



## CLEARING PERMIT

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

### PERMIT DETAILS

Area Permit Number: CPS 9006/1  
File Number: DWERT6289  
Duration of Permit: From 21 February 2020 to 21 February 2022

### PERMIT HOLDER

Shire of Waroona

### LAND ON WHICH CLEARING IS TO BE DONE

Fawcett Road reserve (PINs 1373407 and 1377962), Waroona and Hamel  
McClure Road reserve (PINs 1373449, 1373448 and 11602694), Hamel

### AUTHORISED ACTIVITY

The Permit Holder shall not clear more than 73 native trees within the areas cross-hatched yellow in Figure 1 to 5 of Schedule 1.

### CONDITIONS

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

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in 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. Dieback and weed control

When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the 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. Application

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

#### 4. Records to be kept

The Permit Holder must maintain the following records in relation to the clearing of native vegetation authorised under this Permit:

- (a) 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 or decimal degrees;
- (b) the date(s) that the area was cleared;
- (c) the size of the area cleared (in hectares);

- (d) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 1 of this Permit;
- (e) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 2 of this Permit.

## 5. Reporting

The Permit Holder must produce the records required under condition 3 of this Permit when required by the *CEO*.

## Definitions

The following meanings are given to terms used in this Permit:

*CEO* means the Chief Executive Officer of the Department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*;

*dieback* means the effect of *Phytophthora* species on native vegetation;

*fill* means material used to increase the ground level, or fill a hollow;


*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;

*weed/s* means any plant –

- (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*;  
or
- (b) published in a Department of Biodiversity, Conservation and Attractions Regional Weed Rankings Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.

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## END OF CONDITIONS

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Erika Eto  
A/MANAGER  
NATIVE VEGETATION REGULATION

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

29 January 2021

# SCHEDULE 1

The boundary of the area authorised to be cleared is shown in the maps below (Figure 1 - 5).



