



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 10210/1
File Number: DWERVT12741
Duration of Permit: From 06 December 2024 to 06 December 2039

PERMIT HOLDER

McIntyre Trees Pty Ltd

LAND ON WHICH CLEARING IS TO BE DONE

Lot 41 on Deposited Plan 420248, Catterick

AUTHORISED ACTIVITY

The permit holder must not clear more than 17.3 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

CONDITIONS

1. Period during which clearing is authorised

The permit holder must not clear any *native vegetation* after 06 December 2029.

2. Type of clearing authorised

To the extent authorised under this permit, the permit holder may undertake the following activities within the area cross-hatched yellow in Figure 1 of Schedule 1:

- (a) thinning of *Eucalyptus marginata* (jarrah) trees to promote growth of selected retained trees to a target basal area of 15 square metres per hectare;
- (b) clearing of *understorey* where undertaken in association with the activities described under condition 2(a); and
- (c) *prescribed burning* of *understorey*.

3. 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.

4. Weed and dieback management

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

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

5. Directional clearing

The permit holder must:

- (a) conduct clearing activities in a slow, progressive manner towards adjacent *native vegetation*; and
- (b) allow reasonable time for fauna present within the area being cleared to move into adjacent *native vegetation* ahead of the clearing activity.

6. Vegetation management - thinning

- (a) *thinning* activities undertaken in accordance with condition 2(a) of this permit must be performed by a *forestry operator*;
- (b) operation of logging machinery used to undertake activities authorised under this permit must only be performed during *dry conditions*.
- (c) prior to undertaking any clearing authorised under this permit, an *environmental specialist* must
 - (i) inspect all *habitat trees* within the area cross-hatched yellow in Figure 1 of Schedule 1 and demarcate any *habitat trees* containing hollows suitable for use by *black cockatoo species*; and
 - (ii) determine the species composition, structure and density of the *understorey* of areas proposed to be *thinned*;
- (d) the permit holder must not clear any *habitat trees* containing hollows suitable for use by *black cockatoo species* identified in accordance with condition 6(d) of this permit;
- (e) the permit holder must not clear any *Corymbia calophylla* (Marri) trees that have a diameter, measured at 130 centimetres from the base of the tree, of 70 centimetres or greater, unless they pose an unacceptable safety risk;
- (f) the permit holder must retain a minimum of five (5) *habitat trees* per hectare within the area cross-hatched yellow in Figure 1 of Schedule 1, where present;

- (g) where five (5) *habitat trees* per hectare are not present within the area cross-hatched yellow in Figure 1 of Schedule 1, the permit holder must retain a minimum of five of the largest trees with the potential to become *habitat trees* per hectare within the area cross-hatched yellow in Figure 1 of Schedule 1;
- (h) in addition to the retained five (5) *habitat trees* per hectare under condition 6(g) or 6(f), six (6) to eight (8) secondary *habitat trees* (medium sized 30-50 centimetres diameter) must also be retained per hectare;
- (i) prior to undertaking any clearing authorised under this permit, the permit holder must provide the location of all *habitat trees* and potential *habitat trees* to be retained in accordance with conditions 6(d), 6(e), 6(f), 6(g) and 6(h) of this permit to the *CEO*, recorded using a GPS unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings or decimal degrees;
- (j) the permit holder is required to maintain a minimum retention rate of:
 - (i) 15m²/ha basal area for *Eucalyptus marginata* (jarrah) or *Corymbia calophylla* (Marri) dominated stands;
- (k) a minimum of one 30 metre diameter patch of *healthy representative understorey*, on average, per hectare authorised to be cleared under this permit, is required to be retained, within which clearing of understorey described under condition 2(c) is not permitted;
- (l) the permit holder must retain all *ground habitat logs* within the area cross-hatched yellow in Figure 1 of Schedule 1;
- (m) the permit holder must remove all *woody fuels* present within a 1 metre radius of each *habitat tree* and potential *habitat tree* retained in accordance with conditions 6(d), 6(e), 6(f), 6(g) and 6(h) of this permit and each *ground habitat log* retained in accordance with condition 6(l) of this permit;
- (n) the permit holder must within 12 months of the cessation of activities undertaken in accordance with condition 2 of this permit, and at an *optimal time*, *rehabilitate* any *established log landings* and *extraction tracks* by scarifying the soil surface to reduce compaction and facilitate natural regeneration;
- (o) within two (2) years of undertaking activities required under condition 6(n) of this permit, the permit holder must:
 - (i) engage an *environmental specialist* to determine the species composition, structure and density of the understorey of the areas subjects to *thinning*;
 - (ii) where in the opinion of an *environmental specialist*, there is evidence that the *understorey* will not recover and develop towards its pre-clearing composition, structure and density determined under condition 6(c)(ii) of this permit, the permit holder must undertake *remedial action* at an *optimal time* within the next 12 months to ensure re-establishment of *understorey* prior to expiry of this permit; and
 - (iii) where in the opinion of an *environmental specialist*, there is evidence that the *understorey* will recover and develop towards its pre-clearing composition, structure and density, that report is to be provided to the *CEO* within three (3) months of the determination being made by the *environmental specialist*; and
 - (iv) where the *CEO* does not agree with the determination made under condition 6(o)(iii), the *CEO* may require the permit holder to undertake *remedial*

actions in accordance with the requirements under condition 6(o)(ii) and repeat action under condition 6(o)(iii).

7. Vegetation management – prescribed burning

The permit holder must ensure that any *prescribed burning* undertaken in accordance with condition 2(c) of this permit shall only occur during *suitable conditions* no less than every six (6) years.

