



## Clearing Permit Decision Report

### 1 Application details and outcome

#### 1.1. Permit application details

<b>Permit number:</b>	CPS 9732/1
<b>Permit type:</b>	Area permit
<b>Applicant name:</b>	Mr Jamie Thornton and Ms Amanda Harris
<b>Application received:</b>	9 May 2022
<b>Application area:</b>	5.1 hectares (as revised from 21.55 hectares)
<b>Purpose of clearing:</b>	Horticulture (Truffle orchard)
<b>Method of clearing:</b>	Mechanical Clearing
<b>Property:</b>	Lot 10900 on Deposited Plan 201680
<b>Location (LGA area/s):</b>	Shire of Manjimup
<b>Localities (suburb/s):</b>	Glenoran

#### 1.2. Description of clearing activities

The application is to remove 5.1 hectares of native vegetation within the centre of Lot 10900 on Deposited Plan 201680, for the purpose of horticulture planting, particularly for the farming of hazelnut/oak and truffle (Thornton & Harris, 2022a) (see Figure 1, Section 1.5).

The original application area was 21.55 hectares in size, applied to clear for the purposes of grazing and pasture, horticulture, road construction and hazard reduction (Thornton & Harris, 2022a). The application area was revised to a 4 hectare area during the assessment process in response to the department's request for further avoidance and minimisation. Subsequently, the applicant notified the department of an increase to the application area in a May 2024 to 5.1 hectares.

During assessment it was identified that the applicant 'lopped' or coppiced more than 60 percent of the trees within the application area, between January 2023 and October 2023. The applicant advised that they undertook this clearing in accordance with Regulation 5, item 6 clearing exemption to obtain fencing and farming material. For this exemption to apply, the clearing has to be done in a way that does not kill any live vegetation and does not prevent regrowth of the vegetation and that it is carried out to provide material to the extent to which the material could not be obtained from vegetation already clearing for another purpose. An investigation by the Department into this matter is ongoing.

The Department noted that some basic vegetation structure was retained in these areas. Therefore, the Application Area includes the areas of lopped vegetation. The department considers it is appropriate to assess the lopped areas based on their pre-lopping environmental values. The below assessment is based on a clearing area of 5.1 hectares of native vegetation (application area).

#### 1.3. Decision on application

<b>Decision:</b>	Refused
<b>Decision date:</b>	6 September 2024

**Decision area:**

5.1 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 advertised the application for 21 days and received three submissions. Consideration of matters raised in the public submissions are summarised in Appendix B.

In making this decision, the Delegated Officer had regard to:

- site characteristics and environmental values within the local area (a 10-kilometre radius from the application area) (see Appendix C);
- GIS datasets available at the time of the assessment (see Appendix G.1);
- photographs of the application area (Thornton & Harris, 2022b);
- the findings of:
  - a vegetation survey (Ward, 2022);
  - a black cockatoo habitat assessment (Onshore Environmental, 2022) (see Appendix G); and
  - a site inspection undertaken by the department (DWER, 2022a)
- expert scientific advice from:
  - the Department of Biodiversity Conservation and Attractions (DBCA) on the potential impacts of the clearing on biodiversity values (DBCA, 2022); and
  - the Commissioner of Soil and Land Conservation (CSLC), taking into consideration the findings of Department of Primary Industries and Regional Development's (DPIRD) site inspection, on the potential land degradation issues as a result of the proposed activities (CSLC, 2022)
- advice from the department's Water Source Protection Planning branch on the potential impacts of the clearing on Public Drinking Water Source Areas (PDWSA) (DWER, 2022b);
- the 10 Clearing Principles set out in Schedule 5 of the EP Act (see Appendix D); and
- public concerns raised during the submission period (Appendix B).

In addition to the above information, and in accordance with section 51O of the EP Act, the Delegated Officer also had regard to relevant planning instruments and any other matters considered relevant to the assessment (see Section 3) including the necessity of the proposed clearing.

During the assessment of the original application area (21.55 hectares), the department identified that the proposed clearing would have a significant impact on suitable foraging and breeding habitat for the *Zanda latirostris* (Carnaby's black cockatoo), *Zanda baudinii* (Baudin's black cockatoo) and *Calyptorhynchus banksii naso* (forest red-tailed black cockatoo) species (collectively referred to as black cockatoos). On 7 July 2022, the department requested for the applicant to provide information on how impacts of the proposed clearing can be avoided or minimise (DWER, 2022c). The applicant subsequently amended the application area multiple times, reducing the area proposed to be cleared. The final application area has been reduced to 5.1 hectares.

The department assessed the revised application area, considering the supplied black cockatoo habitat assessment (Onshore Environmental, 2022) and information from the department's site inspection (DWER, 2022a). The assessment identified that the proposed clearing will result in:

- removal of 5.1 hectares of marri (*Corymbia calophylla*) and karri (*Eucalyptus diversicolor*) woodland which provides low to moderate foraging habitat for black cockatoos;
- the loss of 11 trees with a diameter at breast height (DBH) larger than 500 millimetres which could develop hollows suitable for black cockatoo breeding; and
- potential introduction and spread of weeds and dieback into adjacent vegetation which could impact on the quality of vegetation and its habitat values.

Between November 2023 and July 2024, ongoing negotiations between the department and the applicant, regarding a suitable offset to counterbalance the residual impact of the proposed clearing on black cockatoo habitat, were undertaken. The department notes that numerous offset proposals have been proposed by the department in response to changing application areas. Agreement to a suitable offset was not reached.

On 24 July 2024, the department notified the applicant of the department's intention to refuse the clearing permit application unless a suitable offset to counterbalance the proposed impacts of the clearing is provided. An offset calculation using the WA environmental offset metric 'calculator' was provided to the applicant. The calculation determined that to counterbalance 100 per cent of the impacts of the clearing of 5.1 hectares of native vegetation that provides low to moderate quality foraging habitat for black cockatoos, an area of 17.62 hectares of moderate

quality black cockatoo habitat is required to be secured in perpetuity under a conservation covenant. In addition, planting of 100 marri trees within this covenant area is also required to ensure that there is an improvement to the quality of foraging habitat within the offset site. The department requested that the applicant provide the following information prior to 24 August 2024:

- confirmation that the application area has increased to 5.1 hectares;
- commitment to the offset and proposed management measures (planting of 100 marri trees and weed control) to improve the quality of the vegetation within the offset areas; and
- confirmation of the location of the offset area based on the revised offset requirement of 17.62 hectares.

No response from the applicant in regard to the above required information was received.

Having had regard to the above information, the Delegated Officer determined that the resulting environmental impacts from the proposed clearing, in the absence of an appropriate offset, is unacceptable, and it would not be appropriate to grant a clearing permit. Accordingly, the Delegated Officer refused the application.

1.5. Site map



C:\Users\jathna\OneDrive - Department of Water and Environmental Regulation\Desktop\QGIS NVR ASSESSMENTS SLIP - GDA2020 new map layout.gxz

Figure 1 - Map of the application area. The areas crosshatched blue indicates the area assessed under the clearing permit application

## 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)
- *Aboriginal Heritage Act 1972* (WA)
- *Soil and Land Conservation Act 1945* (WA).

Relevant policies considered during the assessment include:

- *Environmental Offsets Policy* (2011).

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2016).

## 3 Detailed assessment of application

### 3.1. Avoidance and mitigation measures

The applicant has implemented the following avoidance measures throughout the assessment process:

- the proposed clearing area was reduced from 21.55 hectares to approximately 12.1 hectares, which resulted in the separation of the application area into two sections. The northern area was proposed for pasture and grazing. The southern area was proposed for horticulture.
- Following the ongoing conversation between the applicant and the department, the applicant further reduced the application area from 12.1 hectares to approximately 6 hectares, which has resulted in the removal of the northern section proposed for pasture and grazing from the clearing permit application. Trees that contain suitable hollows for black cockatoos were identified in the northern section of the proposed clearing area (see Appendix F). These trees with suitable hollows are retained as a result of removing the northern section from the proposed clearing area.
- Following further requests to the applicant to avoid the clearing of marri trees, the applicant has reduced the clearing area from approximately 6 hectares to approximately 4 hectares and moving the application area to an area of vegetation that was predominately immature Karri with scattered Marri throughout, to further avoid impact to black cockatoo habitat

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.

