



## **CLEARING PERMIT**

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

### **PERMIT DETAILS**

Area Permit Number: CPS 9258/1  
File Number: DWERVT7739  
Duration of Permit: From 30 August 2021 to 30 August 2023

### **PERMIT HOLDER**

Sarah Diane Walker  
Gavin Charles Roocke

### **LAND ON WHICH CLEARING IS TO BE DONE**

Lot 156 on Deposited Plan 59787, Walpole

### **AUTHORISED ACTIVITY**

The permit holder must not clear more than 0.078 hectares of native vegetation within the area cross-hatched yellow in Figure 1 of Schedule 1.

### **CONDITIONS**

#### **1. Avoid, minimise, and reduce impacts and extent of clearing**

In determining the native vegetation authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending order of preference:

- (a) avoid the clearing of native vegetation;
- (b) minimise the amount of native vegetation to be cleared; and
- (c) reduce the impact of clearing on any environmental value.

#### **2. Weed and dieback management**

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

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;

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

### 3. Directional clearing

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

### 4. 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 1994 (GDA94), 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 1;</li> <li>(f) actions taken to minimise the risk of the introduction and spread of weeds and dieback in accordance with condition 2; and</li> <li>(g) actions taken to undertake directional clearing in accordance with condition 3.</li> </ul> |

### 5. Reporting

The permit holder must provide to the *CEO*, the records required under condition 4 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 –<br>(a) that is a declared pest under section 22 of the <i>Biosecurity and Agriculture Management Act 2007</i> ; or<br>(b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or<br>(c) not indigenous to the area concerned. |

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## END OF CONDITIONS



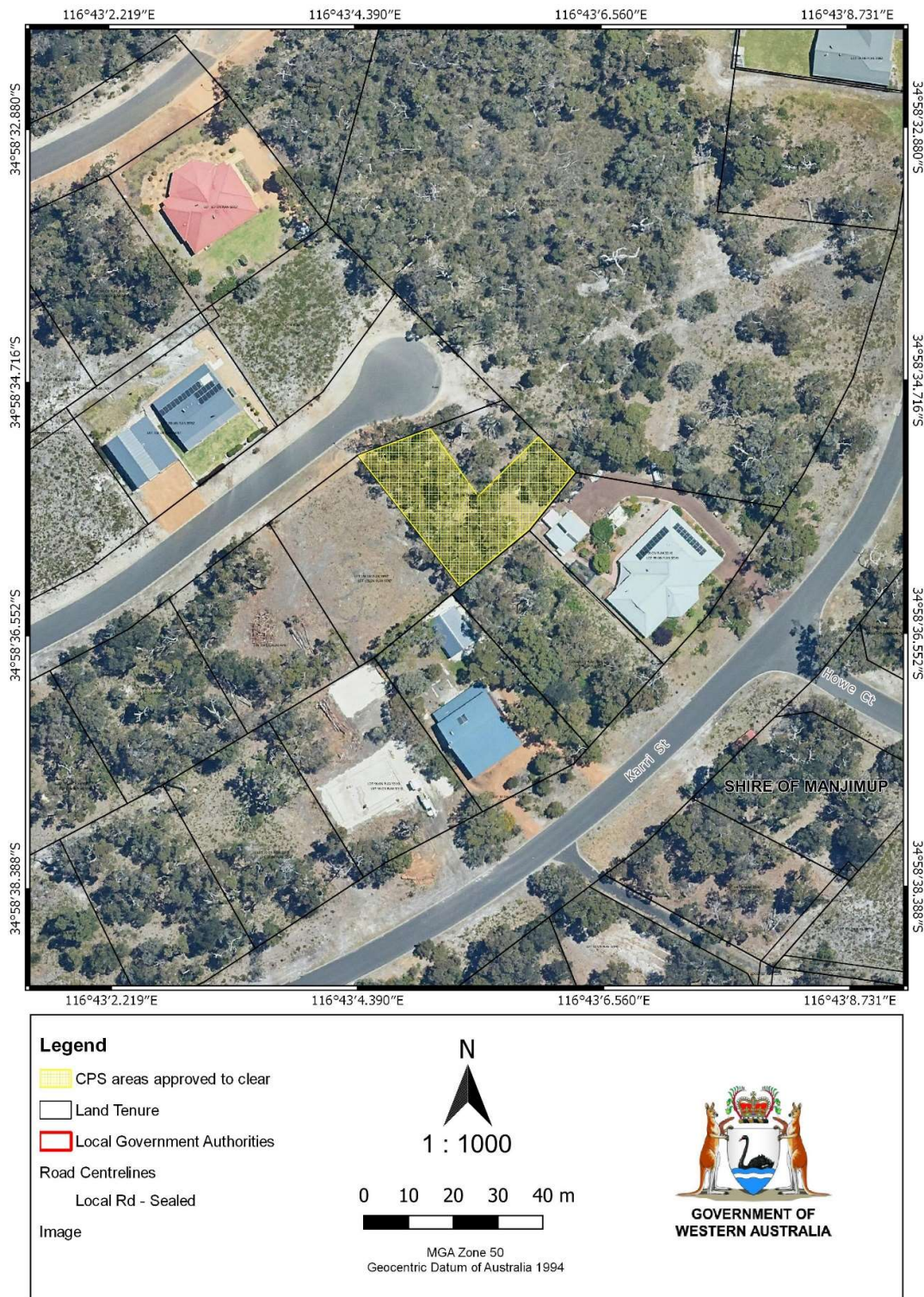
Meenu Vitarana  
A/MANAGER  
NATIVE VEGETATION REGULATION

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

6 August 2021

# SCHEDULE 1

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



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



# Clearing Permit Decision Report

## 1 Application details and outcome

### 1.1. Permit application details

|                        |                                                  |
|------------------------|--------------------------------------------------|
| Permit number:         | CPS 9258/1                                       |
| Permit type:           | Area permit                                      |
| Applicant name:        | Ms Sarah Diane Walker<br>Mr Gavin Charles Roocke |
| Application received:  | 7 April 2021                                     |
| Application area:      | 0.078 hectares of native vegetation              |
| Purpose of clearing:   | Constructing a single dwelling and shed          |
| Method of clearing:    | Mechanical                                       |
| Property:              | Lot 156 on Deposited Plan 59787                  |
| Location (LGA area/s): | Shire of Manjimup                                |
| Localities (suburb/s): | Walpole                                          |

### 1.2. Description of clearing activities

The vegetation proposed to be cleared is contained within a single contiguous area to accommodate a proposed dwelling and shed, and to comply with the recommendations of a Bushfire Attack Level (BAL) report (see Figure 1, Section 1.5).