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

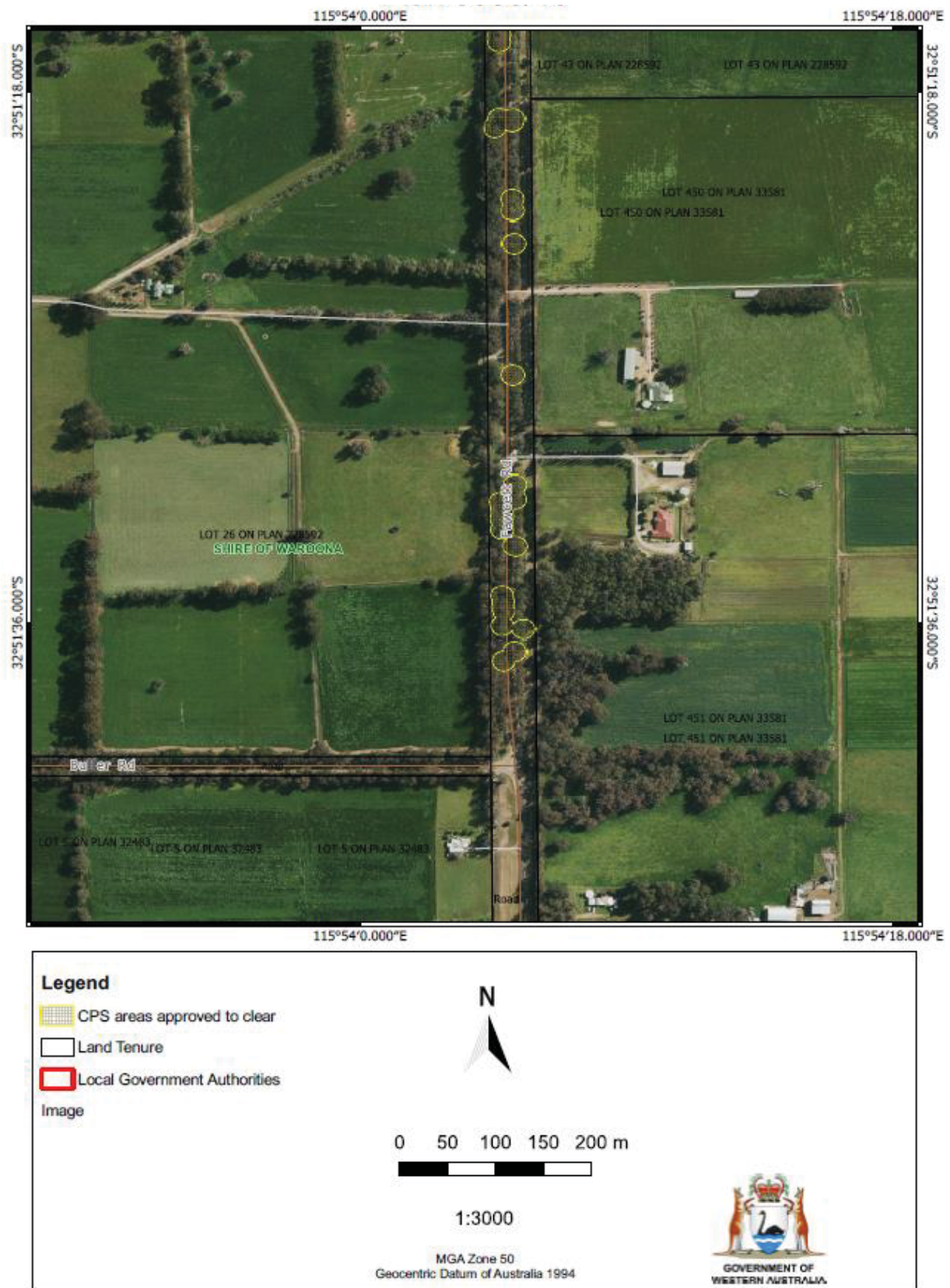


Figure 2: Map of the boundary of the area within which clearing may occur

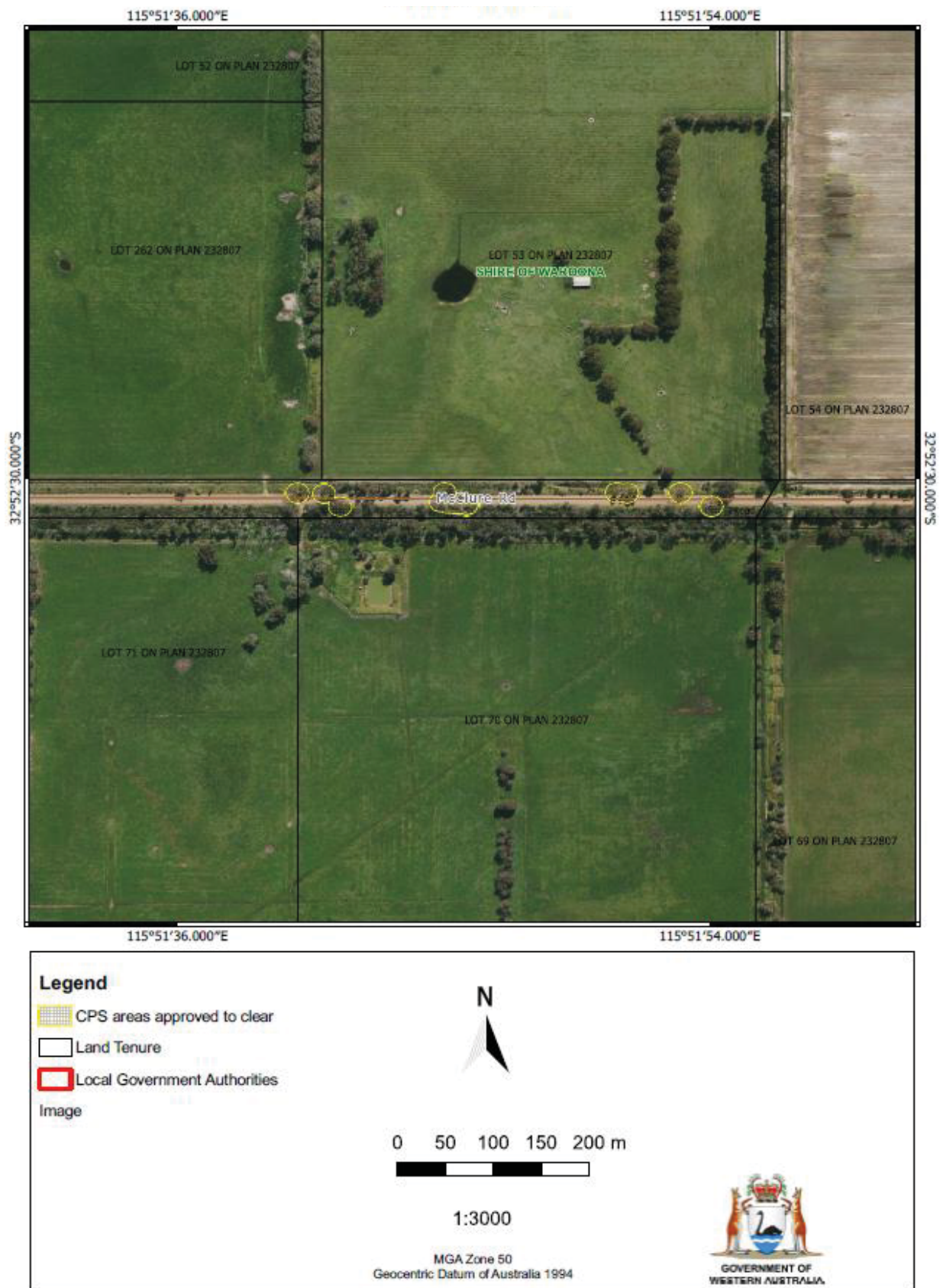


Figure 3: Map of the boundary of the area within which clearing may occur



Figure 4: Map of the boundary of the area within which clearing may occur



Figure 5: 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 9006/1
<b>Permit type:</b>	Area permit
<b>Applicant name:</b>	Shire of Waroona
<b>Application received:</b>	11 August 2020
<b>Application area:</b>	73 native trees
<b>Purpose of clearing:</b>	Road maintenance and hazard reduction
<b>Method of clearing:</b>	Mechanical removal
<b>Property:</b>	Fawcett Road reserve (PINs 1373407 and 1377962) McClure Road reserve (PINs 1373449, 1373448 and 11602694)
<b>Location (LGA area/s):</b>	Shire of Waroona
<b>Localities (suburb/s):</b>	Waroona and Hamel

### 1.2. Description of clearing activities

The application area comprises selected trees adjacent to an existing road, within a broader road reserve that has a function in maintaining connectivity between patches of remnant vegetation in the local area (10 kilometre radius from the perimeter of the application area).

