



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 9795/1
Permit Holder:	City of Busselton
Duration of Permit:	From 10 February 2023 to 10 February 2033

The permit holder is authorised to clear *native vegetation* subject to the following *conditions* of this permit.

PART I – CLEARING AUTHORISED

1. Clearing authorised (purpose)

The permit holder is authorised to clear *native vegetation* for the purpose of road widening.

2. Land on which clearing is to be done

North Jindong Road reserve (PIN 11471104), North Jindong

3. Clearing authorised

The permit holder must not clear more than 14 *native* trees within the area cross-hatched yellow in Figure 1 of Schedule 1.

4. Period during which clearing is authorised

The permit holder must not clear any *native vegetation* after 10 February 2028.

PART II – MANAGEMENT CONDITIONS

5. 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.

6. 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.

7. Revegetation and rehabilitation

- (a) The permit holder shall plant and maintain at least 19 marri (*Corymbia calophylla*) trees within the areas cross-hatched red in Figure 2 of Schedule 1 in accordance with the following *conditions*:
 - (i) ensuring only *local provenance* seeds and propagating material are used to *revegetate* and *rehabilitate*;
 - (ii) ensure planting is undertaken at the *optimal time*;
 - (iii) undertake *weed* control and watering of plantings for at least two years post planting;
 - (iv) the *revegetation* is to commence within 12 months of undertaking clearing authorised under this permit and no later than 30 June 2025.
- (b) Within 24 months of undertaking *revegetation* in accordance with *condition* 7(a) of this permit, the permit holder must:
 - (i) engage an *environmental specialist* to make a determination on whether 19 planted marri (*Corymbia calophylla*) trees will survive;
 - (ii) where, in the opinion of an *environmental specialist* the 19 planted marri (*Corymbia calophylla*) trees will not survive, the permit holder must undertake additional *planting* of marri (*Corymbia calophylla*) trees to achieve this outcome; and
 - (iii) where additional planting of marri (*Corymbia calophylla*) trees is undertaken in accordance with *condition* 7(b)(ii), the permit holder must repeat the activities required by *conditions* 7(a)(i-v) and 7(b)(i-ii) of this permit.

8. Fauna management – western ringtail possums

- (a) In relation to the area cross-hatched yellow in Figure 1 of Schedule 1, the permit holder must engage a *fauna specialist* to inspect that area immediately prior to, and for the duration of *clearing* activities, for the presence of *Pseudocheirus occidentalis* (western ringtail possum(s)).
- (b) *Clearing* activities must cease in any area where fauna referred to in condition 8(a) are identified until either:
 - (i) the western ringtail possum individual has moved on from that area to adjoining *suitable habitat*; or
 - (ii) the western ringtail possum individual has been removed by a *fauna specialist*.

- (c) Any western ringtail possum individual removed in accordance with condition 8(b)(ii) must be relocated by a *western ringtail possum specialist* to a *suitable habitat*.
- (d) Where fauna is identified under condition 8(a), the permit holder must within 14 calendar days provide the following records to the *CEO*:
 - (i) the number of individuals identified;
 - (ii) the date each individual was identified;
 - (iii) the location where each individual was identified recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (iv) the number of individuals removed and relocated;
 - (v) the relevant qualifications of the *western ringtail possum specialist* undertaking removal and relocation;
 - (vi) the date each individual was removed;
 - (vii) the method of removal;
 - (viii) the date each individual was relocated;
 - (ix) the location where each individual was relocated to, recorded using a GPS unit set to GDA94, expressing the geographical coordinates in Eastings and Northings or decimal degrees; and
 - (x) details pertaining to the circumstances of any death of, or injury sustained.

9. Fauna management - direction of clearing

The permit holder shall conduct *clearing* in a slow progressive manner towards adjacent *native vegetation* to allow fauna to move into adjacent *native vegetation* ahead of the *clearing* activity.

PART III - RECORD KEEPING AND REPORTING

10. 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 <i>clearing</i> activities generally	(a) the species composition, structure, and density of the cleared area; (b) the location where the <i>clearing</i> occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings; (c) the date that the area was cleared;

No.	Relevant matter	Specifications
		<ul style="list-style-type: none"> (d) the direction of clearing; (e) the number of <i>native trees</i> cleared; (f) actions taken to avoid, minimise, and reduce the impacts and extent of <i>clearing</i> in accordance with <i>condition 5</i>; (g) actions taken to minimise the risk of the introduction and spread of <i>weeds</i> and <i>dieback</i> in accordance with <i>condition 6</i>; and (h) actions taken to manage and mitigate impacts to western ringtail possums in accordance with <i>condition 8</i>.
2.	In relation to the required <i>revegetation</i> activities in accordance with <i>condition 7</i>	<ul style="list-style-type: none"> (a) the location where the marri (<i>Corymbia calophylla</i>) trees were planted, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings; (b) the date that the area was planted; (c) the number of marri (<i>Corymbia calophylla</i>) trees planted; (d) the size (in mm) of the marri (<i>Corymbia calophylla</i>) trees planted; (e) dates of the weed and watering actions undertaken in accordance with <i>condition 7(b)(iv)</i>; (f) a copy of the <i>environmental specialist's</i> report; (g) a description of the <i>revegetation</i> activities undertaken; and (h) any remedial actions required to be undertaken.

11. Reporting

The permit holder must provide to the *CEO* the records required under *condition 10* of this permit when requested by the *CEO*.

DEFINITIONS

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

Table 2: Definitions

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .

Term	Definition
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.
fauna specialist	means a person who holds a tertiary qualification specialising in environmental science or equivalent, and has a minimum of 2 years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the <i>CEO</i> as a suitable fauna specialist for the bioregion, and who holds a valid fauna licence issued under the <i>Biodiversity Conservation Act 2016</i> .
fill	means material used to increase the ground level, or to fill a depression.
dieback	means the effect of <i>Phytophthora</i> species on native vegetation.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
mulch	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
optimal time	means the period from May to June for undertaking planting and seeding.
suitable habitat (western ringtail possum)	means habitat known to support western ringtail possums (<i>Pseudocheirus occidentalis</i>) within the known current distribution of the species, typically characterised by abundant foliage, presence of suitable nesting structures such as tree hollows, as well as high canopy cover and continuity. Known habitat includes peppermint (<i>Agonis flexuosa</i>) dominated woodlands, jarrah (<i>Eucalyptus marginata</i>) and marri (<i>Corymbia calophylla</i>) forests, riparian vegetation with a canopy of Bullich (<i>Eucalyptus megacarpa</i>) or flooded gum (<i>Eucalyptus rudis</i>), karri (<i>Eucalyptus diversicolor</i>) forests, sheoak (<i>Allocasuarina fraseriana</i>) dominated woodlands, and other stands of myrtaceous trees growing near swamps, watercourses or floodplains.
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.
western ringtail possum specialist	means a <i>fauna specialist</i> who holds a tertiary qualification specialising in environmental science or equivalent, has a minimum of two years of work experience in western ringtail possum (<i>Pseudocheirus occidentalis</i>) identification, surveys of western ringtail possums and capture and handling of western ringtail possums, and holds a valid fauna licence issued under the <i>Biodiversity Conservation Act 2016</i> .

END OF CONDITIONS

A handwritten signature in black ink, appearing to be 'Mathew Gannaway', written over a horizontal line.

Mathew Gannaway
MANAGER
NATIVE VEGETATION REGULATION

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

17 January 2023

Schedule 1

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

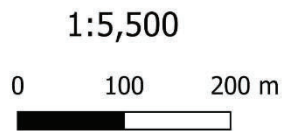


Figure 1: Map of the boundary of the area within which clearing may occur



Legend

-  CPS areas approved to clear
-  Area conditioned to be revegetated
-  Localities
-  Land Tenure
-  Local Government Authorities
-  Road Centrelines
-  Local Road (Sealed)



MGA Zone 50
Geocentric Datum of Australia 1994



**GOVERNMENT OF
WESTERN AUSTRALIA**

Figure 2: Map of the boundary of the area within which revegetation and rehabilitation must occur



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 9795/1
Permit type:	Purpose permit
Applicant name:	City of Busselton
Application received:	5 July 2022
Application area:	14 native trees
Purpose of clearing:	Road widening
Method of clearing:	Mechanical Removal
Property:	North Jindong Road reserve (PIN 11471104)
Location (LGA area/s):	City of Busselton
Localities (suburb/s):	North Jindong

1.2. Description of clearing activities

The application is for a Purpose Permit to clear 14 native trees, consisting of five *Corymbia calophylla* (marri) trees, seven juvenile unknown species and two mature dead trees of an unknown species, within North Jindong Road reserve (PIN 11471104), North Jindong, for the purpose of road widening.

The City of Busselton (the City) intend to seal, widen and complete maintenance on the road, to improve its safety and function. North Jindong Road is located within prime farming land areas adjacent to existing gravel quarries industries that attract multiple heavy haulage vehicles which utilise North Jindong Road as a key link to Bussell Highway. In addition to heavy vehicles usage, there has been significant growth in tourist traffic in the area considerably increasing the risk of collisions. According to the Senior Officer of the Dunsborough Fire and Rescue Service there have been at least two recent fatalities on North Jindong Road (City of Busselton, 2022d).

1.3. Decision on application

Decision:	Granted
Decision date:	17 January 2023
Decision area:	14 native trees

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 (Appendix B), relevant datasets (Appendix F.1), the images from a flora and vegetation survey (Appendix E), the clearing principles set out in Schedule 5 of the EP Act (Appendix C), relevant planning instruments and any other matters considered relevant to the assessment (Section 3). The Delegated Officer also took into consideration that the purpose of the clearing is to improve community safety and reduce the likelihood and/or severity of crashes by improving road width to accommodate traffic volumes, increase sightlines/driver visibility, remove risks from falling branches and trees being in close proximity to the road.

The assessment identified that the proposed clearing will result in:

- the loss of native vegetation that is suitable habitat for the Critically Endangered *Pseudocheirus occidentalis* (western ringtail possum), as well as *Zanda latirostris* (Carnaby's black cockatoo), *Zanda baudinii* (Baudin's black cockatoo) and *Calyptorhynchus banksii naso* (forest red-tailed black cockatoo);
- loss of native vegetation within an extensively cleared landscape; 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.

The Delegated Officer considered the 14 native trees proposed to be cleared to be part of a continuous track of vegetation within the road reserve. Given the limited extent of clearing, the lack of habitat features identified amongst the trees proposed to be cleared and the condition of the large tracks of intact vegetation surrounding the application area, the Delegated Officer considered the proposed clearing is not likely to impact significant habitat for black cockatoos or western ringtail possum. To minimise impacts to fauna, progressive one directional clearing is required and pre-inspection for western ringtail possums to allow individuals present at the time of clearing to move to adjacent vegetation. The planting of species suitable for black cockatoo foraging and breeding habitat will be undertaken to reduce impacts to black cockatoos. The likelihood of impact from weeds and dieback can be minimised by applying weed and dieback management measures.

