, Section 1.5). The purpose of the clearing is to install a new power connection to associated accommodation facilities at the Carnamah Bulk Grain Terminal.

### 1.3. Decision on application

<b>Decision:</b>	Granted
<b>Decision date:</b>	12 November 2021
<b>Decision area:</b>	0.033 hectares of native vegetation, as depicted in Section 1.5, below.

### 1.4. Reasons for decision

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

In making this decision, the Delegated Officer had regard for the site characteristics (see 0), relevant datasets (see Appendix E.1), the clearing principles set out in Schedule 5 of the EP Act (see 0), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3).

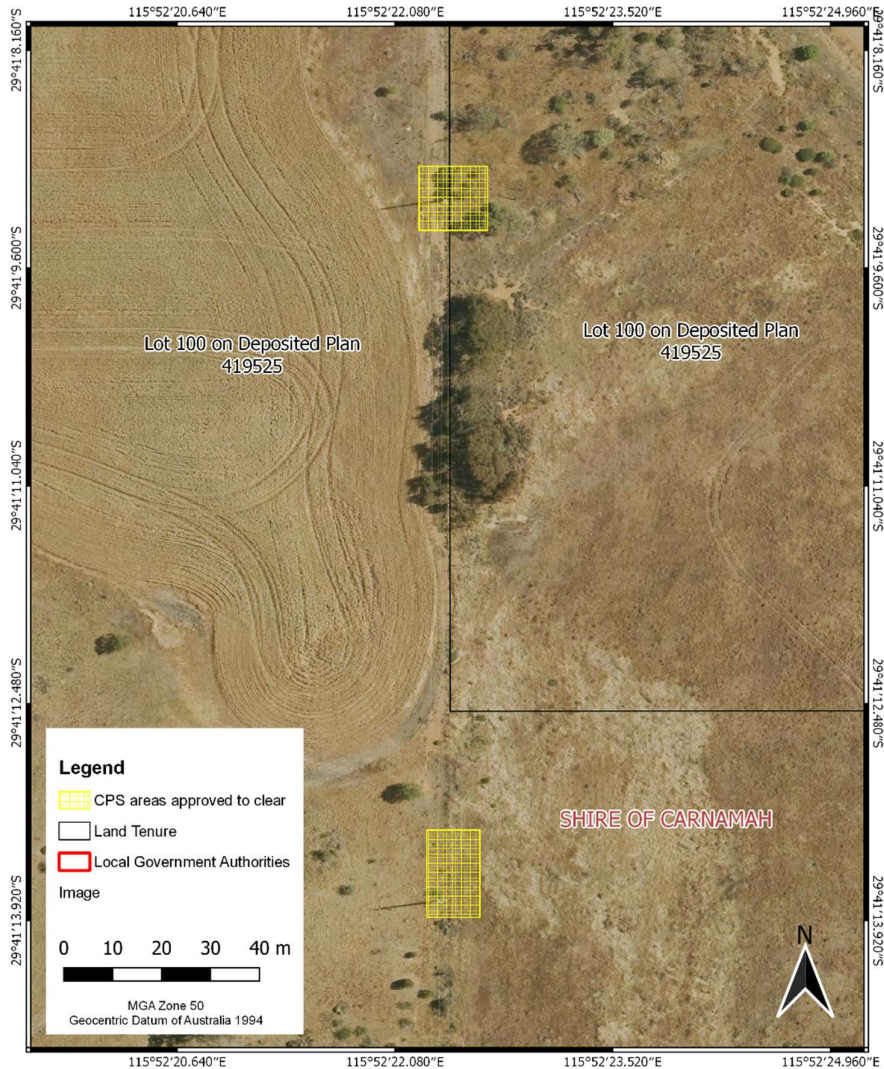
The assessment of this application identified:

- that there is the potential for introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values; and
- the application area comprises native vegetation in an area that has been extensively cleared.

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 have long-term adverse impacts on environmental values. The Delegated Officer decided to grant a clearing permit subject to conditions to:

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

## 1.5. Site map



**Figure 1:** Map of the application areas

The area cross-hatched yellow indicates the area authorised to be cleared under the granted clearing permit.