The application form for clearing permit application CPS 9006/1 stated that the total area of clearing is 46 native trees (approximately 0.5 hectares (ha)) for the purpose of road maintenance. This application was revised during the assessment process and combined with the now withdrawn clearing permit application CPS 9005/1. This increased the proposed clearing under CPS 9006/1 from 46 native trees to 73 native trees. The extent of the proposed clearing is indicated in Figure 1 (see Section 1.5).

### 1.3. Decision on application

<b>Decision:</b>	Granted
<b>Decision date:</b>	29 January 2021
<b>Decision area:</b>	73 native trees, 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 undertaking the assessment, the Delegated Officer had regard for the site characteristics (see Appendix A), relevant datasets (see Appendix E), photographs provided by the applicant and the findings of the site inspection



(see Appendix D), the clearing principles set out in Schedule 5 of the EP Act (see Appendix B), and any other matters considered relevant to the assessment (see Section 3).

In particular, the Delegated Officer has determined that:

- The clearing is not likely to have significant impact on conservation significant flora, fauna or ecological community.
- The clearing is not likely to have significant impact on an ecological linkage or a significant remnant of vegetation in a highly cleared landscape.
- The clearing is not likely to have a significant or long-term impact on a mapped multiple use palusplain within the application area.

The proposed clearing also has the potential to result in the introduction and spread of weeds and dieback into adjacent vegetation, which could impact on its habitat quality and connectivity.

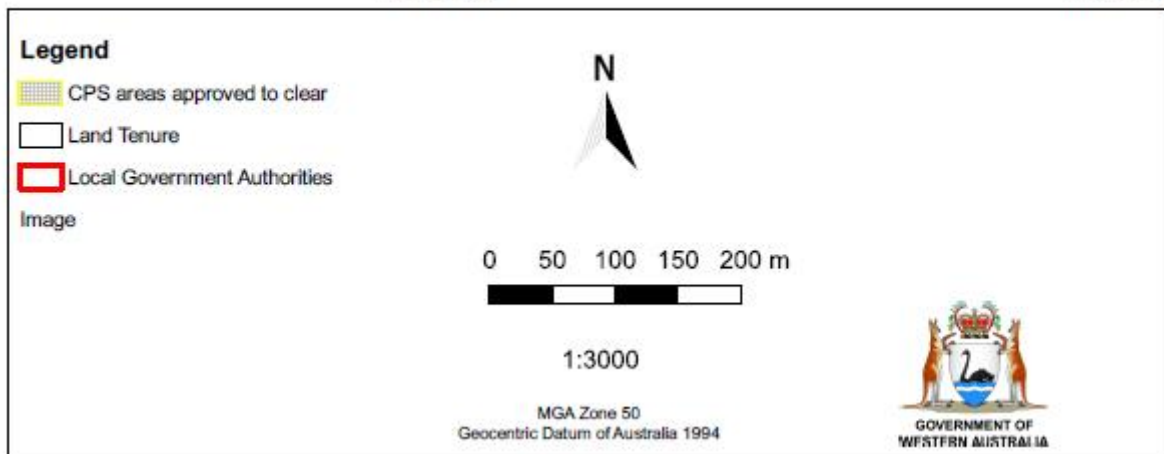
After consideration of the available information, the Delegated Officer determined that the impacts of the proposed clearing could be minimised and managed, and that the proposed clearing is not likely to lead to an unacceptable risk to the environment. The Delegated Officer decided to grant a clearing permit subject to conditions to:

- Avoid, minimise and reduce the impacts and extent of clearing.
- Take steps to minimise the risk of the introduction and spread of weeds and dieback.