After consideration of the available information, as well as the applicant's avoidance, minimisation and mitigation measures (Section 3.1), the Delegated Officer determined the proposed clearing is unlikely to have long-term adverse impacts on conservation significant fauna or flora species and can be minimised and managed to unlikely lead to an unacceptable risk to environmental values.

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

- avoid, minimise to reduce the impacts and extent of clearing;
- progressive one directional clearing
- fauna management conditions for western ringtail possums
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback; and
- a minimum of 19 marri trees will be required to be planted and maintained within the road reserve, as mitigation measures for the clearing of the 14 native trees that provide habitat value and significant remnant vegetation in an extensively cleared landscape.



Clearing Permit Decision Report

1.5. Site map



Figure 1: Map of the application area CPS 9795/1. The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.



Clearing Permit Decision Report

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).
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016).

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

Evidence was submitted by the applicant, demonstrating that avoidance and mitigation measures have been considered. These avoidance and mitigation measures include:

Avoidance

- The project was designed with an emphasis on avoiding and/or minimising impact to native vegetation.
- No dreys, hollows or potential hollows were observed in any of the trees proposed to be cleared (Ecosystem Solutions, 2021).
- The population of western ringtail possums that were found residing within the survey area were located outside of the application area (to the north).
- Where impacts cannot be avoided, minimisation and mitigation will be made via design measures, including the commissioned Flora and Fauna Survey of North Jindong Road (Ecosystem Solutions, 2021) to identify environmental constraints and guide the project design.
- Potential impacts will be managed prior to and during construction through the implementation of a construction management plan.
- The upgrade to North Jindong Road will include:
 - The majority of the roadway will be widened to the east to limit clearing to one side of the road and avoid disturbance where possible to the existing vegetation on the western road verge.
 - The design level of the road is approximately 250 millimetres above the existing level to minimise clearing required.
- The design pavement width has been reduced from the typical 8.2 metres width to 8.0 metres, including sealed sections.
- As western ringtail possums breed year-round, the applicant will attempt to avoid clearing during the peak breeding periods (Ecosystem Solutions, 2021).

Mitigation

The City have noted the request to plant a minimum of 19 *Corymbia calophylla* (marri) trees within the section of North Jindong Road due for reconstruction. Factoring in the 50 percent success rate of planting vegetation, the City will commit to planting 40 marri trees in sparse areas to stitch vegetation corridors (mindful of existing overhead power and site line restrictions). City staff will work in conjunction with Ecosystem Solutions for planting placement and techniques for the best success rates and the best ecological outcomes based on landscape connectivity and habitat maintenance/establishment without impacting on road safety.

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 (Appendix B) 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 (Appendix C) identified that the impacts of the proposed clearing present a risk to flora, fauna and significant remnant vegetation. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

3.2.1. Biological values (flora) - Clearing Principle (a)

According to available databases, forty-nine conservation significant flora species were identified within the local area (10 kilometre radius of the application area), which include 14 threatened flora species and 35 priority flora species. The closest record of the flora species was the Priority four *Acacia flagelliformis*, identified 590 metres from the application area.

Although several threatened and priority species were likely to be found within the application area (see Appendix B.4. Flora analysis table), the 2021 flora field survey completed along North Jindong Road, North Jindong, by Ecosystem Solutions, found no Threatened flora species. The survey only recorded *Loxocarya magna* (Priority 3).

The Flora survey was completed in September and October, an optimal time for many flowering species. However, this timing may have been outside the predominate flowering time for other flora species, which limits identification of all flora within the site (Ecosystem Solutions, 2021). The Delegated Officer considered that due to the clearing being limited to only 14 trees, the timing of the flora survey was adequate.

Loxocarya magna

Loxocarya magna is classified as a priority three conservation significant flora species in Western Australia. *Loxocarya magna* is a rhizomatous perennial sedge which grows approximately one metre high and over two and a half metres wide, in a compact, domed, upright position. The rhizomes appear white with grey hairs and are approximately five millimetres in diameter. *Loxocarya magna* is dioecious (with separate male and female plants). The female flower (styles) is pink, very feathery, straight or curled, approximately two to three millimetres long and emerge from upper bracts. The male flower is tubular, approximately six millimetre long, with white anthers in the spike that are between 11 to 17 millimetres long (Western Australian Herbarium, 1998-). *Loxocarya magna* occur mostly in the South-West Botanical Province, occurring throughout the Swan Coastal Plain, Jarrah Forest, Warren and Esperance Plains IBRA Regions. They are known to flower during September or November (Western Australian Herbarium, 1998-).

Seven *Loxocarya magna* plants were identified during the 2021 flora survey on North Jindong Road (Ecosystem Solutions, 2021). Of these seven records, two were located nearby the trees proposed to be cleared (Figure 2). As the two records appear to be mapped on the opposite side of the road than the closest tree proposed to be cleared (Figure 2), these plants are unlikely to be impacted by the proposed clearing.

Weeds have the potential to out-compete native flora and reduce the biodiversity of an area, and have the potential to be spread during clearing and/or revegetation activities. Weed and dieback management measures will assist in mitigating impacts to the records of *Loxocarya magna*.



Figure 2: Locations of *Loxocarya magna* records identified during the 2021 flora and fauna survey (Ecosystem Solutions, 2021).

Conclusion

The proposed clearing of 14 trees is not likely to impact any Threatened or Priority flora. Potential impacts to biodiversity, as a result of the introduction and spread of weeds and dieback may be minimised by the implementation of a weed and dieback management condition.

Conditions

The permit holder is required to take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback.

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

Assessment

Within the local area (10 kilometre radius of the application area), 30 conservation significant fauna species have been recorded. Of these records, 17 species occur within marine waters, freshwater and/or are migratory birds, which are not represented within the application area.

The application area is likely to provide an ecological linkage for fauna moving through the landscape.

The application area is likely to provide habitat for arboreal species recorded within the local area including, but not limited to; western ringtail possum, *Phascogale tapoatafa wambenger* (south-western brush-tailed phascogale), and black cockatoos. The application is not considered likely to provide suitable or significant habitat for ground dwelling fauna.

***Pseudocheirus occidentalis* (western ringtail possum)**

Western ringtail possums are listed as Critically Endangered under the BC Act and the EPBC Act. The application area is within the Swan Coastal Management Zone for the western ringtail possum as described within the 'Western Ringtail Possum Recovery Plan' (DPaW, 2017) (Figure 3). The management plan outlines strategies to slow the decline in population size, extent and area of occupancy through managing major threatening processes affecting the subpopulations and their habitats and allowing the persistence of the species in each of the identified key management zones: Swan Coastal Plain, southern forests and south coast (DPAW, 2017).

Vegetation communities critical to the species include long unburnt mature remnants of *Agonis flexuosa* (peppermint) woodlands with high canopy continuity and high foliage nutrients (high in nitrogen and low toxin levels); *Eucalyptus marginata* (jarrah), *Corymbia calophylla* (marri) forests and woodlands 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; coastal heath, jarrah/marri woodland and forest, peppermint woodlands, myrtaceous heaths and shrublands, *Eucalyptus megacarpa* (bullich) dominated riparian zones and karri forest. Any habitat where western ringtail possums occur naturally are considered critical and worthy of protection (DPAW, 2017).

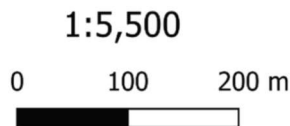
Although thirteen sightings of western ringtail possums were recorded during Ecosystem Solutions 2021 survey, only six were located within the application area (Figure 4) (Ecosystem Solutions, 2021). Suitable hollows and known dreys were identified in the surrounding areas, however, none within the application area or within the trees proposed to be cleared (Ecosystem Solutions, 2021).

Considering the application area is restricted to individual marri trees and other unknown species, with suitable habitat remaining within the road reserve, the application area is not likely to provide significant habitat for the western ringtail possum. North Jindong Road may act as an ecological linkage between larger remnants of native vegetation within the local area. Western ringtail possums may traverse the application area moving between the larger remnants. Deaths to individuals that may be present at the time of clearing is the greatest threat. Pre-clearance inspections will ensure that impacts to individuals are minimised. Planting of marri trees within the road reserve will also ensure ecological linkage values will persist.



Legend

- CPS areas approved to clear
- Localities
- Land Tenure
- Local Government Authorities
- Very high
- High
- Medium
- Low
- Very Low
- Unsuitable
- Road Centrelines
- Local Road (Sealed)



MGA Zone 50
Geocentric Datum of Australia 1994

Figure 3: Map of the location of western ringtail possum habitat suitability within application area CPS 9795/1.