8. Records that must be kept

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

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	<ul style="list-style-type: none"> (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 GDA2020, 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); (e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 3; and (f) actions taken to minimise the risk of the introduction and spread of <i>weeds</i> and <i>dieback</i> in accordance with condition 4; and (g) actions taken to undertake directional clearing in accordance with condition 5.
2.	In relation to vegetation management pursuant to condition 6	<ul style="list-style-type: none"> (a) the <i>environmental specialists</i> report documenting the species composition, structure and density of the <i>understorey</i> in accordance with condition 6(c); (b) For <i>habitat trees</i> and potential <i>habitat trees</i> retained in accordance with conditions 6(d),6(f) and 6(g): <ul style="list-style-type: none"> (i) the species of each tree; (ii) the location of each <i>habitat tree</i> and potential <i>habitat tree</i>, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum

No.	Relevant matter	Specifications
		<p>Australia 2020 (GDA20), expressing the geographical coordinates in Eastings and Northings;</p> <p>(iii) a photograph of each <i>habitat tree</i> and potential <i>habitat tree</i>; and</p> <p>(iv) the number of <i>habitat trees</i> and potential <i>habitat trees</i> retained per hectare.</p> <p>(c) Monitoring undertaken to ensure that the specified minimum <i>basal area</i> is retained in accordance with condition 6(i);</p> <p>(d) Photographs of the understorey taken at one year, two years and three years after completing clearing authorised under this permit;</p> <p>(e) for <i>ground habitat logs</i> retained in accordance with condition 6(l):</p> <p>(i) the location of each <i>ground habitat log</i> recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA 20), expressing the geographical coordinates in Eastings and Northings;</p> <p>(ii) the number of <i>ground habitat logs</i> retained;</p> <p>(f) action taken to remove <i>woody fuels</i> surrounding retained <i>habitat trees</i> and <i>ground habitat logs</i> in accordance with condition 6(m);</p> <p>(g) number of <i>log landings</i> established, and their location recorded using a Global Positioning (GPS) unit set to Geocentric Datum Australia 2020 (GDA 20), expressing the geographical coordinates in Eastings and Northings;</p> <p>(h) the date(s) the <i>log landings</i> and <i>extraction tracks</i> were <i>rehabilitated</i> in accordance with condition 6(n); and</p> <p>(i) a detailed description of the nature and extent of any <i>remedial actions</i> undertaken in accordance with condition 6(n).</p>
3.	In relation to vegetation management pursuant to condition 7	(a) Date(s) when the prescribed burning activities were undertaken.

9. Reporting

- (a) The permit holder must provide to the *CEO* on or before 30 June of each year, a written report:
- (i) of records required under condition 8 of this permit; and
 - (ii) concerning activities done by the permit holder under this permit between 1 January and 31 December of the preceding calendar year.
- (b) If no clearing authorised under this permit was undertaken between 1 January and 31 December of the preceding calendar year, a written report confirming that no clearing under this permit has been carried out, must be provided to the *CEO* on or before 30 June of each year.
- (c) Prior to DD June 2034, the permit holder must provide to the *CEO* a written report of records required under condition 8 of this Permit where these records have not already been provided under condition 9(a) of this Permit.

DEFINITIONS

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

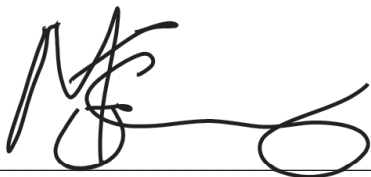
Table 2: Definitions

Term	Definition
basal area	is the method of expression of tree cover density in an area where the total area of tree trunk, whose diameter over bark is measured at 1.3 metres above the ground, is expressed as square metres per hectares of land area.
black cockatoo habitat trees	means trees that have a diameter, measured at 130 centimetres from the base of the tree, of 50 centimetres or greater (or 30 centimetres or greater for <i>Eucalyptus salmonophloia</i> or <i>Eucalyptus wandoo</i>) that contain hollows suitable for breeding by black cockatoo species.
black cockatoo species	means one or more of the following species: (a) <i>Zanda lateriosis</i> (Carnaby's cockatoo); (b) <i>Zanda baudinii</i> (Baudin's cockatoo); and/or (c) <i>Calyptorhynchus banksii naso</i> (forest red-tailed black cockatoo).
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
culled/ing	means the selective removal and/or killing of unsaleable trees for thinning, using methods including notching, felling or machine pushing.
dieback	means the effect of <i>Phytophthora</i> species on native vegetation.
direct seeding	means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.