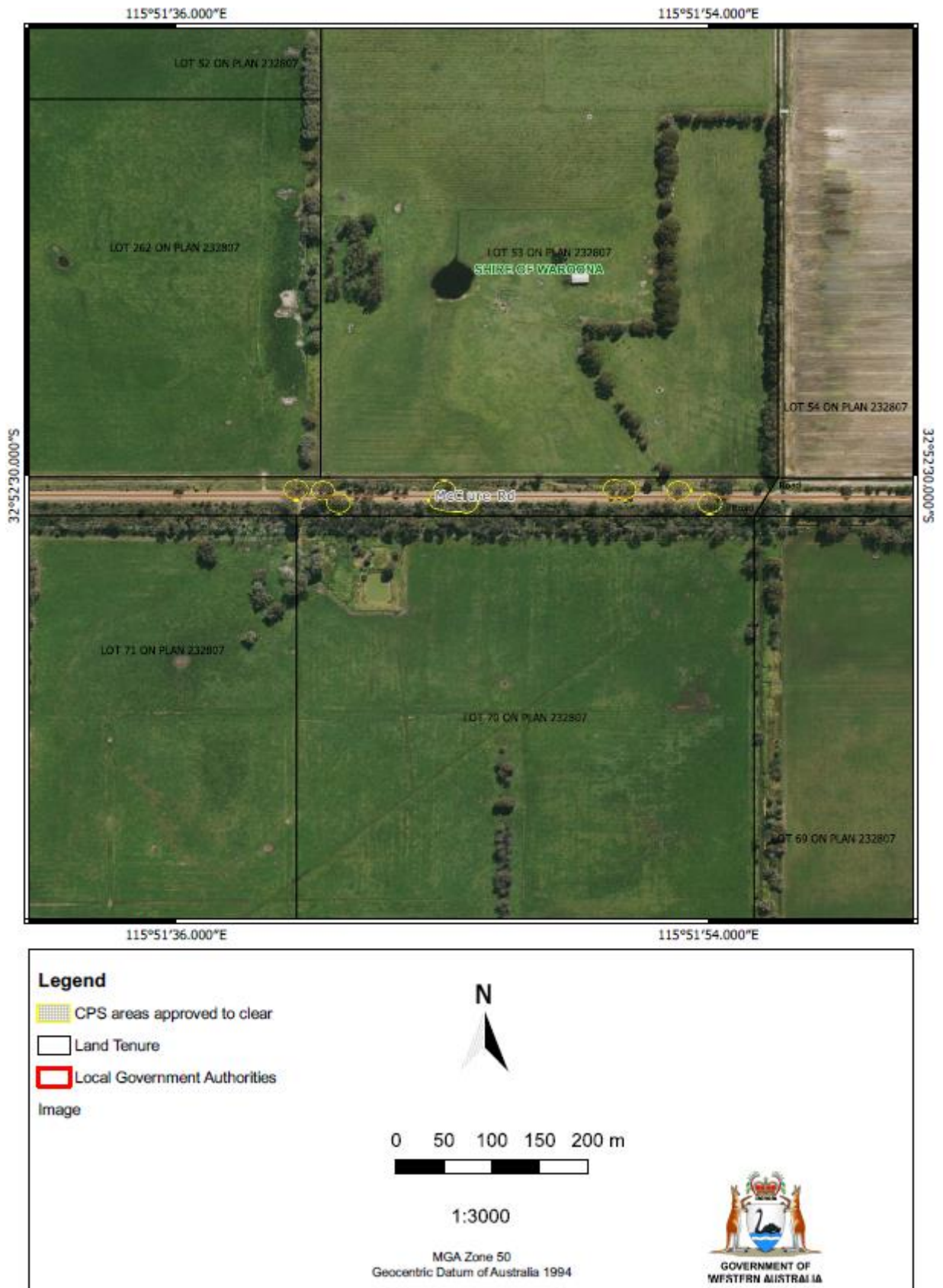
## 1.5. Site map



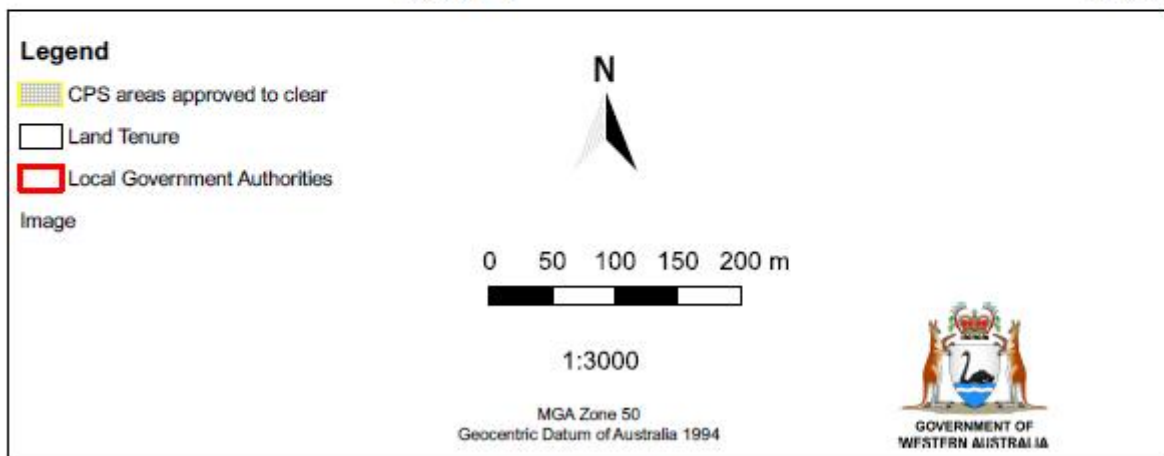
Figure 1 Map of the application area



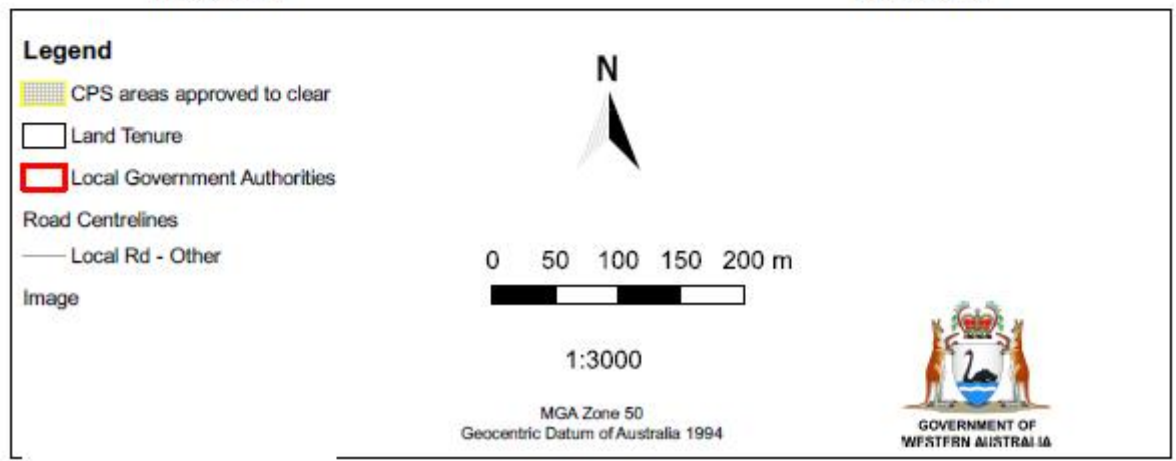
**Figure 2** Map of the application area