## 2 Legislative context

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

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the 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)

### **3 Detailed assessment of application**

#### **3.1. Avoidance and mitigation measures**

CBH has advised that alternative locations for the new power infrastructure and connection were considered, however, in all cases clearing would be required (Applicant, 2021). Based on the instructions and advice given to CBH by Western Power, the application areas were found to be best suited for the works.

The Delegated Officer was satisfied that the applicant has given reasonable consideration to options 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 0A) 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 impacts of the proposed clearing present a risk to remnant vegetation within an area which has been extensively cleared. 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. Significant remnant vegetation – Clearing Principle (e)**

###### Assessment:

The aim of Clearing Principle (e) is to maintain sufficient native vegetation in the landscape for the maintenance of ecological values. The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001). The extents of native vegetation in the Interim Biogeographic Regionalisation for Australia (IBRA) bioregion, within which the application area occurs, and in the local area are inconsistent with these thresholds.

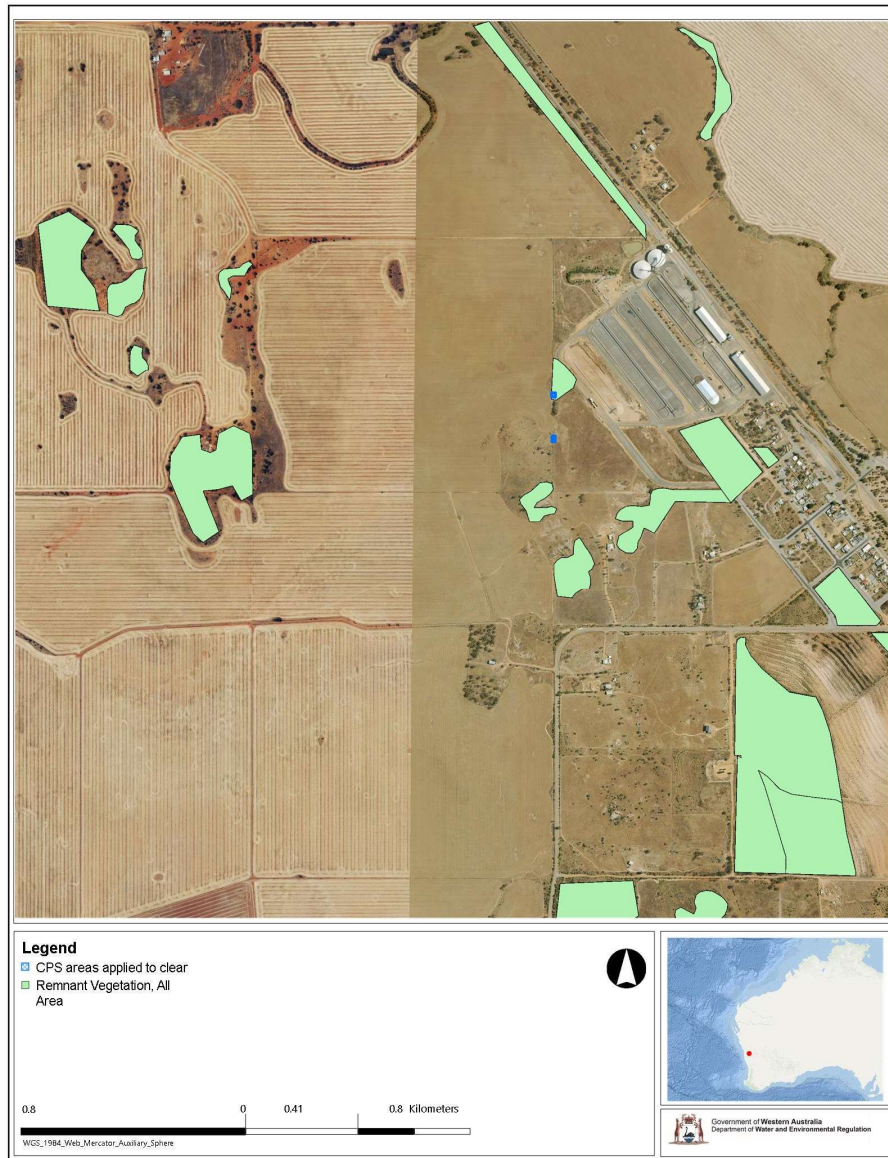
The application areas are located within the 'Avon Wheatbelt' IBRA which retains approximately 18.51 per cent of its pre-European vegetation extent (Government of Western Australia, 2019). The Beard vegetation complex Perenjori (695), which has been mapped within the application areas, retains approximately 14.12 per cent of its original vegetation extent. The local area retains approximately 6.66 per cent vegetation cover (approximately 2,052.85 hectares). Given this, the application areas occur within an area which has been extensively cleared.