Term	Definition
dry conditions	means when soils (not dust) do not freely adhere to rubber tyres, tracks, vehicle chassis or wheel arches.
environmental specialist	means a person who holds a tertiary qualification in environmental science or equivalent, and has a minimum of two (2) years work experience relevant to the type of environmental advice that an environmental specialist is required to provide under this permit, or who is approved by the CEO as a suitable environmental specialist.
extraction tracks	means formally established temporary tracks in which understorey has been cleared and topsoil has been disturbed, along which trees felled by logging machinery are moved from the cutting site to a landing or roadside.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
fill	means material used to increase the ground level, or to fill a depression.
forestry operator	means an external person with a minimum of 5 years of experience in conducting forestry activities to meet harvest and silvicultural standards required for native forest operations on lands managed by Department of Biodiversity, Conservation and Attractions.
forestry technician	means an external person with a minimum of 5 years of experience in conducting forestry activities relevant to forest ecology in native forest operations including habitat tree identification and tree marking
ground habitat logs	means a log with a minimum length of 3 metres and a minimum internal hollow diameter of 10 centimetres
habitat tree/s	means trees that have a diameter, measured over bark at 1.3 meters from the base of the tree, of at least 70 centimetres for marri (<i>Corymbia calophylla</i>), of at least 50 centimetres for jarrah (<i>Eucalyptus marginata</i>), and of at least 30 centimetres of wandoo (<i>Eucalyptus wandoo</i>), that contain or have the potential to develop hollows or roosts suitable for native fauna.
healthy representative understorey	means native understorey vegetation that is vigorous, free of disease, and has a similar species composition to typical preclearing understorey vegetation present within the area in which clearing is authorised.
local provenance	means native vegetation seeds and propagating material from natural sources within 50 kilometres and the same IBRA subregion of the area cleared.
log landings	means an area established for the purpose of stockpiling commercially harvested trees, to enable loading for collection
mulch	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
optimum time	means the period from April to June for undertaking direct seeding, and the period from May to July for undertaking planting.
planting	means the re-establishment of vegetation by creating soil conditions and planting seedlings of the desired species.
prescribed burning	is the process of planning and applying fire to a predetermined area, under specific environmental conditions, to minimise the size and intensity of fire on life, property and critical infrastructure.
remedial action	means, for the purpose of this permit, any activity that is required to ensure successful re-establishment of understorey to its pre-clearing composition, structure and density, and may include a combination of soil treatments and revegetation, such as infill <i>planting</i> or <i>direct seeding</i> .
regenerated/ing/ion	means actively managing an area containing native vegetation in order to improve the ecological function of that area.

Term	Definition
revegetated/ing/ion	means the re-establishment of a cover of local provenance native vegetation in an area using methods such as natural regeneration, direct seeding and/or planting, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.
suitable conditions	means conditions that have been determined by a Bush Fire Officer appointed under the <i>Bush Fires Act 1954</i> to be suitable to allow the burning of vegetation within the area authorised under this permit to occur.
thinned/ing	describes a silvicultural activity to promote the growth of selected trees by reducing competition through the removal of smaller stems with consideration of tree spacing to maintain the overall structure and composition of the dominant overstorey species.
understorey	means, for the purpose of this Permit, all native vegetation that does not include trees to be culled or subject to harvest.
weeds	means any plant – <ul style="list-style-type: none"> (a) that is a declared pest under section 22 of the <i>Biosecurity and Agriculture Management Act 2007</i>; or (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or (c) not indigenous to the area concerned.
woody fuels	means woody vegetative materials that have a diameter of 75 mm or greater and a length of 1 metre or greater

END OF CONDITIONS



Mathew Gannaway
 A/SENIOR MANAGER
 NATIVE VEGETATION REGULATION

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

12 November 2024

SCHEDULE 1

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



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



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 10210/1
Permit type:	Area permit
Applicant name:	McIntyre Trees Pty Ltd
Application received:	29 May 2023
Application area:	17.3 hectares of native vegetation
Purpose of clearing:	Silvicultural thinning
Method of clearing:	Mechanical
Property:	Lot 41 on Deposited Plan 42048
Location (LGA area/s):	Shire of Bridgetown-Greenbushes
Localities (suburb/s):	Catterick

1.2. Description of clearing activities

The vegetation proposed to be cleared is 17.3 hectares of native vegetation contained within a single contiguous area within Lot 41 on Deposited Plan 420248, Catterick (see Figure 1, Section 1.5). The clearing is to comprise of thinning of *Eucalyptus marginata* (jarrah) trees such that a basal area of at least 15 m² per hectare is retained to improve forest health and undertake prescribed burning to reduce fuel load (McIntyre Trees, 2023).

1.3. Decision on application

Decision:	Grant
Decision date:	12 November 2024
Decision area:	17.3 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 B), relevant datasets (see Appendix F.1), the applicants Forest Management Plan (JC Forestry, 2024), the clearing principles set out in Schedule 5 of the EP Act (see Appendix C), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3).

The assessment identified that the proposed clearing will result in:

- the loss of native vegetation that is suitable foraging and potential roosting habitat for Carnaby's cockatoo, Baudin's black cockatoo and forest red-tailed black cockatoo (black cockatoo species),
- while the application area contains potential breeding habitat for all three black cockatoo species, the applicant has committed to retaining all habitat trees (diameter at breast height (DBH) of greater than 50 centimetres) containing hollows suitable for black cockatoo species,

- the loss of habitat for chuditch and south-western brush-tailed phascogale (BTP),
- potential impacts to conservation significant fauna utilising the application area,
- the vegetation within the application area may be growing in association with an environment associated with a watercourse but is unlikely to cause deterioration in the quality of surface or underground water or to result in any long term impacts to riparian vegetation communities due to the nature of the proposed clearing, and
- the potential introduction and spread of weeds and dieback into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values.

After consideration of the available information, including advice received from the Department of Biodiversity and Conservation (DBCA), as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing can be minimised and managed to unlikely lead to an unacceptable risk to conservation significant fauna species through permit conditioning.