### 1.3. Decision on application

|                |                                                                         |
|----------------|-------------------------------------------------------------------------|
| Decision:      | Granted                                                                 |
| Decision date: | 6 August 2021                                                           |
| Decision area: | 0.078 hectares of native vegetation, as depicted in Section 1.5, below. |

### 1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 21 days and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix A), relevant datasets (see Appendix E.1), the clearing principles set out in Schedule 5 of the EP Act (see Appendix B), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3). The Delegated Officer also took into consideration that the proposed clearing is to the extent necessary to accommodate a proposed dwelling and to comply with the recommendations of a Bushfire Attack Level (BAL) report.

The assessment identified that the proposed clearing will result in:

- the loss of one potential breeding hollow for black cockatoo species, and
- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values.

Given the condition of the potential breeding hollow, the distance from the closest confirmed breeding site and the extent of black cockatoo breeding habitat in secure conservation estate in the local area, the Delegated Officer determined it unlikely that the potential hollow within the application area is being utilised for breeding by black cockatoo species or that its removal represents a significant residual impact to black cockatoo breeding habitat in the local area. 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 the proposed clearing is unlikely to have long-term adverse impacts on biological, conservation, or land and water resource values and can be minimised and managed to be unlikely to lead to an unacceptable risk to environmental values.

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

- avoid, minimise and reduce the impacts and extent of clearing,
- take hygiene steps to minimise the risk of the introduction and spread of weeds, and
- undertake slow, progressive one directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity.

## 1.5. Site map

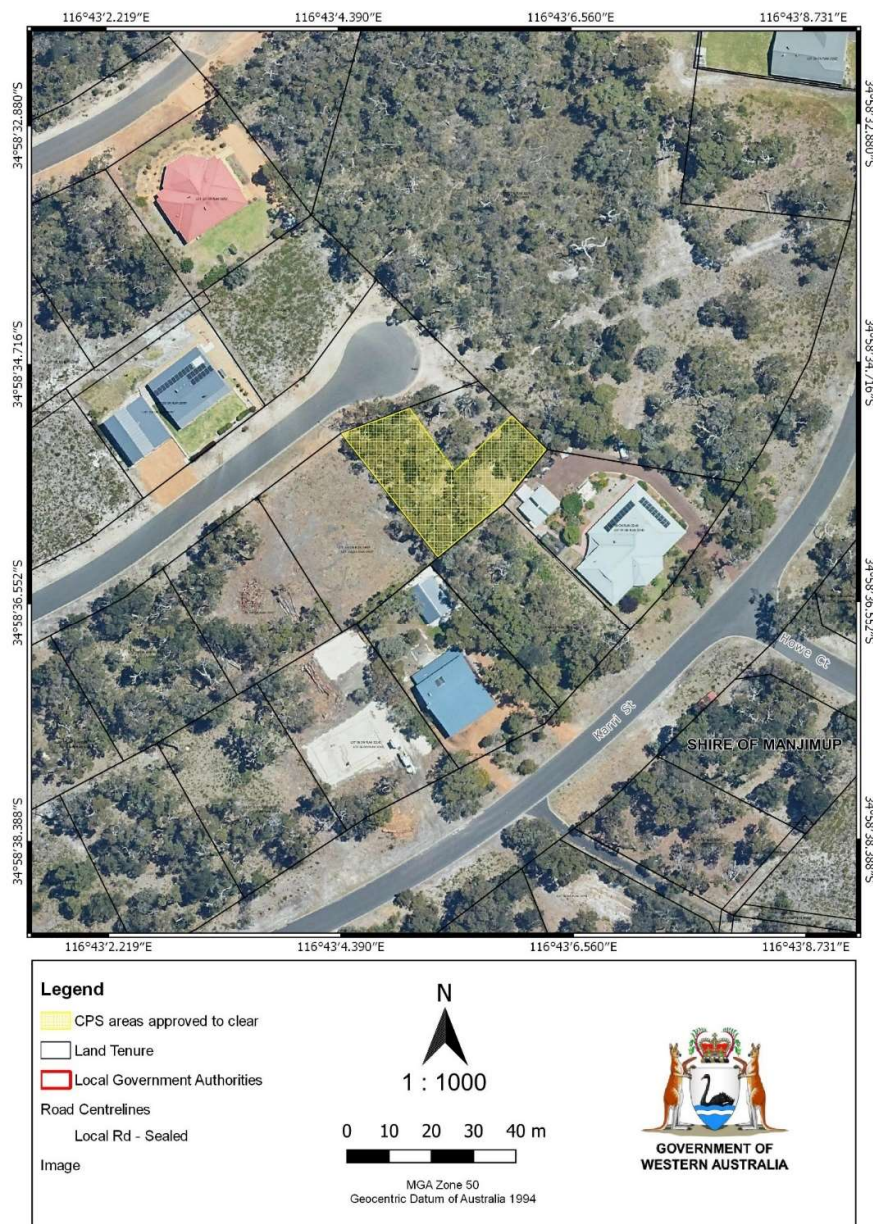


Figure 1 The area cross-hatched yellow indicates the area authorised to be cleared under the granted clearing permit.

## 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)
- *Planning and Development Act 2005* (WA) (P&D Act)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)

## 3 Detailed assessment of application

### 3.1. Avoidance and mitigation measures

The applicant advised that the building envelope of the proposed dwelling was moved as close to the south-western boundary of the property as possible, to allow the retention of a stand of four jarrah trees in the north-western portion of the property (Walker and Rooke, 2021a). The applicant also advised that the clearing area is only to the extent necessary for the building envelopes and Building Protection Zones (BPZ) of the proposed dwelling and shed, and to comply with the recommendations of a BAL report (Walker and Rooke, 2021a).

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

### 3.2. Assessment of impacts on environmental values

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

The assessment against the clearing principles (see Appendix B) identified that the impacts of the proposed clearing present a risk to biological values (flora and fauna) and land and water 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 (flora) - Clearing Principles (a) and (c)

##### Assessment

A review of available databases indicates that a total of 77 conservation significant flora species have been recorded within the local area (see Appendix A). These species were listed as threatened under the state BC Act and/or Commonwealth EPBC Act, or as Priority (P) species by the Department of Biodiversity Conservation and Attractions (DBCA). Based on the habitat preferences of the above species, the condition of the vegetation within the application area, adjacent land uses, and the distribution and extent of existing records, the application area was not considered likely to comprise significant habitat for any priority flora species. However, the application area was considered to provide suitable habitat for one threatened flora species: *Microtis globula*.

