



## CLEARING PERMIT

*Granted under section 51E of the Environmental Protection Act 1986*

<b>Purpose Permit number:</b>	CPS 10137/1
<b>Permit Holder:</b>	Shire of Moora
<b>Duration of Permit:</b>	From 6 March 2024 to 6 March 2034

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 road construction and upgrades.

**2. Land on which clearing is to be done**

Watheroo Road reserve (PIN 11708219)

**3. Clearing authorised**

The permit holder must not clear more than 0.54 hectares of *native vegetation* within the area cross-hatched yellow in Figure 2 and 3 of Schedule 1.

**4. Period during which clearing is authorised**

The permit holder must not clear any *native vegetation* after 6 March 2029.

### **PART II – MANAGEMENT CONDITIONS**

**5. 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.

## 6. 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.

## 7. Directional clearing

- (a) conduct clearing authorised under this permit in one direction towards adjacent native vegetation; and
- (b) allow a reasonable time for fauna present within the area being cleared to move into adjacent native vegetation ahead of the clearing activity

## 8. Revegetation requirements

The permit holder must within 24 months of undertaking clearing authorised under this permit:

- (a) establish and maintain a minimum of 0.73 hectares of native vegetation within Watheroo Road reserve (PIN 11708219) using species suitable for black cockatoo foraging, including *Eucalyptus loxophleba*, *Eucalyptus salmonophloia* and *Eucalyptus wandoo*;
- (b) ensure only local provenance species are used;
- (c) ensure planting is undertaken at the optimal time;
- (d) the permit holder shall within 24 months of planting a minimum of 0.73 hectares of native vegetation, in accordance with condition 8(a) of this permit;
  - i. engage an *environmental specialist* to make a determination that at least 0.73 hectares of native vegetation will survive;
  - ii. if the determination made by the *environmental specialist* under condition 8(d)(i) that at least 0.73 hectares of native vegetation will not survive, the permit holder must plant additional native seedlings that will result in at least 0.73 hectares of native vegetation within Watheroo Road reserve (PIN 11708219).
  - iii. undertake weed control activities on an ‘as needs’ basis to ensure success of revegetation;
- (e) where additional planting of native seedlings is undertaken in accordance with condition 8(d)(ii), the permit holder must repeat the activities required by condition 8(b), 8(c) and 8(d) of this permit.

## **PART III - RECORD KEEPING AND REPORTING**

### 9. Records that must be kept

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

**Table 1: Records that must be kept**

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	<ul style="list-style-type: none"> <li>(a) the species composition, structure, and density of the cleared area;</li> <li>(b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings;</li> <li>(c) the date that the area was cleared;</li> <li>(d) the size of the area cleared (in hectares);</li> <li>(e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 5; and</li> <li>(f) actions taken to minimise the risk of the introduction and spread of <i>weeds</i> and <i>dieback</i> in accordance with condition 6;</li> </ul>
2.	In relation to revegetation activities pursuant to condition 8	<ul style="list-style-type: none"> <li>(a) the species composition, structure and density of the <i>revegetation</i> area;</li> <li>(b) the location where the revegetation occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings;</li> <li>(c) a copy of the <i>environmental specialist's</i> report;</li> <li>(d) a description of the revegetation activities undertaken; and</li> <li>(e) any remedial actions required to be undertaken.</li> </ul>

## 10. Reporting

The permit holder must provide to the *CEO* the records required under condition 9 of this permit when requested by the *CEO*.

## DEFINITIONS

In this permit, the terms in Table 2 have the meanings defined.

**Table 2: Definitions**

Term	Definition
Black cockatoo foraging species	means species suitable for foraging by <i>Zanda lateriosis</i> (Carnaby's cockatoo)
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental</i>

Term	Definition
	<i>Protection Act 1986.</i>
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
dieback	means the effect of <i>Phytophthora</i> species on native vegetation.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
environmental specialist	means a person who holds a tertiary qualification in environmental science or equivalent and has a minimum of two (2) years work experience relevant to the type of environmental advice that an environmental specialist is required to provide under this permit, or who is approved by the CEO as a suitable environmental specialist.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
fill	means material used to increase the ground level, or to fill a depression.
local provenance	means native vegetation seeds and propagating material from natural sources within 50 kilometres and the same IBRA subregion of the area cleared.
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.
optimal time	means the period from May to June for undertaking planting and seeding.
revegetate	means the re-establishment of a cover of local provenance native vegetation in an area using methods such as natural regeneration, direct seeding and/or planting, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.
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**

 Digitally signed by Ryan Mincham  
 Date: 2024.02.12 17:01:24 +08'00'