After consideration of avoidance and minimisation measures, the department determined that an offset to counterbalance the significant residual impacts to the loss of low to moderate black cockatoo foraging habitat was necessary, in accordance with the Government of Western Australia's *Environmental Offsets Policy* and *Environmental Offsets Guidelines*.

An acceptable offset to counterbalance the impacts of the proposed clearing on environmental values was not provided by the applicant.

### 3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix C) 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 D) identified that the impacts of the proposed clearing present a risk to biological values 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 and fauna - Clearing Principles (a and c)**

#### Assessment

The application area is located within the Warren Forest Interim Biogeographic Regionalisation for Australia (IBRA) region of Western Australia and mapped within two Southwest Vegetation Complexes (Webb et al, 2016):

- Crowea complex, described as tall open forest of *Corymbia calophylla-Eucalyptus diversicolor* on upper slopes with *Allocasuarina decussata-Banksia grandis* on upper slopes in hyperhumid and perhumid zones.
- Wheatley complex, described as tall open forest of *Eucalyptus diversicolor-Corymbia calophylla* on slopes and tall open forest of *Eucalyptus patens* on valley floor in perhumid and humid zones.

A basic vegetation survey was undertaken on 24 November 2021 to determine the type of vegetation, vegetation condition and presence of any conservation significant flora species, within the survey area (Ward, 2022). The survey identified that the northern half of the property was converted to almost pure marri and the ground vegetation is sparse and clumped, which has been highly modified by harvesting. The southern half of the property slopes away to the southeast and forms part of the Donnelly River valley. This area is dominated by Karri regeneration (Ward, 2022) and includes the application area.

The vegetation survey identified a total of 72 species representing 33 families, including 19 weed species within the property. The condition of the vegetation over the property was rated as good to degraded (Keighery, 1994) (Ward, 2022). The vegetation under application is considered to be in good (Keighery, 1994) condition (DWER 2022).

The department's desktop assessment identified one threatened and five priority flora species previously within the local area (10 km radius of the application area). In forming a view on the likelihood of these species occurring within the application area, the preferred habitat types of these species and their recorded proximity to the application area were considered, along with the vegetation/soil types and landforms within the application area.

The vegetation survey identified that the survey area had a layer of deep litter (made up on twigs and branches) which had built up on the forest floor. The steeper lower slopes appeared to be infested with blackberry. The survey concludes that this site comprised of low number of plant species (71) in relation to other areas that have been logged across the main biogeographical range of the jarrah forest (Ward, 2022).

Considering the habitat preferences of each conservation significant flora species identified in the local area and the vegetation observed in the application area (Ward, 2022), it is not considered for suitable habitat for conservation significant flora to occur within the application area. The vegetation survey did not identify any threatened flora within the survey area (Ward, 2022).

The department sought further clarification from DBCA on the impacts of the proposed clearing on conservation significant flora. DBCA advised that the application area is unlikely to provide suitable habitat for the conservation significant flora identified through the desktop assessment (DBCA, 2022a).

#### **Ecological Communities**

According to available datasets, there are no state listed Threatened Ecological Communities (TECs) mapped within the local area. Noting the type of vegetation present, the application area is not considered to be representative of any known TECs or Priority Ecological Communities (PECs), or be necessary for the maintenance of a TEC or PEC.

#### **Fauna**

Impacts to fauna as a result of the proposed clearing are discussed in section 3.2.2 of the report.

#### Conclusion

Based on the above assessment, the vegetation within the application area is unlikely to provide habitat for threatened or priority flora species or represents TECs or PECs.

There is potential that the proposed clearing could result in the introduction and/or spread of weeds and dieback into adjacent vegetation, which could impact on the quality of adjacent habitat values. According to the advice from DBCA, the location of the clearing footprint being located within the centre of the property will result in an increased edge effect.

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

#### Assessment

The department's desktop assessment identified 16 conservation significant fauna species listed under the state *Biodiversity Conservation Act 2016* (BC Act), Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or as Priority species by the DBCA occurring within the local area.

The local records include three birds, ten mammals, one invertebrate, one fish and one amphibian species. Fauna recorded within the local area that are associated with the an aquatic environment are unlikely to occur within the application area, given the absence of a watercourse or wetland.

In forming a view on the likelihood of fauna species occurring within the application area, the preferred habitat types and typical home ranges of these species and their recorded proximity to the application area were considered, along with the type and condition (Keighery, 1994) of the vegetation within the application area. The department determined that the vegetation in the application area is likely to provide suitable habitat for the following species:

- *Zanda baudinii* (Baudin's cockatoo) (Endangered)
- *Zanda latirostris* (Carnaby's cockatoo) (Endangered)
- *Calyptorhynchus banksia naso* (forest red-tailed black cockatoo) (Vulnerable)
- *Pseudocheirus occidentalis* (western ringtail possum, ngwayir) (Critically Endangered)
- *Phascogale tapoatafa wambenger* (south-western brush-tailed phascogale, wambenger) (Conservation Dependent); and
- *Falsistrellus mackenziei* (Western false pipistrelle) (Priority 4).

#### **Black cockatoos**

The application area is mapped within the known distribution zones of the black cockatoos (Department of Agriculture, Water and the Environment (DAWE), 2022). Records of the black cockatoos are known from the local area. Black cockatoo habitat can be considered in terms of breeding, roosting and foraging habitat. The South West Forest region, in which the application area occurs, is particularly important for Baudin's cockatoo and the forest red-tailed black cockatoo, as it is the main breeding region. Baudin's cockatoo area also known to have important foraging and wintering areas in this region (DAWE, 2022).

A black cockatoo habitat assessment was undertaken by Onshore Environmental on the 26th and 27th of July 2022. The survey occurred over 22.55 hectares and focused predominately on the suitability of the vegetation within the application area and surrounds as nesting habitat for the black cockatoo species (Onshore Environmental, 2022).

#### Breeding habitat

Black cockatoos 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. (DAWE, 2022). '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. Suitable DBH for nest hollows is 500 millimetres for most tree species (Commonwealth of Australia, 2012; DAWE, 2022).

The black cockatoo habitat assessment identified a total of 56 trees with the DBH greater than 50 centimetres including 45 marri trees, 10 karri trees and one dead tree. These trees were assessed as to the suitability for breeding for black cockatoos. A total of 30 trees were categorised as being unsuitable based on the absence of hollows or the hollows were too small to be utilised for nesting the black cockatoo birds. A further 19 trees were classified as marginal given the presence of a suitably sized hollow for black cockatoos but were considered unlikely to be used for various different reasons or not possible to be identified from the ground level. A total of seven trees were classified as suitable, containing hollows that appeared to be of a suitable size and sufficient depth for use as a nesting hollow. Although classified as suitable, none of these hollows showed evidence of use by black cockatoos (Onshore Environmental, 2022).

As detailed in section 3.1 of the decision report, the application area has been substantially reduced. According to the data provided with the black cockatoo habitat assessment, the revised application area contains 11 trees with

DBH larger than the 50 centimetres (See Appendix F). Five trees were classified as unsuitable for nesting and six trees were classified as 'marginal' (T14, T15, T18, T25, T26, T26b) (Onshore Environmental, 2022). There is uncertainty on whether these three trees contain hollows. The Table 1 below provides a detailed description of each of the habitat trees identified within the application area and the location of the following trees are shows in Appendix F.