**Figure 3** Map of the application area



**Figure 4** Map of the application area



**Figure 5 Map of the application area**

The areas crosshatched yellow in figures 1 to 5 indicates the area(s) 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)
- *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)

## 3 Detailed assessment of application

### 3.1. Avoidance and mitigation measures

The proposed clearing is limited to 46 trees within Fawcett road reserve and 27 native trees within McClure Road reserve, which the applicant advised is substantially less than the number of trees that occurs within these road reserves. This claim was substantiated during a site inspection undertaken by DWER Officers on 5 October 2020.

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 (fauna) and significant remnant vegetation within an extensively cleared landscape. 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 (b)

##### Assessment

The proposed clearing is limited to individual trees on both sides of Fawcett Road reserve and McClure Road reserve.

Within Fawcett Road reserve, the trees proposed to be cleared comprise predominantly jarrah (*Eucalyptus marginata*), marri (*Corymbia calophylla*), and swamp paperbark (*Melaleuca raphiophylla*). Some flooded gum (*Eucalyptus rudis*) and a smooth-barked *Eucalyptus* sp. may also be impacted. Within McClure Road reserve, the trees proposed to be cleared comprise predominantly of *Corymbia calophylla* and *Melaleuca raphiophylla* (Shire of Waroona, 2020a and 2020b; and DWER, 2020).

A database search identified that three threatened fauna species and one 'conservation dependent' fauna species have been recorded in close proximity to the application area. All fauna species are known to utilise arboreal habitat that maybe present within the application area.

##### **Black cockatoos**

Carnaby's cockatoo (*Calyptorhynchus latirostris*) and Baudin's cockatoo (*Calyptorhynchus baudinii*) are listed as endangered and Forest red-tailed cockatoo (*Calyptorhynchus banksii naso*) is listed as vulnerable under the EPBC Act and BC Act (collectively referred to as 'black cockatoos'). According to available databases, there are no black cockatoo breeding or roosting sites within the application area, however, there are two confirmed breeding sites and

three confirmed roost sites that occur within the local area. Black cockatoos breed in large hollow-bearing trees, generally within woodlands or forests, but are also known to breed in isolated trees (Commonwealth of Australia, 2012). Suitable breeding habitat for black cockatoos includes trees which either have a suitable nest hollow or are of a suitable diameter at breast height (DBH) to develop a nest hollow. For most tree species, a suitable DBH is 500 millimetres (Commonwealth of Australia, 2012). The proposed clearing is not likely to provide suitable breeding habitat for black cockatoos. Shire of Waroona (2020a and 2020b) advised that approximately 28 marri trees within Fawcett Road reserve and 23 marri trees within McClure Road reserve, are proposed to be cleared. Of these, 8 trees within Fawcett road reserve and 4 trees within McClure Road reserve have a suitable DBH of 500 millimetres or greater. A site inspection undertaken by DWER did not identify any trees within the application area to contain hollows of suitable size, to provide breeding habitat for black cockatoos (DWER, 2020).

The removal of marri trees will impact upon foraging habitat for the black cockatoo species. According to available databases, the local area surrounding Fawcett Road reserve and McClure Road reserve comprises approximately 7,941 hectares and 7,583 hectares of native vegetation mapped as black cockatoo foraging habitat respectively. The application areas represent approximately 0.003 per cent of this extent. The removal of approximately 51 marri trees occur across two stretches of road reserve approximately 1.5 kilometres and 3 kilometres in length, is not likely to have a significant impact upon foraging habitat for the black cockatoo species. Vegetation will remain within the road reserve that will provide foraging habitat for this species.

**South-western brush-tailed phascogale (*Phascogale tapoatafa* subsp. *wambenger*; Conservation Dependent):**

In the south-west, the South-western brush-tailed phascogale is typically found in jarrah forest, and has been observed in dry sclerophyll forests and open woodlands that contain hollow-bearing trees (Department of Environment and Conservation, 2012). According to available databases, the nearest record is approximately 1.4 kilometres from the application area.

Significant habitat refers to the resources (breeding, resting and feeding), connectivity or habitat area for a species, or community that is critical for the species' survival. Noting that the proposed clearing is limited to individual trees, and that vegetation will remain in the road reserve, the application area is unlikely to be significant for the survival of the abovementioned fauna or other fauna species, or be necessary for the maintenance of significant habitat.

**Ecological linkage**

According to available databases, a South West Regional Ecological Linkage intersects the application area within Fawcett road reserve. This linkage runs from west to east along an unnamed road reserve that intersects with Fawcett Road reserve. Approximately three native trees that forms a part this linkage are proposed to be removed, at the south of the intersection of Fawcett Road reserve and the unnamed road reserve. The proposed clearing is not likely to sever this linkage, nor likely to have a significant impact on the function of this linkage.