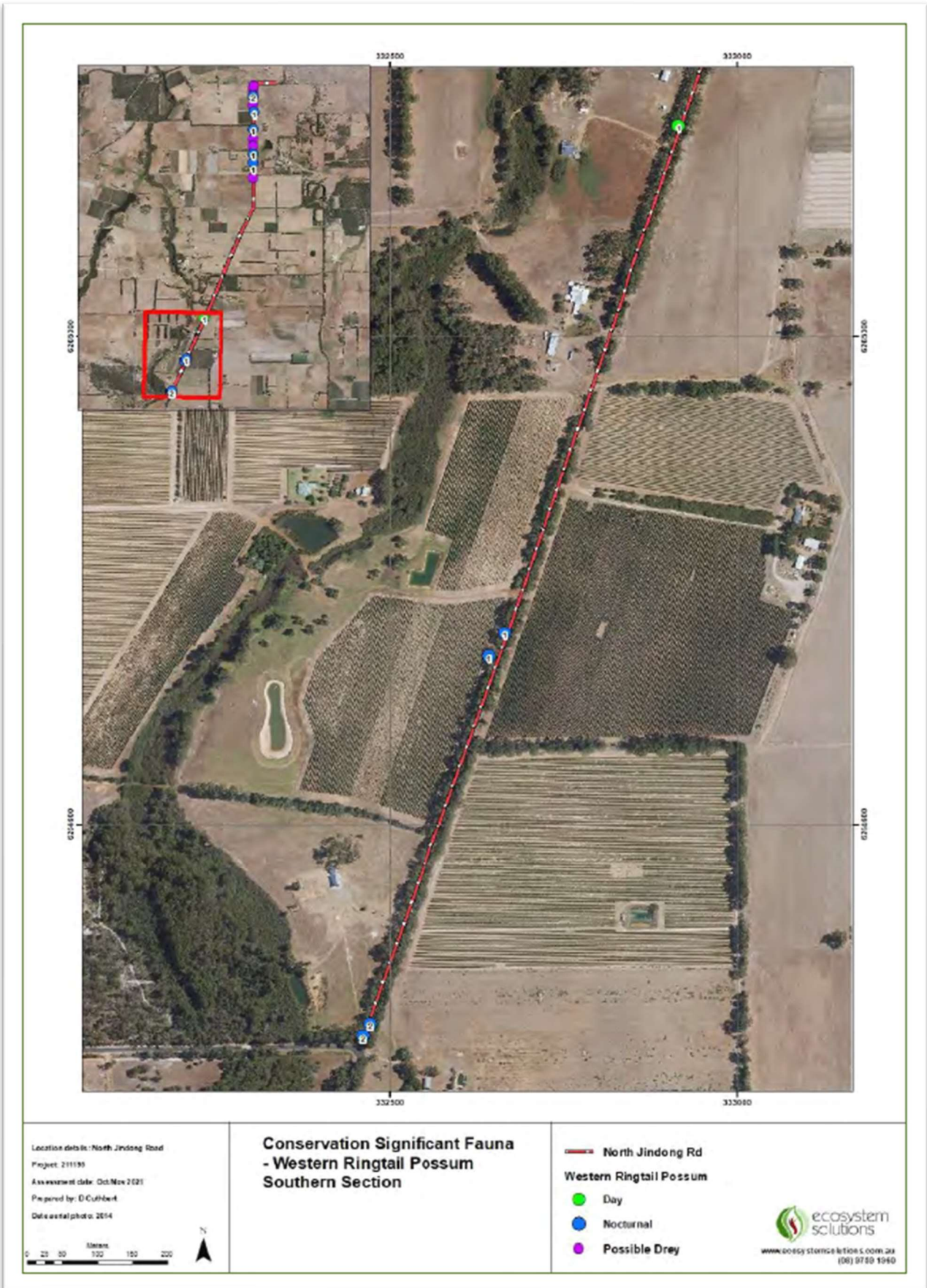


Figure 4: Western ringtail possum and drey locations identified around the application area of CPS 9738/1, during Ecosystem Solutions Flora and Fauna survey in November 2021 (Ecosystem Solutions, 2021).

Black cockatoo species

Zanda latirostris (Carnaby's black cockatoo), *Zanda baudinii* (Baudin's black cockatoo) and *Calyptorhynchus banksii naso* (forest red-tailed black cockatoo) are listed as endangered and/or vulnerable under the BC Act and EPBC Act. The application area is within the known distribution of all three black cockatoo species (Figure 5). While habitat requirements for the three species of black cockatoos differ, the requirements in general can be categorised as breeding habitat, foraging habitat and night roosting habitat. It must be noted that *Calyptorhynchus sp.* (white-tailed black cockatoo) have been recorded in the local area. These records were obtained when the data collector could not definitively distinguish if they spotted a Baudin's or Carnaby's cockatoo, therefore the *Calyptorhynchus sp.* (white-tailed black cockatoo) category was created to incorporate these records.

Breeding habitat

Breeding habitat for the species of black cockatoos is described within the referral guidelines for three threatened black cockatoo species (DAWE, 2022). Although marri trees are noted as a common breeding tree species to all three black cockatoos (DAWE, 2022), the 2021 Flora and Fauna survey found no hollows in the trees proposed to be cleared (Figure 7) (Ecosystem Solutions, 2021). There were trees with hollows found within the survey area that are not part of the clearing application.

Foraging habitat

Foraging habitat differs between the three species of black cockatoos:

- *Zanda baudinii* (Baudin's cockatoo) - Primarily seeds of Marri, rarely Jarrah, in woodlands and forest, and seeds of native proteaceous plant species (for example, *Banksia* spp. (includes *Dryandra* spp.) and *Hakea* spp.). During the breeding season feed primarily on native vegetation, particularly Marri (seeds, flowers, nectar and grubs). Also insects and insect larvae; pith of *Anigozanthos flavidus* (kangaroo paw); tips of *Pinus* spp.; *Macadamia* spp., almonds and pecans; seeds of apples and pears; and persimmons.
- *Zanda latirostris* (Carnaby's cockatoo) - Native shrubland, kwongan heathland and woodland on seeds, flowers and nectar of native proteaceous plant species (*Banksia* spp., *Hakea* spp. and *Grevillea* spp.), as well as *Callistemon* spp. and marri. Also seeds of introduced species including *Pinus* spp., *Erodium* spp., wild radish, canola, almonds, macadamia and pecan nuts; insects and insect larvae; occasionally apples and persimmons; and liquidambar.
- *Calyptorhynchus banksii naso* (forest red-tailed black cockatoo) - Primarily seeds of Jarrah and Marri in woodlands and forest, and edges of Karri forests, including Wandoo and Blackbutt. Forages on *Allocasuarina* cones, fruits of Snottygobble (*Persoonia longifolia*) and Mountain Marri (*C. haematoxylon*). Other less important foods include Blackbutt, Bullich, *Allocasuarina fraseriana*, *Hakea* spp., Tuart, Redheart Moit (*E. decipiens*) and Bushy Yate (*E. lehmanni*). Also some introduced eucalypts such as River Red Gum (*E. camaldulensis*) and Rose Gum (*E. grandis*). On the Swan Coastal Plain, often feeds on introduced Cape Lilac (*Melia azedarach*), *E. caesia*, *E. erythrocorys*, Lemon-scented Gum and Kaffir Plum (*Harpephyllum caffrum*).

The flora and vegetation survey provided with the application (Ecosystem Solutions, 2021) noted the vegetation types within the application area include woodlands of marri. Noting the above listed foraging preferences of black cockatoo species, the application area will provide foraging habitat for all three black cockatoos.

Food resources within the range of roost 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 night roosting sites to the application area. Available databases show that there are nine records of black cockatoo roost sites within the local area but no mapped breeding locations. Black cockatoos will generally forage up to 12 kilometres from an active breeding site. 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.

Although seven trees including in the area proposed to be cleared were noted to have a DBH less than 500mm and three were noted to be dead, these trees still have the potential to provide foraging habitat or habitat for other species. Due to the application area being within the foraging distance of known roosts, the proposed clearing of 14 native trees that provide suitable foraging habitat in an extensively cleared vegetation complex within the local area is likely to be significant.



Legend

- CPS areas approved to clear
- Black cockatoo foraging
- Localities
- Land Tenure
- Local Government Authorities
- Road Centrelines
- Local Road (Sealed)

1:5,500

0 100 200 m



MGA Zone 50
Geocentric Datum of Australia 1994



GOVERNMENT OF
WESTERN AUSTRALIA

Figure 5: Location of mapped black cockatoo feeding locations within application area CPS 9795/1.

Night Roost sites

Black cockatoo night roosts are usually located in the tallest trees of an area, and in close proximity to both a food supply and surface water (Commonwealth of Australia, 2012). There are seven roosts mapped within the local area of the application area, with the closest being 1.94 kilometres away. Given the location of trees with hollows and potential hollows found within the road reserve adjacent to the trees being cleared (Figure 6), it is likely that black cockatoos utilise the immediately adjacent area for night roosting (Ecosystem Solutions, 2021).

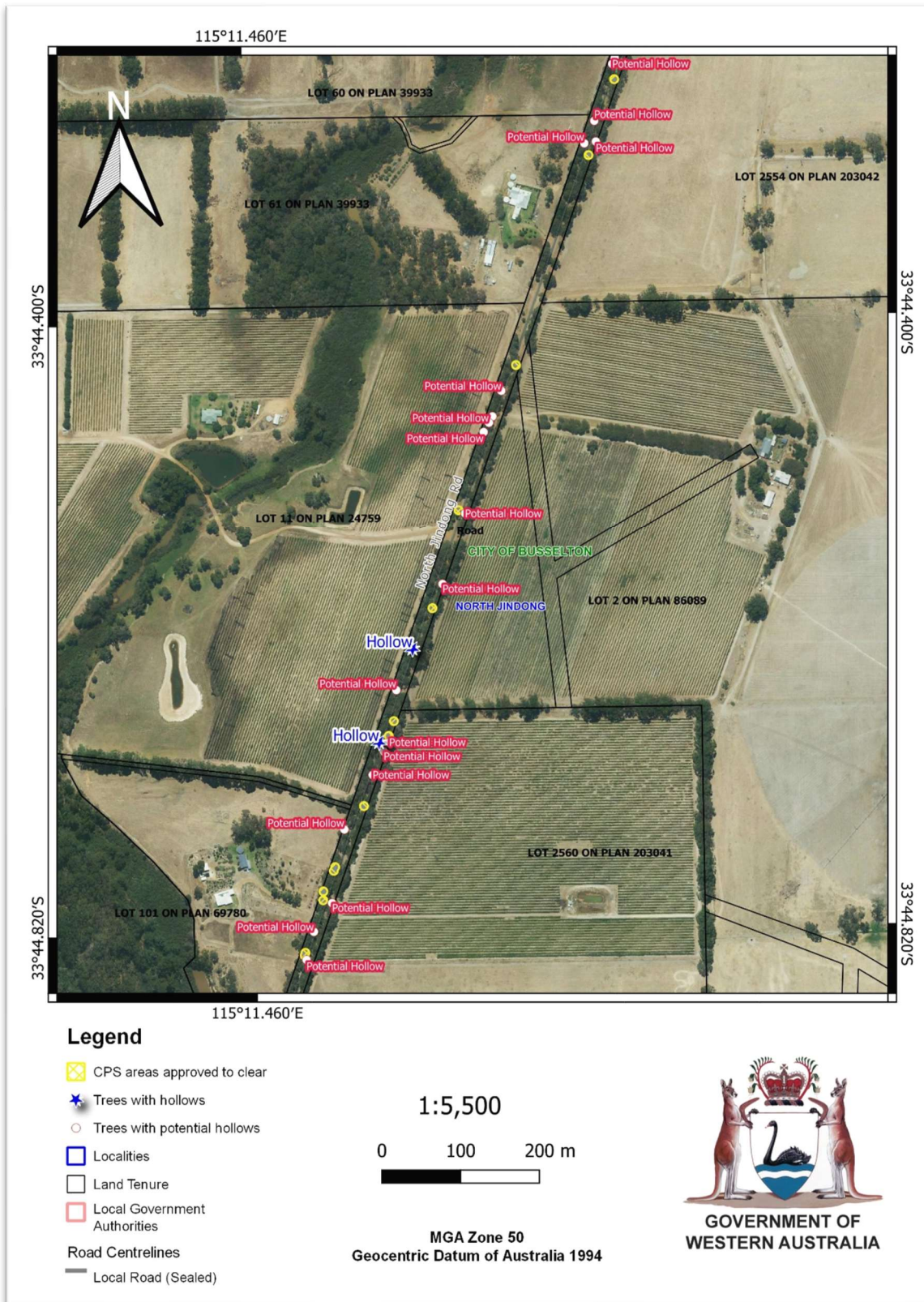


Figure 6: Data plotted that was provided to DWER from surveys completed in November 2021, showing where trees with hollows, potential hollows were located (Ecosystem Solutions, 2021).