Ryan Mincham  
 MANAGER  
 NATIVE VEGETATION REGULATION

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

12 February 2024



# Schedule 1 Plan 10137/1

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

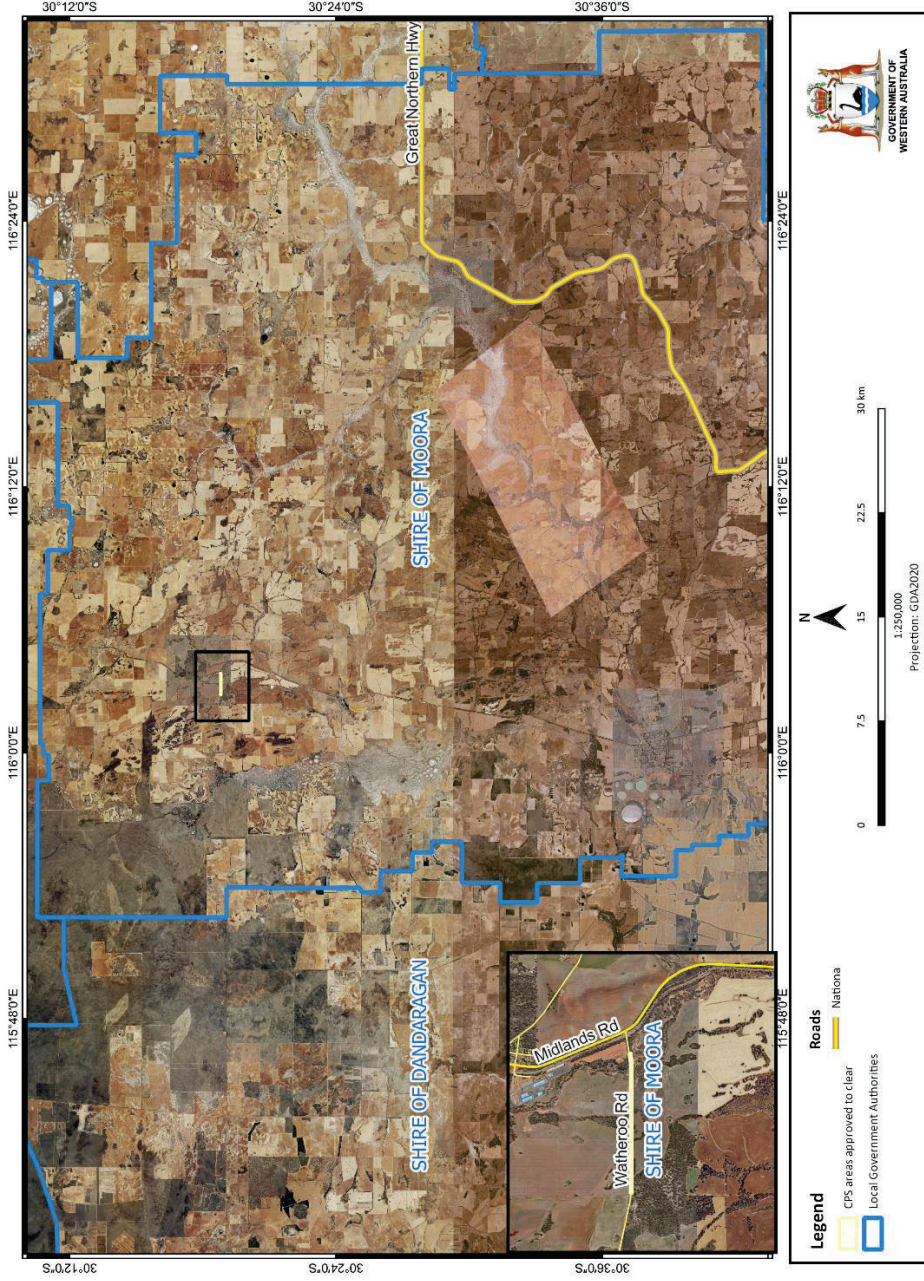


Figure 1: Context map of the boundary of the area within which clearing may occur