*Microtis globula* (south-coast mignonette orchid) is a perennial herb with pale yellow-green flowers occurring between December and January and is associated with peaty soils in seasonally wet swamps (DEWHA, 2008). The south-coast mignonette orchid is known from seven populations between Albany and Walpole, with six of the populations located within national parks or nature reserves and one population occurring on private land (DEWHA, 2008). Given the application area is mapped within a Palusmont (seasonally waterlogged highland) and occurs in soil systems consistent with existing records, the application area may provide suitable habitat for the south-coast mignonette orchid. However, the application area is located within a residential area and has been highly disturbed

from adjacent clearing for residential purposes and road infrastructure. Further, the mapped Palusmont has been highly modified by adjacent land uses and is unlikely to represent the seasonally wet swamps typically associated with the south-coast mignonette orchid. The approved conservation advice for the also notes that the south-coast mignonette orchid is often observed nine to twelve months after summer fire (DEWHA, 2008). Noting that the application area is located within a residential area, it is also unlikely that the application area will experience a suitable fire interval to support a viable population of the south-coast mignonette orchid. Given the condition of the vegetation, adjacent land uses, and the species' representation within secure conservation estate, it is unlikely that the application area comprises significant habitat for the south-coast mignonette orchid or that the proposed clearing represents a significant impact to the continuation of the species.

#### Conclusion

Based on the above assessment, the application area is not considered likely to represent significant habitat for any threatened or priority flora species or to be critical for the continuation of these species. For the reasons set out above, it is considered that impacts to conservation significant flora species are unlikely to result from the proposed clearing and that this does not constitute a significant residual impact.

#### Conditions

No flora management conditions required.

### **3.2.2. Biological values (fauna) - Clearing Principles (a) and (b)**

#### Assessment

A review of available databases indicates that a total of 48 conservation significant fauna species have been recorded within the local area (see Appendix A). These species were listed under the state BC Act and/or Commonwealth EPBC Act, as Priority species by DBCA, or are migratory species listed under International Agreements.

Of the conservation significant fauna species recorded within the local area, the following have the potential to be found within the application area based on habitat preferences (see Appendix A.4):

- *Calyptorhynchus banksii naso* (Forest red-tailed black cockatoo)
- *Calyptorhynchus baudinii* (Baudin's cockatoo)
- *Calyptorhynchus latirostris* (Carnaby's cockatoo)
- *Falco peregrinus* (Peregrine falcon)
- *Isodon fusciventer* (Quenda)
- *Phascogale tapoatafa wambenger* (South-western brush-tailed phascogale)
- *Pseudocheirus occidentalis* (Western ringtail possum)

#### **Black cockatoo species**

The forest red-tailed black cockatoo, Baudin's cockatoo, and Carnaby's cockatoo, collectively known as black cockatoo species, are known to nest in hollows of live and dead trees, including marri (*Corymbia calophylla*), jarrah (*Eucalyptus marginata*), karri (*Eucalyptus diversicolor*), wandoo (*Eucalyptus wandoo*), tuart, flooded gum (*Eucalyptus rudis*), and other *Eucalyptus* spp. (Commonwealth of Australia, 2012). 'Breeding habitat' for black 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, 2012). While breeding, black cockatoos also generally forage within a 6 to 12-kilometre radius of their nesting site (Commonwealth of Australia, 2012). According to available datasets, mapped black cockatoo foraging habitat is recorded within a 12-kilometre radius of the application area, making it a suitable location for breeding if appropriate hollows are present. The application area is also mapped within the predicted breeding range for all three black cockatoo species (Commonwealth of Australia, 2012). However, according to available databases, the closest confirmed breeding site is approximately 18 kilometres north of the application area.

Given the above, and that the application area includes 13 mature marri and six mature jarrah trees, the application area may provide breeding habitat for black cockatoo species, if suitable hollows are present. Photographs provided by the applicant indicate that seven of the trees within the application area are of suitable DBH to provide breeding habitat, with one tree (Tree 12) appearing to contain a single vertical hollow (Figure 2; Walker and Rooke, 2021b). From the ground, it is difficult to determine the dimensions of the hollow and whether the entrance size and internal depth would make it suitable for use as a breeding hollow by black cockatoo species. In the absence of survey information, it is considered that Tree 12 may contain a suitable breeding hollow for black cockatoo species.

While it is acknowledged that the loss of mature, hollow-bearing trees represents a significant risk to black cockatoo species (Commonwealth of Australia, 2012), it is noted that the application area is located within an extensively vegetated landscape and that approximately 75 per cent of all remnant vegetation in the local area occurs within secure conservation estate. The application area is also located directly adjacent to a vegetated Crown Reserve and within 500 metres of the Walpole-Nornalup National Park, which are likely to contain suitable breeding habitat for black cockatoo species. Noting that much of the available breeding habitat in the local area is located within secure conservation estate and that the closest confirmed breeding site is 18 kilometres north of the application area, it is not considered likely that the loss of one potentially suitable breeding hollow within a residential area represents a significant impact to black cockatoo breeding habitat. Further, the suitability of the tree for use by black cockatoo species is questionable, given the dimensions of any hollow present are unknown and the potential hollow has been significantly disturbed through scorching from historical fires (Figure 2). Given the condition of the tree, the distance from the closest confirmed breeding site and the extent of secure breeding habitat in the local area, it is not considered likely that the hollow is being utilised for breeding by black cockatoo species or that its removal represents a significant residual impact.



Figure 2. Photographs of potential vertical hollow within Tree 12 (Walker and Roocke, 2021b).

It is recognised that the potential breeding trees within the application area may also represent suitable roosting habitat for black cockatoo species. However, according to available databases, the closest confirmed roost site is more than 40 kilometres east of the application area. Further, roosting is typically noted to occur within suitable trees close to an important water source and within an area of quality foraging habitat (Commonwealth of Australia, 2012). As the application area does not transect any watercourses and contains a small area of foraging habitat within an extensively vegetated landscape, it is not considered likely that the application area contains significant roosting habitat for any black cockatoo species.

Black cockatoo species are noted to forage on a range of plant species, with the primary foraging resources varying between species (Commonwealth of Australia, 2012). Carnaby's cockatoos forage on the seeds, nuts and flowers of a variety of plants, including Proteaceous species (*Banksia*, *Hakea* and *Grevillea*), as well as *Allocasuarina* and *Eucalyptus* species, marri and a range of introduced species (Valentine and Stock, 2008). Forest red-tailed black cockatoos feed predominantly on the seeds of marri and jarrah, which comprise approximately 90 per cent of their diet (DEC, 2008). Baudin's cockatoos primarily feed on the seeds of marri, but may also forage on the seeds of jarrah and Proteaceous species (DEC, 2008). As the application area includes a canopy of marri, jarrah and *Allocasuarina fraseriana* (sheoak), it is likely to comprise 0.078 hectares of suitable foraging habitat for black cockatoo species. However, as discussed above, the application area is located within an extensively vegetated area and occurs within 500 metres of extensive tracts of native vegetation within Walpole-Nornalup National Park and adjacent Crown Reserves, which are likely to provide larger remnants of suitable foraging habitat for black cockatoo species. Approximately 75 per cent of all remnant vegetation in the local area also occurs within secure conserve estate and the vegetation within the application area comprises approximately 0.0001 per cent of all vegetation in the local area. Further, foraging habitat within a 12-kilometre radius of breeding sites and a 6-kilometre radius of roosting sites is noted as being of particular importance for black cockatoo species (Commonwealth of Australia, 2012). According to available datasets, the application area occurs approximately 18 kilometres from the closest confirmed breeding site and over 40 kilometres from the closest confirmed roost site. Given the extent of the application area, the extent of potential foraging habitat in the local area, and the distance

from confirmed breeding and roost sites, the application area is not considered to comprise significant foraging habitat for black cockatoo species and the proposed clearing is unlikely to represent a significant impact to black cockatoo foraging habitat in the local area.