***Phascogale tapoatafa wambenger* (south-western brush-tailed phascogale)**

In south-west WA, *Phascogale tapoatafa wambenger* (south-western brush-tailed phascogales) are known to occur in dry sclerophyll forests and open woodlands that contain hollow bearing trees, with records less common in higher rainfall areas. This species is said to occur in highest densities in Perup/Kingston area, Collie River valley, and near Margaret River and Busselton (DEC, 2012). According to available databases, this species has been recorded 36 times within the local area (10 kilometres from the application area). A survey of the application area, conducted by Ecosystem Solutions in November 2021, did not observe any signs of this species, however, they may use the road reserve to traverse between larger remnants of native vegetation. Impacts to individuals present at the time of clearing remain the greatest threat. Slow, directional clearing will mitigate impacts to individuals present at the time of clearing.

Ecological linkage

The application area may function as an ecological linkage for fauna, including south-western brush-tailed phascogale, 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 with the road reserve.

Conclusion

Based on the above assessment, the application area includes suitable habitat for black cockatoos and western ringtail possum. The proposed clearing may also result in potential impacts on individuals of these species and south-western brush-tailed phascogales that may be present at the time of clearing. Slow, directional clearing and a pre-clearance inspection of the trees being cleared will mitigate impacts to individuals that may be present at the time of clearing.

The City have proposed the planting of marri trees within North Jindong road reserve to mitigate impacts to fauna. The mitigation planting proposed was input into the WA Environmental Offsets Metric Calculator to determine the ratio required to mitigate the loss of 14 trees. From this, 19 trees are required to be planted to mitigate the loss. The City have proposed to plant 40 marri trees within the road reserve, which exceeds the minimum required. The City will be required to ensure the survival of at least 19 marri trees. The proposed planting was determined to be a suitable mitigation measure. A significant residual impact does not remain following the mitigation planting. DWER considers the mitigation planting aligns with the WA Environmental Offsets Policy (2011) and WA Environmental Offsets Guideline (2014).

For the reasons set out above, it is considered that the impacts of the proposed clearing on biological values can be managed through the avoidance, minimisation and mitigation measures committed to by the applicant including conditions as specified in the permit.

Conditions

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

- Planting and ensuring the survival of at least 19 marri trees within the road reserve.
- Slow, directional clearing towards adjacent native vegetation.
- A fauna specialist to be present to monitor clearing and to take steps as specified in the permit conditions if nominated fauna species are present during the clearing.

3.2.3. Biological values (Threatened ecological communities) - Clearing Principle (d)

Assessment

During the survey completed by Ecosystem Solutions in 2021, it was identified that the survey site contained areas of the Threatened Ecological Community (TEC) (Vulnerable) SCP1b, *Corymbia calophylla* woodlands on heavy soils of the Swan Coastal Plain (SCP1b). This TEC is known to occur less than one kilometre from the survey area and some associated species of this TEC were observed during the survey (Ecosystem Solutions, 2021).

Department of Biodiversity, Conservation and Attractions (DBCA) advice was sort as to whether the application area currently represents the SCP1b TEC. DBCA advised that most of the vegetation currently present within the road reserve is degraded. The structure had been modified and there are currently several weeds present. Historically, the vegetation within the application area was likely to have been representative of the SCP1B TEC, however, due to its degraded condition, it no longer represents a viable occurrence of this community (DCBA, 2022).

Conclusion

Based on the above assessment, the proposed clearing of 14 native trees in the degraded North Jindong Road reserve will not be impacting a TEC and therefore does not result in any significant residual impact.

Conditions:

No conditions necessary.

3.2.4. Significant remnant vegetation - Clearing Principle (e)

Assessment

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001). The application area is located within the Swan Coastal Plain Interim Biogeographic Regionalisation of Australia (IBRA) bioregion, which retains approximately 38 per cent of its pre-European vegetation extent (Government of Western Australia, 2019b). The mapped Swan Coastal Plain vegetation 'Abba complex' retains approximately 6.54 per cent of its pre-European native vegetation extent within the bioregion (Government of Western Australia, 2019a). The extent of native vegetation remaining within the local area is 20.83 per cent. The Abba vegetation complex (30) and native vegetation remaining within the local area both retain less than 30 per cent of the original extent of native vegetation. Noting the local area and the mapped Abba vegetation complex is less than the 30 per cent threshold, the application area is considered to be within an extensively cleared landscape.

Conclusion

Due to the presence of suitable habitat for conservation significant fauna, the proposed clearing is impacting a significant remnant of native vegetation within an extensively cleared landscape. The mitigation measures proposed by the applicant through the revegetation of at least 19 native trees does not result in a significant residual impact, according to calculations made using the WA Environmental Offsets Metric Calculator (see section 3.2.2). Weed and dieback management measures will minimise impacts to the surrounding native vegetation.

Conditions:

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

- Planting and ensuring the survival of at least 19 marri trees within the road reserve.
- Take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback.

3.2.5. Relevant planning instruments and other matters

The application area is located within the Busselton-Capel Groundwater Area - 32 proclaimed under the *Rights in Water and Irrigation Act 1914* (RIWI Act), and within the South West Carburnup River catchment, Busselton Coast Basin – Basin No 610, but not within a proclaimed surface water area. As no watercourses are present within the application area, approvals under the RIWI Act are not required.

The application area is located within the boundaries of the registered South West Boojarah #2 Indigenous Land Use Agreement (WI2017/013). No Aboriginal Heritage Places have been mapped within the application area.

There are six Aboriginal Heritage Places within the local area (10 kilometre radius from the centre of the area proposed to be cleared) with the closest being Marybrook 1 Camp (Place ID - 23) (approximately 6.7 kilometre north of the application site) and the next closest being Busselton Fringe Camp (Place ID - 676) (approximately 8.5 kilometre north-northeast of the application site). 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



Clearing Permit Decision Report

Appendix A. Additional information provided by applicant

The applicant submitted a flora and fauna report completed by Ecosystem Solutions in November 2021. They supplied information on avoidance and mitigation, addressed the ten clearing principles outlined in Schedule 5 of the EP Act and photos of the 14 subject trees within the application to be cleared (Appendix E). This information has been taken into consideration by the Delegated Officer in determining the outcome of this application.

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 native vegetation, comprised of 14 native trees proposed to be cleared, is located along a road reserve within an intensive land use zone of Western Australia. The majority of this roadside vegetation is adjacent to cleared paddocks used for agricultural and horticultural purposes. The proposed clearing area contributes to habitat linkages in a north south direction between parcels of native vegetation.</p> <p>Aerial imagery and spatial data indicate the local area (10 kilometre radius from the centre of the area proposed to be cleared) retains approximately 20.83 percent of the original remnant vegetation cover.</p>
Ecological linkage	<p>The application area may function as an ecological linkage for fauna moving between larger remnants of native vegetation within the local area.</p> <p>North Jindong Road was surveyed in June 2010 and allocated as a roadside conservation – road centreline (DBCA-030) area, with weeds identified - kikuyu <i>tagasaste</i> victorian teatree <i>watsonia gladiolus</i> tree decline.</p>
Conservation areas	<p>The closest conservation areas is located approximately 200 metres southwest of the application area, which is associated with an area under a DBCA covenant.</p>
Vegetation description	<p>There is minimal understorey where the trees are proposed to be cleared. The vegetation within the road reserve has been severely impacted by disturbance, with signs of clearing, historic grazing and the presence of invasive weeds (Ecosystem Solutions, 2021). Representative photos of the proposed clearing areas supplied by the applicant (City of Busselton, 2022b) are available in Appendix E.</p> <p>The two mapped vegetation types over the application area are described as:</p> <ul style="list-style-type: none"> Pinjarra (1136) Woodland southwest vegetation association, which is described as jarrah, marri and <i>Eucalyptus marginata</i> (wandoo), <i>Corymbia calophylla</i>, <i>Eucalyptus wandoo</i>. (Shepherd <i>et al</i>, 2001) Abba vegetation complex (30), which is described as a mixture of open forest of <i>Corymbia calophylla</i>, <i>Eucalyptus marginata</i> (Jarrah) - Banksia species and woodland of <i>Corymbia calophylla</i> with minor occurrences of <i>Corymbia haematoxylon</i> woodland of <i>Eucalyptus rudis</i> and Melaleuca species along creeks and on flood plains (Webb <i>et al</i>. 2016). <p>The mapped vegetation type (Abba vegetation complex) retains approximately 6.54 per cent of the original extent (Government of Western Australia, 2019a).</p>
Vegetation condition	<p>Vegetation survey provided by the applicant indicates the vegetation within the application area is in Degraded to Completely Degraded condition (Keighery, 1994). The full Keighery (1994) condition rating scale is provided in Appendix D. The full survey descriptions and photos are available in Appendix E.</p>
Climate and landform	<p>Rainfall: 1100 millilitres per annum and 1200 millilitres per annum Evapotranspiration: 800 millilitres per annum.</p>