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



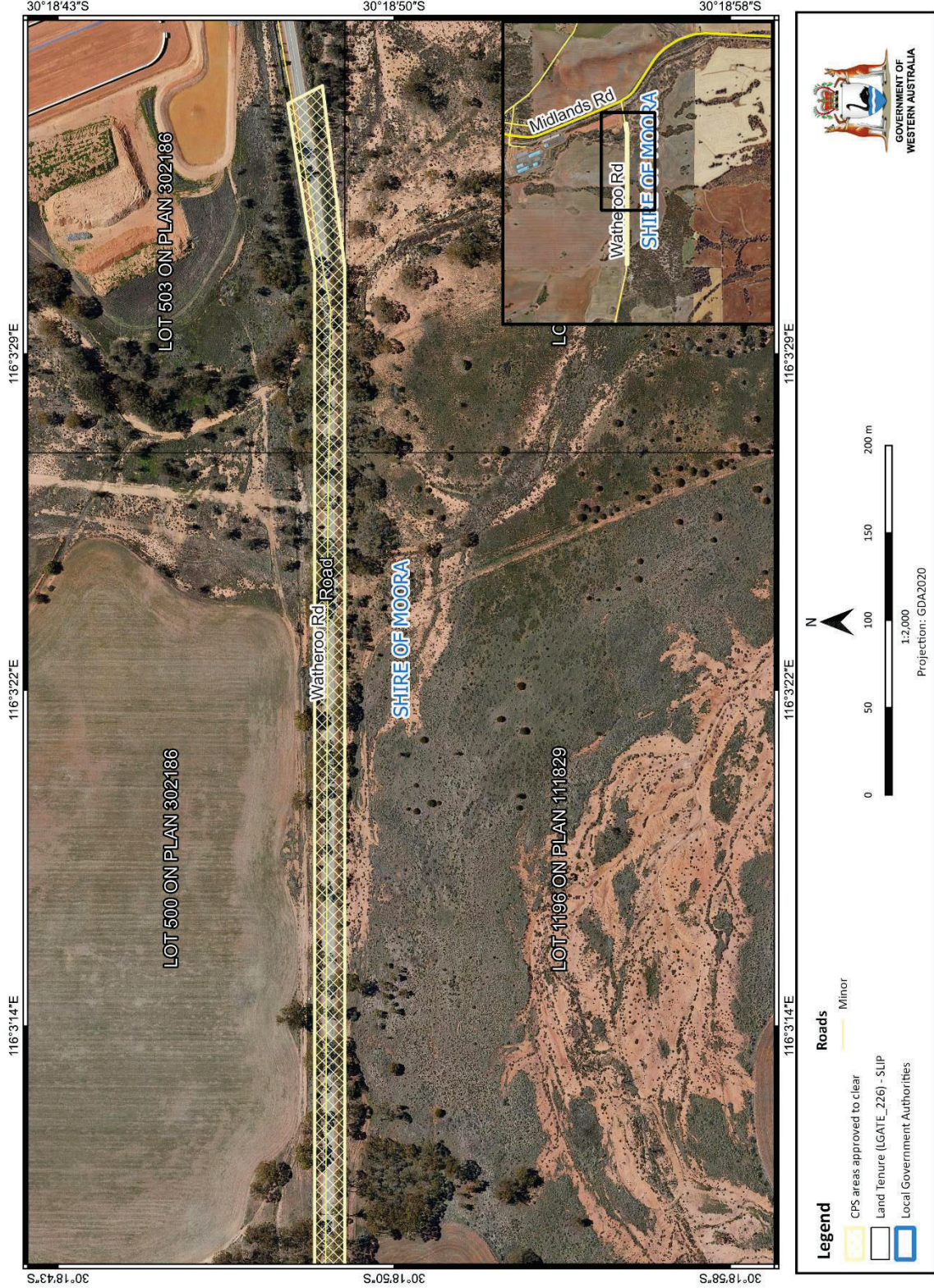


Figure 3: Map of the boundary of the area within which clearing may occur



# Clearing Permit Decision Report

## 1 Application details and outcome

### 1.1. Permit application details

<b>Permit number:</b>	CPS 10137/1
<b>Permit type:</b>	Purpose permit
<b>Applicant name:</b>	Shire of Moora
<b>Application received:</b>	30 March 2023
<b>Application area:</b>	1.2 hectares of native vegetation
<b>Purpose of clearing:</b>	Road construction and upgrades
<b>Method of clearing:</b>	Mechanical removal
<b>Property:</b>	Watheroo Road reserve (PIN 11708219)
<b>Location (LGA area/s):</b>	Shire of Moora
<b>Localities (suburb/s):</b>	Watheroo

### 1.2. Description of clearing activities

The vegetation proposed to be cleared is distributed across two separate areas (see Figures 1-3, Section 1.5). The application is to selectively clear trees and shrubs for the purpose of road widening (Shire of Moora, 2023a). The area proposed to be cleared is within an approximately 8.3-kilometre strip along both road edges of Watheroo Road reserve.

The application was revised during the assessment process to remove the Carot Well Road section from the application area. This reduced the application area from 1.2 hectares to 0.54 hectares and the proposed clearing footprint from 19.65 hectares to 3.07 hectares (Shire of Moora, 2023b).

### 1.3. Decision on application

<b>Decision:</b>	Granted
<b>Decision date:</b>	12 February 2024
<b>Decision area:</b>	0.54 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 28 days and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix B), relevant datasets (see Appendix F.1), the findings of a flora and vegetation and black cockatoo survey (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 Delegated Officer also took into consideration the purpose of the clearing was to widen the road to improve road safety, allowing road trains to easily pass one another while coming from opposite directions.



The assessment identified that the proposed clearing will result in:

- the loss of native vegetation that is suitable foraging habitat for Carnaby's cockatoo (*Zanda latirostris*);
- the loss of native vegetation that is significant as a remnant of native vegetation in an area that has been extensively cleared; and
- the potential introduction and spread of weeds and dieback into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values.

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 black cockatoo foraging habitat subject to revegetation being conducted in accordance with permit conditions. 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;
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback;
- undertake slow, progressive, one-directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity; and
- revegetation of 0.73 hectares of native vegetation within Watheroo Road reserve with species suitable for black cockatoo foraging, including *Eucalyptus loxophleba*, *Eucalyptus salmonophloia* and *Eucalyptus wandoo*.



