GOVERNMENT OF
With PaWESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 9072/1

File Number: DWERVT6691

Duration of Permit: From 04 June 2021 to 04 June 2023

PERMIT HOLDER

City of Kalamunda

LAND ON WHICH CLEARING IS TO BE DONE

Lot 581 on Deposited Plan 71883 (Crown Reserve 26127), Lesmurdie

AUTHORISED ACTIVITY

The permit holder must not clear more than 1.211 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 authorized 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 north to south 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	(a) the species composition, structure, and density of the cleared area; (b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings; (c) the date that the area was cleared; (d) the size of the area cleared (in hectares); and (e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with *condition 1*; and (f) actions taken to minimise the risk of the introduction and spread of weeds and dieback in accordance with *condition 2*. (g) Direction of clearing, in accordance with specifications b-c.

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 *Environmental Protection Act 1986*.
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
dieback	means the effect of *Phytophthora* species on native vegetation.
department	means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	*Environmental Protection Act 1986* (WA)
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
weeds	means any plant – (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or (c) not indigenous to the area concerned.

END OF CONDITIONS

Mathew Gannaway
MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

12 May 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

Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 9072/1
Permit type:	Area permit
Applicant name:	City of Kalamunda
Application received:	6 October 2020
Application area:	1.211 hectares of native vegetation
Purpose of clearing:	Undertaking carpark upgrades at the Ray Owen Sports Centre
Method of clearing:	Mechanical
Property:	Lot 581 on Deposited Plan 71883 (Crown Reserve R 26127)
Location (LGA area/s):	City of Kalamunda
Localities (suburb/s):	Lesmurdie

1.2. Description of clearing activities

The City of Kalamunda propose to clear 1.211 hectares of remnant native vegetation, contained within the Ray Owen Reserve that encompasses the Ray Owen sports Centre. The reserve also forms part of the Mundy Regional Park. The clearing is for an expansion of the Ray Owen Sports Centre car park.

1.3. Decision on application

Decision:	Granted
Decision date:	12 May 2021
Decision area:	1.211 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 findings of a flora and fauna survey, 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 the impacts of clearing native vegetation within Mundy reginal Park and comments provided by the Department of Biodiversity, Conservation and Attractions (DBCA).

The assessment identified that the proposed clearing will result in:

- The loss of native vegetation that contains suitable habitat for *Calyptorhynchus baudinii,* (Baudin's cockatoo), *Calyptorhynchus latirostris* (Carnaby's cockatoo), *Calyptorhynchus banksii* subsp. *naso* (Forest red-tailed

cockatoo), *Isoodon fusciventer*. (quenda), *Ctenotus delli* (Dell's skink) and *Platycercus icterotis xanthogenys* (western rosella).

- The potential introduction and spread of weeds and dieback into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Sections 3.1), the Delegated Officer decided to grant a clearing permit subject to the following requirements conditioned on the clearing permit, to manage and address the impacts of clearing:

- Undertake slow, progressive clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity.
- Take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback.

The Delegated Officer considered that the loss of black cockatoo foraging and potential breeding habitat was not significant due to its location within an extensively vegetated landscape, adjacent to the Mundy Regional Park that contains breeding and foraging habitat of better quality and comments received by DBCA. The City of Kalamunda will also be retaining some trees within the application area.