Ground-dwelling fauna may utilise the application area as part of a corridor for moving through the landscape, however noting that the understorey vegetation is not proposed to be cleared and that vegetation will remaining in the road reserve, these species are unlikely to be impacted by the proposed clearing other than from possible temporary deterrence during clearing activities.

A review of aerial imagery indicates that the remaining vegetation within the application areas are isolated and not likely to function as an ecological linkage in enabling fauna to move between areas of remnant vegetation. In addition, vegetation will also remain within the adjacent road reserves. Therefore, the proposed clearing is not likely to have an impact on vegetation acting as stepping-stones for fauna movement within the local area.

There is potential that the proposed clearing activities could result in the introduction or spread of weeds and dieback into adjacent vegetation, which could impact on its habitat quality and connectivity.

Conclusion

Based on the above assessment, the Delegated Officer has determined that the proposed clearing is not likely to impact significant habitat for fauna.

Conditions

To mitigate potential impacts to adjacent vegetation from the clearing, a weed and dieback condition will be added to the permit. Weed and dieback management that requires earth-moving machinery to be clean of weeds and soil when entering and exiting the clearing area, ensure that no known weed or dieback affected soil, mulch, fill or other material is brought into the area to be cleared and restrict the movement of machines and other vehicles to the limits of the area to be cleared.



### 3.2.2. Significant remnant vegetation and conservation areas - Clearing Principles (e)

#### Assessment

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750. Below an extent of 30 per cent, species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001). Within the Peel Region Scheme boundary, where the application area is located, the Environmental Protection Authority (EPA) recognises it to be a constrained area. In constrained areas, the EPA recommends a revised minimum 10 per cent representation threshold for ecological communities (Environmental Protection Authority, 2015). The extent of native vegetation remaining within the local area from the perimeter of the application area within Fawcett and McClure Road reserves, is approximately 23 to 25 per cent. This is above the 10 per cent threshold within constrained areas.

The mapped Swan Coastal Plain vegetation complexes Dardanup Complex, Guildford Complex and Serpentine River Complex retain less than the recommended national targets, with approximately 5.70, 5.09 and 9.77 per cent native vegetation remaining respectively (Government of Western Australia 2019a). While this vegetation has been extensively cleared, the application areas are dominated by *Corymbia calophylla* and *Melaleuca raphiophylla* over a weedy understorey. The application area represents approximately 0.005 per cent (Fawcett Road reserve) and 0.003 per cent (McClure Road reserve) of the remaining vegetation within the local area.

The vegetation within the application area may be representative of the above mentioned vegetation complexes, however the loss of individual trees within a degraded road reserve will not significantly impact on the occurrence of these vegetation complexes.

Taking into account the minimal extent of the proposed clearing in a completely degraded to degraded (Keighery, 1994) condition and that the application area is unlikely to provide significant habitat for fauna, be a part of a significant ecological linkage or be necessary to maintain ecosystem services (such as hydrological processes), the vegetation within the application area is not considered as a significant remnant of native vegetation in an extensively cleared landscape.

No ecological linkages will be significantly impacted by the proposed clearing.

#### Conclusion

Based on the above assessment, the Delegated Officer has determined that the proposed clearing will not significantly impact on this environmental value.

### 3.3. Relevant planning instruments and other matters

No registered Aboriginal sites of significance have been mapped within the application area. Two sites, Drake Road Dampland and Brookside Camp Waroona, occur approximately 1.7 kilometres from the application area. Noting this separation distance, the proposed clearing is unlikely to impact on these Aboriginal sites of significance. 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.

## Appendix A. Site characteristics

### A.1. Site characteristics

Characteristic	Details
Local context	<p>The application area comprises native vegetation adjacent to an existing road, within a broader road reserve that has function in maintaining connectivity between native vegetation remnants within the local area.</p> <p>The application proposes to clear 46 native trees across 1.5 kilometres along Fawcett Road, and 27 trees across 3 kilometres along McClure road.</p> <p>The local area considered in the assessment of this application is defined as a 10-kilometre (km) radius from the perimeter of the application area. The local area retains approximately 23-25 per cent of native vegetation cover.</p>