Table 1: Details of the potential nesting trees within the application area

Point	Category	comments	Easting	Northing	Tree	DBH (m)
T02	Unsuitable	Opening at top is filled with woody debris	403682	6214499	marri	1
T14	Marginal	Dead marri, hollow in top could be usable but difficult to see from ground. Old chewed nuts nearby	403817	6214629	marri	1.4
T15	Marginal	Small side entry hollow near top	403874	6214626	marri	1.3
T16	Unsuitable	Big Karri no hollows visible	403786	6214592	karri	1.5
T17	Unsuitable	No suitable hollows. Small hollow side entry on trunk	403762	6214589	marri	1.4
T18	Marginal	May have upwards facing hollow on bend of main trunk, view obstructed	403739	6214596	marri	1.1
T25	Marginal	One small hollow 10x10 not likely to be suitable to black cockatoos due to small size. No large observable hollows. Large tree may have other hollows that aren't visible	403857	6214523	marri	1.5
T26	Marginal	Large karri, no large hollows visible	403874	6214518	karri	1.8
T26b	Marginal	Small side entry hollow from broken branch 15x15cm on eastern side of tree. Western Rosellas observed in the area could be using hollow. Small and likely not deep enough for Black cockatoos	403899	6214532	marri	1.3
T29	Unsuitable	Top opening but appears unsuitable	403695	6214547	N/A	1.6
T30	Unsuitable	Big old dead tree with dead branches	403671	6214621	karri	1.5

#### Roosting habitat

Night-roosts are usually located in the tallest trees of an area, and in close proximity to both a food supply and a water source (DAWE, 2022).

It is acknowledged that the six habitat trees within the application area may represent suitable roosting habitat for black cockatoo species. According to available databases, there are no known roost sites within the local area with the closest confirmed roost site located approximately 11.9 kilometres of the application area. No evidence of roosting by black cockatoo species was observed during the black cockatoo habitat assessment (Onshore Environmental, 2022).

Noting that the local area is highly vegetated, the proposed clearing would not significantly impact the availability of black cockatoo roosting habitat within the local area.

#### Foraging habitat

Significant foraging habitat for black cockatoo species includes foraging material that is within an approximate 6–12-kilometre radius of breeding trees and within six kilometres of a night roosting site (DAWE, 2022). The preferred foraging habitat for each of the species is described below:

- Carnaby's cockatoo – native shrubland, kwongan heathland and woodland dominated by proteaceous plant species such as banksia spp, hakea spp. and grevillea spp, as well as allocasuarina and eucalyptus species, marri and a range of introduced species (Valentine and Stock, 2008).
- forest red-tailed black cockatoo – jarrah and marri woodlands and forest, edges of karri forests including wandoo and blackbutt within the range of the species (DAWE, 2022).



- Baudin's cockatoo – eucalypt woodlands and forest, proteaceous woodland, and heath. Primarily feeding on marri during the breeding season and non-native species outside of the breeding season (DAWE, 2022).

Food resources within the range of breeding sites and roost sites are important to sustain populations, and foraging resources are therefore viewed in the context of known breeding and night roosting sites, as well as watering sites particularly within 12 kilometres of an impact area (DAWE, 2022). Marri trees identified within the application area are a known primary food source for all three black cockatoo birds (Johnstone, R.E and Kirkby T, 2010). There is one black cockatoo roost site mapped in the 12-kilometre radius area. No known black cockatoo breeding sites are mapped within a 12-kilometre radius of the application area. There is a non-perennial natural watercourse that runs within the southern boundary of the property.

Based on the findings of the black cockatoo assessment (Onshore Environmental, 2022), calls of the forest red-tailed black cockatoos were heard during the survey. Old chewed marri nuts were also observed within the application area, specifically near Tree 14. No recent evidence of use was observed.

The DBCA advised that regardless of the extensive areas of similar vegetation available within the local area, the cumulative impact of the removal of black cockatoo foraging habitat is likely to be regionally significant. As per the Carnaby's cockatoo recovery plan, reversal of threats (including loss of habitat) is required before significant increases in the black cockatoo populations can occur (DBCA, 2022a). The Carnaby's cockatoo recovery plan notes that a reasons for the decline of Carnaby's cockatoo is the extensive clearing of nesting and feeding habitat. The long-term survival of Carnaby's cockatoo depends on the availability of suitable breeding habitat and foraging habitat capable of providing enough food to sustain the population (Parks and Wildlife, 2013).

As determined by the site visit (DWER 2022), habitat assessment (Onshore Environmental 2022) and flora survey (Ward, 2022), the vegetation within the application area is predominately immature Karri woodland in good (Keighery, 1994) condition with scattered immature Marri trees throughout. Karri is not considered a primary foraging resource for black cockatoos. However, it is considered that the application area contains low to moderate foraging habitat for all three black cockatoo species given the presence of scattered Marri. Potential nesting trees, with suitable hollows have been identified on the same property as the area proposed to be cleared and it is therefore considered that the application area could provide foraging habitat for breeding individuals in the locality. It is considered that the application area contains critical habitat for Carnaby's cockatoo, Baudin's cockatoo and forest red-tailed black cockatoo.

#### **South-Western Brush-Tailed Phascogale (*Phascogale tapoatafa wambenger*)**

South-Western Brush-Tailed Phascogale in south-west WA, is known to occur in dry sclerophyll forests and open woodlands with hollow-bearing trees (usually eucalypts) and sparse understorey, including karri forest (Bradshaw, 2015), with records less common in higher rainfall areas. This species occurs in highest densities in the Perup/Kingston area, Collie River valley, and near Margaret River and Busselton (DEC, 2012). According to the desktop assessment, records of this species were identified 5.51 kilometres from the application area.

The application area contains hollow bearing trees (Onshore Environmental, 2022), sparse understorey in some areas and fallen logs (DWER, 2022a), which is likely to be suitable habitat for South-Western Brush-Tailed Phascogale. However, noting the extent of vegetation within the local area which is likely to provide similar and/or better condition (Keighery, 1994) vegetation to the application area for phascogales, it is not likely that the application area represents significant habitat for this species. The risk of long-term impacts to phascogale populations within the local area as a direct result of the proposed clearing is low, and the removal of the vegetation would not significantly impact this species.

#### **Quenda (*Isoodon fusciventer*)**

The quenda occupies areas of dense understorey such as around swamps or in banksia and jarrah woodlands. This species is distributed near the south coast from Guilderton north of Perth to east of Esperance (DEC, 2021). Noting the known distribution and the habitat present within the application area, it is considered likely that Quenda maybe a transient visitor to the application area. Given the broad range of the species and relative abundance of intact vegetation throughout the surrounding local area, the clearing proposed is unlikely to significantly impact Quenda.

#### **Western Ringtail Possum (*Pseudocheirus occidentalis*)**

WRP is listed as Critically Endangered under the BC Act, as well as the EPBC Act. According to the WRP recovery plan, habitat critical to survival for WRP is not well understood and is therefore, based on the habitat variables observed where WRP are most commonly recorded. These appear to vary between key management zones (DPaW, 2017). The common findings however are high nutrient foliage, availability for food, suitable structure for

protection/nesting and canopy continuity to avoid/escape predation and other threats. Current distribution of WRP in Western Australia is limited to three management zones. Populations in the southern forest management zone occur mainly in jarrah or marri dominated forests, in adjacent stands of riparian vegetation often with an overstorey of flooded gum (*Eucalyptus rudis*) and extending to wandoo (*Eucalyptus wandoo*) forests to the north-east of Manjimup and karri (*Eucalyptus diversicolor*) forests from Northcliffe to west of Manjimup. Any habitat where WRP occur naturally are considered critical and worthy of protection (DPAW, 2017). Habitat critical to survival comprises forests with limited anthropogenic disturbance (unlogged or lightly logged, and a low intensity and low frequency fire history), that are intensively fox-baited and have low indices of fragmentation (Wayne et al. 2012).