1.5. Site map

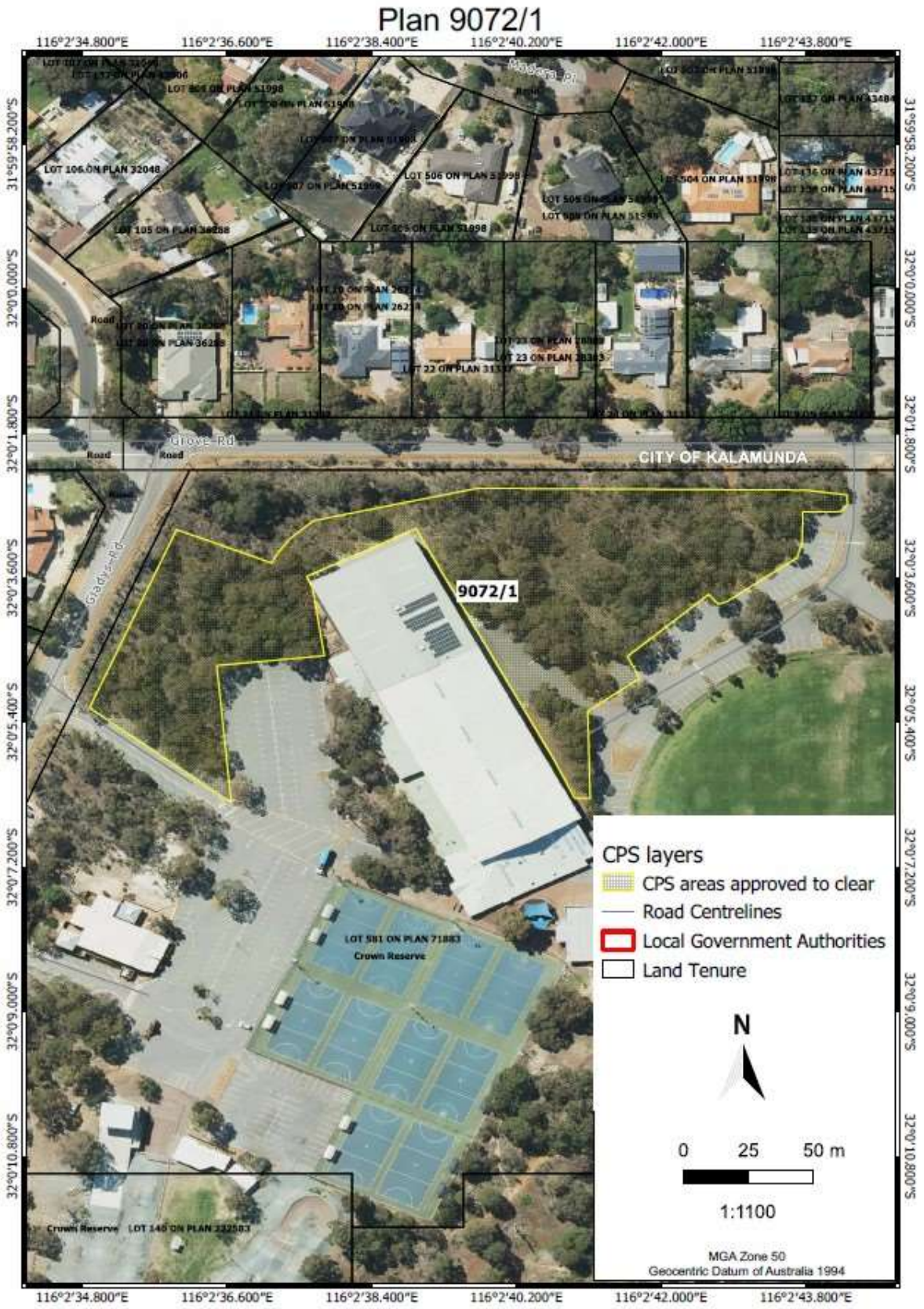

Figure 1 Map of the application area. The area crosshatched yellow indicates the area authorised to be cleared under the granted clearing permit.

2 Legislative context

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

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

- the precautionary principle
- the principle of intergenerational equity
- the 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

In support of the application, the City of Kalamunda advised that the minimisation of clearing has been considered (City of Kalamunda 2020). The Delegated Officer notes that CPS 9072/1 is a renewal of an earlier application from 2017 (CPS 7434/1) which did not proceed. The proposed clearing area has been reduced from 1.53 ha to 1.211 ha.

There will be a few trees that will be retained within the carpark (City of Kalamunda 2020). The City of Kalamunda were unable to provide the exact location of where the tress will be retained.

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 may present a risk to fauna and the biodiversity of the site, as well as adjacent conservation areas. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

3.2.1. Biological values (Biodiversity) Clearing Principles (a)

Assessment

A fauna and flora survey carried out by Natural Area (2020) determined the application area comprised of a woodland of *Corymbia calophylla* (Marri) and *Eucalyptus marginata* (Jarrah), with a middle storey of *Banksia sessilis* var. *sessilis*, *Xanthorrhoea preissii* and *Xanthorrhoea brunonis* over an understory of mixed native herbs and sedges. This aligns with the mapped vegetation type, the Dwellingup D2 complex. Natural Area (2020) determined that 83 percent of the vegetation within the application area was in Excellent (Keighery 1994) condition (see Appendix B, Figure 2), with the remainder in Very Good to Completely Degraded (Keighery 1994) condition.

Vegetation within Ray Owen Reserve comprised a total of 124 flora species (taxa) from 33 families, with 97 native species (Natural Area 2020). Similar remnants of woodland, within the Dwellingup D2 complex, can include over 350 species of flora (DEC 2008). Therefore, the application area does not represent a high level of biodiversity within this type of woodland. The Dwellingup D2 complex retains approximately 82.5 per cent of its pre-European extent (Government of Western Australia 2019). No conservation significant flora was identified within the application area (Natural Area 2020).

Of the 124 flora species identified, 27 were weed species. The proposed clearing may increase the spread of weeds and dieback if not appropriately managed.

Fauna analysis (Appendix A) indicated that the application area may provide suitable habitat for nine species of conservation significant fauna. It is considered that the habitat proposed to be cleared is not likely to be significant. The impact of proposed clearing for these species is further assessed in section 3.2.2 below.