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

- avoid, minimise to reduce the impacts and extent of clearing,
- engage an environmental specialist to ensure that:
 - all marri (*Corymbia calophylla*) with greater than 70-centimetre DBH trees be retained,
 - primary habitat trees are retained at five trees per hectare (on average 25 trees per five hectares) in all coupes, and
 - secondary habitat trees- marri (medium sized 30- 70 centimetres DBH) are also retained at six to eight trees per hectare,
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback
- undertake slow, progressive one directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity,
- retain a minimum basal area of 15m² for jarrah forest,
- retain all ground habitat logs and remove woody fuels surrounding retained habitat trees,
- rehabilitate log landings and extraction tracks within 12 months of cessation of thinning activities by scarifying the soil surface to reduce compaction and facilitate natural regeneration,
- harvesting methodology is to be undertaken in a sustainable manner to reduce damage to mid storey canopy and non-target vegetation when conditions are dry,
- undertake prescribed burning only during suitable conditions no less than every six years, and
- monitoring of the area thinned within two years of undertaking activities to ensure the understory is recovering towards pre-clearing composition, structure and density.

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)

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)

- *Silviculture Guideline for Jarrah Forest, Sustainable Forest Management Series, FEM Guideline 1* (DPAW, 2014)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

The applicant has provided a Forest Management Plan (FMP) (JC Forestry, 2023) in support of this clearing permit application, detailing measures that will be taken during the thinning activities. These include the following:

- The silvicultural prescription to be adopted follows the principles contained within the “Silvicultural Guidelines for the Jarrah Forest”, published as “FEM Guide No 1” by the Department of Parks and Wildlife (now DBCA) in 2014,
- In summary, the prescription for the Catterick property will be to promote the growth of selected retained trees by thinning to a target basal area of 15m² per hectare,
- At least five habitat trees per hectare, on average, will be retained. Selection of habitat trees will target all and any sound older trees with hollows or potential hollows, for fauna,
- Harvesting machinery will be cleaned of any soil and plant matter before entering the property to minimise any risk of introducing jarrah dieback disease or undesirable weeds,
- Harvesting will be carried out by an experienced and qualified local harvesting contractor using machinery suitable for the harvesting of native forest. This will comprise a tree harvester to fell trees and cut boles into appropriate lengths. Extraction of logs will be carried out using a rubber-tyred skidder or forwarder. Logs will be loaded onto trucks using the forwarder. Biomass will be generated from low grade log and branch material extracted to bush landings by a mobile chipping machine,
- Extraction tracts will, where necessary, be created by the tree harvester and will use natural gaps between trees,
- All harvesting activity will be conducted in accordance with the WA timber industry Codes of Practice, as published from time to time by the Forest Industries Federation (WA) Inc,
- Following harvesting, the thinned areas will be burnt under cool conditions in autumn, winter or spring,
- A log landing (i.e. area where logs are stacked and then loaded onto truck) will be located along the existing property boundary track on the south side of Catterick Road.

The Department determined the FMP did not adequately demonstrate that all reasonable efforts had been taken to avoid and minimise potential impacts of the proposed clearing on the environmental values, due to the lack of secondary habitat trees proposed to be retained. DBCA (2023) recommends that an additional six to eight secondary habitat trees (30-70 centimetres DBH) per hectare be retained in addition to the proponents advised five trees per hectare. DBCA (2023) also recommended the prescribed burn period to be no less than six years and harvesting methodology is to be undertaken in a sustainable manner to reduce damage to mid storey canopy and non-target vegetation when conditions are dry.

The applicant has committed to a revised FMP outlining the management actions above as requested from DWER and DBCA (JC Forestry, 2024).

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

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix 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 C) identified that the impacts of the proposed clearing present a risk to biological values (fauna) and land and water resources. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

3.2.1. Biological values (Fauna) - Clearing Principles (a) and (b)

Assessment

The application area is located within the Jarrah Forest IBRA bioregion. According to available databases a total of 16 conservation significant fauna species have been recorded within the local area (10-kilometre radius of the

application area). Of the conservation significant fauna species recorded within the local area, the application area may provide habitat for the following five species:

- *Calyptorhynchus latirostris* (forest red-tailed black cockatoo) VU
- *Dasyurus geoffroii* (chuditch) VU
- *Phascogale tapoatafa wambenger* (south-western brush-tailed phascogale) CD
- *Zanda baudinii* (Baudin's cockatoo) EN
- *Zanda latirostris* (Carnaby's cockatoo) EN

This assumption is based on habitat requirements, distribution, mapped vegetation type and the condition of the vegetation. A photograph provided by the applicant identified that the vegetation type within the application area was largely consistent with the mapped vegetation types of the area, consisting of open forest of *Eucalyptus marginata* subsp. *marginata-Corymbia calophylla* on lateritic uplands in subhumid and semiarid zones (JC Forestry, 2023).

The applicant may have notification responsibilities under the EPBC Act for impacts to Baudin's black cockatoo, Carnaby's cockatoo, and forest red-tailed black cockatoo and their habitats, as set out in the EPBC Act. The applicant has been advised to contact the federal Department of Climate Change, Energy, the Environment and Water (DCCEW) to discuss EPBC Act referral requirements.

Black cockatoos

Black cockatoos are known to nest in hollows of live and dead trees, including *Corymbia calophylla* (marri), *Eucalyptus marginata* (jarrah), *Eucalyptus diversicolor* (karri), *Eucalyptus wandoo* (wandoo), *Eucalyptus gomphocephala* (tuart), *Eucalyptus rudis* (flooded gum), and other *Eucalyptus* spp. (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, where suitable DBH for nest hollows is 500 millimetres for most tree species (DAWE, 2022).