WRP resting sites include constructed dreys and tree hollows, with dreys constructed in the canopy when hollows are not available (Jones et al, 1994). The department's site inspection did not observe any dreys within the application area (DWER, 2022a).

Given the application area contains marri and karri trees, which include six large trees with hollows within close proximity to water resources, the application area is likely to contain suitable habitat for the WRP. The local area contains a total of nine previous recordings, with the closest record located 2.53 kilometres of the application area.

The department sought advice from DBCA in regard to the impacts on WRP from the proposed clearing. DBCA advised that WRP had been recorded within the local area and are likely to use the application area as the site appears to contain suitable habitat (DBCA, 2022a).

The department's assessment identifies that the local area retains approximately 61.4 per cent of its original native vegetation extent, the majority of which is secured in perpetuity in conservation areas managed by DBCA. Noting this, the proposed clearing of 5.1 hectares of vegetation is unlikely to have significant impact on the availability of WRP habitat in this location. However, given the likelihood that the trees within the application area maybe occupied by WRP individuals, The proposed clearing is likely to impact on individuals that may be utilizing the application area at the time of clearing.

#### **Western false pipistrelle (*Falsistrellus mackenziei*)**

Western false pipistrelle is listed as a Priority four species by DBCA. According to the desktop assessment, this species was recorded from eight locations within the local area with the closest record identified 4.68 kilometres from the application area. The western false pipistrelle is known to inhabit wet sclerophyll forests dominated by karri, jarrah, tuart; utilise tree hollows for diurnal refuge and breeding, usually in colonies of 5-30 individuals and feed on flying-insects (Atlas of Living Australia, n.d).

DBCA advised that habitat loss is one of the major threats to this species and given the continuous habitat between the application area and the previously identified records in the local area, it is considered likely that this species would occur within the application area (DBCA, 2022a). However, DBCA has advised that the loss of suitable habitat from the clearing proposed is unlikely to result in significant impacts to the Western false pipistrelle at the species level.

#### Conclusion

Based on the above assessment, the proposed clearing will impact on 5.1 hectares of suitable low to moderate quality foraging habitat for black cockatoo species and an offset to counterbalance this significant residual impact is required.

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

#### Assessment

The application area is part of the broader Dwalganup Soil-landscape System with undulating plateau terrain and moderately incised, to shallow, minor valleys. Mount Brook flows through the southern part of the property, meeting the Donnelly River approximately 1.3 kilometres to the west (CSLC, 2022).

The application area is mapped within two soil landscape units (DPIRD, 2019):

- Crowea (Dwalganup), brown duplex Phase which is described as Loamy gravels and Brown deep loamy duplexes. Red earths or red duplex soils also occur. The vegetation associated with this soils landscape is a tall, open forest (40 to 80 m high) of *Eucalyptus diversicolor* (karri) and marri is dominant, with *Banksia grandis*, *Allocasuarina decussata* and *Persoonia longifolia* as a low tree layer.
- Wheatley Subsystem (Dwalganup) is described as mainly shallow (20-40 m) minor valleys with low sideslopes (5-20%) and narrow swampy floors with a slightly incised stream channel. The vegetation associated with this soil landscape is marri forest with patches of karri. Understorey species are *Agonis parviceps*, *karri boronia*,

*zamia*, bracken, *Acacia browniana*, holly flame tree, *Lasiopetalum floribundum*, *Tremandra stelligera* and tassel flower.

Expert land degradation advice was received by DPIRD, who undertook a site inspection of the application area in 2022. The soils within the application area was identified as mainly loamy gravels and loamy earths, with proportions of clay increasing from the surface to subsoil. On the valley slopes, the soils become increasingly red–brown coloured with friable topsoil. The soils appear well structured with good water and nutrient holding capacity (CSLC, 2022).

DPIRD advised that the proposed clearing may increase the risk of water erosion and phosphorus export however advised that good land management practices will reduce the likelihood of surface flow and nutrient export (CSLC, 2022).

The applicant advised that they plan to retain a buffer perimeter of parkland cleared trees around the proposed truffle orchard (oak trees) for wind protection and to stabilize soil and capturing any sediment runoff that may come from the cleared area. The applicant also plans to plant the oak trees on the contour to reduce the risk of erosion.

#### Conclusion

Based on the above assessment, the proposed clearing may cause an increase in soil erosion. Management measures are likely to mitigate this risk.

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

#### Tree lopping activities within the application area

During the assessment of the application area it was noted by the department that approximately 60 per cent of the native vegetation within the application area was lopped by the applicant. This clearing was referred internally within the department for investigation (ICMS 73245). The investigation is currently ongoing. The department considered it appropriate to conduct its assessment on the basis of the pre-logging environmental values.

#### Planning and other matters

The Shire of Manjimup advised that local government approvals are not required for the purpose of clearing, and that the proposed clearing is consistent with the Shire's Local Planning Scheme No 4 "Priority Agriculture". The Shire requested the applicant to ensure to undertake all land use activities proposed to comply with the development standards for the zone (Shire of Manjimup, 2022).

The application area falls within the Donnelly River Water Reserve Public Drinking Water Source Area (PDWSA). The application area falls within a zone that is not assigned a priority level, however as the property is zoned as priority agriculture, the application area is likely to be within a priority two area of the PDWSA/ The proposed truffle farming is compatible with conditions in priority two areas. It is recommended that:

- Vegetated buffers to water bodies are maintained.
  - There is a 160-metre distance between the water body and the application area.
- Pesticides should be applied in accordance with best management practices (i.e. in accordance with label directions)
  - The applicant has advised that they are aware of legal and social responsibilities to only use chemical pest and weed control as per best practice and following all manufacturers recommendations. The applicant has experience in chemical application within large orchards along major rivers in other areas.
- Fertilisers should be applied in accordance with best management practices.
  - The applicant has advised that minimal fertiliser use is desirable for the proposed use with no phosphorus or nitrogen-based fertilisers to be applied at all in the truffiere and organic farming principles to be followed wherever possible. No pasture or turf is intended to be established on any slope above the watercourse. Best practice and statutory regulation are to be followed at all times for handling of any chemicals used.
- This land use is considered incompatible if irrigation with recycled water is to occur.
  - The applicant has advised that water from the licenced dam on the property is to be used for watering any trees. No recycled water use is possible or intended anywhere on the property. The surface water licence (205790) expires on the 21 November 2031.

No Aboriginal sites of significance have been mapped within the application area. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972 (WA)* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

**End**

## Appendix A. Additional information provided by applicant

Information	Description
Vegetation survey (Ward, 2022)	The applicant has commissioned Mr Bruce Ward to undertake a vegetation assessment of the application area. The vegetation survey was conducted on 24 November 2021.
Photographs (Thornton & Harris, 2022b)	The department requested the applicant to provide photographs of the proposed clearing area to more accurately determine the environmental values of native vegetation proposed to be cleared. In response, the applicant submitted a number of photographs.
Black cockatoo habitat assessment (Onshore Environmental, 2022)	The applicant commissioned Onshore Environmental Consultants Pty Ltd to undertake a black cockatoo habitat assessment at Lot 10900 on Deposited Plan 201680. The survey was completed in July 2022. The survey mainly focussed on the breeding habitat for black cockatoos by assessing trees that had a DBH greater than 50 cm.

## Appendix B. Details of public submissions

On 25 May 2022, the department advertised the Application for public comments for 21 days and received three public submissions (Submission 2022a, Submission 2022b & Submission 2022c). A summary of the comments received by the three public submissions are detailed below.