Characteristic	Details
Ecological linkage	A south west regional ecological linkage intersects the application area within Fawcett Road reserve. This linkage runs from west to east along an unnamed road reserve that intersects with Fawcett Road reserve.
Conservation areas	Numerous conservation areas are mapped within the local area, comprising of lands managed by the Department of Biodiversity, Conservation and Attractions (DBCA), privately-managed conservation areas, and Bush Forever sites. The closest mapped conservation area is Hamel State Forest located approximately 1.6 kilometres and 1.8 kilometres from the application area within Fawcett Road reserve and McClure Road reserve respectively.
Vegetation description	<p>The application area within Fawcett Road reserve is mapped as (Hedde et al., 1980):</p> <ul style="list-style-type: none"> <li>• Dardanup Complex, described as: Mosaic of vegetation types characteristic of adjacent vegetation complexes such as Serpentine River, Southern River and Guildford.</li> </ul> <p>Vegetation composition was determined from photographs provided by the applicant and the findings of a site inspection undertaken by DWER (2020). The trees proposed to be cleared comprise predominantly jarrah (<i>Eucalyptus marginata</i>), marri (<i>Corymbia calophylla</i>), and swamp paperbark (<i>Melaleuca raphiophylla</i>). Some flooded gum (<i>Eucalyptus rudis</i>) and a smooth-barked <i>Eucalyptus</i> sp. may also be impacted. From available imagery, the jarrah and marri trees appear to be coppice and juvenile regrowth, with diameter at breast height estimated to be up to approximately 30 centimetres.</p> <p>Understorey within the application area includes <i>Melaleuca</i> species, peppermint (<i>Agonis flexuosa</i>), grasstree (<i>Xanthorrhoea preissii</i>), unidentified shrubs, sedges and grasses. The understorey is not proposed to be cleared as part of this application. Dead plants that appear to be the weed watsonia (<i>Watsonia bulbilifera</i>) are present throughout the road reserve.</p> <p>The application area within McClure Road reserve is mapped as (Hedde et al., 1980):</p> <ul style="list-style-type: none"> <li>• Dardanup Complex, as described above;</li> <li>• Guildford Complex, described as: a mixture of open forest to tall open forest of <i>Corymbia calophylla</i> (marri) - <i>Eucalyptus wandoo</i> (wandoo) - <i>Eucalyptus marginata</i> (jarrah) and woodland of <i>Eucalyptus wandoo</i> (wandoo) (with rare occurrences of <i>Eucalyptus lane-poolei</i> (salmon white gum)). Minor components include <i>Eucalyptus rudis</i> (flooded gum) - <i>Melaleuca raphiophylla</i> (swamp Paperbark) ; and</li> <li>• Serpentine River Complex, described as: closed scrub of <i>Melaleuca</i> species and fringing woodland of <i>Eucalyptus rudis</i> (Flooded Gum) - <i>Melaleuca raphiophylla</i> (Swamp Paperbark) along streams.</li> </ul> <p>Photographs supplied by the applicant (Shire of Waroona, 2020b) and DWER site inspection (DWER, 2020) indicate the vegetation proposed to be cleared within McClure road reserve consists of <i>Corymbia calophylla</i> and <i>Melaleuca raphiophylla</i>. The understory consists predominantly of weedy grasses. The understorey is not proposed to be cleared as part of this application.</p>
Vegetation condition	Vegetation condition was determined from photographs provided by the applicant and the findings of a site inspection undertaken by DWER (2020). The vegetation within the application area ranges from degraded to completely degraded condition, on the scale described by Keighery (1994) (see Appendix C) (Shire of Waroona, 2020a and 2020b; and DWER, 2020).
Climate and landform	<p>Rainfall: 1,000 - 1,100 millimetres per annum</p> <p>Evapotranspiration: 800 millimetres per annum</p> <p>Geology: Alluvial, shoreline, and aeolian deposits</p> <p>Acid Sulfate Soil Risk: Moderate to low risk</p> <p>Groundwater Salinity (Total Dissolved Solids): 500-1,000 mg/L</p>

Characteristic	Details
Soil description	The application area is mapped as: <ul style="list-style-type: none"> <li>Pinjarra P3 Phase: Flat to very gently undulating plain with deep, imperfect to poorly-drained acidic gradational yellow or grey-brown earths and mottled yellow duplex soils, with loam to clay loam surface horizons;</li> <li>Pinjarra P4 Phase: Poorly drained flats, sometimes with gilgai microrelief and with moderately deep to deep black, olive grey and some yellowish brown cracking clays and less commonly non-cracking friable clays with generally acidic subsoils; and</li> <li>Pinjarra P1b: Flat to very gently undulating plain with deep acidic mottled yellow duplex soils. Moderately deep pale sand to loamy sand over clay: imperfectly drained and moderately susceptible to salinity in limited areas (Department of Primary Industries and Regional Development, 2017).</li> </ul>
Land degradation risk	The clearing of 73 individual trees cross two road reserves in a completely degraded to degraded (Keighery, 1994) condition is not likely to cause appreciable land degradation.
Waterbodies	The application area within Fawcett Road reserve is located within the broader Keysbrook consanguineous wetland suite. The entire application area is located within a 'multiple use' wetland (palusplain) and is adjacent to a man-made drain. A minor tributary adjoins this man-made drain and is located approximately 15 metres from the application area. Waroona Drain, a major river is located approximately 40 metres from the application area.
Hydrogeography	The application area is within the 'Coastal Plain' Hydrological Zone, and the 'Harvey Estuary – Harvey River' Hydrographic Catchment. The application area is also within the mapped 'Waroona Irrigation District' Surface Water Area and 'Murray' Groundwater Area under the <i>Rights in Water and Irrigation Act 1914</i> .
Flora	With consideration for the site characteristics set out above, relevant datasets (see Appendix E), DWER site inspection, and photographs provided by the applicant, conservation significant flora species are not likely to be impacted by the clearing.
Ecological communities	With consideration for the site characteristics set out above, relevant datasets (see Appendix E), a site inspection undertaken by DWER and photographs provided by the applicant ecological communities are not likely to be impacted by the clearing.
Fauna	There are 18 fauna conservation significant species within the local area. Of these, four species may be found within the application area (see Appendix A.3)

## 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
<b>IBRA bioregion*</b>					
Swan Coastal Plain	1,501,221.93	579,813.47	38.62	269,964.76	17.98
<b>Vegetation complex**</b>					
Dardanup Complex	8,948.33	510.43	5.70	173.09	1.93
Guildford Complex	90,513.13	4,607.91	5.09	390.92	0.32
Serpentine River Complex	19,855.41	1,940.18	9.77	859.26	2.61