Black cockatoos generally breed in woodland or forest but may also breed in former woodland or forest now present as isolated trees (Commonwealth of Australia, 2022). Black cockatoo species are noted to forage on a range of plant species, with the primary foraging resources varying between species (Commonwealth of Australia, 2012). Carnaby's cockatoos forage on the seeds, nuts, and flowers of a variety of plants, including Proteaceous species (*Banksia* 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 cockatoos feed predominantly on the seeds of marri and jarrah, which comprise approximately 90 per cent of their diet (DEC, 2008). Baudin's cockatoos primarily feed on the seeds of marri but may also forage on the seeds of jarrah and Proteaceous species (DEC, 2008). Given the application area contains marri and jarrah trees and occurs within the predicted occurrence range for all the black cockatoo species, the application area provides suitable foraging habitat for black cockatoos.

Food resources within the range of roost and breeding sites are important to sustain populations of black cockatoos, and foraging resources should therefore be viewed in the context of the proximity to the known roosting and breeding sites to the application area. Available databases show that there are 10 records of black cockatoo roost sites within the local area. Following breeding, they will flock in search of food, usually within six kilometres of a night roost (Commonwealth of Australia, 2012), but may range up to 20 kilometres. Given the presence of suitable foraging habitat within the known foraging distance to multiple roosting locations, the clearing of the marri and jarrah trees may be significant.

The revised FMP submitted in support of this application, identified that all marri (*Corymbia calophylla*) with greater than 70-centimetre DBH trees be retained. Accordingly, the applicant has also committed to retaining all habitat trees that contain hollows of suitable size for use by black cockatoo species and ensuring that a minimum of five habitat trees of suitable DBH to develop nest hollows are retained per hectare, where present (JC Forestry, 2024). The applicant has also advised that secondary habitat trees (medium sized- 30- 70 centimetres DBH) are also retained at six to eight trees per hectare (JC Forestry, 2024). Whilst detailed data on the species and size class distribution of the current stand has not been provided, a conservative estimate considers that the retention of a basal area of 15m² per hectare would result in over 100 trees per hectare being retained if the average diameter were 40cm. DBCA (2024) advised that if the tree retention rate indicated can be achieved, together with the additional recommendations from DBCA, then given the area of proposed clearing is adjacent to foraging habitat within State Forest which is no longer subject to commercial forestry practices, the proposed silviculture activity is unlikely to be highly significant for black cockatoos.

A permit condition to ensure the retention of all potential breeding trees that contains hollows of a suitable size, a minimum of five primary habitat trees per hectare and six to eight secondary habitat trees is considered suitable to mitigate potential impacts to significant breeding and roosting habitat for black cockatoo species.

Chuditch

Chuditch are ground dwelling marsupials, typically associated with riparian jarrah forest or other forest, woodland or shrubland habitats that contain suitable den sites, including hollow logs and tree hollows, and sufficient prey biomass that are usually associated with watercourses (DEC, 2012a). Given that the application area comprises mature marri (*Corymbia calophylla*) and jarrah (*Eucalyptus marginata*), the application area may contain suitable habitat for chuditch. Noting the proposed clearing relates only to ecological thinning and fire hazard reduction activities, which are likely to present short-term impacts to habitat resources at ground level, it is not considered likely that the proposed clearing will significantly impact habitat for ground-dwelling fauna. Directional clearing and conditions to retain ground habitat logs and patches of healthy understorey will allow any ground-dwelling fauna present at the time of clearing to disperse into adjacent suitable habitat and is sufficient to mitigate impacts to ground-dwelling fauna.

South-western brush-tailed phascogale

The south-western brush-tailed phascogale is an arboreal dasyurid, associated with dry sclerophyll forests and open woodlands that contain hollow-bearing trees, characterised by high canopy cover and connectivity (DEC, 2012a). As the application area contains marri and jarrah woodland with high canopy cover, the application area provides suitable habitat for the south-western brush-tailed phascogale. However, as discussed above, the applicant has committed to retaining hollow bearing trees, five trees per hectare of suitable DBH to develop hollows, six to eight secondary habitat trees and will maintain a basal area of 15m² per hectare (JC Forestry, 2024). Noting that the proposed clearing will not include the removal of hollow-bearing trees and that canopy connectivity will be maintained throughout retained stands, it is not considered likely that the proposed clearing will impact significant habitat for the south-western brush-tailed phascogale. A permit condition ensuring directional clearing is undertaken is considered sufficient to mitigate direct impacts to individuals if present at the time of clearing, allowing individuals to disperse into suitable habitat adjacent to the proposed clearing area.

Ecological linkage

The application area may function as an ecological linkage for fauna to move between larger remnants of native vegetation within the local area. The ecological linkage values will not likely be severed by the proposed clearing, noting native vegetation will remain within the application area. Notwithstanding the above, given that native vegetation remains surrounding the application area, a weed and dieback management condition will be required to assist in mitigating impacts to surrounding vegetation and maintaining ecological linkage values.

Conclusion

Based on the above assessment, the proposed clearing will result in the loss of foraging and potential roosting habitat for black cockatoo species as well as the loss of suitable habitat for conservation significant fauna species. However, for the reasons set out above, it is considered that the impacts of the proposed clearing on these fauna species are unlikely to represent a significant residual impact subject to the below conditions.