Conclusion

Based on the above assessment, the proposed clearing will not impact an area of high biodiversity, does not include any conservation significant flora or flora assemblages resembling a threatened or priority ecological community and is not likely to contain significant fauna habitat. However, the clearing activities may increase the spread of weeds and dieback.

Conditions

To address the above impacts, weed and dieback hygiene management measures will be required as a condition on the clearing permit.

3.2.2. Biological values (Biodiversity and Fauna) – Clearing Principles (b)

Assessment

According to available datasets, *Calyptorhynchus baudinii,* (Baudin's cockatoo), *Calyptorhynchus latirostris,* (Carnaby's cockatoo) and *Calyptorhynchus banksii naso*, (Forest red-tailed cockatoo) have been recorded within one kilometre of the Ray Owen Reserve. Forty-six black cockatoo roosts have also been recorded within the local area. Black cockatoo roost sites are usually located in the tallest trees within a land scape, and in proximity to a food and water supply (Commonwealth of Australia, 2017). Black cockatoo flocks will utilise different roosts, often for weeks, or until the local food supply is exhausted. Black cockatoo flocks show some consistency in roost site preference, with sites used in most years to access high-quality feeding sites. However, not all roosts are used in every year (DPAW, 2013). Foraging resources within 6 kilometres, and up to 12 kilometres of roost sites are important to sustain populations (Commonwealth of Australia 2017). Of the 46 black cockatoo roosts recorded within the local area, three are located within 1.5 kilometres of the application area. However, there are no records of roosting within the Ray Owen Reserve (DBCA 2020).

Ray Owen Reserve is mapped as Black cockatoo feeding habitat and evidence of feeding (see Appendix B, Figure 4a) was identified at three locations (Natural Area 2020). Therefore, the vegetation proposed to be cleared likely provides a foraging resource to black cockatoos utilising the adjacent roosts. However, based on available data bases, the local area comprises approximately 16350 hectares of mapped black cockatoo feeding habitat (93 percent of all remanent vegetation). Of the 16350 hectares of mapped black cockatoo feeding habitat, approximately 80 percent occurs within conservation areas and state forest. The proposed clearing of 1.211 hectares (approximately 0.007 per cent of mapped black cockatoo habitat) is not likely to significantly reduce the amount of foraging resource available to local black cockatoo flocks. DBCA advised that this portion of the Ray Owen Reserve is considered to be of low value. Areas containing good quality forwaging habitat are located nearby to support these species (DBCA 2020).

There are four records of ‘white tailed Black cockatoo’ nesting sites within the local area, with the nearest located 9.7 kilometres south east of the application. A survey of habitat trees (Natural Area 2020) identified nine trees with hollows within the application area (see Appendix B, Figure 5), including two hollows suitable for black cockatoo species. No evidence of Black cockatoo breeding was identified during the survey (Natural Area 2020), and there are no records of breeding or roosting within the application area (DBCA 2020).

A number of the aforementioned tree hollows were determined as suitable parrot nesting sites (Natural Area 2020) Such hollows may also be suitable for the Priority 4, *Platycercus icterotis xanthogenys* (western rosella) which has been recorded, 5.8 kilometres from the application area, in similar habitat. The local area retains 54.6 percent native vegetation (Government of Western Australia 2019). Vegetation mapping and aerial imagery indicates that a large portion of vegetation in the local area is suitable breeding habitat for western rosella.

The application area includes suitable habitat for *Dasyurus geoffroii* (chuditch, western quoll) and *Isoodon fusciventer*. (quenda). These species are recorded 0.63 and 0.06 kilometres from the Ray Owen Reserve, respectively. No evidence indicating the presence of chuditch was identified in the fauna survey to support this application (Natural Area 2020). Also chuditch has not been previously recorded in the application area (DPAW 2020). Chuditch may range through the area, however it is unlikely to be significantly impacted by the proposed clearing.

According to available datasets, quenda is known to occur at five locations adjacent to the application area, with the closest record 0.06 kilometres to the north. Though not observed during the fauna survey (Natural Area 2020), Ray Owen Reserve is known to provide habitat for quenda (DPAW 2020). Suitable habitat of similar quality is close by and directional clearing of the application area would allow quenda to move away from impacted areas.

The Priority 4 species, *Ctenotus delli* (Dell's skink) occurs 5.63 kilometres from the Ray Owen Reserve. According to available datasets, habitat suitable for Dell's skink, does occur within the application area, however there is no

record of this species occurring within Ray Own Reserve (Natural Area 2020). If present though undetected, directional clearing may also mitigate impacts to Dell's skink.

Conclusion

The application area provides suitable foraging, potential breeding, and potential roosting habitat for the black cockatoo species. Suitable habitat for the Dell's skink, quenda and western rosella also occurs within the application area. The local area retains 54.6 percent native vegetation and the mapped vegetation complex retains 82.5 percent native vegetation cover. Suitable habitat in better or similar condition is located elsewhere within the local area and no loss of significant habitat for these species is expected. The City of Kalamunda also advised that some trees will remain within the application area.