While this vegetation complex has been extensively cleared, the vegetation in the application areas is degraded and dominated by a few native Acacia shrubs and Eucalyptus trees over weedy understorey, and is therefore not considered representative of this vegetation complex.

The two application areas consist of disturbed and fragmented patches of vegetation, surrounded by a landscape that has been extensively cleared. The land immediately adjacent to the application areas consists of cleared agricultural land. There are small, scattered areas of mapped remnant vegetation present within the local area, some of which are in close proximity to the application areas (see Figure 2).

The local area has been extensively cleared, with aerial imagery indicating that the application areas may function as a stepping-stone ecological corridor, between areas of remnant vegetation in the local area. Stepping-stone corridors contribute to landscape connectivity and contribute to fauna dispersal within an extensively cleared landscape.

It is unlikely the vegetation proposed to be cleared provides significant functionality as an ecological linkage given it is fragmented and non-contiguous with adjacent vegetation (see Figure 2 and Appendix D).



**Figure 2:** Aerial imagery showing the extent of mapped remnant vegetation in proximity of the application areas.

### Usage of vegetation by Black Cockatoos

The application areas are not located within known distribution areas for Forest Red-tailed Black Cockatoos (*Calyptorhynchus banksii naso*) or Baudin's Black Cockatoo (*C. baudinii*) (DSEWPaC 2012). The areas proposed to be cleared are within the mapped breeding range of Carnaby's Black Cockatoo (*C. latirostris*), with the nearest confirmed breeding location approximately 16 kilometres from the application areas. The nearest confirmed roost is located approximately 38 kilometres away and the nearest unconfirmed roost is approximately 36 kilometres away.

Assessment of the photographs supplied by the applicant (see Appendix D) indicate that the trees proposed to be cleared are not of sufficient size to be utilised by *C. latirostris* for breeding and no visible hollows were observed. The application areas contain some emerging eucalyptus species which are typical foraging species for Carnaby's cockatoo. However, it is noted these emergents are too juvenile to provide foraging habitat for Carnaby's cockatoo. Given the small scale of the proposed clearing and the application areas are not located within a 6-12 kilometre radius of a nesting site or 6 kilometres of a night roost, it is unlikely that the vegetation proposed to be clearing comprises a significant foraging resource for Black Cockatoos (DSEWPaC 2012).

Based on the vegetation observed within the application area and photographs supplied by the applicant (see Appendix D), the Delegated Officer determined that the proposed clearing is not likely to provide significant foraging,



roosting or breeding habitat for Carnaby's cockatoo, or significant habitat for any other conservation significant fauna species recorded within the local area.

#### Conclusion

Based on the above assessment, despite the vegetation extent within the local area being below the national retention target of 30%, the vegetation proposed to be cleared is not considered significant as it has limited habitat value for fauna of conservation significance, in particular *C. latirostris*.

The vegetation proposed to be cleared is not likely to serve a significant linkage function due to the small scale and fragmented nature of the vegetation to be cleared. The retention of vegetation within close proximity of the application areas (see Figure 2), will continue to act as a stepping-stone for fauna transition between mapped remnants north and south of the application area (see Figure 2), maintaining any potential linkage function.

#### Conditions

No conditions required.

### **3.3. Relevant planning instruments and other matters**

The Shire of Carnamah (the Shire) advised DWER that local government approvals are not required, and that the proposed clearing is consistent with the Shire's Local Planning Scheme. The Shire did not have any objections to the proposed clearing, however, advised they would like some form of revegetation be proposed from the applicant, given the clearing is within an already highly cleared landscape. The department considered the Shire's comments and determined that no revegetation conditions be imposed on the permit due to the very small scale and degraded condition of the vegetation to be cleared, which provides limited value with respect to ecological function.