Conditions

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

- directional clearing, which requires, slow one directional clearing to allow terrestrial fauna to disperse ahead of the clearing activity should they occur on site at the time of clearing which will minimise impacts to individuals,
- weed and dieback management measures will be required as a condition on the clearing permit to mitigate impacts to adjacent vegetation, and
- vegetation management- silvicultural thinning includes requirements to:
 - inspect all trees of suitable DBH for the presence of hollows suitable for use for black cockatoos and retaining all habitat trees with suitable hollows,
 - retain a minimum of five primary habitat trees per hectare and a minimum of six to eight secondary habitat trees per hectare,
 - retain a minimum basal area of 15m² for jarrah forest,
 - retain all ground habitat logs and remove woody fuels surrounding retained habitat trees, and
 - rehabilitate log landings and extraction tracks within 12 months of cessation of thinning activities by scarifying the soil surface to reduce compaction and facilitate natural regeneration.

3.2.2. Biological values (Flora) - Clearing Principles (a) and (c)

Assessment

The desktop assessment identified that a total of seven conservation significant flora species have been recorded within the local area. With consideration for the relevant datasets (see Appendix F), the habitat preferences and conservation statuses of the aforementioned species, the distribution and extent of existing records, the application area is unlikely to provide significant habitat for threatened or priority flora species.

In addition, whilst the application area is unlikely to provide significant habitat for threatened or priority flora species, the primary method of clearing is thinning of jarrah and marri forest, which will not target mid- or understorey species. The extent of impacts to mid- and understorey species are likely to be indirect through incidental clearing during thinning activities or through altered environmental conditions resulting from the clearing of canopy species and fire hazard reduction burning. Given the nature of the proposed clearing, a vegetation management condition will be placed on the permit, requiring the applicant to monitor understorey species composition, structure, and density within the application area during thinning and bushfire mitigation activities and to undertake remedial action where there is evidence that understorey will not recover and develop towards its pre-clearing condition. Therefore, while it is unlikely that conservation significant flora species occur within the application area due to the degraded nature of its understorey, it is also not expected that the proposed clearing will significantly alter the condition of the vegetation or the potential for these species to occur in the future.

Conclusion

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

Conditions

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

- Vegetation management – thinning, which includes requirements to:
 - Engage an environmental specialist to determine the species composition, structure, and density of the understorey of areas proposed to be thinned,
 - Within two years of completing thinning, engage an environmental specialist to determine the species composition, structure, and density of the understorey of areas subject to thinning, and
 - Where there is evidence that understorey will not recover and develop towards its pre-clearing composition, structure, and density, undertake remedial action to ensure re-establishment of understorey.

3.2.3. Land and water resources - Clearing Principles (f) and (i)

Assessment

A non-perennial tributary of the Blackwood River and a perennial earth dam intersect the application area. Therefore, some of the vegetation within the application area may be growing in, or in association with, an environment associated with a watercourse. As the application area intersects a non-perennial tributary of the Blackwood River, the proposed clearing may result in minor, short-term impacts to surface water quality.

Clearing adjacent to watercourses and wetlands can impacts upon water quality in the short term through erosion and sedimentation generated by clearing. However, it is noted that thinning of trees is likely to have lesser impacts on waterbodies than the removal of all vegetation and given the non-perennial nature of the watercourse and the extent of the proposed clearing across riparian areas, it is likely that any water quality impacts will be limited to short-term increases in sedimentation and turbidity and are unlikely to be significant.

Conclusion

Based on the above assessment, the proposed clearing is not anticipated to cause deterioration in the quality of surface or underground water, or to result in any long-term impacts to the ecological values of the riparian vegetation communities associated with the watercourses within the application area. The Delegated Officer determined that the impacts of the proposed clearing on land and water resources does not constitute a significant residual impact.

Conditions

No management conditions required.

3.3. Relevant planning instruments and other matters

The clearing permit was advertised on the DWER's website on 8 July 2023, inviting submissions from the public within a 21-day period. No submissions were received.

The Shire of Bridgetown-Greenbushes advised DWER that local government approvals are not required, and that the proposed clearing is consistent with the Shire's Local Planning Scheme. The Shire did not have any objections to the proposed clearing.

Under Regulation 63 of the *Biodiversity Conservation Regulations 2018*, a person who possesses any flora taken from private land with the intent to supply (including a person who is an owner or occupier of the land) must be the holder of a Private Land Supplier's Licence (and must continue to hold such a licence until the flora is supplied to another person). The applicant has advised that the harvested wood will be sold as a form of supplementary income for the land owners (JC Forestry, 2023). The applicant will be required to obtain the licence on receipt of the clearing permit.

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

End

Appendix A. Additional information provided by applicant

Summary of comments	Consideration of comment
On the 2 August 2024 the applicant provided a response to the formal request for further information issued by DWER. This included confirmation of advice received by DBCA and a revised FMP	See Section 3.1

Appendix B. 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 DWER at the time of this assessment. This information was used to inform the assessment of the clearing against the Clearing Principles, contained in Appendix C.