### **Peregrine falcon**

The peregrine falcon typically nests on rocky ledges in tall, vertical cliff faces and gorges, or in tall trees associated with drainage lines, and can hunt in a range of habitat types including timbered watercourses, riverine environments, wetlands, plains, open woodlands, and pylons and spires of buildings (DAWE, 2021). Given its woodland structure and proximity to existing records, the application area may provide suitable foraging habitat for the peregrine falcon. However, noting that the peregrine falcon is a highly mobile species with a large home range that does not rely on specialist niche habitats, the peregrine falcon is likely to be transient in the application area and it is unlikely that the application area represents significant habitat for the species. Further, noting that the application area is a disturbed remnant in a residential area and occurs within 500 metres of larger intact remnants of native vegetation including Walpole-Nornalup National Park and adjacent Crown Reserves, it is unlikely that the peregrine falcon would be reliant on the application area for foraging in the local area.

### **Quenda**

Quenda are ground-dwelling marsupials, typically associated with forest or woodlands near watercourses, where understorey consists of dense scrub and leaf litter is abundant (DEC, 2012a). Given the application area contains remnant marri and jarrah woodland, it is likely to contain suitable habitat for quenda. However, it is acknowledged that the application area comprises 0.078 hectares of degraded remnant vegetation in a residential area and that native understorey is sparse and highly disturbed throughout the application area. It is therefore unlikely that the application area would provide sufficient understorey cover and leaf litter to comprise preferred habitat for the species. Further, the local area is extensively vegetated and the application area is located within 500 metres of larger remnants of suitable habitat for quenda including Walpole-Nornalup National Park and adjacent Crown Reserves, and it is expected that individuals will be able to disperse into this vegetation at the time of clearing, given the application of slow, progressive directional clearing. Given the extent of the proposed clearing, the condition of the vegetation and the extent of suitable habitat available in the local area, the application area is not considered likely to comprise significant habitat for quenda.

### **Arboreal fauna**

The western ringtail possum is an arboreal folivore, associated with a diverse range of habitats in the South Coast management zone from Walpole to east of Albany, characterised by high canopy cover and connectivity (DPAW, 2017). Within the South Coast management zone, suitable habitat includes coastal heath, jarrah and marri woodland, *Agonis flexuosa* (peppermint) woodlands, myrtaceous heaths and shrublands, *Eucalyptus megacarpa* (Bullich) dominated riparian zones and *Eucalyptus diversicolor* (karri) forest with appropriate canopy, that provide suitable foraging habitat and tree hollows for breeding and diurnal refuge (DPAW, 2017). Given the application area comprises marri and jarrah woodland and may contain a tree hollow, the application area may provide 0.078 hectares of suitable habitat for the western ringtail possum. However, it is acknowledged that records of the western ringtail possum in the local area are either historical records or are dated prior to 2000, and it is unclear whether a local population persists. Photographs provided by the applicant also indicate that canopy cover across the application area is patchy due to its degraded condition, with small areas of full canopy connectivity and other areas comprising a sparse and disconnected canopy. It is also noted that the application area occurs within 500 metres of larger, intact remnants of vegetation, including Walpole-Nornalup National Park and adjacent Crown Reserves, which are likely to provide a more suitable canopy structure and extensive habitat resources for the western ringtail possum. Further, the local area is extensively vegetated and approximately 75 per cent of remnant vegetation in the local area persists within secure conservation estate. Given the extent of the proposed clearing, the canopy structure of the application area, and the extent of suitable habitat available in the local area, the application area is not considered likely to comprise significant habitat for the western ringtail possum and the proposed clearing is unlikely to result in significant impacts to western ringtail possum habitat in the local area. Should individuals be present within the application area at the time of clearing, it is expected that individuals will be able to disperse into local conservation area, given the application of slow, progressive directional clearing.

The south-western brush-tailed phascogale is an arboreal dasyurid, associated with dry sclerophyll forests and open woodlands that contain hollow-bearing trees, characterised by high canopy cover and connectivity (DEC, 2012b). As the application area comprises marri and jarrah woodland and may contain a hollow-bearing tree, the application area may provide 0.078 hectares of suitable habitat for the south-western brush-tailed phascogale. However, as discussed above, canopy structure within the application area is patchy and there are extensive intact remnants of native vegetation in the local area, of which 75 per cent occur within secure conservation estate. It is likely that the larger remnants of native vegetation in the local area, including Walpole-Nornalup National Park,

comprise a suitable canopy structure and appropriate habitat resources to support the south-western brush-tailed phascogale. Given the application area is located within 500 metres of Walpole-Nornalup National Park and adjacent Crown Reserves, it is expected that individuals will be able to disperse into this vegetation if present at the time of clearing, given the application of slow, progressive directional clearing. Given the extent of the proposed clearing, the canopy structure of the application area, and the extent of suitable habitat available in the local area, the application area is not considered likely to comprise significant habitat for the south-western brush-tailed phascogale and the proposed clearing is unlikely to significantly impact south-western brush-tailed phascogale habitat in the local area.

#### Conclusion

Based on the above assessment, the proposed clearing may result in the loss of one potential breeding hollow for black cockatoo species but is unlikely to significantly impact breeding habitat for black cockatoo species or significant habitat for conservation significant fauna species in the local area. For the reasons set out above, it is considered that potential direct impacts to fauna resulting from the proposed clearing can be managed through a directional clearing condition.

#### Conditions

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

- Directional clearing, which requires slow, progressive, one directional clearing to allow terrestrial fauna to disperse ahead of the clearing activity should they occur on site at the time of clearing,

### **3.2.3. Land and water resources - Clearing Principles (f) and (g)**

#### Assessment

As the application area is mapped within a Plausmont and may be seasonally wet, the vegetation within the application area may be considered to be growing in, or in association with, an environment associated with a wetland. However, the application area comprises 0.078 hectares of disturbed vegetation in a residential area and does not include characteristic riparian or wetland vegetation. It is also acknowledged that the Plausmont has been highly modified through historical clearing for residential subdivisions and road infrastructure, and it is unlikely that the vegetation within the application area is contributing significantly to the function of riparian communities or wetlands in the local area. Given the extent and location of the proposed clearing, the condition of the vegetation, and adjacent land uses, the proposed clearing is not considered likely to result in any significant or long-term impacts to the ecological values of the vegetation communities associated with the wetland mapped within the application area.