Summary of comments	Consideration of comment
<p>The proposed clearing provides suitable habitat for all three black cockatoo species. The marri provides a substantial foraging source for the black cockatoos even at these ages of 30 – 50 years of age, and in 50 years' time they will also start to develop and provide nesting hollows.</p> <p>Any remaining hectares of foraging vegetation (particularly within breeding ranges, as is the case of application CPS 9732/1), may be critical for the persistence of the flocks that depend on them.</p>	Impacts of the proposed clearing on black cockatoo foraging habitat are addressed in assessment of impacts on environmental values (see section 3.2.2).
Combination of tree hollows and the emerging marri is valuable cockatoo habitat.	Impacts of the proposed clearing on black cockatoo habitat are addressed in assessment of impacts on environmental values (see section 3.2.2).
Cumulative impacts of - It is vital to consider the impacts of proposed clearing in the context of the many smaller, unregulated (and at present under-evaluated) habitat losses that are currently occurring across the ranges of these species."	The application area was significantly reduced during the assessment process. The department assessed cumulative impacts of smaller, incremental clearings under clearing principle (e). To counterbalance the significant residual of the clearing, the department requested for an agreement to offset.
A black cockatoo habitat assessment is required. All large hollows should be inspected for sign of use.	A black cockatoo habitat assessment was undertaken by Onshore Environmental on 26th and the 27th July 2022 during the assessment of the application area.
It is likely that in addition to the three threatened and endangered black cockatoo species, there may be several other threatened and priority fauna species present at the proposed clearing site. The old logs lying throughout part of the area, and the 'very heavy leaf litter' and 'sink of ecological diversity' indicate the likely importance of parts of the site for many fauna.	Impacts of the proposed clearing on fauna habitat are addressed in assessment of impacts on environmental values (see section 3.2.2).
The information provided within the 'vegetation survey' that talked about fauna is misleading and confusing	A black cockatoo habitat assessment was undertaken by Onshore Environmental on 26 and the 27 July 2022 during the assessment of the application area.
Need for mitigation measures that are effective for black cockatoo conservation.	The applicant was requested to provide a suitable offset to counterbalance the significant residual impacts of the proposed clearing.

<p>“The applicant intends to remove native vegetation to establish oak trees/truffles. The Shire of Manjimup has abundant cleared land suitable for this purpose and there is no requirement to clear more land, especially for non-essential food supply”</p>	<p>The applicant has selected the application area for the intended purpose because of the soil type and the chemical history being most suitable for the proposed truffle orchard. When selecting this site, the applicant took into account the zoning of this land being ‘primary agriculture’.</p>
<p>Long-unburnt forests have a lower fire risk than forests burnt 5-20 years ago; long-unburnt forests are now rare and cater for flora and fauna that need long-unburnt habitats.</p>	<p>Noted in the assessment of impact to fauna habitat within the application area for ground dwelling fauna.</p>
<p>‘This application makes no attempt to contribute to net landscape habitat gain’.</p>	<p>This matter was discussed during the assessment process. The department did not reach an agreement with the applicant on the final offset.</p>
<p>The proposal to clear native vegetation is intended for private gain.</p>	<p>The necessity of clearing has been considered in making a decision on the clearing permit application.</p>

## Appendix C. Site characteristics

### C.1. Site characteristics

The information provided below describes the key characteristics of the area proposed to be cleared and is based on the best information available to the department at the time of this assessment. This information was used to inform the assessment of the clearing against the Clearing Principles, contained in Appendix D.

Characteristic	Details
Local context	<p>The application area is situated within the Warren bioregion. The area proposed to be cleared is 5.1-hectares that is part of a larger patch of native vegetation in the intensive land use zone of Western Australia.</p> <p>Aerial imagery and spatial data indicates the local area (10-kilometre radius from the area proposed to be cleared) retains approximately 61.44 per cent of the original native vegetation cover.</p>
Ecological linkage	<p>No formal ecological linkages are mapped over the application area. The South West Regional Ecological Linkage is located approximately 1.3 kilometres south of the application area.</p>
Conservation areas	<p>No conservation areas or DBCA managed lands are mapped within the application area. More than 50 per cent of the local area occurs within DBCA managed estate.</p> <p>The closest conservation area is the Donnelly River Nature Reserve (Class A) located immediately to the southwest of the application area. The application area is further surrounded by the following State Forest to the north, south and the west.</p> <ul style="list-style-type: none"> <li>• South East Nannup State Forest</li> <li>• North Donnelly State Forest</li> <li>• Donnelly State Forest</li> <li>• Barlee Brook State Forest.</li> </ul>
Vegetation description	<p>Photographs taken by the department during the site inspection (DWER, 2022a), vegetation survey (Bruce, 2022) and the black cockatoo habitat assessment (Onshore Environmental, 2022) indicate the vegetation within the proposed clearing area consists of a mix of marri and karri trees with various midstory species.</p> <p>Representative photos are available in Appendix F.</p> <p>The broad scale mapped vegetation types within the application area are (Webb et al, 2016):</p> <ul style="list-style-type: none"> <li>• vegetation complex 68, which is described as tall open forest of <i>Corymbia calophylla-Eucalyptus diversicolor</i> on upper slopes with <i>Allocasuarina decussata-Banksia grandis</i> on upper slopes in hyperhumid and perhumid zones.</li> <li>• vegetation complex 298, which is described as tall open forest of <i>Eucalyptus diversicolor-Corymbia calophylla</i> on slopes and tall open forest of <i>Eucalyptus patens</i> on valley floor in perhumid and humid zones.</li> </ul> <p>The mapped vegetation types retain more than 50 per cent of the original extent (Government of Western Australia, 2019).</p>
Vegetation condition	<p>Photographs taken during the site inspection (DWER, 2022a) has indicated the vegetation within the application area is in good condition (Keighery, 1994).</p> <p>The vegetation survey (Bruce, 2022) has determined that the vegetation within the survey area ranged from Good to Degraded (Keighery, 1994) condition. The full Keighery (1994) condition rating scale is provided in Appendix E.</p> <p>Representative photos are available in Appendix F.</p>
Climate and landform	<p>The property receives an approximate average annual rainfall between 750-1000 mm (2000-2020). The DPIRD weather station at Yanmah (6km southeast of the property) has recorded an annual average rainfall of 976 mm between 2013 and 2021.</p>

Characteristic	Details
	<p>The application area falls within two soil landforms (DPIRD, 2019), which are:</p> <ul style="list-style-type: none"> <li>• Wheatley subsystem (254DwWH) described as Shallow (20-40 m deep), V-shaped minor valleys with low side slopes (5-20%) and narrow swampy floors with a slightly incised stream channel.</li> <li>• Crowea (Dwalganup), brown duplex Phase (254DwCRb) described as broad ridge crests, this unit comprises broadly convex ridge crests and the flanks of gentle upper slopes and ridges.</li> </ul>
Soil description	<p>The soils examined in the area proposed for clearing are mainly Loamy gravels and Loamy earths, with proportions of clay increasing from the surface to subsoil. On the valley slopes, the soils become increasingly red–brown coloured with friable topsoil. The soils appear well structured with good water and nutrient holding capacity (CSLC, 2022).</p>
Land degradation risk	<p>The site is dominated by a broad ridge crest and valley slopes with soils appearing well structured with good water and nutrient holding capacity (CSLC, 2022).</p> <p>The southern area of the property has moderately steep slopes which may present a risk of water erosion and nutrient export. However, once the orchard is established, the likelihood of erosion in these areas is reduced with good land management and implementation of appropriate surface water control measures to prevent surface water runoff (CSLC, 2022).</p> <p>The applicant advised that they plan to retain a buffer perimeter of parkland cleared trees around the proposed truffle orchard (oak trees) for wind protection. This will have the added benefit of stabilizing soil and capturing any sediment runoff that may come from the cleared area. The applicant also plans to plant the oak trees on the contour to reduce the risk of erosion.</p>
Waterbodies	<p>The desktop assessment and aerial imagery indicated that no watercourses transect the area proposed to be cleared. The Donnelly River, which is a perennial major river is located approximately 800 metres to the west of the application area. The Mount Brook watercourse, which is a nonperennial minor river is mapped approximately 160 metres south of the application area.</p>
Hydrogeography	<p>The application area falls within the Donnelley River system area under the RIWI Act and is within the Donnelly River PDWSA.</p> <p>Groundwater salinity level (Total Dissolved Solids) is mapped as 500-1000 milligrams per litre (DWER-026).</p>
Flora	<p>According to the desktop assessment, six flora records within the local area were identified that include one threatened and five priority flora species. The closest species, <i>Amanita kalamundae</i> (P1) was identified 2.12 kilometres from the application area.</p>
Ecological communities	<p>No Threatened or Priority Ecological Communities were recorded within the application area.</p> <p>The nearest recorded conservation significant ecological community is the Priority three <i>Epiphytic Cryptogams</i> of the karri forest, mapped approximately 750 metres west of the application area.</p>
Fauna	<p>According to the desktop assessment, 16 fauna species were recorded from the local area which include three bird species, ten mammals, one amphibian, one fish and one invertebrate species. The application area is mapped within the distribution zone of the three threatened black cockatoo species.</p>