B.1. Site characteristics

Characteristic	Details
Local context	<p>The area proposed to be cleared is a 17.3-hectare patch of native vegetation in the intensive land use zone of Western Australia. It is surrounded by native vegetation and Hester State Forest is located approximately 162 metres southwest of the application area.</p> <p>Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 42.6 per cent of the original native vegetation cover.</p>
Ecological linkage	The application area does not intersect any formal mapped linkages. Ecological linkage 164 is found approximately 0.8 kilometres southwest of the application area.
Conservation areas	No conservation areas are mapped within the application area. The closest conservation area is Hester State Forest which is located approximately 162 metres southwest of the application area.
Vegetation description	<p>Photographs and information supplied by the applicant indicate the vegetation within the proposed clearing area consists of <i>Eucalyptus marginata</i> (jarrah) and <i>Corymbia calophylla</i> (marri) with minimal understorey.</p> <p>This is consistent with the mapped vegetation types:</p> <ul style="list-style-type: none"> Dwellingup D1; described as open forest of <i>Eucalyptus marginata</i> subsp. <i>marginata</i>- <i>Corymbia calophylla</i> on lateritic uplands in mainly humid and subhumid zones. Grimwade GR; Tall open forest to open forest of <i>Corymbia calophylla</i>-<i>Eucalyptus marginata</i> subsp. <i>marginata</i> with <i>Eucalyptus patens</i> on slopes and <i>Eucalyptus rudis</i> over some <i>Agonis flexuosa</i> on lower slopes in the humid zone. <p>A representative photo is available in Appendix E.</p> <p>The above mapped vegetation types retain approximately 86.8 and 50.3 per cent respectively of their original extents (Government of Western Australia, 2019b). The mapped vegetation types retain approximately 86 and 50 per cent of the original extent (Government of Western Australia, 2019).</p>
Vegetation condition	<p>A photograph supplied by the applicant and a review of aerial imagery indicates the vegetation within the proposed clearing area is in Good to Degraded (Keighery, 1994) condition.</p> <p>The full Keighery (1994) condition rating scale is provided in Appendix D.</p> <p>A representative photo is available in Appendix E.</p>

Characteristic	Details
Climate	The southwest of Western Australia experiences a Mediterranean climate of hot dry summers and cool wet winters, and the proposed clearing area is situated within the 'Temperate – distinctly dry and warm summer' Köppen climate class (Commonwealth of Australia 2005). An average of 987 millimetres of rainfall is recorded annually from the Manjimup weather station.
Soil description	The soils across the application area are mapped as (DPIRD, 2023): <ul style="list-style-type: none"> • Dwellingup subsystem (255DpDW) described as divides, lower to upper slopes and hillcrests. Duplex sandy gravels and loamy gravels with minor areas of shallow gravels, deep sandy gravels, yellow deep sands and yellow and pale deep sands, often gravelly. • Grimwade subsystem (255LvGR) described as moderately deep valleys (30-70 m) in granite. Soils are loamy earths and loamy gravels.
Land degradation risk	Soils within the application area are mapped as having a moderate risk of wind erosion and subsurface acidification (DPIRD, 2023).
Waterbodies and hydrogeography	The desktop assessment and aerial imagery indicated that one minor, non-perennial watercourse and one perennial earth dam of the Blackwood River transect the area proposed to be cleared. The application area does not transect any water resources proclaimed under either the <i>Rights in Water and Irrigation Act 1914</i> (RIWI Act) or the <i>Country Areas Water Supply Act 1947</i> (CAWS Act). The mapped groundwater salinity is approximately 500-100 milligrams per litre total dissolved solids.
Flora	The desktop assessment identified that a total of seven conservation significant flora species have been recorded within the local area, comprising of one Threatened flora species, one Priority 1 (P1) flora species, two Priority 2 (P2) flora species, two Priority 3 (P3) flora species and one Priority 4 (P4) flora species (Western Australian Herbarium, 1998-). None of these existing records occur within the application area, with the closest record being an occurrence of <i>Grevillea ripicola</i> (P4) approximately four kilometres from the application area. With consideration for the relevant datasets (see Appendix F), the habitat preferences and conservation statuses of the aforementioned species, the distribution and extent of existing records, the application area is unlikely to provide significant habitat for threatened or priority flora species (see Section 3.2.2).
Ecological communities	No Threatened or Priority Ecological Communities (TEC/PEC) are mapped within the 10-kilometre radius of the application area. The Claypans with mid dense shrublands of <i>Melaleuca lateritia</i> over herbs TEC is located approximately 21 kilometres north-west of the application area. With consideration for site characteristics and relevant datasets (see Appendix F), the application area is not considered likely to contain vegetation representative of a TEC or PEC.
Fauna	The desktop assessment identified that a total of 16 conservation significant fauna species have been recorded within the local area, comprising of nine Threatened fauna species, six priority fauna species and one extinct fauna species (DBCA, 2007-). None of these existing records occur within the application area, with the closest record being an occurrence of <i>Hydromys chrysogaster</i> approximately 1.8 kilometres from the application area. With consideration for the site characteristics set out above, relevant datasets (see Appendix F), and the habitat preferences of the aforementioned species, the application area may provide significant habitat for five conservation significant fauna species and impacts to these species required further consideration (see Section 3.2.1).

B.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion*					
Jarrah Forest*	4506660.25	2399838.15	53.25	1673614.25	37.14
Vegetation complex					
Dwellingup D1 (78) **	208490.90	181038.81	86.83	171561.01	82.29
Grimwade GR (130) **	22046.59	11083.33	50.27	9556.20	43.35
Local area					
10km radius	33297.52	14185.75	42.60	-	-

*Government of Western Australia (2019)

B.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]
<i>Calyptorhynchus banksii naso</i> (forest red-tailed black cockatoo)	VU	Y	Y	4.5	177	N/A
<i>Zanda baudinii</i> (Baudin's cockatoo)	EN	Y	Y	5.7	17	N/A
<i>Zanda latirostris</i> (Carnaby's cockatoo)	EN	Y	Y	5.4	158	N/A
<i>Zanda</i> sp. 'white-tailed black cockatoo'	EN	Y	Y	3.9	146*	N/A
<i>Dasyurus geoffroii</i> (chuditch, western quoll)	VU	Y	Y	2	24	N/A
<i>Phascogale tapoatafa wambenger</i> (south-western brush-tailed phascogale)	CD	Y	Y	3.7	54	N/A

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

* An additional 146 records of *Zanda* sp. 'white-tailed black cockatoo' (White-tailed black cockatoo) were recorded in the local area, which may comprise either of these species.