Conditions

To address the above impacts, slow directional clearing to allow fauna to move into adjacent vegetation ahead of the clearing activity will minimise impact to individuals will be required as a condition on the clearing permit.

3.2.3. Biological values (Conservation areas) – Clearing Principles (h)

Assessment

The application area occurs within Mundy Regional Park. Mundy Regional park is approximately 16.5 hectares in size. The regional park has been previously impacted by recreational facilities including buildings, ovals and carparks with approximately 6.2 hectares of native vegetation remaining within park. The proposed clearing is likely to directly impact the Mundy Regional Park through the direct removal of native vegetation. Given Mundy Regional Park has been highly impacted by previous recreation activities, the proposed clearing is not likely to have a significant impact on this conservation area. DBCA also advised that the Department has no specific objections to this application (DBCA 2020).

The proposed clearing may indirectly impact this conservation area through the spread of weeds and dieback. Weed and dieback management practices will help mitigate this risk.

Conclusion

The proposed clearing of vegetation is likely to directly impact the Mundy Regional Park. Given Mundy Regional Park has been highly impacted by previous recreation activities the proposed clearing is not likely to have a significant impact on this conservation area.

Conditions

To address the above impacts, weed and dieback hygiene management measures will be required as a condition on the clearing permit.

3.3. Relevant planning instruments and other matters

The application area occurs within Mundy Regional Park. DBCA advised that although they have no specific objection to this application, it should be noted that the DBCA does not typically support the clearing of native vegetation within regional parks, given they are areas that are reserved for parks and recreation (DBCA 2020). No public submissions have been received for this application.

The proposed clearing was included in previous application (CPS 7473/1) for 1.53 hectares. This application was received 29 December 2016 and a permit granted 24 June 2017, including conditions for weed control. No public submissions or appeals were received.

No Aboriginal Sites of Significance are located within the application area.

Appendix A. Site characteristics

A.1. Site characteristics

<table>
<tr><th>Characteristic</th><th>Details</th></tr>
<tr><td>Local context</td><td>The area proposed to be cleared is a portion of approximately 11-hectare patch of native vegetation within the Ray Owen Reserve, which is also vested within Mundy Reginal Park. Ray Owen Reserve is linked to the main body of the reginal park via several connected patches of native vegetation scattered throughout the suburb of Lesmurdie.

Mundy Regional Park includes approximately 751 hectares of remnant vegetation of the Darling Plateau.</td></tr>
<tr><td>Ecological linkage</td><td>Ray Owen Reserve is linked to a number of surrounding smaller remnants of native vegetation that form ecological steppingstones to an extensive tract of Darling Plateau vegetation. The Darling Plateau includes a number of national parks.</td></tr>
<tr><td>Conservation areas</td><td>The application area forms part of the Mundy Regional Park and is approximately 2.5 kilometres north of Korung National Park and 0.7 kilometres south-west of Lesmurdie Falls National Park.</td></tr>
<tr><td>Vegetation description</td><td>The vegetation survey by Natural Area (2020) described vegetation within the clearing area as; Corymbia calophylla (Marri) and Eucalyptus marginata (Jarrah), with a middle storey of Banksia sessilis var. sessilis, Xanthorrhoea preissii and Xanthorrhoea brunonis over an understory of mixed native herbs and sedges. Representative photos and maps are available in Appendix B.

This is consistent with the mapped vegetation type:

• Dwellingup D2 - Open forest of Eucalyptus marginata subsp. marginata-Corymbia calophylla on lateritic uplands in subhumid and semiarid zones.

The mapped vegetation type retains approximately 82.5 per cent of the original extent (Government of Western Australia, 2019).</td></tr>
<tr><td>Vegetation condition</td><td>The table below lists the varying levels of vegetation condition identified within the clearing area (Natural Area 2020).

Vegetation condition according to Keighery, (1994).
<table>
<tr><th>Vegetation Condition</th><th>Excellent</th><th>Very Good</th><th>Good</th><th>Degraded</th><th>Completely Degraded</th><th>Totals</th></tr>
<tr><td>Area (ha)</td><td>1.23</td><td>0.124</td><td>-</td><td>0.081</td><td>0.05</td><td>1.485</td></tr>
<tr><td>Area</td><td>83 %</td><td>8.3 %</td><td>-</td><td>5.4 %</td><td>3.3%</td><td>100</td></tr>
</table>

The full Keighery (1994) condition rating scale is provided in Appendix B. Representative photos are available in Appendix B.</td></tr>
<tr><td>Climate and landform</td><td>The climate is classified as Mediterranean, with dry, hot summers and cool, wet winters.

• average rainfall is 762.1 mm per annum, with the majority falling between May and August.

• average maximum temperature ranges from 18.0 degrees centigrade in winter to 32 degrees centigrade in summer.