Noting that the mapped soil type within the application area is susceptible to land degradation resulting from wind erosion, subsurface acidification, and phosphorus export, the proposed clearing has the potential facilitate land degradation. However, the proposed clearing will result in the loss of 0.078 hectares of disturbed vegetation in a residential area that has been modified by adjacent land uses, including historical clearing for residential subdivisions and road infrastructure. Following clearing, the application area will be developed into single dwelling and shed with associated asset protection zones, and it is unlikely that the cleared area will be left exposed to weathering for long periods of time. Further, the local area is extensively vegetated and the application area is adjacent to a vegetated Crown Reserve, which is likely to provide a buffer for the effects of land degradation resulting from wind erosion, subsurface acidification, and phosphorus export. Given the extent and location of the proposed clearing, the condition of the vegetation, and the extent of remnant vegetation in the local area, the proposed clearing is not considered likely to cause appreciable land degradation.

Given the application area is weed-infested, it is acknowledged that the proposed clearing may cause degradation of adjacent and nearby remnant native vegetation by facilitating the spread of weeds and dieback. A weed and dieback management condition is considered to minimise this risk, and it is not considered likely that the proposed clearing will have a significant impact on adjacent remnant vegetation.

#### Conclusion

Based on the above assessment, the proposed clearing may result in the loss of vegetation growing in, or in association with, an environment associated with a wetland and may facilitate the spread of weeds and dieback into adjacent retained vegetation in the local area. For the reasons set out above, the proposed clearing is unlikely to result in any significant or long-term impacts to the ecological values of the riparian communities associated with the wetland or to result in appreciable land degradation.

It is considered that the impacts of the proposed clearing can be managed to be environmentally acceptable by taking steps to minimise the risk of the introduction and spread of weeds and dieback and does not constitute a significant residual impact.

#### Conditions

To address the above impacts, the following management measure will be required as a condition on the clearing permit:

- Dieback and weed control, which ensures protocols are put in place to limit the introduction and transportation of dieback- and weed-affected materials.

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

The clearing permit application was advertised on the Department of Water and Environmental Regulation's website on 28 April 2021, inviting submissions from the public within a 21-day period. No submissions were received in relation to this application.

The Shire of Manjimup (the Shire) advised DWER that local government approvals are required for the proposed dwelling and shed, and that the proposed clearing is consistent with the Shire's Local Planning Scheme 4, under which the property is zoned as Residential (Shire of Manjimup, 2021). The Shire did not have any objections to the proposed clearing and advised that planning approval for a Dwelling - Single, Outbuilding, Land Clearing and a building envelope variation was granted on 23 March 2021 (Shire of Manjimup, 2021). The Shire advised that the approved building envelopes and native bush site plan were consistent with the application area for the clearing permit (Shire of Manjimup, 2021).

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

### A.1. Site characteristics

| Characteristic         | Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Local context          | The area proposed to be cleared is part of a mosaic of fragmented native vegetation in the intensive land use zone of Western Australia. It is adjacent to residential properties to the east and south, Merlot Street to the north and Crown Reserve 44332 to the west. Spatial data indicates the local area (20-kilometre radius from the centre of the area proposed to be cleared) retains approximately 84.2 per cent of the original native vegetation cover.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Ecological linkage     | <p>The application area is mapped within Strategic Zone A of the South West Macro Corridor, which represents a continuous strip of vegetation along the Fitzgerald River valley linking the Fitzgerald River National Park with Lake Magenta Nature Reserve (Wilkins, et al., 2006). The main objective of the South West Macro Corridor project was to improve the long-term future of wildlife within national parks and nature reserves within the South Coast Region of Western Australia by further developing and promoting a regional-scale Macro Corridor Network of native vegetation with inland linkages along major river systems to protected areas and uncleared bushland (Wilkins, et al., 2006).</p> <p>Given the application area is a small remnant within a mosaic of remnant native vegetation and cleared areas within a residential area, it is unlikely that the application area is contributing significantly to the functionality of the South West Macro Corridor. Further, noting that the application area is surrounded by residential properties and road infrastructure, it is also unlikely that the vegetation within the application area is providing a significant ecological linkage in the local area or facilitating significant movement into the adjacent Crown Reserve 44332 or other conservation reserves in the local area.</p> |
| Conservation areas     | The closest conservation areas are the Walpole and Nornalup Inlets Marine Park and the Walpole-Nornalup National Park, which occur between 250 and 300 metres from the application area, separated by previously cleared residential properties and road infrastructure.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Vegetation description | <p>Photographs supplied by the applicant indicate the vegetation within the proposed clearing area consists of a canopy of <i>Corymbia calophylla</i> (marri), <i>Eucalyptus marginata</i> (jarrah) and sparsely distributed <i>Allocasuarina fraseriana</i> (sheoak), over a sparse understorey of sedges and weeds. Representative photos are available in Appendix D.</p> <p>This is inconsistent with the mapped South-west Forest vegetation type Walpole (Wp), described as low woodland of <i>Allocasuarina fraseriana</i>-<i>Banksia attenuata</i>-<i>Banksia ilicifolia</i> with stunted <i>Eucalyptus marginata</i> subsp. <i>marginata</i> on flats in the hyperhumid zone (Mattiske and Havel, 1998). However, this is consistent with the mapped Beard vegetation 3, described as medium forest; jarrah-marri (Shepherd et al, 2001).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Vegetation condition   | <p>Photographs supplied by the applicant indicate the vegetation within the proposed clearing area is in Good to Degraded (Keighery, 1994) condition, described as:</p> <ul style="list-style-type: none"> <li>• Good: Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it, and</li> <li>• Degraded: Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management (Keighery, 1994).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Characteristic                             | Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                            | The full Keighery (1994) condition rating scale is provided in Appendix C. Representative photos are available in Appendix D.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Climate and landform                       | The application area occurs on flat topography in deep sands and has a mean annual maximum temperature of 20.3°C and a mean annual minimum temperature of 11.7°C. The mean annual rainfall is 1300 millimetres, and the annual evapotranspiration rate is 900 millimetres.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Soil description and land degradation risk | <p>The soil is mapped within the Walpole Subsystem (254BrWA), described as flat to gently sloping benches with some shallow dissections, podzols and deep sands, including Teatree scrub, sheoak woodland and kangaroo grass sedgeland (DPIRD, 2021).</p> <p>The Walpole Subsystem (254BrWA) is mapped at a low risk of land degradation resulting from water erosion, salinity, flooding, and waterlogging, but is mapped at a high risk of land degradation resulting from wind erosion, subsurface acidification and phosphorus export (Schoknecht et al., 2004).</p>                                                                                                                                                                                                                                                                                                                                                       |
| Waterbodies and hydrogeography             | <p>The desktop assessment and aerial imagery indicated that the application area is located within a mapped Palusmont (seasonally waterlogged highland). The application area does not transect any watercourses, with the closest watercourse being the Walpole River which occurs approximately 300 metres from the application area, separated by previously cleared residential properties and road infrastructure.</p> <p>The application area is not mapped within any surface or groundwater areas proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> (the RIWI Act) and does not transect any water resources proclaimed under either the <i>Metropolitan Water Supply Sewerage and Drainage Act 1909</i> or <i>Country Areas Water Supply Act 1947</i> (CAWS Act).</p> <p>Groundwater salinity within the application area is mapped at 500 to 1000 milligrams per litre total dissolved solids.</p> |
| Flora                                      | <p>The desktop assessment identified that a total of 77 rare flora species have been recorded within the local area, comprising one Priority 1 (P1) flora, 19 Priority 2 (P2) flora, 26 Priority 3 (P3) flora, 24 Priority 4 (P4) flora, and seven threatened flora (Western Australian Herbarium, 1998-). None of these existing records occur within the application area, with the closest record being an occurrence of <i>Gonocarpus simplex</i> (P4) approximately 0.6 kilometres from the application area.</p> <p>With consideration for the site characteristics set out above, relevant datasets (see Appendix E.1), the habitat preferences of the aforementioned species, and the distribution and extent of existing records, the application area may provide suitable habitat for one threatened flora species and impacts to this species required further consideration (see Appendix A.3).</p>               |
| Ecological communities                     | <p>The desktop assessment identified that the closest state-listed threatened ecological community (TEC) is an occurrence of the Mount Lindesay - Little Lindesay Vegetation Complex TEC, located approximately 50.3 kilometres north-east of the application area.</p> <p>The closest state-listed priority ecological communities (PECs) include an occurrence of the <i>Reedia spathacea</i> - <i>Empodisma gracillimum</i> - <i>Schoenus multiglumis</i> dominated peat paluslopes and sandy mud floodplains of the Warren Biogeographical Region PEC and the Subtropical and Temperate Coastal Saltmarsh PEC, approximately 200</p>                                                                                                                                                                                                                                                                                       |