	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
<b>Local area</b>					
10km radius of Fawcett Road reserve	34,522.67	8,713.05	25	-	-
10km radius of Mclure Road reserve	37,577.97	8,642.06	23	-	-

\*Government of Western Australia (2019a)

\*\*Government of Western Australia (2019b)

### A.3. Fauna analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Are surveys adequate to identify? [Y, N, N/A]
Carnaby's black cockatoo ( <i>Calyptorhynchus latirostris</i> )	Endangered	Y	Y	N/A
Forest red-tailed black cockatoo ( <i>Calyptorhynchus banksii naso</i> )	Vulnerable	Y	Y	N/A
Baudin's black cockatoo ( <i>Calyptorhynchus baudinii</i> )	Endangered	Y	Y	N/A
South-western brush-tailed phascogale ( <i>Phascogale tapoatafa</i> subsp. <i>wambenger</i> )	Conservation Dependent	N	Y	N/A

## 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 proposed clearing is limited to individual trees within a broader vegetated road reserve. The application area comprises vegetation that may provide suitable habitat for fauna species, including conservation significant species. The application area is not representative of any threatened or priority ecological community, and is unlikely to include habitat for threatened or priority flora.</p>	Not likely to be at variance	No
<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 trees proposed to be cleared are likely to comprise habitat for conservation significant fauna, including three black cockatoo species and south-western brush-tailed phascogale. Noting that the proposed clearing is limited to individual trees and that vegetation will remain in the road reserve, lack of hollow bearing trees, and the sparse weed-dominated understorey, the vegetation proposed to be cleared is not likely to comprise a significant habitat for these or other native fauna.</p>	Not likely to be at variance	Yes Refer to Section 3.2.1

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u> Considering the application is to clear 73 individual trees over completely degraded to degraded understorey, the proposed clearing area is unlikely to impact on habitat for threatened flora species.</p>	Not likely to be at variance	No
<p><u>Principle (d):</u> <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.”</i></p> <p><u>Assessment:</u></p> <p>Seven state listed threatened ecological communities (TEC) have been recorded in the local area. Noting the composition and condition of the vegetation proposed to be cleared, the application area is unlikely to be representative of, or be necessary for the maintenance of, these TECs.</p>	Not likely to be at variance	No
<b>Environmental value: significant remnant vegetation and conservation areas</b>		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u></p> <p>The extent of native vegetation in the local area is inconsistent with the national objectives and targets for biodiversity conservation in Australia. However, the vegetation in the application area is not considered a significant remnant as it is not a part a significant ecological linkage, is not likely to provide significant habitat for conservation significant flora and fauna, and is not likely to be representative of threatened or priority ecological community.</p>	Not likely to be at variance	Yes Refer to Section Section 3.2.2
<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 is not likely to have an impact on the environmental values of nearby conservation areas. No ecological linkages will be severed by the proposed clearing.</p>	Not likely to be at variance	No
<b>Environmental value: land and water resources</b>		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>The areas proposed to be cleared are located within a ‘multiple use’ wetland (palusplain) and is adjacent to a man-made drain. Several <i>Melaleuca raphiophylla</i> trees within the application area is growing in association with these wetlands.</p> <p>The application area is in a completely degraded to degraded (Keighery, 1994) condition, and multiple use wetlands are considered to be wetlands with few important ecological attributes and functions remaining (Water and Rivers Commission, 2001). Therefore, the proposed clearing of <i>Melaleuca raphiophylla</i> is not likely to have a significant impact on the environmental values of this wetland.</p>	At variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (g):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</p> <p><u>Assessment:</u></p> <p>The main land degradation risk associated with the soil type mapped across the application area is a moderate to very high risk of waterlogging. Noting the extent and purpose of the proposed clearing, and its location adjacent to an existing road, the proposed clearing is unlikely to cause appreciable land degradation.</p>	Not likely to be at variance	No
<p><u>Principle (i):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.”</p> <p><u>Assessment:</u></p> <p>Given, the extent and location of the proposed clearing along an existing road, and the completely degraded to degraded (Keighery, 1994) condition of the vegetation, the clearing is unlikely to impact surface or groundwater quality.</p> <p>The application area is mapped within a multiple use wetland. Impacts caused to this wetland as a result of the proposed clearing is expected to be negligible.</p>	Not likely to be at variance	No
<p><u>Principle (j):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</p> <p><u>Assessment:</u></p> <p>Given the completely degraded to degraded (Keighery, 1994) condition of the application area, that the proposed clearing consists of individual trees, and that vegetation will remain within the road reserve, the proposed clearing is unlikely to contribute to waterlogging 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.

Condition	Description
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 (DWER, 2020)**



Figure 6: Photograph of application area within Fawcett Road reserve, refer to point 1 in Figure 10 below (DWER, 2020).



Figure 7: Photograph of application area within Fawcett Road reserve, refer to point 16 in Figure 10 below (DWER, 2020)



Figure 8: Photograph of application area within McClure Road reserve, refer to point 5 in Figure 11 below (DWER, 2020)



Figure 9: Photograph of application area McClure Road reserve, refer to point 24 in Figure 11 below (DWER, 2020)

## Appendix E. Sources of information

### E.1. GIS databases

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Offsets Register – Offsets (DWER-078)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas



- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems
- Wheatbelt Wetlands Stage 1 (DBCA-021)

Restricted GIS Databases used:

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

## E.2. References

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