Characteristic	Details
Soil description	The application area is located within two soil systems, with the northern 57 percent of the application area being located within the 213AbJD1 Jindong flats which is described as having well drained flats with sandy gradational grey brown (Busselton) soils, some red brown sands and loams (Marybrook Soils) and the southern 43 percent being mapped as 213AbAB1 Abba Flats Phase which is described as having flats and low rises with sandy grey brown duplex (Abba) and gradational (Busselton) soils' (DPIRD, 2019).
Land degradation risk	For detailed land degradation risk factors for both soil systems found within the application area, see Section B.3. of the report.
Waterbodies	No wetlands or waterways are mapped as occurring within the application area. The nearest waterway is major river Carburnup River, which meanders parallel to the west of North Jindong Road, and is located approximately 176 metres at its closest point.
Hydrogeography	The application area is in the Coastal Plain hydrological zone which occupies the western portion of the Perth Basin. Major aquifers: Leederville, Yarragadee & Cockleshell Gully Fms. The eastern Yoganup Fm, is a major recharge area; discharge to the Indian Ocean. The application area is not located within a proclaimed surface water area, however, Geographe Bay Rivers Surface Water Area lays approximately 500 metres south of the area proposed to be cleared. The application area does however lay within the Busselton-Capel Groundwater Area - UFI 32, proclaimed under the RIWI Act. According to available databases, the groundwater salinity ranges from <500 milligrams to litres total dissolved solids in the southern 213AbJD1 - Jindong flats Phase soil system and 500-1000 milligrams to litres total dissolved solids in the northern 213AbAB1 - Abba Flats Phase soil system.
Flora	Available databases indicate that there are 49 conservation significant flora records within the local area, 34 of which are priority listed species, five listed as Critically Endangered, five listed as Endangered and four listed as Threatened. The closest to the application area being Priority four species <i>Acacia flagelliformis</i> , recorded approximately 590 metres away. From a flora survey conducted by Ecosystem Solutions (2021), Priority three <i>Loxocarya magna</i> was found adjacent to the application area (Ecosystem Solutions, 2021).
Ecological communities	There are eleven conservation significant ecological communities within the local area, with five of these being located within 500 metres of the application area. These five include: <ul style="list-style-type: none"> • (Endangered) Banksia WL SCP - Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region – 260 metres west of the southern sites • (P1) Whicher Scarp B2 - West Whicher Scarp Banksia attenuata woodland (Swan Coastal Plain centred woodlands of grey/white sands community B2) – 320 metres west of the southern sites • (Vulnerable) SCP1b - <i>Corymbia calophylla</i> woodlands on heavy soils of the southern Swan Coastal Plain (floristic community type 1b as originally described in Gibson et al. (1994)) - 500 metres south-east of the southern sites • (P1) Whicher Scarp Paluslope Wetlands - Swan Coastal Plain Paluslope Wetlands - 610 metres south-east of the southern sites • (Critically Endangered) SCP10b - Shrublands on southern Swan Coastal Plain Ironstones (Busselton area) (floristic community type 10b as originally described in Gibson et al. (1994)) - 320 metres south-east of the southern sites None of these ecological communities have been mapped as occurring within the application area. No conservation significant ecological communities were noted within the application area.
Fauna	There are records of 30 conservation significant fauna species found in the local area. Twelve of these are migratory birds which are unlikely to utilise the application area. Five of these species are oceanic or freshwater species, which would not utilise the habitats within the application area. The application area lies within the mapped distribution area for all three black cockatoo species. There are nine records of black cockatoo roosts within 10 kilometres of the

Characteristic	Details
	<p>application area. There are no confirmed black cockatoo breeding trees within the application area (Ecosystem Solutions, 2021), however, with roosts being identified within 6 kilometres of the application area, it is possible that the application area and surrounds are used as foraging habitat.</p> <p>The closest confirmed forest red-tailed black cockatoo breeding site is approximately 13.15 kilometres to the north-west of the application area and the closest confirmed white-tailed black cockatoo breeding site is approximately 26.22 kilometres south-south-east of the application area.</p> <p>The application area is mapped within medium to high suitable habitat for western ringtail possums.</p> <p>The fauna table B.4. in this report, provides an analysis of the species identified within the local area.</p>

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**					
Swan Coastal Plain	1,501,221.93	579,813.47	38.62	29.81	17.98
Vegetation association**					
Swan Coastal Plain – <i>Pinjarra_1136</i>	48,118.01	3,341.18	6.94	128.83	0.27
Vegetation complex*					
Swan Coastal Plain – <i>Abba_30</i>	50,892.78	3,326.20	6.54	183.20	0.36
Remnant vegetation					
Remnant vegetation mapped within 10 km	33,671.95	7013.47	20.83	-	-

*Government of Western Australia (2019a)

**Government of Western Australia (2019b)

B.3. Land degradation

Risk Factor	213AbJD1 - Jindong flats Phase	213AbAB1 - Abba Flats Phase
Wind erosion	M1: 10-30% of map unit has a high to extreme wind erosion risk	
Water erosion	L1: <3% of map unit has a high to extreme water erosion risk	
Water logging	M2: 30-50% of map unit has a moderate to very high waterlogging risk	H1: 50-70% of map unit has a moderate to very high waterlogging risk
Water Repellence	L2: 3-10% of map unit has a high water repellence risk	M1: 10-30% of map unit has a high water repellence risk
Sub-surface Acidification	H2: >70% of map unit has a high subsurface acidification risk or is presently acid	
Phosphorous export	L2: 3-10% of map unit has a high to extreme phosphorus export risk	M1: 10-30% of map unit has a high to extreme phosphorus export risk
Salinity	L1: 30-50% of map unit has a moderate to high salinity risk or is presently saline	
Flooding	L1: <3% of the map unit has a moderate to high flood risk	

B.4. Flora analysis table

Species name	Conservation status	Number of known records (total)	Distance of closest record to application area (km)	Suitable habitat? [Y/N]	Suitable Soils? [Y/N]	Comment (Associated vegetation/habitat)
Threatened Species						
<i>Banksia nivea</i> subsp. <i>uliginosa</i>	EN	8	5.58	N	N	Eucalyptus dominated woodland or low forest.
<i>Banksia squarrosa</i> subsp. <i>argillacea</i>	T	11	3.72	N	Y	Tall shrubland of banksia, open marri-jarrah forest
<i>Caladenia busselliana</i>	CR	5	3.98	N	Y	Winter-wet swamps
<i>Caladenia excelsa</i>	EN	1	8.84	N	N	Hilltops and slopes
<i>Caladenia procera</i>	CR	11	3.90	Y	N	Marri-jarrah or peppermint woodland
<i>Caladenia viridescens</i>	CR	2	9.19	Y	Y	Marri-peppermint woodlands
<i>Chamelaucium roycei</i>	T	4	1.34	N	N	Wetland and swamp vegetation
<i>Daviesia elongata</i>	T	14	3.00	Y	Y	Marri-jarrah, <i>Banksia</i> woodland
<i>Drakaea micrantha</i>	EN	2	2.28	Y	N	<i>Banksia</i> , <i>Allocasuarina fraseriana</i> woodland or forests
<i>Grevillea brachystylis</i> subsp. <i>grandis</i>	CR	16	0.84	Y	Y	Marri-jarrah woodland
<i>Verticordia densiflora</i> var. <i>pedunculata</i>	EN	2	9.02	Y	N	Low woodland usually dominated by marri-jarrah, melaleuca, over shrubland
<i>Verticordia plumosa</i> var. <i>ananeotes</i>	CR	6	2.34	N	Y	Shrubland with overstorey of marri with melaleuca
<i>Verticordia plumosa</i> var. <i>vassensis</i>	EN	2	9.02	N	N	Inhabits seasonally wet or wetland areas; associated with Melaleuca spp
Priority Species						
<i>Acacia flagelliformis</i>	4	6	0.59	Y	Y	Marri-jarrah banksia woodland
<i>Acacia inops</i>	3	2	8.44	N	N	Dense swampy vegetation
<i>Acacia lateritica</i> var. <i>Glabrous</i> variant (B.R. Maslin 6765)	3	1	8.71	Y	N	Marri-jarrah woodland
<i>Acacia semitrullata</i>	4	6	3.58	N	Y	Sandplains and swampy areas
<i>Actinotus whicheranus</i>	2	1	5.64	Y	N	Jarrah-marri and banksia woodland
<i>Andersonia ferricola</i>	1	5	5.59	N	N	Tall shrublands
<i>Calothamnus lateralis</i> var. <i>crassus</i>	3	4	2.54	N	N	Peaty sand in swamps
<i>Calothamnus quadrifidus</i> subsp. <i>teretifolius</i>	3	3	5.57	Y	Y	Woodland or shrubland of jarrah-marri
<i>Chordifex gracilior</i>	4	13	0.96	N	N	Low eucalyptus woodland
<i>Cyathochaeta teretifolia</i>	3	3	0.73	N	N	Swamp edges with melaleuca
<i>Gahnia sclerioides</i>	3	4	4.15	N	N	Low woodland or mixed shrubland
<i>Grevillea brachystylis</i> subsp. <i>brachystylis</i>	4	1	9.80	Y	N	Marri-jarrah Forest
<i>Grevillea brachystylis</i> subsp. <i>Yelverton</i> (A. Webb AW09122)	3	10	5.10	Y	N	Marri low open woodland
<i>Hakea oldfieldii</i>	2	2	9.69	Y	N	Marri-jarrah woodland
<i>Isopogon formosus</i> subsp. <i>dasylepis</i>	3	15	1.24	N	N	Eucalyptus woodland with banksia
<i>Johnsonia inconspicua</i>	3	4	2.97	Y	N	Marri-jarrah open woodland
<i>Lambertia rariflora</i> subsp. <i>rariflora</i>	4	1	9.80	N	N	Near intermittent streams, jarrah forrests
<i>Lasiopetalum laxiflorum</i>	3	3	2.14	Y	Y	Marri-jarrah open woodland
<i>Lepyrodia heleocharoides</i>	3	4	3.11	N	N	Usually on borders of swamp

Species name	Conservation status	Number of known records (total)	Distance of closest record to application area (km)	Suitable habitat? [Y/N]	Suitable Soils? [Y/N]	Comment (Associated vegetation/habitat)
<i>Leucopogon</i> sp. Busselton (D. Cooper 243)	2	1	8.73	N	N	Jarrah-marri woodland
<i>Loxocarya magna</i>	3	6	3.37	Y	Y	Marri-melaleuca woodland
<i>Melaleuca incana</i> subsp. Gingilup (N. Gibson & M. Lyons 593)	2	1	7.69	N	N	Swamps – riparian vegetation
<i>Olearia strigosa</i>	3	1	3.55	N	N	Eucalyptus woodland
<i>Pimelea ciliata</i> subsp. <i>longituba</i>	3	1	2.54	N	N	Jarrah or eucalyptus woodland over peppermint
<i>Pultenaea pinifolia</i>	3	3	7.79	N	Y	Swamp or wetland vegetation
<i>Schoenus benthamii</i>	3	1	8.57	N	Y	Swampy vegetation or seasonal wetlands
<i>Schoenus</i> sp. Jindong (R.D. Royce 2485)	1	1	2.54	N	N	Open eucalypt woodland
<i>Stylidium leeuwinense</i>	4	1	0.73	N	N	Winter-wet habitat and depressions
<i>Synaphea decumbens</i>	3	2	5.90	Y	N	Marri-jarra Forest
<i>Synaphea hians</i>	3	2	4.15	Y	N	Marri-jarra or melaleuca woodland
<i>Synaphea petiolaris</i> subsp. <i>simplex</i>	3	5	4.96	Y	N	Marri-jarra and melaleuca woodland
<i>Thysanotus formosus</i>	1	1	9.89	N	N	In situations often inundated in winter, open jarrah forest
<i>Thysanotus glaucus</i>	4	1	8.22	N	N	Low open woodland dominated by <i>Banksia</i> sp.
<i>Verticordia lehmannii</i>	4	2	3.55	N	Y	Swampy heath vegetation