| Characteristic | Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                | metres from the application area, separated by previously cleared residential properties and road infrastructure.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Fauna          | <p>The desktop assessment identified that a total of 48 threatened or priority fauna species have been recorded within the local area, including 26 threatened fauna species, 11 priority fauna species, nine fauna species protected under international agreement, and two other specially protected fauna species (DBCA, 2007-). None of these existing records occur within the application area, with the closest record being an occurrence of <i>Pseudocheirus occidentalis</i> (western ringtail possum), approximately 250 metres west of the application area.</p> <p>With consideration for the site characteristics set out above, relevant datasets (see Appendix E.1), and the habitat preferences of the aforementioned species, the application area may provide suitable habitat for seven conservation significant fauna species and impacts to these species required further consideration (see Appendix A.3).</p> |

## A.2. Vegetation extent

|                                                    | Pre-European extent (ha) | Current extent (ha) | Extent remaining (%) | Current extent in all DBCA managed land (ha) | Current proportion (%) of pre-European extent in all DBCA managed land |
|----------------------------------------------------|--------------------------|---------------------|----------------------|----------------------------------------------|------------------------------------------------------------------------|
| IBRA bioregion*                                    |                          |                     |                      |                                              |                                                                        |
| Warren                                             | 833,985.56               | 659,432.21          | 79.07                | 558,485.38                                   | 66.97                                                                  |
| Beard vegetation association                       |                          |                     |                      |                                              |                                                                        |
| Beard vegetation association 3*                    | 2,661,087.83             | 1,803,421.34        | 67.77                | 1,469,765.05                                 | 55.23                                                                  |
| Beard vegetation association within IBRA bioregion |                          |                     |                      |                                              |                                                                        |
| Beard vegetation association 3* (Warren)           | 250,262.10               | 195,318.18          | 78.05                | 170,135.22                                   | 67.98                                                                  |
| Local area                                         |                          |                     |                      |                                              |                                                                        |
| 20-kilometre radius                                | 86,825.93                | 73,121.52           | 84.22                | -                                            | -                                                                      |

\*Government of Western Australia (2019)

### A.3. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix E.1), and the distribution and extent of existing records, 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 in local area (total) | Are surveys adequate to identify? [Y, N, N/A] |
|-------------------------|---------------------|-----------------------------------|---------------------------------|---------------------------|-----------------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| <i>Microtis globula</i> | T                   | Y                                 | N                               | Y                         | 3.0                                                 | 1                                             | N/A                                           |

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

### A.4. Fauna analysis table

With consideration for the site characteristics set out above and relevant datasets (see Appendix E.1), impacts to the following conservation significant fauna required further consideration.

| Species name                                                                  | Conservation status | Suitable habitat features? [Y/N] | Suitable vegetation type? [Y/N] | Distance of closest record to application area (km) | Number of known records in local area (total) | Are surveys adequate to identify? [Y, N, N/A] |
|-------------------------------------------------------------------------------|---------------------|----------------------------------|---------------------------------|-----------------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| <i>Calyptorhynchus banksii naso</i> (Forest red-tailed black cockatoo)        | VU                  | Y                                | Y                               | 0.72                                                | 13                                            | N/A                                           |
| <i>Calyptorhynchus baudinii</i> (Baudin's cockatoo)                           | EN                  | Y                                | Y                               | 1.1                                                 | 180                                           | N/A                                           |
| <i>Calyptorhynchus latirostris</i> (Carnaby's cockatoo)                       | EN                  | Y                                | Y                               | 0.97                                                | 29                                            | N/A                                           |
| <i>Falco peregrinus</i> (Peregrine falcon)                                    | EN                  | Y                                | Y                               | 2.1                                                 | 8                                             | N/A                                           |
| <i>Isodon fusciventer</i> (Quenda)                                            | OS                  | Y                                | Y                               | 1.9                                                 | 32                                            | N/A                                           |
| <i>Phascogale tapoatafa wambenger</i> (South-western brush-tailed phascogale) | P4                  | Y                                | Y                               | 1.5                                                 | 29                                            | N/A                                           |
| <i>Pseudocheirus occidentalis</i> (Western ringtail possum)                   | CD                  | Y                                | Y                               | 0.25                                                | 8                                             | N/A                                           |

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority; CD: Species of special conservation interest (conservation dependent fauna); OS: Other specially protected fauna