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.

**End**

## Appendix. A Site characteristics

### C.1. Site characteristics

Characteristic	Details
Local context	<p>The area proposed to be cleared is up to 0.033 hectares of native vegetation distributed across two separated areas in the intensive land use zone of Western Australia. It is predominantly surrounded by previously cleared agricultural land and is adjacent to the Carnamah Bulk Grain Terminal, owned by the applicant (CBH).</p> <p>Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 6.66 per cent (2,052.85 hectares) of the original native vegetation cover.</p>
Ecological linkage	<p>The application areas do not form part of any formal mapped linkage, however, the local area has been extensively cleared, with aerial imagery indicating the vegetation may contribute to informal linkage functionality, as a stepping-stone ecological corridor, between areas of remnant vegetation in the local area. Remnant vegetation is mapped within close proximity of the application areas.</p>
Conservation areas	<p>The application area does not occur within any conservation areas. There is one reserve under DBCA tenure within the local area and three unmanaged reserves. The closest conservation area is a Yarra Yarra Lake Conservation Park, located approximately 2.3 kilometres west of the application area.</p>
Vegetation description	<p>Photographs supplied by the applicant indicate the vegetation within the proposed clearing area consists of a few native <i>Acacia</i> shrubs and <i>Eucalyptus</i> trees, with no <i>Allocasuarina campestris</i> visible from the representative photographs provided by the applicant (see Appendix D).</p> <p>This is inconsistent with the mapped vegetation type Beard vegetation association Perenjori (695), which is described as Shrublands; <i>Allocasuarina campestris</i> scrub (Shepherd et al, 2001).</p> <p>The mapped vegetation type retains approximately 14.12 per cent of the original extent (Government of Western Australia, 2019).</p>
Vegetation condition	<p>Photographs supplied by the applicant indicate the vegetation within the proposed clearing area is in a degraded (Keighery, 1994) condition.</p> <p>The full Keighery (1994) condition rating scale is provided in 0 C. Representative photographs are available in Appendix D.</p>
Climate and Landform	<p>The mean annual rainfall for the application area is 400 millimetres.</p> <p>The areal actual evapotranspiration for the application area is 400 millimetres.</p> <p>The topography of the application area is relatively flat and varies slightly between 270 metres Australian Height Datum (AHD) to 280 metres AHD.</p>
Soil description	<p>The soil is mapped as Coorow 3 Subsystem (258Cw_3), which is described as plateau residuals, very gently inclined hillslopes and hillcrests; complex of lateritic gravels, yellow deep sand, sandy earths and some duplexes, shallow rock and rock fragments common (Shepherd et al., 2004).</p>
Land degradation risk	<p>The soils subsystem mapped in the application area has a moderate to high risk of water erosion, flooding, waterlogging and phosphorus export and is highly susceptible to salinity, subsurface acidification and wind erosion.</p>
Waterbodies	<p>The application area does not intersect any watercourses or wetlands.</p> <p>The closest watercourse is a natural, non-perennial lake named the Yarra Yarra Lakes, located approximately 2.3 kilometres west of the application area.</p>

Characteristic	Details
Hydrogeography	The application area is within the proclaimed Arrowsmith Groundwater Area, however, does not intersect any proclaimed surface water or any Public Drinking Water Source Areas.
Flora	<p>There are 34 records of threatened and priority flora taxa within the local area (10 kilometres), with 13 priority and two threatened flora species occurring on the same soil type as that of the application area.</p> <p>Photographs provided by the applicant indicate a few native Acacia shrubs and Eucalyptus trees over weedy understorey within the application area (see Appendix D).</p>
Ecological communities	<p>Two priority ecological communities have been recorded in the local area:</p> <ul style="list-style-type: none"> <li>• <i>Eucalypt</i> woodlands of the Western Australian Wheatbelt (Wheatbelt Woodlands); and</li> <li>• the Plant assemblages of the Inering System as originally described in Beard (1976) (Inering System).</li> </ul> <p>The Wheatbelt Woodlands threatened ecological community (TEC) is listed as Critically Endangered under <i>the EPBC Act</i> and Priority 3 under the State criteria and the Inering System is listed as Vulnerable under the State criteria.</p> <p>The closest mapped occurrence of <i>Eucalypt</i> woodlands is located approximately 400 metres east of the application area. The closest mapped occurrence of Inering System is located approximately 965 metres west of the application area.</p>
Fauna	<p>The local area contains 21 records from 11 species of conservation significant fauna. The most common is the Hooded plover (dotterel) with six records, with a P4 code and Carnaby's cockatoo with three records, listed as Endangered under the EPBC Act.</p> <p>The application is mapped within the Carnaby's Cockatoo distribution. The closest confirmed Carnaby's Cockatoo breeding site is located approximately 16 km away to the north-west. The application area falls outside mapped feeding area buffers.</p>