# Clearing Permit Decision Report

## 1.5. Site map(s)

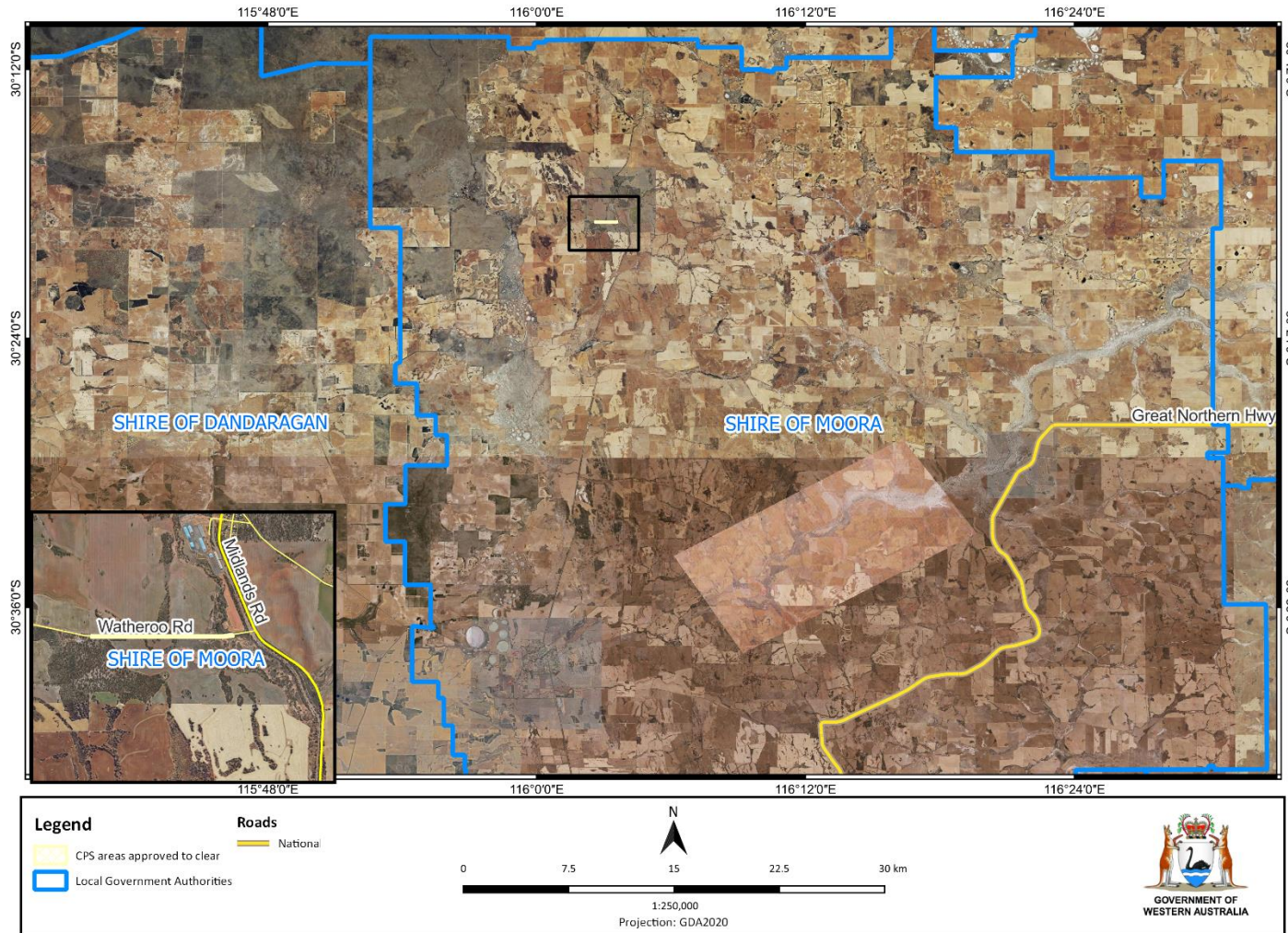


Figure 1 Context map of the application area

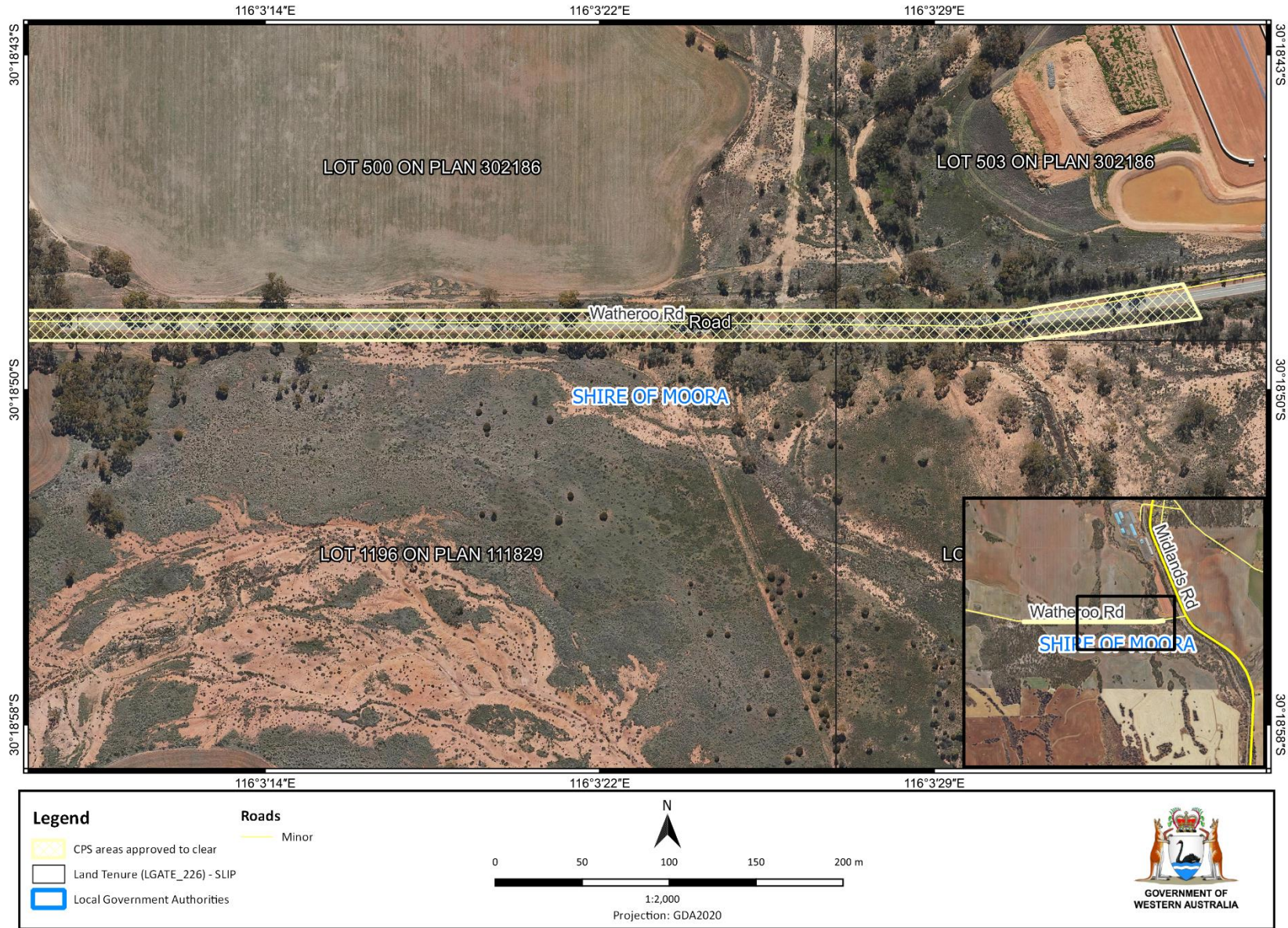




**Figure 2** Map of the application area

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





**Figure 3** Map of the application area

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



## Clearing Permit Decision Report

### 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)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- 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 that the proposed clearing was necessary to improve the safety of the two road reserves. However, this did not adequately demonstrate that all reasonable efforts had been taken to avoid and minimise potential impacts of the proposed clearing on environmental values, including the clearing of significant remnant vegetation in a highly cleared area.

On 24 October 2023, the applicant advised that the application area would be modified to remove the Carot Well Road area. This modification reduced the amount of proposed clearing from 1.2 hectares to 0.54 hectares, with the clearing envelope reduced from 19.65 hectares to 3.07 hectares.

The department's assessment identified that the proposed clearing included the removal of suitable black cockatoo foraging habitat and was within an extensively cleared landscape. Based on the above, the Shire was requested to revegetate 0.73 hectares to mitigate the impacts of clearing. The applicant committed to revegetating the requested amount within Watheroo Road reserve using a combination of species which provide suitable foraging resources for the Carnaby's cockatoo.

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

#### 3.2. Assessment of impacts on environmental values

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

The assessment against the clearing principles (see Appendix C) identified that the impacts of the proposed clearing present a risk to biological values, significant remnant vegetation and conservation areas. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.