B.5. 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]
Atlantic yellow-nosed albatross	VU	N	N	9.90	1	N/A
Australian sea-lion	VU	N	N	9.57	1	N/A
Baudin's cockatoo	EN	Y	Y	2.54	13	Y
Carnaby's cockatoo	EN	Y	Y	1.94	11	Y
Carter's freshwater mussel	VU	N	N	0.25	5	N/A
Caspian Tern	MI	Y	Y	9.71	4	N/A
Chuditch, western quoll	VU	N	N	8.59	2	N/A
Common Sandpiper	MI	N	N	9.82	1	N/A
Common tern	MI	N	N	9.90	1	N/A
Crested tern	MI	N	N	9.57	8	N/A
Dunsborough burrowing crayfish	EN	N	N	0.24	46	N/A
Forest red-tailed black cockatoo	VU	Y	Y	2.54	12	Y
Greater sand plover, large sand plover	VU	N	N	9.82	1	N/A
Hooded plover, hooded dotterel	P4	N	N	9.90	2	N/A
Margaret River burrowing crayfish	CR	N	N	0.80	10	N/A
Northern giant petrel	MI	N	N	9.90	1	N/A
Osprey, eastern osprey	MI	N	N	9.71	2	N/A
Peregrine falcon	OS	N	N	2.73	2	N/A
Quenda, southwestern brown bandicoot	P4	N	Y	0.48	21	Y
Red-necked stint	MI	N	N	9.82	2	N/A

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]
Sharp-tailed sandpiper	MI	N	N	5.28	1	N/A
Southern right whale	VU	N	N	9.79	1	N/A
South-western brush-tailed phascogale, wambenger	CD	Y	Y	3.90	36	Y
Vasse pachysaga (Busselton-Donnybrook)	P1	N	N	8.55	1	N/A
Wandering albatross	VU	N	N	9.90	1	N/A
Water-rat, rakali	P4	N	N	0.48	10	N/A
Western brush wallaby	P4	Y	Y	8.28	5	Y
Western ringtail possum, ngwayir	CR	Y	Y	0.48	297	Y
White-tailed black cockatoo	EN	Y	Y	2.76	34	Y
Woylie, brush-tailed bettong	CR	N	N	2.26	2	N/A

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

Appendix C. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p>Principle (a): <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u></p> <p>The trees proposed to be cleared occur near records of priority flora.</p>	May be at variance	Yes <i>Refer to Section 3.2.1.</i>
<p>Principle (b): <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 habitat for black cockatoo and western ringtail possums, as well as habitat utilised by south-western brush-tailed phascogales.</p>	At variance	Yes <i>Refer to Section 3.2.2. above.</i>
<p>Principle (c): <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>No threatened flora was recorded within the application area. A survey of the application area also found no individuals of threatened flora species.</p>	Not likely to be at variance	No
<p>Principle (d): <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>The area proposed to be cleared does not contain species that represent a threatened ecological community.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.3. above.</i>
Environmental value: significant remnant vegetation and conservation areas		
<p>Principle (e): <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>	At variance	Yes <i>Refer to Section 3.2.4. above.</i>

Assessment against the clearing principles	Variance level	Is further consideration required?
<p>The extent of the mapped vegetation type and the native vegetation in the local area is not 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. Application area contains suitable habitat for threatened fauna and occurs adjacent to records of priority flora.</p>		
<p><u>Principle (h):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.”</i></p> <p><u>Assessment:</u></p> <p>Given the distance to the nearest conservation area and the lack of topographical connectivity from the application area to conservation areas, the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas.</p>	Not 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></p> <p>Given no water courses or wetlands are recorded within the application area, and the distance from any waterbody within the local area, the proposed clearing is unlikely to impact an environment associated with a watercourse or wetland.</p>	Not 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>Two soil types were mapped within the application area. Noting the extent and location of the application area, and the vegetation remaining within the road reserve, 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> <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 no rivers, creeks or wetlands are recorded within the application area, the proposed clearing is unlikely to impact surface or ground water quality.</p>	Not likely to be at variance	No
<p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u></p> <p>The mapped soil type within the application area has a moderate to high risk of flooding. These occurrences are aligned with the waterway which runs parallel approximately 141 metres to the west of the application area, however, no waterways or waterbodies intersect the application area.</p> <p>As a result of the distance between the application area and any floodplain boundaries of neighbouring watercourses and the size of the clearing, it is considered that the proposed clearing is unlikely to contribute to increased incidence or intensity of flooding.</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.
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.



Clearing Permit Decision Report

Appendix E. Biological survey information excerpts and photographs of the vegetation

City of Busselton ID	City of Busselton ID	Ecosystem Solutions IBSA FID	Presence of hollows?	Species	Easting	Northing
SLK525L	0	NR	NR	NR	332499.849m	6264399.929m
SLK525L	1	NR	NR	NR	332500.793m	6264403.301m
SLK600L	2	NR	NR	NR	332523.367m	6264469.868m
SLK610L	3	190	Dead, No Hollow	Unknown	332523.686m	6264481.012m
SLK643L	4	197	No Hollow	Marri	332536.877m	6264507.200m
SLK643L	5	NR	NR	NR	332538.548m	6264511.863m
SLK730R	6	406	Dead, No Hollow	Marri	332575.127m	6264589.209m
SLK825R	7	NR	NR	NR	332606.601m	6264678.166m
SLK844R	8	NR	NR	NR	332613.066m	6264696.905m
SLK995R	9	442	No Hollow	Marri	332662.009m	6264840.135m
SLK1125L	10	NR	NR	NR	332695.099m	6264965.272m
SLK1320R	11	363	Dead, No Hollow	Unknown	332768.027m	6265149.260m
SLK1605R	12	347	No Hollow	Marri	332860.041m	6265415.430m
SLK1705R	13	338	No Hollow	Marri	332892.648m	6265511.659m

Figure 7: Coordinates and details of trees proposed to be cleared in clearing application CPS 9795/1 (City of Busselton, 2022c)



Figure 8a: Trees along North Jindong Road reserve, proposed to be cleared (City of Busselton, 2022b).

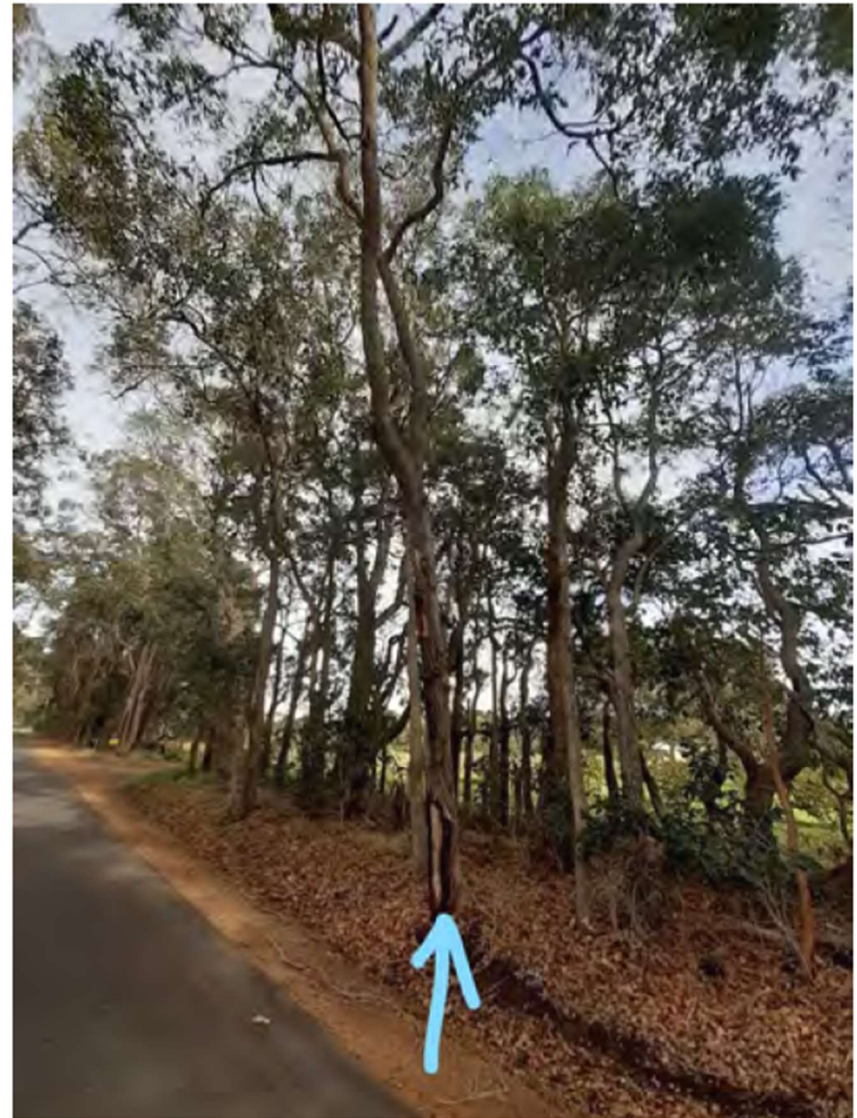
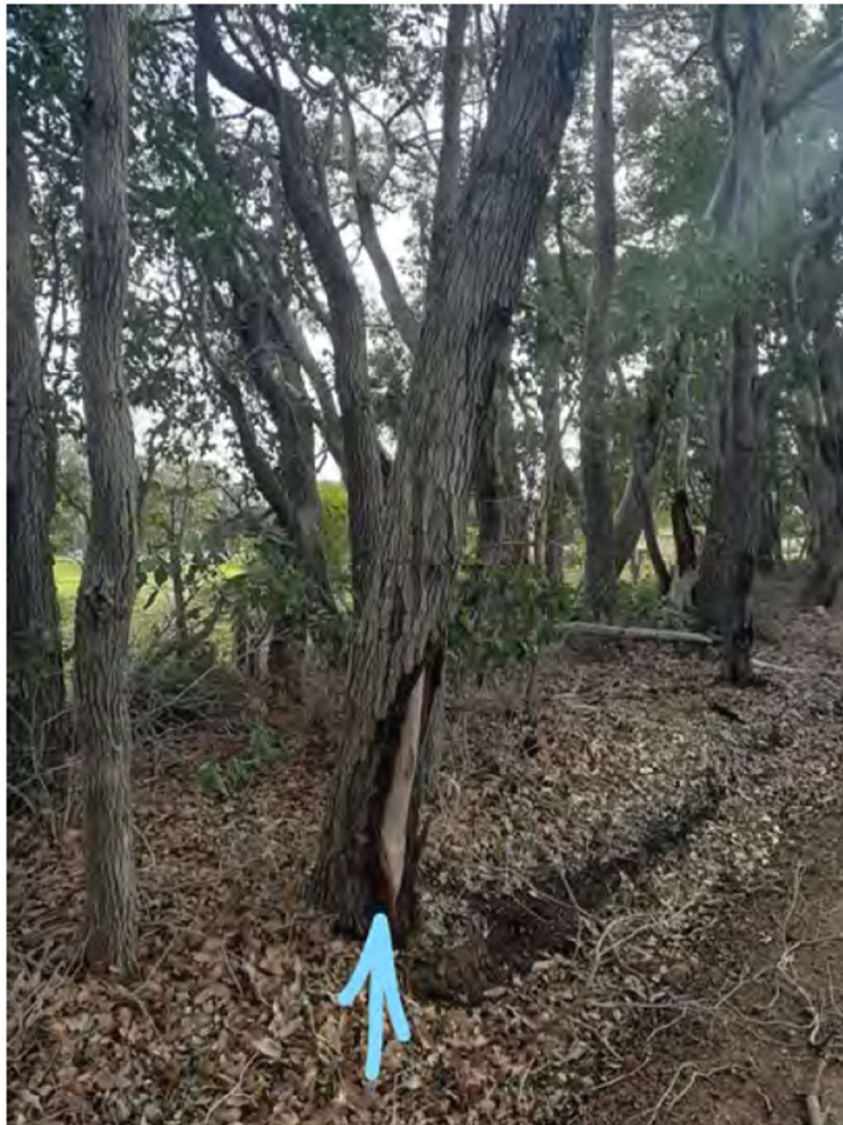