## C.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*					
Avon Wheatbelt	9,517,109.95	1,761,187.42	18.51	174,980.68	2.42
Vegetation complex					
Beard vegetation association Perenjori (695) *	658.42	92.99	14.12	N/A	N/A
Local area					
10km radius	30,825.58	2052.85	6.66	-	-

\*Government of Western Australia (2019a)

## Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
<b>Environmental value: biological values</b>		
<p><u>Principle (a):</u> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared does not contain locally significant flora, fauna, habitats, or assemblages of plants. The application areas do not intersect and are not within close proximity to any Threatened Ecological Communities listed under the BC Act or EPBC Act. The application areas are fragmented, in a degraded vegetation condition and have minimal to no understorey vegetation and a high abundance of exotic species.</p> <p>The application areas consist of disturbed and fragmented patches of vegetation, with a lack of native understorey that are not conducive for the occurrence of conservation significant flora that occur in the local area. Based on the above, it is highly unlikely that any species of conservation significance have a dependency on habitat within the application areas.</p>	Not likely to be at variance	No
<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></p> <p>The areas proposed to be cleared are considered unlikely to contain significant habitat for conservation significant fauna which have been recorded within the local area, including the Western Spiny-Tailed Skink, Malleefowl and Wallaby. The application areas are small, contain minimal leaf litter and have a high number of exotic species that occupy a large percentage of the understorey. Given the above, it is unlikely that the application areas provide significant habitat for these conservation significant fauna species.</p>	Not likely to be at variance	No
<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></p> <p>There are two threatened flora species occurring on the same soil type as that of the application area, however, given the degraded (Keighery, 1994) condition of the vegetation, as indicated by photographs provided by the applicant, it is unlikely to contain suitable habitat for threatened flora species listed under the BC Act. In addition, the photographs provided by the applicant indicate the very small application areas consist of disturbed and fragmented patches of vegetation with a lack of native understorey, which would be unlikely to contain conservation significant flora.</p>	Not likely to be at variance	No
<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></p> <p>The application area does not intersect any Threatened Ecological Communities (TEC) listed under the BC Act. The closest TEC to the application areas is approximately 400 metres to the east, which is the Eucalypt woodlands of the Western Australian Wheatbelt. Photographs supplied by the applicant indicate the vegetation within the proposed clearing area consists of a few native Acacia shrubs and Eucalyptus trees, which is not representative of the Wheatbelt woodlands TEC.</p>	Not likely to be at variance	No



Assessment against the clearing principles	Variance level	Is further consideration required?
<b>Environmental value: significant remnant vegetation and conservation areas</b>		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u></p> <p>The National Objectives and Targets for Biodiversity Conservation 2001-2005 include a target to have clearing controls in place that prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750 (Commonwealth of Australia 2001).</p> <p>The extent of the native vegetation in the local area is inconsistent with the threshold targets for biodiversity conservation. The mapped Beard vegetation association (695) retains approximately 6.66 per cent of its pre-European vegetation extent within the Avon Wheatbelt Bioregion.</p> <p>The vegetation proposed to be cleared is not considered to be part of any formal ecological linkage in the local area, however, due to the extensively cleared landscape, may perform an informal linkage function.</p> <p>The areas proposed to be cleared are of a small scale, do not comprise high biodiversity values or represent significant habitat for conservation significant flora or fauna, on which basis it is not likely to be considered a significant remnant when compared to other larger, intact remnants within the local area.</p>	May be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (h):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.”</i></p> <p><u>Assessment:</u></p> <p>Given the distance to the nearest conservation area, the Yarra Yarra Lakes Conservation Park, located approximately 2.3 kilometres west of the application 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
<b>Environmental value: land and water resources</b>		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>Noting the descriptions of the mapped vegetation types, photographs of the vegetation within the application areas and the distance from any known watercourses or wetlands, it is considered that the vegetation within the application area is not growing in association with a watercourse or wetland.</p>	Not likely to be at variance	No