• the highest recorded maximum being 46.7 degrees centigrade

• average minimum temperatures range from 8.0 degrees centigrade in winter to 17.5 degrees centigrade in summer.

• the lowest recorded minimum being -1.3 degrees centigrade

Land form of the application is described as very gently to gently undulating terrain (<10%) with well drained, shallow to moderately deep gravelly brownish sands, pale brown sands and earthy sands overlying lateritic duricrust (DPIRD 2019).</td></tr>
</table>

Characteristic	Details
Soil description	Dwellingup 2 Phase: Shallow to moderately deep gravelly brownish sands, pale brown sands and earthy sands overlying lateritic duricrust. (DPIRD 2019).
Land degradation risk	Dwellingup 2 Phase soil unit is generally of low risk of land degradation (see section C.6, for risk analysis table). The highest risk factor is wind erosion with 70 percent of the mapped soil unit having a high to extreme risk.
Waterbodies	The desktop assessment and aerial imagery indicated that one unnamed, manmade waterbody occurs 0.5 kilometers east of the application area.
Hydrogeography	The application area forms part of a well-drained flat hilltop. Elevation within the application area is less than 10 meters, (see section C.6 for additional hydrological risk values).
Flora	A total of 102 Species of conservation significant flora were recorded within the local area. The nearest threatened flora species is *Conospermum undulatum* recorded 1 kilometre from the application area, on the same mapped soil type, (Dwellingup 2 Phase). The nearest priority flora record to the application area is the Priority 4 *Boronia tenuis.* There are four records of priority flora within 0.9 kilometres, none of which are found on the same soil type as the application area. A targeted flora survey carried out in August by Natural area (2020), did not identify any conservation significant flora within the application area.
Ecological communities	Thirteen conservation significant ecological communities area recorded in the local area. The proposed clearing will does not include or is adjacent to any conservation significant ecological communities.
Fauna	There are 33 species of conservation significant fauna recorded in the local area. The nearest record is for, *Isoodon fusciventer*.(quenda), at 0.06 kilometres north of the application area, The application area is mapped as Black cockatoo habitat including: • Carnabys Cockatoo, likely breeding area: • Feeding habitat for Calyptorhynchus baudinii (Baudin's), *Calyptorhynchus latirostris* (Carnabys) and *Calyptorhynchus banksii naso* (Forest red tail, cockatoo) • Baudin's Cockatoo Roost Areas (buffered) Confirmed: Roost Areas Confirmed - Buffered 6kms • Baudsns, Carnabys and Forest red tail, cockatoo Roost Areas (buffered) Unconfirmed: Roost Areas Unconfirmed - Buffered 6kms • Four 'white tailed Black cockatoo, breeding sites are mapped within the local area the nearest is 9.7 km south east. Additional species most likely to utilise the habitat within the application area considered in section C.3 below.

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*					
Jarrah Forest	4,506,660.25	2,399,838.15	53.25	69.74	37.14
Vegetation complex					
West Darling 2	86,128.33	71,055.96	82.5	58,975.34	68.47
Local area					
10km radius	32028.12	17490.24	54.6	-	-

Government of Western Australia (2019)

A.3. Fauna analysis table

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 (total)	Are surveys adequate to identify? [Y, N, N/A]
Isoodon fusciventer.(quenda, southwestern brown bandicoot)	P4	Y	Y	0.06	664	Y
Dasyurus geoffroii (chuditch, western quoll)	VU	Y	Y	0.63	50	Y
Calyptorhynchus latirostris (Carnaby's cockatoo)	EN	Y	Y	0.94	933	Y
Calyptorhynchus baudinii (Baudin's cockatoo)	EN	Y	Y	1.06	98	Y
Calyptorhynchus banksii naso (forest red-tailed black cockatoo)	VU	Y	Y	1.37	79	Y
Notamacropus irma (Western brush wallaby)	P4	Y	Y	1.7	10	Y
Phascogale tapoatafa wambenger (South-western brush-tailed phascogale, wambenger)	CD	Y	Y	2.0	39	Y
Ctenotus delli (Dell's skink, Darling Range Southwest Ctenotus)	P4	Y	Y	5.63	4	Y
Platycercus icterotis xanthogenys (western rosella)	P4	Y	Y	5.8	1	Y

T: threatened, CD: species of special conservation interest (conservation dependent fauna), CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

A.4. Land degradation risk table

Risk categories	
Wind erosion	H2: >70% of map unit has a high to extreme risk
Water erosion	L1<3% of map unit has a high risk
Salinity	L1<3% of map unit has a high risk
Subsurface Acidification	H2: >70% of map unit has a high to extreme risk
Flood risk	L1: <3% of the map unit has a moderate to high hazard
Water logging	L1: <3% of the map unit has a moderate to high hazard
Phosphorus export risk	L1: <3% of the map unit has a moderate to high hazard