### 3.2.1. Biological values (fauna) - Clearing Principles (a), and (b)

#### Assessment

The desktop assessment identified nine conservation significant fauna species within the local area (20km-radius from the centre of the application area), which comprised of five priority fauna species, two vulnerable fauna species, one endangered species and one specially protected species. The closest record is of *Zanda latirostris* (Carnaby's cockatoo) recorded approximately 326 metres from the application area. This was also the most frequently occurring species with 24 records. The entire application area is mapped within the known Carnaby's distribution area.

#### **Carnaby's Cockatoo**

##### Breeding habitat

Carnaby's cockatoo are known to nest in hollows of live and dead trees, including *Corymbia calophylla* (marri), *Eucalyptus marginata* (jarrah), *Eucalyptus diversicolor* (karri), *Eucalyptus wandoo* (wandoo), *Eucalyptus gomphocephala* (tuart), *Eucalyptus rudis* (flooded gum), and other *Eucalyptus* spp. (Commonwealth of Australia, 2022). 'Breeding habitat' for Carnaby's cockatoos includes trees of these species that either have a suitable nest hollow or are of a suitable diameter at breast height (DBH) to develop a nest hollow, where suitable DBH for nest hollows is 500 millimetres for most tree species (Commonwealth of Australia, 2022). Breeding black cockatoos also generally forage within a 6 to 12- kilometre radius of their nesting site (Commonwealth of Australia, 2022). As the application area is located within the modelled range for Carnaby's cockatoo and contains suitable tree species for foraging and breeding, it is considered to comprise suitable habitat.

According to spatial data, the application area is mapped within 500 metres of two confirmed breeding locations for black cockatoos. A Carnaby's cockatoo habitat assessment was conducted by Western Ecological (2023). The assessment identified 29 potential breeding trees in the survey area, of the 29 potential breeding trees, 21 were Salmon Gum (*Eucalyptus salmonophloia*), four were Wandoo (*Eucalyptus wandoo*), and four were York Gum (*Eucalyptus loxophleba*). None of the 29 potential breeding trees had a hollow considered to be a large enough opening, at an appropriate height and in the main trunk to be considered a potential nesting tree when viewed from the ground.

Although 25 of the potential breeding trees had a DBH that measured  $\geq 300$  mm in the case of Salmon Gum and Wandoo, and four of the York Gums had a DBH that measured  $\geq 500$  mm, many of the main trunks of these trees split (into multiple trunks or branches) at a height of approximately between 2-5 m (or split at ground level into two main trunks or other forms that make them unsuitable for nesting). These trees are unlikely to form hollows suitable for nesting in the main trunk in the near future and possibly some will never, despite them meeting the Black Cockatoo referral guidelines for potential breeding trees (Western Ecological, 2023). Representative photos of potential breeding trees identified in the assessment are shown in Appendix E.

##### Foraging Assessment

The Carnaby Habitat Assessment assessed the habitat for shrub and tree species known as important dietary items for Carnaby's cockatoo. Important dietary items include Proteaceous species (*Banksia* spp, *Hakea* spp, *Grevillea* spp), Marri and other Eucalypts and as such included looking for the species as stated, as well as evidence of foraging and opportunistic observations. The habitat assessment at Watheroo Road identified little to no foraging habitat for Carnaby's cockatoo within the understorey (Western Ecological, 2023). The road edge in the application area consisted of mostly weedy grasses, with no midstory and is adjacent to wheatfields and paddocks. While the understorey identified in the flora survey and the Carnaby habitat assessment was not considered to be suitable foraging habitat, the upperstorey trees *Eucalyptus loxophleba*, *Eucalyptus salmonophloia* and *Eucalyptus wandoo* could act as foraging resources. While *Eucalyptus loxophleba* may not be their preferred foraging resource, both *Eucalyptus salmonophloia* and *Eucalyptus wandoo* are considered to be primary habitat for Carnaby black cockatoos (Groom 2011; Commonwealth of Australia 2022). Additionally, the limited vegetation remaining in the extensively cleared area renders all of these species important as a foraging source for Carnaby cockatoos.

##### Night Roosting Assessment

Night roosting assessments were conducted at Watheroo Road. Night roosting sites are often situated to access local food and water sources, as well as providing a protected place to roost. Roost sites are typically used



sequentially for periods of 4–6 weeks and may be a traditional roost used over many years (Western Ecological, 2023). The survey identified no evidence of roosting during the assessment, although this does not eliminate the potential of roosting in the area.

#### Ecological linkage

The application area is part of the road conservation network and is considered an important ecological linkage in the area. The local area has been extensively cleared with only 24.90 per cent of native vegetation remaining in the 20-kilometre radius, the vegetation in the application area is important for fauna movement across the local and broader region.

#### Conclusion

Based on the above assessment, the area proposed to be cleared provides suitable foraging habitat for Carnaby's cockatoo, is within an extensively cleared area and is a significant ecological linkage for fauna in the region. Revegetation within the road reserve is proposed to mitigate the impacts of clearing native vegetation (Clark Lindbeck and Associates, 2023a).

#### Conditions

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

- Revegetation of 0.73 hectares of native vegetation within Watheroo Road reserve with species suitable for black cockatoo foraging, including *Eucalyptus loxophleba*, *Eucalyptus salmonophloia* and *Eucalyptus wandoo*;
- Slow, directional clearing to allow fauna to move into adjacent vegetation ahead of the clearing activity.

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

#### Assessment

The desktop assessment identified 60 conservation significant flora species within the local area (20km-radius from the centre of the application area). The nearest record is a Priority 1 species, *Caladenia dundasiae*, located approximately 65 metres from the application area. A total of 33 conservation significant flora occurred in the same vegetation type as the application area and 35 in the same soil type, A total of three flora species occurred in a similar habitat to that present within the application area:

- *Acacia flabellifolia* – Priority 3
- *Babingtonia cherticola* – Priority 3
- *Caladenia dundasiae* – Priority 1

#### *Acacia flabellifolia*

*Acacia flabellifolia* is a priority 3 species. Its distribution ranges from Yandanooka and Watheroo in Western Australia. It is generally associated with roadside heath, with *Acacia congesta subsp. cliftoniana*, *Dodonaea sp.*, *Eucalyptus spp.*, *Grevillea sp.*, and *Melaleuca sp* (Western Australian Herbarium, 1998). According to spatial data, *Acacia flabellifolia* is mapped approximately 200 metres from the application area. The flora survey did not find any threatened or priority flora and this species was considered unlikely to occur following the survey (Clark Lindbeck and Associates, 2023b).