Figure 8b: Trees along North Jindong Road reserve, proposed to be cleared (City of Busselton, 2022b).



Figure 8c: Trees along North Jindong Road reserve, proposed to be cleared (City of Busselton, 2022b).



Figure 8d: Trees along North Jindong Road reserve, proposed to be cleared (City of Busselton, 2022b).

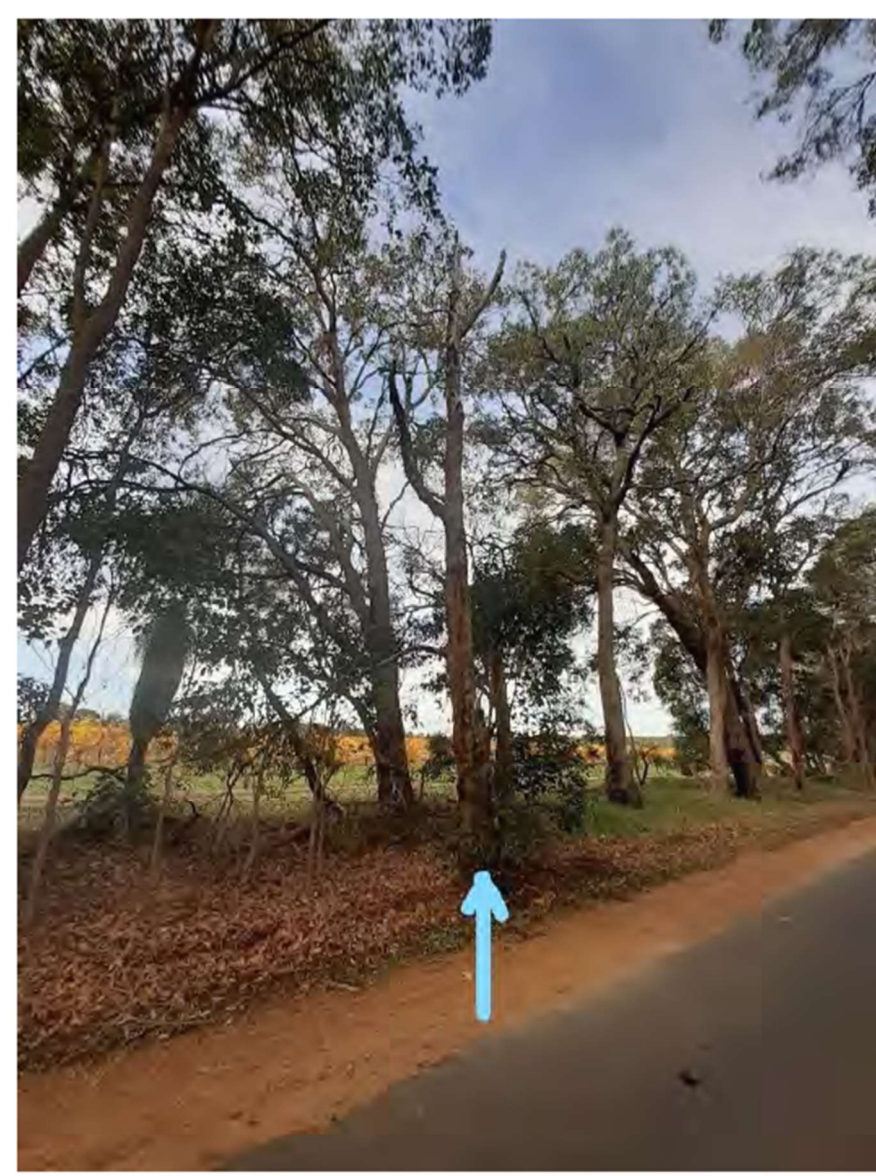
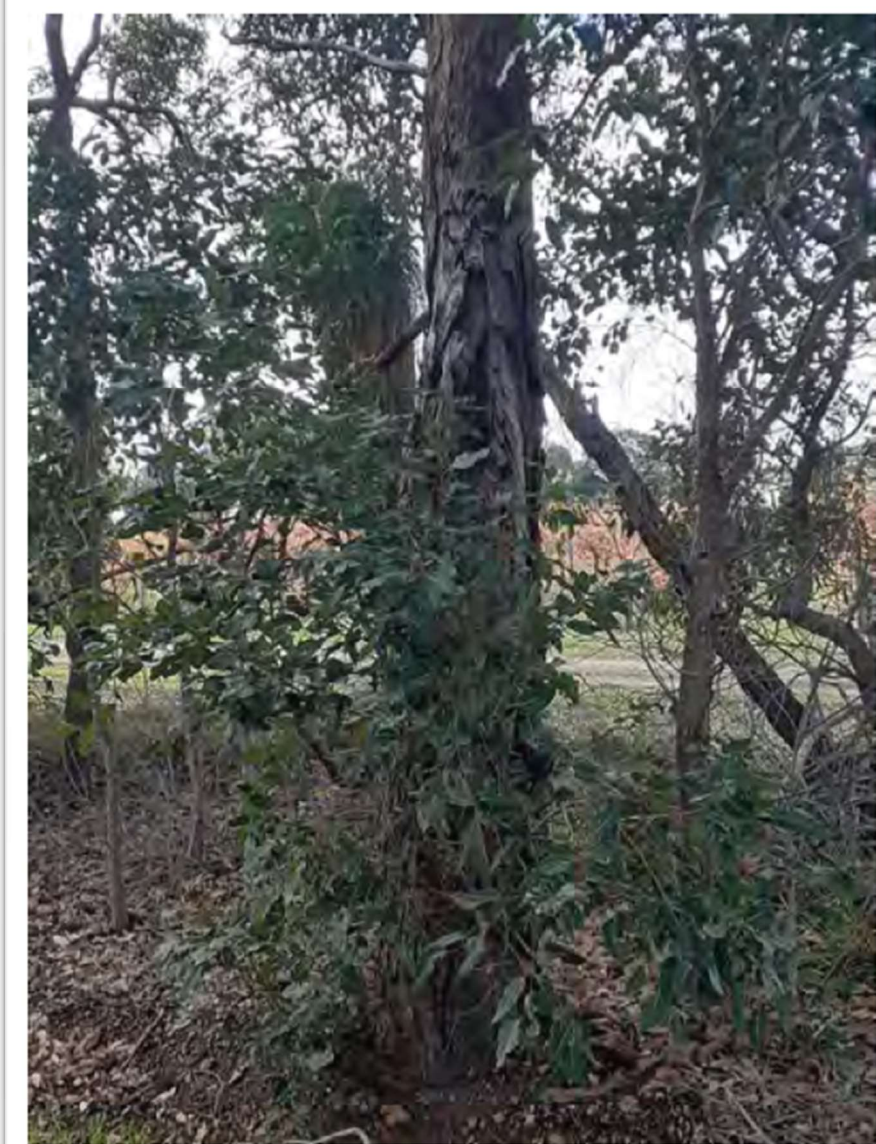


Figure 8e: Trees along North Jindong Road reserve, proposed to be cleared (City of Busselton, 2022b).



Figure 8f: Trees along North Jindong Road reserve, proposed to be cleared (City of Busselton, 2022b).



Figure 8g: Trees along North Jindong Road reserve, proposed to be cleared (City of Busselton, 2022b).



Figure 8h: Trees along North Jindong Road reserve, proposed to be cleared (City of Busselton, 2022b).