Appendix B. 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 B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
Principle (a): *"Native vegetation should not be cleared if it comprises a high level of biodiversity."* Assessment The marri, jarrah woodland identified in the application area was found to be suitable for nine of the 33 conservation significant fauna species recorded in the local area (as listed in Appendix A.3). A fauna and flora survey did not identify any conservation significant flora species or ecological communities within the application area. Fauna habitat within the application area is not considered significant.	Not likely to be at variance	Yes *Refer to Section 3.2.1, above.*
Principle (b): *"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."* Assessment: The area proposed to be cleared is mapped as Black Cockatoo feeding habitat. Evidence of Black Cockatoo foraging was noted in three locations (Natural Area 2020). The application area, may also be suitable for three priority 4 fauna. Noting the fauna habitat in the local context, habitat is not considered significant.	Not likely to be at variance	Yes *Refer to Section 3.2.2, above.*

Assessment against the clearing principles	Variance level	Is further consideration required?
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: No threatened flora was identified in the application area (Natural Area 2020). The area proposed to be cleared is unlikely to contain flora species listed as threatened.	Not likely to be at variance	No
Principle (d): *"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."* Assessment: The area proposed to be cleared does not contain species that indicate a threatened ecological community.	Not at variance	No
Environmental value: significant remnant vegetation and conservation areas		
Principle (e): *"Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."* Assessment The vegetation survey (Natural Area 2020) confirmed, the vegetation within the application area is consistent with the mapped vegetation. The Dwellingup D2 complex**,** retains 82.5 percent of its original extent. The remanent vegetation mapped within the local area is 54.6 percent, this is consistent with the national objectives and targets for biodiversity conservation in Australia (Commonwealth of Australia 2001). The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.	Not at variance	No
Principle (h): *"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."* Assessment Given the application area falls within Mundy regional park and is adjacent to Lesmurdie Falls National Park and Korung National Park, the proposed clearing may impact a nature conservation area.	May be at variance	Yes *Refer to Section 3.2.3, above.*
Environmental value: land and water resources		
Principle (f): *"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."* Assessment Given no water courses or wetlands are recorded within or adjacent to the application area, the proposed clearing is unlikely to impact an environment associated with a watercourse or wetland	Not at variance	No
Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."* Assessment The Dwellingup 2 soil unit is mapped as low risk of water erosion, nutrient export, and salinity. Wind erosion for 70 percent of this soil unit is mapped as high to extreme risk. Noting the application area is in a sheltered position and given the moderate size of the clearing, wind erosion is unlikely to occur. Therefore, the proposed clearing is not likely to have an appreciable impact on land degradation.	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
Principle (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."* Assessment Given no water courses wetlands or Public Drinking Water Sources Areas, are recorded within or adjacent to the application area, the proposed clearing is unlikely to impact surface or ground water quality.	Not at variance	No .
Principle (j): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."* Assessment Given no water courses or wetlands are recorded in or adjacent to the application area, the proposed clearing is unlikely to contribute to flooding.	Not at variance	No

Appendix C. Biological survey information excerpts / photographs of the vegetation.

Figure 2. Example of vegetation within the application area (Natural Area 2020).