#### *Babingtonia cherticola*

*Babingtonia cherticola* is a priority 3 species. It is found within the Avon Wheatbelt, Geraldton Sandplains and the Swan Coastal Plain (Western Australian Herbarium, 1998). According to spatial data, it is mapped within 300 metres of the application area. *Babingtonia cherticola*'s known habitat includes *Acacia acanthoclada subsp. glaucescens*, *Allocasuarina sp.* and *Banksia sessilis*. The flora survey did not find any threatened or priority flora and this species was considered unlikely to occur following the survey (Clark Lindbeck and Associates, 2023b).

#### *Caladenia dundasiae*

*Caladenia dundasiae* is a priority 1 species. It is a poorly known species, that is endemic to the Watheroo area. It has been recorded within Eucalypt wandoo woodlands (Western Australian Herbarium, 1998). According to spatial data, *Caladenia dundasiae* is mapped within approximately 65 metres of the application area. The flora survey did not find any threatened or priority flora and this species was considered unlikely to occur following the survey (Clark Lindbeck and Associates, 2023b).

While the flora survey was conducted in August 2022 which is not the appropriate time of year for the south-west and interzone region, rainfall in the three months preceding was average to above average (Clark Lindbeck and Associates, 2023b). Two of the priority flora species listed above, *Acacia flabellifolia* and *Caladenia dundasiae* flower during August, which coincided with the timing of the survey. *Babingtonia cherticola* has been recorded with a height of up to 1.5 metres and as a perennial shrub, on which basis it should have been identifiable during the survey even if not flowering.

### Conclusion

For the reasons set out above, it is considered that the impacts of the proposed clearing on conservation significant flora can be managed by avoidance and minimisation and weed and dieback conditions.

### Conditions

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

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

### **3.2.3. Significant remnant vegetation - Clearing Principles (e)**

#### Assessment

The National Objectives and Targets for Biodiversity Conservation 2001-2005 includes 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 (i.e., pre-European settlement) (Commonwealth of Australia, 2001). This is the threshold level below which species loss appears to accelerate exponentially.

Photographs supplied by the applicant and the vegetation survey by Clark Lindbeck and Associates (2023b) indicate the vegetation within the proposed clearing area consists of *Eucalyptus salmonophloia*, *Eucalyptus loxophleba*, and *Eucalyptus wandoo* over weedy understorey. Representative photos are available in Appendix E.

This is consistent with the mapped vegetation type of woodland other 142, which is described as Wheatbelt; York gum, salmon gum etc. *Eucalyptus loxophleba*, *E. salmonophloia*.

The local area (20-kilometre radius from the centre of the application area) has been extensively cleared with 24.90 per cent remaining, while the mapped vegetation type retains approximately 16.29 per cent of the original extent (Government of Western Australia, 2019). The vegetation within the proposed clearing area is also part of a roadside conservation area as assessed by the Roadside Conservation Committee and is therefore considered a significant remnant vegetation in the local area.

#### Conclusion

Based on the above assessment, the proposed clearing will result in further loss in significant remnant vegetation within the Moora region. To mitigate the risk of clearing, the Shire of Moora (the Shire) have agreed to revegetate 0.73 hectares of native vegetation including *Eucalyptus salmonophloia*, *Eucalyptus loxophleba*, and *Eucalyptus wandoo* species (Clark Lindbeck and Associates 2023a).

#### Conditions

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

- Revegetation of 0.73 hectares of native vegetation within Watheroo Road reserve with species suitable for black cockatoo foraging, including *Eucalyptus loxophleba*, *Eucalyptus salmonophloia* and *Eucalyptus wandoo*

### **3.2.4. Conservation areas - Clearing Principles (h)**

#### Assessment

The proposed clearing site within Watheroo Road reserve is mapped adjacent to a DPIRD conservation covenant. The vegetation within the application area is in Completely Degraded (Keighery 1994) condition. The proposed clearing may impact adjacent vegetation within the area under a conservation covenant through weed and dieback spread. These risks can be mitigated through weed and dieback management conditions.

### Conclusion

Based on the above assessment, the proposed clearing may impact adjacent conservation areas. Hygiene management conditions are likely to mitigate this risk.

### Conditions

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

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

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

The proposed clearing area falls within the Jurien Groundwater Area as proclaimed under the *Rights in Water and Irrigation Act 1914* (RIWI Act). Due to the limited potential impact to nearby watercourses, no advice was sought from the RIWI branch.

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. Additional information provided by applicant

Summary of comments	Consideration of comment
Applicant reduced application area (Shire of Moora, 2023b)	See Section 1.1 and 3.1
Applicant provided revegetation plan (Shire of Moora, 2023c)	See Section 3.2