## 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> “Native vegetation should not be cleared if it comprises a high level of biodiversity.”</p> <p><u>Assessment:</u> The area proposed to be cleared contains suitable habitat for regionally significant flora and fauna species.</p>                                                                                                                                                                                                                                                                                                                      | May be at variance           | Yes<br><i>Refer to Sections 3.2.1 and 3.2.2, 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> The area proposed to be cleared contains suitable foraging, roosting, and breeding habitat for conservation significant fauna.</p>                                                                                                                                                                                                                                  | May be at variance           | Yes<br><i>Refer to Section 3.2.2, 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> The area proposed to be cleared may contain suitable habitat for one flora species listed under the BC Act.</p>                                                                                                                                                                                                                                                                                    | Not likely to be at variance | Yes<br><i>Refer to Section 3.2.1, 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> The area proposed to be cleared comprises degraded marri-jarrah-sheoak woodland and does not contain species that can indicate a threatened ecological community (TEC). Given the distance and separation from mapped communities, the proposed clearing is not expected to comprise the whole or a part of, or be necessary for the maintenance of, any TEC.</p> | Not likely to be at variance | No                                                      |
| <b>Environmental value: significant remnant vegetation and conservation areas</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                              |                                                         |
| <p><u>Principle (e):</u> “Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</p> <p><u>Assessment:</u> The extent of the mapped vegetation type and native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is not considered to be contributing to a significant ecological linkage in the local area.</p>                                                       | Not likely to be at variance | No                                                      |
| <p><u>Principle (h):</u> “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.”</p> <p><u>Assessment:</u> Given the extent of the proposed clearing and the distance and separation from 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                                                      |
| <b>Environmental value: land and water resources</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                              |                                                         |
| <p><u>Principle (f):</u> “Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</p> <p><u>Assessment:</u> Given the application area is mapped within a Plausmont and may be seasonally wet, the vegetation within the application area may be</p>                                                                                                                                                                                                                                       | May be at variance           | Yes<br><i>Refer to Section 3.2.3, above.</i>            |

| Assessment against the clearing principles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Variance level               | Is further consideration required? |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|------------------------------------|
| considered to be growing in, or in association with, an environment associated with a wetland.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                              |                                    |
| <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 not susceptible to water erosion, salinity, flooding, or waterlogging, but have a high risk of land degradation resulting from wind erosion, subsurface acidification, and phosphorus export.</p>                                                                                                                                                                                                                                                                                                                                                                                 | Not likely to be at variance | Yes                                |
| <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> While the application area is mapped within a Plausmont and may be seasonally wet, the wetland is almost completely within the local subdivision which is predominantly cleared and is unlikely to exhibit typical wetland characteristics or produce a significant source of surface water. Given the extent of the proposed clearing and that no water courses or proclaimed water resources are recorded within the application area, the proposed clearing is unlikely to impact surface or ground water quality.</p>                                              | Not likely to be at variance | No                                 |
| <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> The application area is mapped within a Plausmont and may be seasonally wet. However, this wetland is almost completely within the local subdivision which is predominantly cleared and unlikely to exhibit typical wetland characteristics. Noting the extent of the proposed clearing and that the mapped soils and topographic contours in the surrounding area do not indicate the proposed clearing is prone to flooding or waterlogging, it is not considered likely that the proposed clearing will cause, or exacerbate, the incidence or intensity of flooding.</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.                 |
| 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

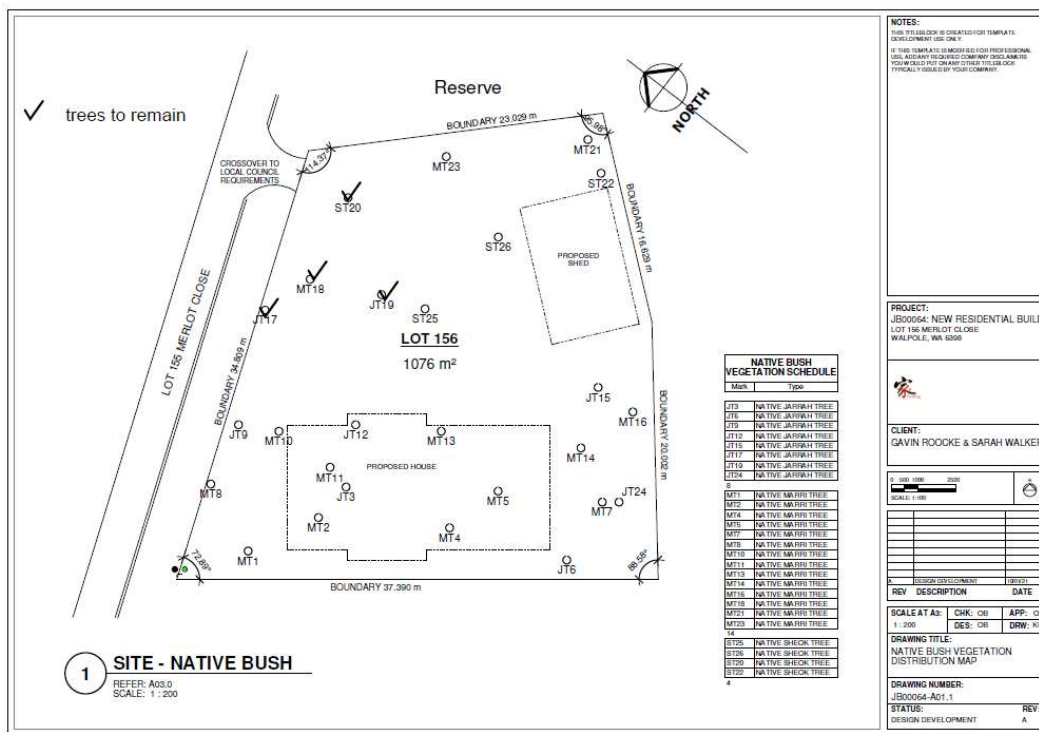


Figure 3. Approved native bush site plan and building envelopes (Shire of Manjimup, 2021).



Figure 4. Location of photographs of trees within the application area, corresponding to the images below (Walker and Rooke, 2021b).



Figure 5. Photographs of Tree 1, proposed to be cleared (Walker and Roocke, 2021b).



Figure 4. Photographs of Tree 2, proposed to be cleared (Walker and Roocke, 2021b).



Figure 6. Photographs of Tree 3, proposed to be cleared (Walker and Roocke, 2021b).



Figure 7. Photographs of Tree 4, proposed to be cleared (Walker and Roocke, 2021b).



Figure 8. Photographs of Tree 5, proposed to be cleared (Walker and Rooke, 2021b).



Figure 9. Photographs of Tree 6, proposed to be cleared (Walker and Rooke, 2021b).



Figure 10. Photographs of Tree 7, proposed to be cleared (Walker and Roocke, 2021b).



Figure 11. Photographs of Tree 8, proposed to be cleared (Walker and Roocke, 2021b).



Figure 12. Photographs of Tree 9, proposed to be cleared (Walker and Roocke, 2021b).