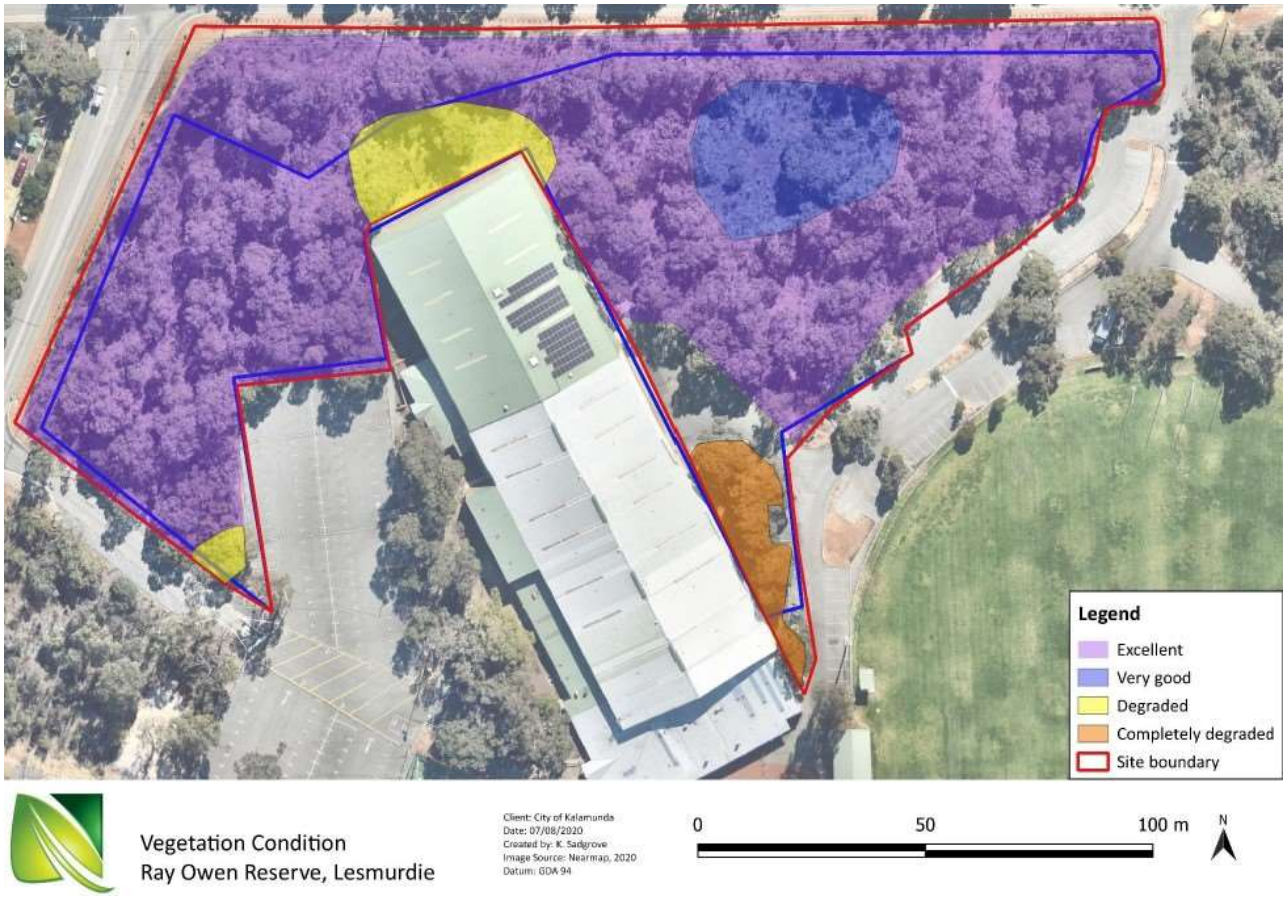

Figure 3 Map of vegetation condition (Natural Area 2020).

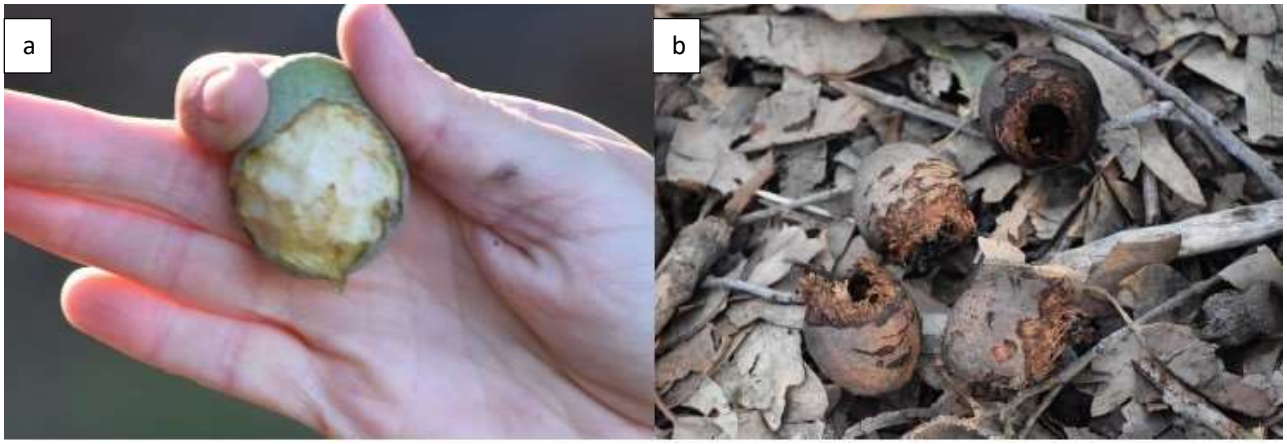

Figure 4 Evidence of feeding by parrot species, a), Evidence of feeding by Forest red-tailed cockatoo, b) (Natural Area 2020).