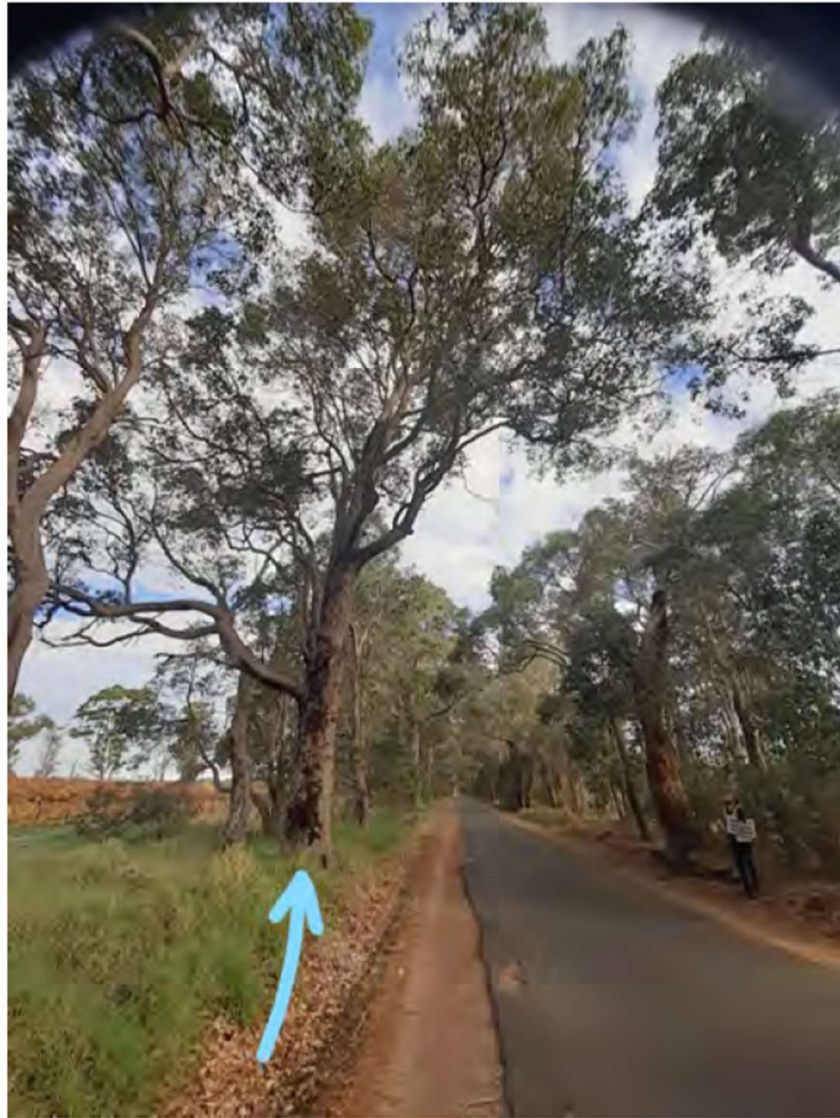


Figure 8i: Trees along North Jindong Road reserve, proposed to be cleared (City of Busselton, 2022b).



Figure 8j: Trees along North Jindong Road reserve, proposed to be cleared (City of Busselton, 2022b).

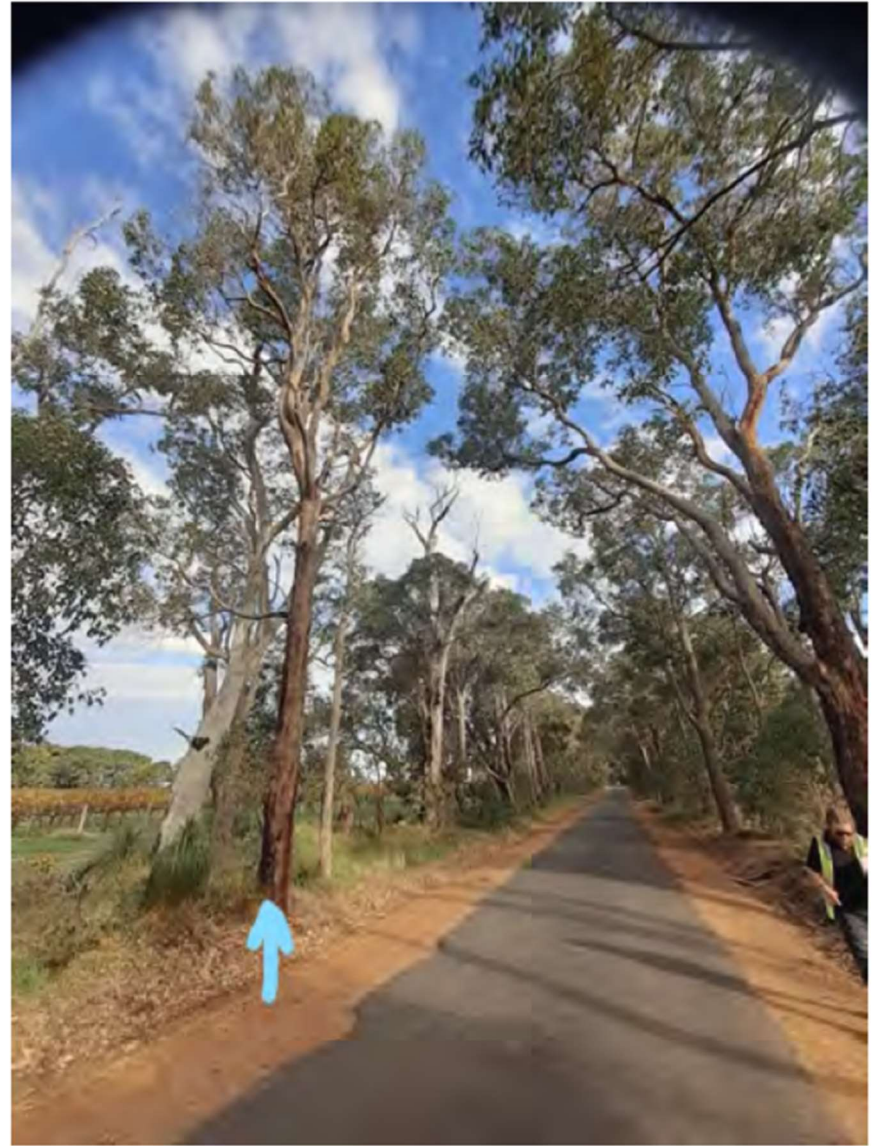
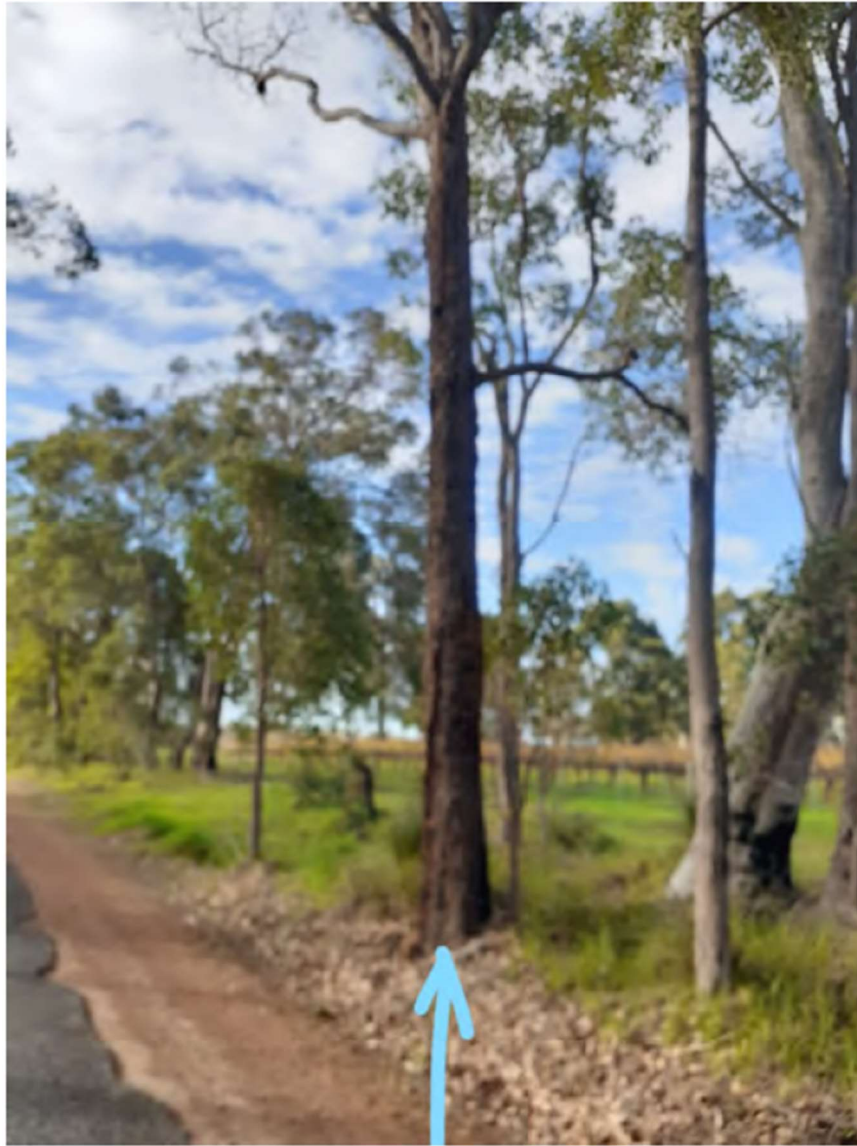


Figure 8k: Trees along North Jindong Road reserve, proposed to be cleared (City of Busselton, 2022b).



Figure 8l: Trees along North Jindong Road reserve, proposed to be cleared (City of Busselton, 2022b).



Figure 8m: Trees along North Jindong Road reserve, proposed to be cleared (City of Busselton, 2022b).



Clearing Permit Decision Report

Appendix F. Sources of information

F.3. GIS databases

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- 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)



Clearing Permit Decision Report

F.4. References

- City of Busselton (2022a) *Clearing permit application CPS 9795/1*, received 5 July 2022 (DWER Ref: DWERDT630415).
- City of Busselton (2022b) *Supporting information CPS 9795/1 – photos of trees*, received 5 July 2022 (DWER Ref: DWERDT630422).
- City of Busselton (2022c) *Email correspondence regarding coordinates and habitat CPS 9738/1*, received 4 November 2022 (DWER Ref: DWERDT702154).
- City of Busselton (2022d) *Response to request for further information CPS 9795/1*, received 9 November 2022 (DWER Ref: DWERDT685258).
- City of Busselton (2022e) *Further information received CPS 9738/1*, received 22 November 2022 (DWER Ref: DWERDT701915).
- 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 three 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 TEC/flora advice for clearing permit application CPS 9795/1*, received 7 November 2022. Department of Biodiversity, Conservation and Attractions, Western Australia (DWER Ref: DWERDT668386).
- Department of Environment and Conservation (DEC) (2012) *Red-tailed Phascogale Phascogale calura (Gould, 1844) – Fauna Profiles*. Perth. Available from https://www.dpaw.wa.gov.au/images/documents/conservation-management/pests-diseases/red-tailed-phascogale_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.
- Department of Parks and Wildlife (DPAW) (2017) *Western Ringtail Possum (Pseudocheirus occidentalis) Recovery Plan*. Wildlife Management Program No. 58. Available from: <http://www.environment.gov.au/biodiversity/threatened/publications/recovery/western-ringtail-possum-recovery-plan>.
- 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.
- Ecosystem Solutions (2021) *Flora and Fauna Significance Assessment – North Jindong Road, North Jindong – 22 November 2021*, received 5 July 2022 (DWER Ref: DWERDT630421).
- Environmental Protection Authority (EPA) (2016a) *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.
- Environmental Protection Authority (EPA) (2016b) *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.

- Government of Western Australia (2019a) *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 (2019b) *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>.
- 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.
- 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.
- 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 June 2022).