## Appendix B. Site characteristics

### B.1. Site characteristics

Characteristic	Details
Local context	<p>The area proposed to be cleared is within the extensive land use zone of Western Australia. It is surrounded by highly cleared rural areas and is adjacent to a DPIRD conservation covenant. The proposed clearing areas are small, isolated remnants in a highly cleared landscape.</p> <p>Spatial data indicates the local area (20-kilometre radius from the centre of the area proposed to be cleared) retains approximately 24.90 per cent of the original native vegetation cover.</p>
Ecological linkage	The application area is mapped within the roadside conservation ecological linkages.
Conservation areas	The application area is mapped adjacent to a DPIRD conservation covenant. Watheroo National Park is approximately 6 kilometres west of the application area.
Vegetation description	<p>Surveys supplied by the applicant indicate the vegetation within the proposed clearing area consists of <i>Eucalyptus salmonophloia</i>, <i>Eucalyptus loxophleba</i>, and <i>Eucalyptus wandoo</i> over mostly weedy understorey (Clark Lindebeck and Associates, 2023). Representative photos are available in Appendix E.</p> <p>This is consistent with the mapped vegetation type:</p> <ul style="list-style-type: none"> <li>Woodland other 142, which is described as Wheatbelt; York gum, salmon gum etc. <i>Eucalyptus loxophleba</i>, <i>E. salmonophloia</i>.</li> </ul> <p>The mapped vegetation type retains approximately 16.29 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 completely degraded (Keighery, 1994) condition.</p> <p>The full Keighery (1994) condition rating scale is provided in Appendix D. Representative photos are available in Appendix E.</p>
Climate and landform	The Shire of Moora has a Mediterranean climate, featuring mild winters that yield most of the year's rain. Moora has an average annual rainfall of more than 500 millimetres over 90 days each year. The summers are warm to hot, with daytime temperatures averaging between 30 to 35 degrees celsius.
Soil description	<p>The soil is mapped as</p> <ul style="list-style-type: none"> <li>258Cw_3 - 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;</li> <li>256Bg_7 - Mid slope, gently undulating rises adjacent to valley plain and drainage line on Colluvium, lithic sand. Shallow to deep loamy duplex, red sandy earth and red shallow loam;</li> <li>256BgBV - alluvial plain of major tributaries of Moore River (from Gt), narrower and shallower with less Salmon Gum than Bv1 (dd17); loamy earths, loamy duplexes.</li> </ul>

Characteristic	Details
Land degradation risk	The soils in the application area are mapped as having a high to extreme risk of wind erosion and subsurface acidification.
Waterbodies	The desktop assessment and aerial imagery indicated that the application area intersects two minor, non-perennial watercourses.
Hydrogeography	The proposed clearing area falls within the Jurien Groundwater Area as proclaimed under the RIWI Act. The proposed site is not subject to a Surface Water Area, or an area protected under the <i>Country Areas Water Supply Act 1917</i> or a Public Drinking Water Source Area. The groundwater salinity level (Total Dissolved Solids) is mapped as 7000-14, 000 milligrams per litre.
Flora	The desktop assessment identified 60 conservation significant flora species within the local area. The nearest record is a Priority 1 species, <i>Caladenia dunsasiae</i> , located approximately 65 metres from the application area.
Ecological communities	No conservation significant ecological communities are mapped over the application area. The closest mapped TEC is the Eucalypt Woodlands of the Western Australian Wheatbelt located approximately 700 metres south-west of the application area.
Fauna	<p>The desktop assessment identified 9 conservation significant fauna species within the local area, which comprised of five priority fauna species, two vulnerable fauna species, one endangered species and one specially protected species. The closest record is of <i>Zanda latirostris</i> (Carnaby's cockatoo) recorded approximately 326 metres from the application area. This was also the most frequently occurring species with 24 records.</p> <p>The entire application area is mapped within Carnaby's known distribution area. The application area is mapped within 500 metres of two confirmed breeding areas for black cockatoos.</p>

### 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*					
Geraldton Sandplains	3,136,037.83	1,404,424.32	44.78	568,255.10	18.12
Vegetation complex					
142	12,175.64	1,983.51	16.29	807.48	6.63
Local area					
20km radius	131,330.7	32,696.27	24.90	-	-

Government of Western Australia (2019)

### B.3. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix F.1), and biological survey information, impacts to the following conservation significant flora required further consideration.

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Acacia flabellifolia</i>	3	Y	Y	Y	0.24	8	Y
<i>Babingtonia cherticola</i>	3	Y	Y	Y	0.29	6	Y

Species name	Conservation status	Suitable habitat features ? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Caladenia dundasiae</i>	1	Y	Y	Y	0.06	6	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.1), and biological survey information, impacts to the following conservation significant fauna required further consideration.

Species name (Common name)	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Zanda latirostris</i> (Carnaby's cockatoo)	EN	Y	Y	0.33	24	Y

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

**Appendix C. Assessment against the clearing principles**

Assessment against the clearing principles	Variance level	Is further consideration required?
<b>Environmental value: biological values</b>		
<p><u>Principle (a):</u> "Native vegetation should not be cleared if it comprises a high level of biodiversity."</p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared contains suitable habitat for conservation significant fauna, however, is not representative of a PEC or TEC and is unlikely to support conservation significant flora. The vegetation within the application area is unlikely to represent an area of high biodiversity relative to areas of better-quality vegetation which occur within the local area.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (b):</u> "Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."</p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared contains 0.54 hectares of suitable habitat for conservation significant fauna. This vegetation may be significant in a local context given its proximity to confirmed black cockatoo breeding locations.</p>	At variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (c):</u> "Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."</p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared is not likely to contain habitat for threatened flora species listed under the BC Act. No threatened flora were identified during the survey.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.2, above.</i>
<p><u>Principle (d):</u> "Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community."</p> <p><u>Assessment:</u></p>	Not likely to be at variance	No



Assessment against the clearing principles	Variance level	Is further consideration required?
<p>The area proposed to be cleared does contain species indicative of a threatened ecological community. The majority of the Eucalypts are in mallee form and in a completely degraded condition.</p>		
<p><b>Environmental value: significant remnant vegetation and conservation areas</b></p>		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u></p> <p>The extent of the native vegetation in the local area is inconsistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is considered to be part of a significant ecological linkage in the local area.</p>	<p>At variance</p>	<p>Yes</p> <p><i>Refer to Section 3.2.3, above.</i></p>
<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 proposed clearing may have an impact on the environmental values of adjacent conservation areas.</p>	<p>May be at variance</p>	<p>Yes</p> <p><i>Refer to Section 3.2.4, above.</i></p>
<p><b>Environmental value: land and water resources</b></p>		
<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>The application area intersects two minor non-perennial watercourses. Due to the small scale clearing, and only minimal intersection to watercourses in the application area, the proposed clearing is unlikely to impact on- or off-site hydrology and water quality.</p>	<p>At variance</p>	<p>No</p>
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>The mapped soils are highly susceptible to wind and water erosion, and nutrient export. Given the small extent and condition of the vegetation, the proposed clearing is unlikely to have an appreciable impact on land degradation.</p>	<p>Not likely to be at variance</p>	<p>No</p>
<p><u>Principle (i):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.”</i></p> <p><u>Assessment:</u></p> <p>Given no major watercourses or Public Drinking Water Sources Areas are recorded within the application area, the proposed clearing is unlikely to impact surface or ground water quality.</p>	<p>Not likely to be at variance</p>	<p>No</p>
<p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u></p>	<p>Not likely to be at variance</p>	<p>No</p>

Assessment against the clearing principles	Variance level	Is further consideration required?
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.		