**C.2. Vegetation extent**

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion**					
Warren	833,985.56	659,432.21	79.07	558,485.38	66.97
Southwest Forest Vegetation Complexes*					
Crowea (CRb)_68	52,753.26	45,425.07	86.11	43,135.87	81.77
Wheatley (WH1)_298	20,321.02	16,400.37	80.71	14,950.98	73.57
Local area					
10km radius	33,475.58	20,568.13	61.44	-	-

\*Government of Western Australia (2019a)

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

**C.1. Flora analysis table**

According to the available databases, the following flora species were recorded from the 10-kilometre radius local area.

Species name	Conservation status	Distance of closest record to application area (km)	Number of known records (total)	Same vegetation type? [Y/N]	Same soil type?	Suitable habitat? [Y/N]
<i>Amanita kalamundae</i>	P3	2.12	1	N	N	N
<i>Caladenia harringtoniae</i>	T	8.78	4	Y	N	N
<i>Deyeuxia inaequalis</i>	P1	6.13	3	N	N	N
<i>Rorippa cygnorum</i>	P2	8.81	1	N	N	N
<i>Senecio leucoglossus</i>	P4	9.51	1	N	N	N
<i>Stylidium ireneae</i>	P4	5.66	1	N	N	N

**C.2. Fauna analysis table**

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

Species scientific name	Species common name	Conservation status	Year of the most recent record	Distance of closest record to application area (km)	Number of known records (total)	Suitable habitat? [Y/N]
<b>Birds</b>						
<i>Calyptorhynchus banksii naso</i>	forest red-tailed black cockatoo	VU	2017	4.86	23	Y
<i>Calyptorhynchus baudinii</i>	Baudin's cockatoo	EN	2017	1.54	21	Y
<i>Calyptorhynchus latirostris</i>	Carnaby's cockatoo	EN	2009	7.05	1	Y
<i>Calyptorhynchus</i> sp. 'white-tailed black cockatoo'	White-tailed black cockatoo	EN	2012	0.41	6	Y
<b>Mammals</b>						



Species scientific name	Species common name	Conser vation status	Year of the most recent record	Distance of closest record to application area (km)	Number of known records (total)	Suitable habitat? [Y/N]
<i>Dasyurus geoffroii</i>	Chuditch, western quoll	VU	-	9.50	4	N
<i>Falsistrellus mackenziei</i>	Western false pipistrelle, western falsistrelle	P4	2018	4.68	8	Y
<i>Isoodon fusciventer</i>	Quenda, southwestern brown bandicoot	P4	2010	3.72	9	Y
<i>Myrmecobius fasciatus</i>	numbat, walpurti	EN	1986	2.34	2	N
<i>Notamacropus irma</i>	western brush wallaby	P4	1997	3.91	7	Y
<i>Phascogale tapoatafa wambenger</i>	South-western brush-tailed phascogale, wambenger	CD	1975	5.51	5	Y
<i>Pseudocheirus occidentalis</i>	western ringtail possum, ngwayir	CR	2018	2.53	9	Y
<i>Setonix brachyurus</i>	Quokka	VU	2017	1.40	110	N

### C.3. Land degradation risk table

254DwCRb - Crowea	
Risk categories	Risk
Wind erosion	H1: 66% of map unit has a high to extreme hazard
Water erosion	L2: 7% of map unit has a very high to extreme hazard
Salinity	L1: 0% of map unit has a moderate hazard
Subsurface Acidification	H2: 100% of map unit has a high susceptibility
Flood risk	L1: 0% of the map unit has a moderate to high hazard
Water logging	L1: 0% of map unit has a moderate to very high risk
Phosphorus export risk	M1: 27% of map unit has a high to extreme hazard
245DwWH - Wheatley	
Risk categories	Risk
Wind erosion	H1: 55% of map unit has a high to extreme hazard
Water erosion	M1: 20% of map unit has a very high to extreme hazard
Salinity	L1: 0% of map unit has a moderate hazard
Subsurface Acidification	H2: 97% of map unit has a high susceptibility
Flood risk	L1: 2% of the map unit has a moderate to high hazard
Water logging	L2: 4% of map unit has a moderate to very high risk
Phosphorus export risk	M2: 47% of map unit has a high to extreme hazard

## Appendix D. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
<b>Environmental value: biological values</b>		
<p><u>Principle (a):</u> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u></p> <p>The application area does not contain habitat for conservation significant flora or vegetation that is representative of a TEC or PEC. Native vegetation within the application area is a mix of marri, karri over an understorey of shrubs and blackberry, mostly in good condition (Keighery, 1994). The marri trees within the application area are considered to provide foraging value for three black cockatoo species.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (b):</u> <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared contains significant habitat for black cockatoos and potential habitat for other conservation significant fauna. The application area falls within the mapped distribution zone of black cockatoos and is considered to contain suitable foraging and potential breeding habitat for these species.</p>	At variance	Yes <i>Refer to Section 3.2.2, above.</i>
<p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u></p> <p>Given the lack of suitable habitat for <i>Caladenia harringtoniae</i>, the only Threatened flora species recorded within the local area, the proposed clearing is not considered likely to impact on this species. The application area is unlikely to contain habitat for any other flora species listed under the BC Act.</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>According to available datasets, there are no state listed TECs mapped within the local area. Noting the vegetation type present, the application area is not considered to be representative of any other state listed TEC, or be necessary for the maintenance of a state listed TEC.</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 the mapped vegetation types and the native vegetation in the local area are consistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<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>The closest conservation area occurs 100 m from the area proposed to be cleared and is separated through an area of continuous vegetation. Given this distance, the proposed clearing is not likely to have an impact on the environmental values of this conservation areas.</p>	Not likely to be at variance	No
<b>Environmental value: land and water resources</b>		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>Given no watercourses or wetlands are recorded within the application area, the proposed clearing is unlikely to impact on- or off-site hydrology and water quality.</p> <p>A non-perennial watercourse occurs approximately 160 metres south of the application area. Given the separation distance between the application area and this watercourse, it is not likely that riparian vegetation would be impacted by the proposed clearing.</p>	Not likely to be at variance	No
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>The mapped soils are susceptible to water erosion and nutrient export.</p>	May be at variance	Yes <i>Refer to Section 3.2.3, above.</i>
<p><u>Principle (i):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.”</i></p> <p><u>Assessment:</u></p> <p>Given the lack of wetlands or watercourses within the application area, that the mapped groundwater salinity level is low and that the local area is highly vegetated, it is not considered likely for the proposed clearing to cause deterioration in the quality of surface or underground water.</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></p> <p>The surveyed soils and topographic contours in the surrounding area do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding.</p> <p>The advice received from the CSLC indicate that the proposed clearing will not lead to increased flooding.</p>	Not likely to be at variance	No

**Appendix E. 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.

Table 1: 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 F. Representative photographs and biological survey information excerpts (DWER, 2022a, Onshore Environmental, 2022)