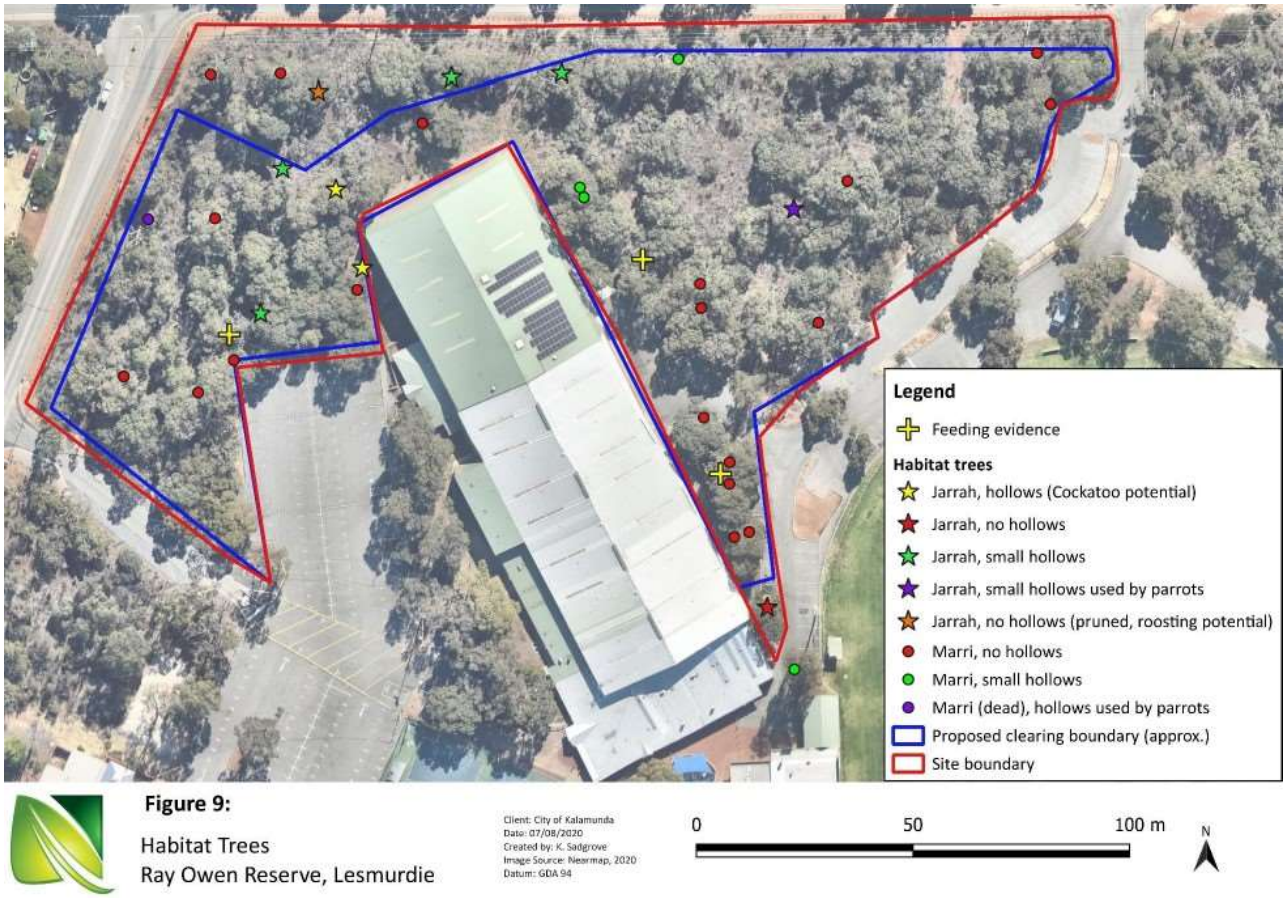

Figure 5 The number and distribution of potential habitat trees within the application area, and evidence of parrot and Black cockatoo feeding (Natural Area 2020).

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Appendix E. Sources of information

E.1. GIS databases

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- 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.

Commonwealth of Australia (2017). Revised draft referral guideline for three threatened black cockatoo species: Carnaby's Cockatoo, Baudin's Cockatoo and the Forest Red-tailed Black Cockatoo.

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

Department of Environment and Conservation (DEC) 2008. *Perth Region Plant Biodiversity Project Jarrah Forest Reference Sites of the Perth Metropolitan Area: Southern transect,* Workshop Notes. The Southern Transect

Department of Parks and Wildlife (DPAW) (2020) Application to clear native vegetation under the *Environmental Protection Act 1986*. Swan Region. Western Australia (DER Ref: A1956230).

Department of Parks and Wildlife (DPAW) (2013). Carnaby's Cockatoo (Calyptorhynchus latirostris) Recovery Plan. Western Australian Department of Parks and Wildlife (Now the Department of Biodiversity, Conservation and Attractions). Perth. Western Australia.

Department of Primary Industries and Regional Development (DPIRD) (2019). *NRInfo Digital Mapping. Department of Primary Industries and Regional Development.* Government of Western Australia. URL: https://maps.agric.wa.gov.au/nrm-info/ (accessed 08 December 2020).

Government of Western Australia (2019) *2018 South West Vegetation Complex Statistics. Current as of March 2019*. WA Department of Biodiversity, Conservation and Attractions, Perth, https://catalogue.data.wa.gov.au/dataset/dbca

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

Natural Area (2020) *Flora, Fauna and Black Cockatoo Habitat Survey Report.* A report compiled for the City of Kalamunda, in support of Clearing Permit application 9072/1.