## Clearing Permit Decision Report

<p><u>Principle (g):</u> "Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."</p> <p><u>Assessment:</u></p> <p>The mapped soils are highly susceptible to wind erosion, salinity and subsurface acidification. However, noting the extent of the application areas and the condition of the vegetation, the proposed clearing is not likely to have an appreciable impact on land degradation.</p>	Not likely to be at variance	No
<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></p> <p>Given no watercourses, wetlands or Public Drinking Water Sources Areas are recorded within the application areas, the proposed clearing is unlikely to result in significant impacts to surface or 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></p> <p>The mapped soils and topographic contours within and surrounding the application areas do not indicate that the proposed clearing is likely to cause or exacerbate the incidence or intensity of flooding or waterlogging.</p>	Not likely to be at variance	No

### Appendix C. Vegetation condition rating scale

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

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

#### Measuring vegetation condition for the South-West and Interzone Botanical Province (Keighery, 1994)

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.

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. Photographs of the vegetation**

Figures 3 to 9: Photographs of the application areas







## Appendix E. Sources of information

### E.1. GIS databases

Publicly available GIS Databases used (sourced from [www.data.wa.gov.au](http://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
- 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

Applicant (2021) *Clearing permit application and supporting documentation CPS 9407/1*, received 25 August 2021 (DWER Ref: DWERDT495394).

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

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](https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf)

Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) (2012) EPBC Act referral guidelines for three threatened black cockatoo species: Carnaby's cockatoo (Endangered) *Calyptorhynchus latirostris*, Baudin's cockatoo (Vulnerable) *Calyptorhynchus baudinii*, Forest red-tailed black cockatoo (Vulnerable) *Calyptorhynchus banksii naso*. Department of Sustainability, Environment, Water, Population and Communities (now the Department of Agriculture, Water and Environment), Canberra.

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](https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits_v1.PDF).

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](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](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 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>

Hedde, E. M., Loneragan, O. W., and Havel, J. J. (1980) *Vegetation Complexes of the Darling System, Western Australia*. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.

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



- Mattiske, E.M. and Havel, J.J. (1998) *Vegetation Complexes of the South-west Forest Region of Western Australia*. Maps and report prepared as part of the Regional Forest Agreement, Western Australia for the Department of Conservation and Land Management and Environment Australia.
- Molloy, S., Wood, J., Hall, S., Wallrodt, S. and Whisson, G. (2009) *South West Regional Ecological Linkages Technical Report*, Western Australian Local Government Association and Department of Environment and Conservation, Perth.
- 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 outputs* Resource Management Technical Report No. 280. Department of Agriculture.
- Shah, B. (2006) *Conservation of Carnaby's Black-Cockatoo on the Swan Coastal Plain, Western Australia*. December 2006. Carnaby's Black-Cockatoo Recovery Project. Birds Australia, Western Australia.
- 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.
- Shire of Carnamah (2021) *Advice for clearing permit application CPS 9407/1*, received 28 September 2021 (DWER Ref: A2053248).
- Valentine, L.E. and Stock, W. (2008) *Food Resources of Carnaby's Black Cockatoo (Calyptorhynchus latirostris) in the Gnangara Sustainability Strategy Study Area*. Edith Cowan University and Department of Environment and Conservation. December 2008.
- Western Australian Herbarium (1998-). *FloraBase - the Western Australian Flora*. Department of Biodiversity, Conservation and Attractions, Western Australia. <https://florabase.dpaw.wa.gov.au/> (Accessed 28 October 2021)