Figures 3-13: Photographs of the application area (DWER, 2022a)

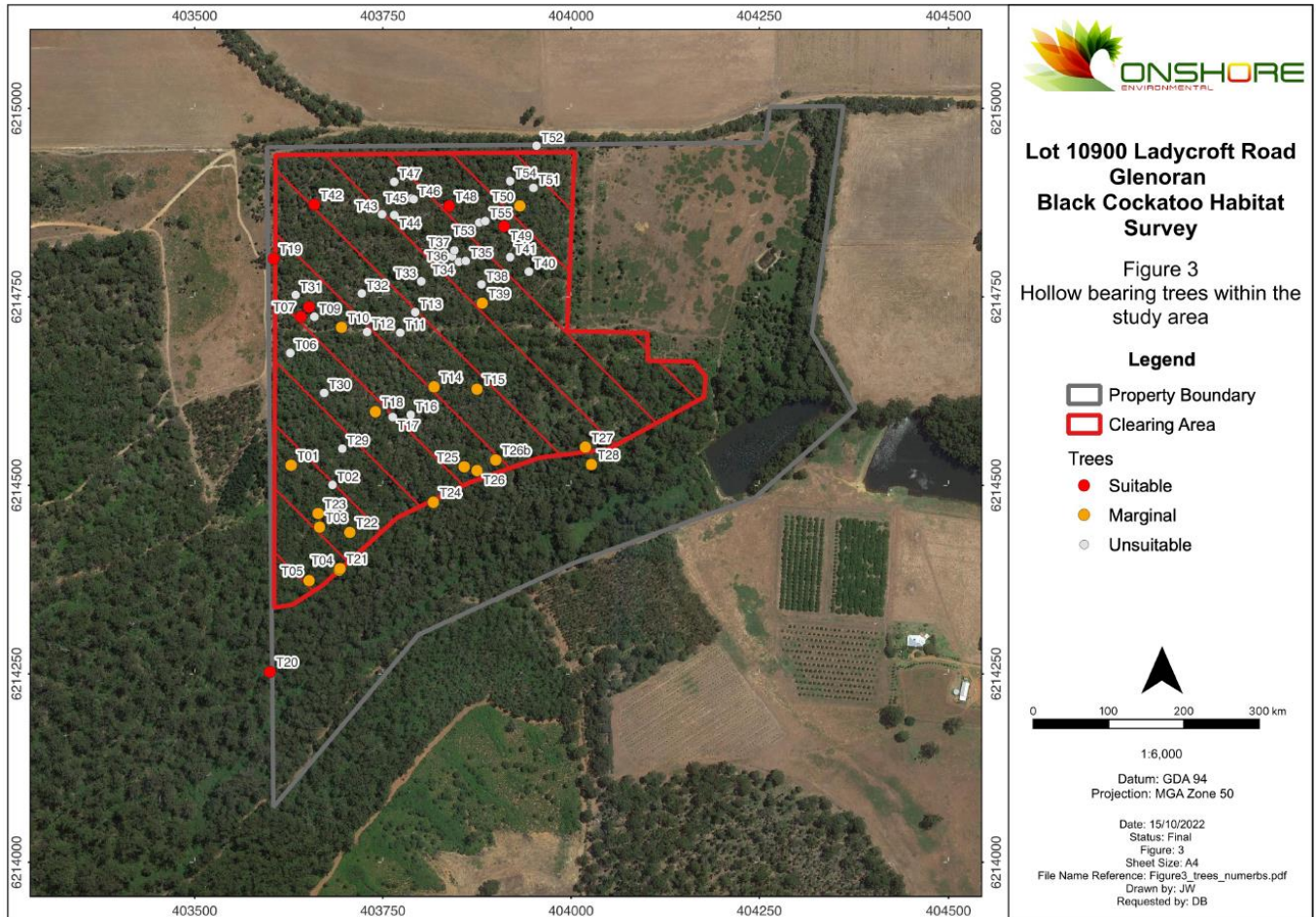


Figure 14: A map of the habitat trees identified within the survey area.

Table 2: A description of the categories for tree hollows used in the black cockatoo habitat assessment

Category	Description
Unsuitable	Hollows unsuitable for nesting due to hollow entrance diameter <10cm or hollow examined by drone and determined to be unsuitable for nesting. These hollows may be utilised by other species and have the potential to become nest sites in the longer term.
Marginal	Hollow is potentially suitable for nesting i.e. diameter of 10 cm or greater. However, these hollows are considered unlikely to be used by Black Cockatoos as nesting sites for one or more of the following reasons: <ul style="list-style-type: none"> <li>small entrance (generally &lt;20cm);</li> <li>deemed unlikely to have a large internal space for nesting, or sufficient depth inside the hollow (i.e. less than 0.5 m);</li> <li>evidence of use by other competitive species i.e. bees, other birds or possums;</li> <li>orientation of the hollow; and/or</li> <li>the presence of branches or other obstructions.</li> </ul> While these hollows are not currently high-quality potential nest sites they have the potential to become nest sites in the future. It is possible that these trees may also contain suitable hollows that were not visible from ground level.
Suitable	A hollow that is likely usable for nesting. The hollow is of suitable size, is likely to be of sufficient depth, and no competitive species are noted. However, there is no evidence of use.
Chewed	Evidence of chew marks or other signs of use on edge of hollow or trunk indicating recent or historical usage.
Used	Known nesting hollow.

The photographs of the vegetation proposed to be cleared supplied by the applicant (Thornton & Harris, 2022b) and full copies of the vegetation (Ward, 2022) and black cockatoo habitat assessment (Onshore Environmental, 2022) survey reports are available at the department’s [website](#).

## Appendix G. Sources of information

### G.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)

## G.2. References

- Atlas of living Australia (n.d) *Falsistrellus mackenziei*. Retrieved from *Falsistrellus mackenziei : Western False Pipistrelle | Atlas of Living Australia (ala.org.au)*. accessed on 03 April 2024.
- Bradshaw, F.J. (2015). Reference material for karri forest silviculture, Department of Parks and Wildlife, Perth. Retrieved from Microsoft Word - CPS 9594-1 - Draft Permit (revised Sep2023) (dwer.wa.gov.au)
- Commonwealth of Australia. (2012). Department of Sustainability, Environment, Water, Population and Communities. *EPBC Act referral guidelines for three threatened black cockatoo species*.
- Commissioner of Soil and Land Conservation (CSLC) (2022) *Land Degradation Advice and Assessment Report for clearing permit application CPS 9732/1*, received 20 June 2022, Department of Primary Industries and Regional Development, Western Australia (DWER Ref: DWERDT620289).
- Commonwealth of Australia (2001) *National Objectives and Targets for Biodiversity Conservation 2001-2005*, Canberra.
- Department of Agriculture, Water and the Environment (DAWE) (2022), Referral guideline for 3 WA threatened black cockatoo species: Carnaby's cockatoo, Baudin's cockatoo and the Forest Red-tailed Black-cockatoo, Department of Agriculture, Water and the Environment, Canberra, February
- Department of Biodiversity, Conservation and Attractions (DBCA) (2022) *Species and Communities Branch fauna/flora advice for clearing permit application CPS 9732/1*, received 01 December 2022. Department of Biodiversity, Conservation and Attractions, Western Australia (DWER Ref: DWERDT695394).
- Department of Biodiversity, Conservation and Attractions (DBCA) (2023) *Species and Communities Branch updated fauna advice for clearing permit application CPS 9732/1*, received 10 January 2023. Department of Biodiversity, Conservation and Attractions, Western Australia (DWER Ref: DWERDT711715).
- Department of Conservation and Land Management (DEC) (2008) Baudin's Cockatoo (*Calyptorhynchus baudinii*) and Forest Red-tailed Black (*Cockatoo Calyptorhynchus banksii naso*) Recovery Plan,
- Department of Environment and Conservation (DEC). (2012). Fauna profiles. Brush-tailed Phascogale. Phascogale tapoatafa (Meyer, 1793). Retrieved from <https://library.dbc.wa.gov.au/static/FullTextFiles/925273.pdf>
- Department of Environment and Conservation (DEC) (2021). Quenda (*Isodon obesulus*). Fauna profiles. Get to know Western Australia's fauna. Retrieved from [https://www.dpaw.wa.gov.au/images/documents/conservation-management/pests-diseases/quenda\\_2012.pdf](https://www.dpaw.wa.gov.au/images/documents/conservation-management/pests-diseases/quenda_2012.pdf)
- Department of Environment Regulation (DER) (2013). *A guide to the assessment of applications to clear native vegetation*. Perth. Available from: [https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2\\_assessment\\_native\\_veg.pdf](https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf).
- Department of Parks and Wildlife (2013) Carnaby's Cockatoo (*Calyptorhynchus latirostris*) Recovery Plan. Wildlife Management Program No. 52. Department of Parks and Wildlife, Perth, Western Australia (Now the Department of Biodiversity, Conservation and Attractions). Perth. Western Australia).
- Department of Parks and Wildlife (DPAW) (2017). Western Ringtail Possum (*Pseudocheirus occidentalis*) Recovery Plan. Wildlife Management Program No. 58. Department of Parks and Wildlife, Perth, WA.
- 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 02 April 2024).
- Department of Water and Environmental Regulation (DWER) (2019). *Procedure: Native vegetation clearing permits*. Joondalup. Available from: [https://dwer.wa.gov.au/sites/default/files/Procedure\\_Native\\_vegetation\\_clearing\\_permits\\_v1.PDF](https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits_v1.PDF).