Appendix C. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<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> The area proposed to be cleared does not contain significant flora assemblages, but contains foraging habitat for Carnaby’s cockatoo, Baudin’s black cockatoo and forest red-tailed black cockatoo and suitable habitat for other conservation significant fauna.</p>	At variance	Yes <i>Refer to Section 3.2.1 and 3.22, 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> The area proposed to be cleared contains foraging habitat and potential breeding habitat for Carnaby’s cockatoo, Baudin’s black cockatoo and forest red-tailed black cockatoo and suitable habitat for other conservation significant fauna.</p>	At variance	Yes <i>Refer to Section 3.2.1, 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> The area proposed to be cleared is unlikely to contain habitat for Threatened flora species.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.22, above.</i>
<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> The area proposed to be cleared is unlikely to be representative of any TEC listed under the BC Act or the EPBC Act.</p>	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
<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> The mapped vegetation type and vegetation extent in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.</p>	Not at variance	No.
<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> Given the distance and separation by road to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas.</p>	Not likely to be at variance	No
Environmental value: land and water resources		
<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> Given two water courses are recorded within the application area, the proposed clearing may impact an environment associated with a watercourse, including impacts to on- or off-site hydrology and water quality. However, noting the retention of at least 50-70 trees per hectare, the proposed clearing is unlikely to result in long term impacts to hydrology.</p>	May be at variance	Yes <i>Refer to Section 3.2.3, above.</i>

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (g):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</p> <p><u>Assessment:</u> The mapped soils are moderately susceptible to subsurface acidification and wind erosion. Noting the retention of 50-70 trees per hectare and the type of clearing (selective removal of trees and prescribed burning), the proposed clearing is not likely to have an appreciable impact on land degradation.</p>	Not likely to be at variance	No
<p><u>Principle (i):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.”</p> <p><u>Assessment:</u> Given two water courses are recorded within the application area, the proposed clearing may impact surface water quality. However, noting the purpose and method of the proposed clearing (i.e. selective thinning and prescribed burning), these impacts are likely to be minor and short term.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.3, above.</i>
<p><u>Principle (j):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</p> <p><u>Assessment:</u> The mapped soils and topographic contours in the surrounding area do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding or to contribute to waterlogging.</p>	Not likely to be at variance	No

Appendix D. Vegetation condition rating scale

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

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from:

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

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

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.

Condition	Description
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

Appendix E. Photograph of the vegetation (JC Forestry, 2023)



Figure 2. Regrowth of jarrah and marri forest on the property (JC Forestry, 2023)

Appendix F. Sources of information

F.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)
- 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)
- 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

Restricted GIS Databases used:

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

F.2. References.

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

Department of Biodiversity, Conservation and Attractions (DBCA) (2023) *Species and Communities Branch fauna advice for clearing permit application CPS 10210/1*, received 10 November 2023. Department of Biodiversity, Conservation and Attractions, Western Australia (DWER Ref: DWERDT867541).

Department of Biodiversity, Conservation and Attractions (DBCA) (2024) *Species and Communities Branch secondary fauna advice for clearing permit application CPS 10210/1*, received 08 July 2024. Department of Biodiversity, Conservation and Attractions, Western Australia (DWER Ref: DWERDT1034502).

Department of Environment and Conservation (DEC) (2008). *Forest black cockatoo (Baudin's cockatoo, Calyptorhynchus baudinii, and forest red-tailed black cockatoo, Calyptorhynchus banksia naso) Recovery Plan*. Department of Environment and Conservation, Canberra.

Department of Environment and Conservation (DEC) (2012a). *Chuditch (Dasyurus geoffroii) Recovery Plan*. Wildlife Management Program No. 54 Department of Environment and Conservation, Perth, Western Australia.

Department of Environment and Conservation (DEC) (2012b). *Fauna Profiles: Brush-tailed phascogale, Phascogale tapoatafa*. Department of Environment and Conservation, Perth, Western Australia.

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.

Department of Parks and Wildlife (DPAW) (2014) *Silviculture Guideline for the Jarrah Forest. Sustainable Forest Management Series, FEM Guideline 1*. Department of Biodiversity, Conservation and Attractions, 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 June 2023).

- 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.
- 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>
- Hedde, E. M., Loneragan, O. W., and Havel, J. J. (1980) *Vegetation Complexes of the Darling System, Western Australia*. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.
- JC Forestry, (2023) *Management Plan to accompany Clearing Permit 10210/1 for McIntyre Trees Pty Ltd*, received 29 May 2023 (DWER Ref: DWERT12741)
- JC Forestry, (2024) *Revised Forest Management Plan to accompany Clearing Permit 10210/1 for McIntyre Trees Pty Ltd*, received 2 August 2024 (DWER Ref: DWERT992059)
- 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.
- McIntyre Trees Pty Ltd (2023) *Clearing permit application CPS 10210/1*, received 29 May 2023 (DWER Ref: DWERT12741).
- 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.
- Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68) *Atlas of Australian Soils*, Sheets 1 to 10, with explanatory data. CSIRO and Melbourne University Press: Melbourne.
- 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.
- 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.
- Western Australian Herbarium (1998-). *FloraBase - the Western Australian Flora*. Department of Biodiversity, Conservation and Attractions, Western Australia. <https://florabase.dpaw.wa.gov.au/> (Accessed July 2023)