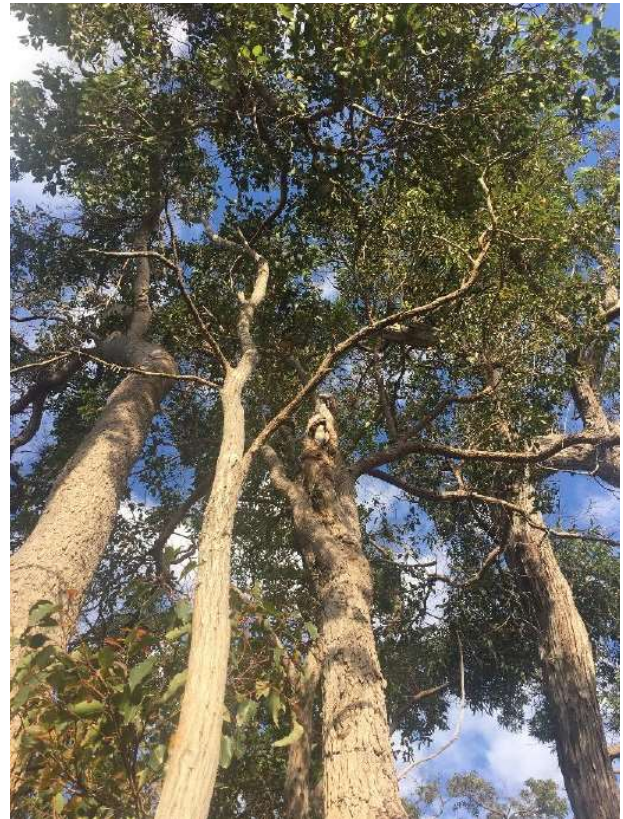


Figure 13. Photographs of Tree 10, proposed to be cleared (Walker and Roocke, 2021b).



Figure 14. Photographs of Tree 11, proposed to be cleared (Walker and Roocke, 2021b).



Figure 15. Photographs of Tree 12, proposed to be cleared (Walker and Roocke, 2021b).



Figure 16. Photographs of Tree 13, proposed to be cleared (Walker and Roocke, 2021b).



Figure 17. Photographs of Tree 14, proposed to be cleared (Walker and Roocke, 2021b).



Figure 18. Photographs of Tree 15, proposed to be cleared (Walker and Roocke, 2021b).



Figure 19. Photographs of Tree 16, proposed to be cleared (Walker and Roocke, 2021b).



Figure 20. Photographs of Tree 23, proposed to be cleared (Walker and Roocke, 2021b).



Figure 21. Photographs of Tree 21, proposed to be cleared (Walker and Roocke, 2021b).

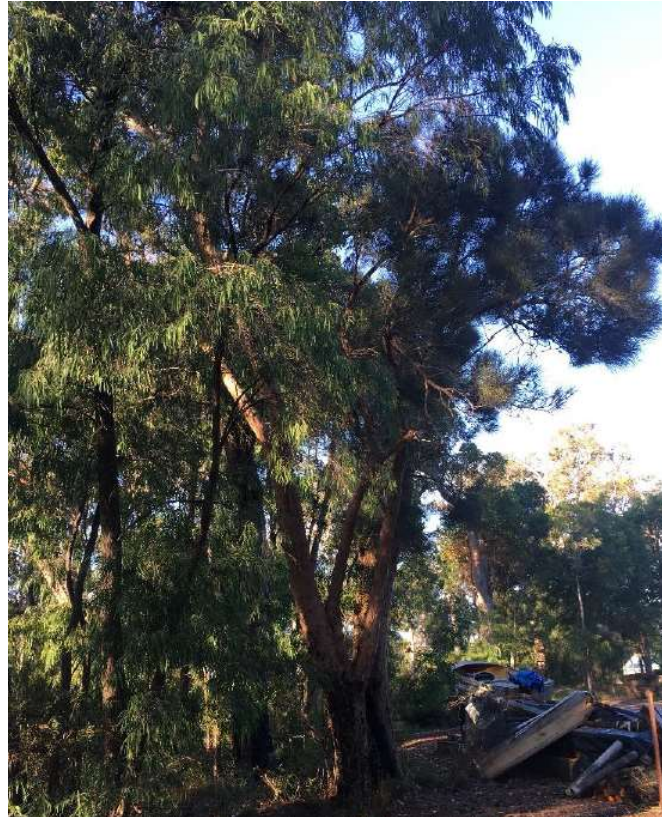


Figure 22. Photographs of Tree 22, proposed to be cleared (Walker and Roocke, 2021b).



Figure 23. Photographs of Tree 24, proposed to be cleared (Walker and Roocke, 2021b).

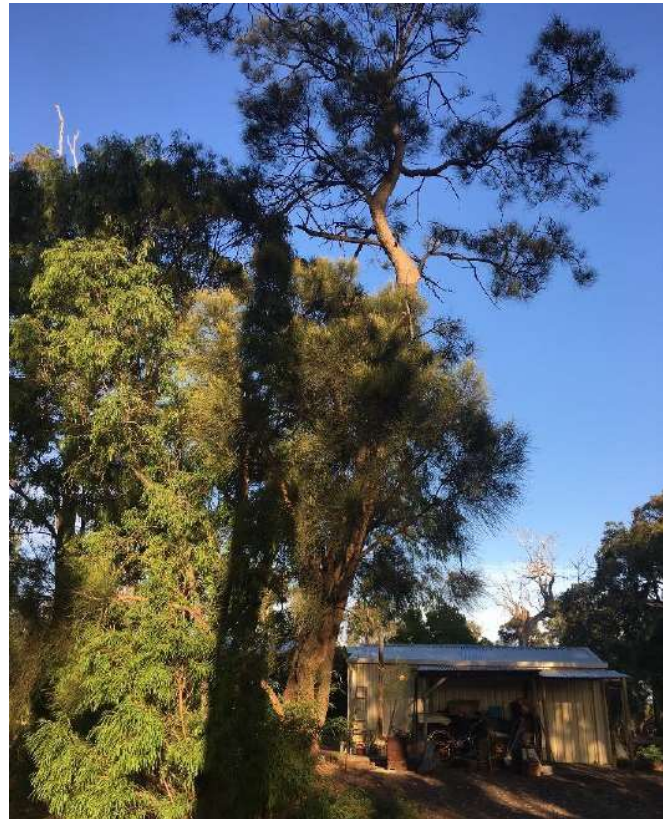


Figure 24. Photographs of Tree 26, proposed to be cleared (Walker and Roocke, 2021b).

## 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)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- CAWSA Part 2A Clearing Control Catchments (DWER-004)
- Consanguineous Wetlands Suites (DBCA-020)
- 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
- South Coast Significant Wetlands (DBCA-018)

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

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

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