## Appendix D. Vegetation condition rating scale

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

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

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

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

**Appendix E. Biological survey information excerpts**



Plate 1. Salmon Gum (Tree 3). Main trunk splits at several points along the main trunk (4 m and 6 m) into smaller branches.



Plate 2. Salmon Gum (Tree 7). Main trunk divides at multiple points, beginning at about 4 m into smaller branches.





Plate 3. Salmon Gum (Tree 10). Main trunk splits at about 4 m into multiple branches.



Plate 4. York Gum (Tree 13). The main trunk bends at about 5 m and then splits into smaller branches.



Plate 5. York Gum (Tree 15). The main trunk splits at about 1.5 m and then both trunks are not vertical.



Plate 6. York Gum (Tree 16). Main trunk divides at about 1.5 m into 3 trunks.





Plate 7. Salmon Gum (Tree 17). Two main trunks that divide at around 1 m and then split into multiple branches at approximately 5 m.



Plate 8. Salmon Gum (Tree 23). Main trunk divides into multiple branches at approximately 4 m.





Plate 9. Salmon Gum (Tree 29). Main trunk divides into two main trunks at about 1.5 m.



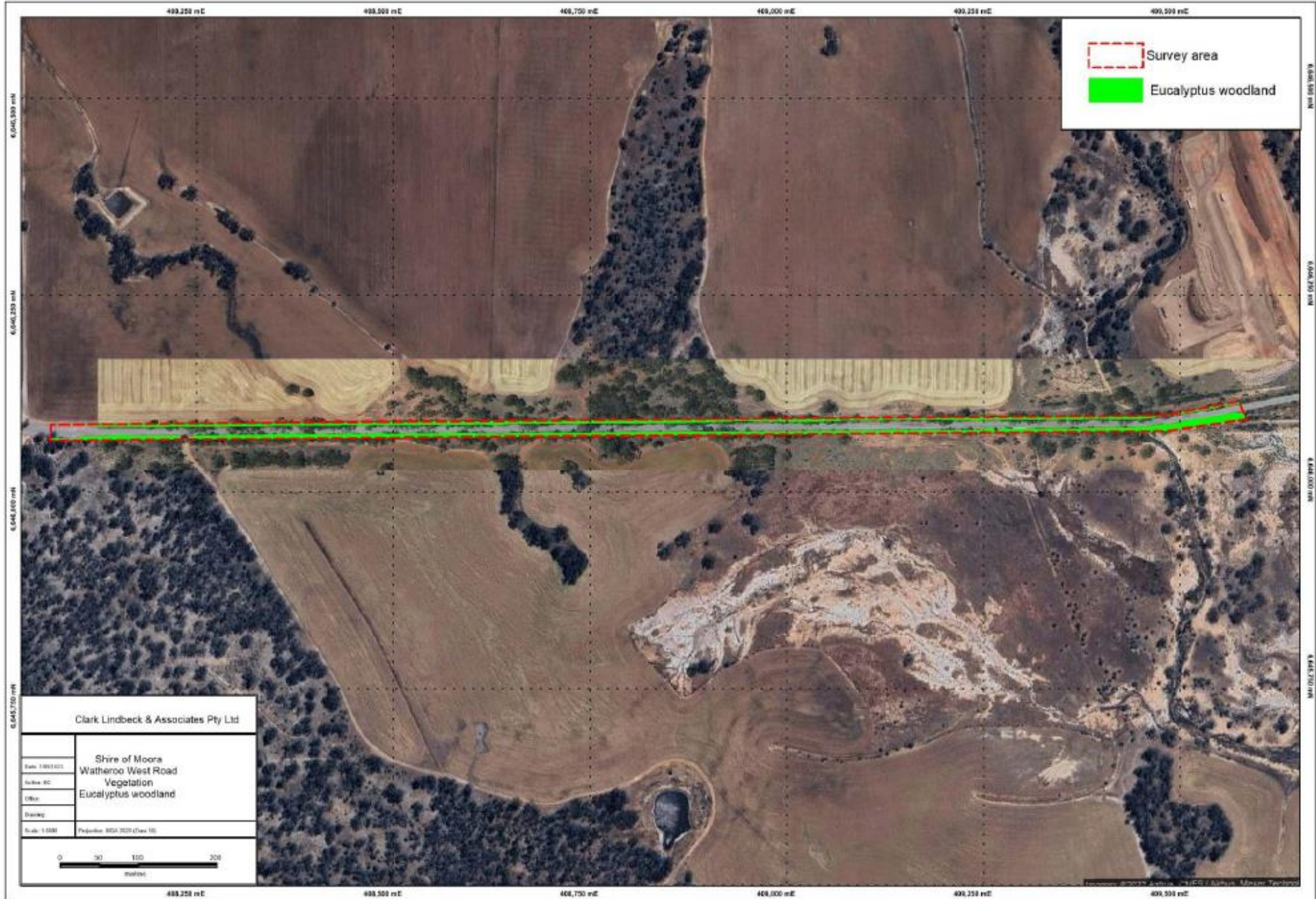
Figure 2 - Potential Breeding Trees Watheroo Road




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<b>Vegetation Type Description</b>	<b>Photo</b>
<p><b>Eucalypt woodland</b></p> <p>Patches of York gum, wandoo &amp; salmon gum woodland.</p>	

## Appendix F. Sources of information

### F.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)

### F.2. References

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