- Department of Water and Environmental Regulation (DWER) (2022a) *Site Inspection Report for Clearing Permit Application CPS 9732/1*, 06 October 2022. Department of Water and Environmental Regulation, Western Australia (DWER Ref: DWERDT928783).
- Department of Water and Environmental Regulation (DWER) (2022b) *Public drinking water source areas advice for clearing permit application CPS 9732/1*, received 26 July 2022 (DWER Ref: DWERDT636292).
- Department of Water and Environmental Regulation (DWER) (2022c) (Native Vegetation Regulation) Request for further information for clearing permit application CPS 9732/1, sent 07 July 2022 (DWER Ref: DWERDT628086)
- Environmental Protection Authority (EPA) (2016). *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment*. Available from: [http://www.epa.wa.gov.au/sites/default/files/Policies\\_and\\_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey\\_Dec13.pdf](http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey_Dec13.pdf).
- Environmental Protection Authority (EPA) (2016). *Technical Guidance – Terrestrial Fauna Surveys*. Available from: [https://www.epa.wa.gov.au/sites/default/files/Policies\\_and\\_Guidance/Tech%20guidance-%20Terrestrial%20Fauna%20Surveys-Dec-2016.pdf](https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/Tech%20guidance-%20Terrestrial%20Fauna%20Surveys-Dec-2016.pdf).
- Government of Western Australia (2008) Baudin's Cockatoo (*Calyptorhynchus baudinii*) and Forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*) Recovery Plan,
- 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>
- Government of Western Australia. (2019) *2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019*. WA Department of Biodiversity, Conservation and Attractions. <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>
- Johnstone, R. E. and Kirkby, T. (2021), Carnaby's Cockatoo (*Calyptorhynchus latirostris*), Baudin's Cockatoo (*Calyptorhynchus baudinii*) and the Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) on the Swan Coastal Plain (Lancelin–Dunsborough), Western Australia. Studies on distribution, status, breeding, food, movements and historical changes. Retrieved from <https://museum.wa.gov.au/sites/default/files/Black%20cockatoos%20on%20Swan%20Coastal%20Plain%20DOP%202011-09-27%20amended.pdf>
- Jones, B.A., How, R.A. and Kitchener, D.J. (1994). A Field Study of *Pseudocheirus occidentalis* (Marsupialia :Petauridae). II. Population Studies. *Wildlife Research* 21; 189-201.
- Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Mattiske, E.M. and Havel, J.J. (1998) *Vegetation Complexes of the South-west Forest Region of Western Australia*. Maps and report prepared as part of the Regional Forest Agreement, Western Australia for the Department of Conservation and Land Management and Environment Australia.
- Molloy, S., Wood, J., Hall, S., Wallrodt, S. and Whisson, G. (2009) *South West Regional Ecological Linkages Technical Report*, Western Australian Local Government Association and Department of Environment and Conservation, Perth.
- Onshore Environmental Pty Ltd (2022) Black Cockatoo Habitat Assessment for Lot 10900 Ladycroft Road, Glenoran, received 20 May 2022 (DWER Ref: DWERDT606306).
- Schoknecht, N., Tille, P. and Purdie, B. (2004) *Soil-landscape mapping in South-Western Australia – Overview of Methodology and outputs* Resource Management Technical Report No. 280. Department of Agriculture.
- Shah, B. (2006) *Conservation of Carnaby's Black-Cockatoo on the Swan Coastal Plain, Western Australia*. December 2006. Carnaby's Black-Cockatoo Recovery Project. Birds Australia, Western Australia.

- Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) *Native Vegetation in Western Australia, Extent, Type and Status*. Resource Management Technical Report 249. Department of Agriculture, Western Australia.
- Shire of Manjimup (2022) *Advice for clearing permit application CPS 9732/1*, received 02 June 2022 (DWER Ref: DWERDT612440).
- Submission (2022a) *Public submission in relation to clearing permit application CPS 9732/1*, received 14 June 2022 (DWER Ref: DWERDT617884).
- Submission (2022b) *Public submission in relation to clearing permit application CPS 9732/1*, received 27 May 2022 (DWER Ref: DWERDT609665).
- Submission (2022c) *Public submission in relation to clearing permit application CPS 9732/1*, received 10 June 2022 (DWER Ref: DWERDT616996).
- Thornton, J. and Harris, A. (2022a) *Clearing permit application CPS 9732/1*, received 09 May 2022 (DWER Ref: DWERDT601202).
- Thornton, J. and Harris, A. (2022b) *Supporting information for clearing permit application CPS 9732/1 – Photographs of the application area*, received 20 December 2020 (DWER Ref: DWERDT928759).
- Thornton, J. and Harris, A. (2024a) Correspondence received during the assessment of clearing permit application CPS 9732/1. Received 25 January 2024 (DWER Ref: DWERDT895662).
- Thornton, J. and Harris, A. (2024b) Correspondence received during the assessment of clearing permit application CPS 9732/1. Received 18 March 2024 (DWER Ref: DWERDT921278).
- Valentine, L.E. and Stock, W. (2008) *Food Resources of Carnaby's Black Cockatoo (Calyptorhynchus latirostris) in the Gnangara Sustainability Strategy Study Area*. Edith Cowan University and Department of Environment and Conservation. December 2008.
- Ward, B. (2022) Vegetation survey on Thornton/Harris property Manjimup. received 17 August 2022 (DWER Ref: DWERDT645879)
- Wayne A, Ward C, Vellious C, Maxwell M, Wilson I, Wayne J, Ward B, Liddelow G, Renwick J, Orell P (2012) Ngwayir (*Pseudocheirus occidentalis*) declines in the Upper Warren, the issue in brief. Unpublished report in Hansard. Department of Environment and Conservation, Manjimup.
- Webb, A., Kinloch, J., Keighery, G. and Pitt, G. 2016. *The Extension of Vegetation Complex Mapping to Landform boundaries within the Swan Coastal Plain Landform and Forested Region of South West Western Australia*. Department of Parks and Wildlife, Bunbury, WA.
- Western Australian Herbarium (1998-). *FloraBase - the Western Australian Flora*. Department of Biodiversity, Conservation and Attractions, Western Australia. <https://florabase.dpaw.wa.gov.au/> (Accessed 7 April 2024)