



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 10118/1
Permit Holder:	Shire of Augusta- Margaret River
Duration of Permit:	From 28 August 2023 to 28 August 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

Glenarty Road reserve (PIN 11607482), Karridale
Kudardup Road reserve (PIN 11606714), Karridale

3. Clearing authorised

The permit holder must not clear more than 0.087 hectares of native vegetation including eight native trees within the area cross-hatched yellow in Figure 1 of Schedule 1.

4. Period during which clearing is authorized

The permit holder must not clear any *native vegetation* after 28 August 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. Directional clearing

The permit holder must conduct clearing activities in a slow, progressive manner in one direction to allow fauna to move into adjacent *native vegetation* ahead of the clearing activity.

8. Revegetation and rehabilitation

(a) The permit holder shall plant and maintain 24 marri (*Corymbia calophylla*) and peppermint (*Agonis flexuosa*) of which eight must be marri (*Corymbia calophylla*) within the adjacent road reserve in Figure 2 of Schedule 2 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 28 August 2024.

(b) Within 24 months of undertaking *revegetation* in accordance with condition 8(a) of this permit, the permit holder must:

- (i) engage an *environmental specialist* to make a determination on whether 24 planted marri (*Corymbia calophylla*) and peppermint (*Agonis flexuosa*) trees will survive;
- (ii) where, in the opinion of an *environmental specialist* the 24 planted marri (*Corymbia calophylla*) trees and peppermint (*Agonis flexuosa*) will not survive, the permit holder must undertake additional planting of marri (*Corymbia calophylla*) and peppermint (*Agonis flexuosa*) trees to achieve this outcome; and
- (iii) where additional planting of marri (*Corymbia calophylla*) and peppermint (*Agonis flexuosa*) trees is undertaken in accordance with condition 8 (b)(ii), the permit holder must repeat the activities required by conditions 8(a)(i-iv) and 8(b)(i-ii) of this permit.

9. 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, including all trees, dreys and tree hollows present, immediately prior to, and for the duration of clearing

activities, for the presence of western ringtail possum(s) (*Pseudocheirus occidentalis*).

- (b) Clearing activities must cease in any area where fauna referred to in condition 9(a) are identified until either:
 - (i) the western ringtail possum(s) individual has moved on from that area to adjoining *suitable habitat*; or
 - (ii) the western ringtail possum(s) individual has been removed by a *western ringtail possum specialist*.
- (c) Any western ringtail possum(s) individual removed in accordance with condition 9(b)(ii) must be relocated by a *western ringtail possum specialist* to a *suitable habitat* within the areas cross-hatched red in Figure 2 of Schedule 2, or as otherwise approved by the *CEO*.
- (d) Where fauna is identified under condition 9(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 2020 (GDA2020), 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 GDA2020, 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 by, an individual.

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 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;

No.	Relevant matter	Specifications
		(d) the size of the area cleared (in hectares); and (e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 5; 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 6; (g) actions taken to manage and mitigate impacts to western ringtail possums in accordance with condition 9; and (h) actions taken to <i>revegetate</i> in accordance with condition 8.

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

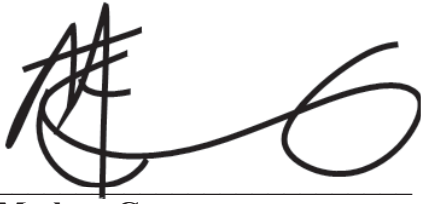
In this permit, the terms in Table have the meanings defined.

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> .
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.
environmental specialist	means a person who holds a tertiary qualification specialising in environmental science or equivalent, and has a minimum of 2 years work experience relevant to the type of environmental advice that an environmental specialist is required to provide under the permit, or who is approved by the <i>CEO</i> as a suitable <i>environmental specialist</i> .
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)

Term	Definition
local provenance	means native vegetation seeds and propagating material from natural sources within 50 kilometres and the same IBRA subregion of the area cleared.
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 or seeding
planting/s	means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species.
rehabilitate	means the re-establishment of a cover of <i>local provenance</i> native vegetation in an area using methods such as natural regeneration, direct seeding and/or <i>planting</i> , so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.
revegetate/ion	means actively managing an area containing native vegetation in order to improve the ecological function of the area.
suitable (western possum)	habitat ringtail
	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.
weed/s	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 read 'Mathew Gannaway', written over a horizontal line.

Mathew Gannaway
MANAGER
NATIVE VEGETATION REGULATION

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

4 August 2023

Schedule 1

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



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

Schedule 2

The boundary of the area within which planting is to occur is shown in hatched red in the map below (Figure 2)



Figure 2: Map of the boundary of the area within which planting must occur



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 10118/1
Permit type:	Purpose permit
Applicant name:	Shire of Augusta Margaret River
Application received:	16 March 2023
Application area:	0.087 hectares including eight (8) native trees
Purpose of clearing:	Road widening and reconstruction of 400 metres along Glenarty Road
Method of clearing:	Mechanical
Property:	Glenarty Road reserve (PIN 11607482) Kudardup Road reserve (PIN 11606714)
Location (LGA area/s):	Shire of Augusta Margaret River
Localities (suburb/s):	Karridale

1.2. Description of clearing activities

The application is to clear native vegetation due to the road currently failing with deformations causing safety hazards, and the width of the sealed road around the bend being insufficient given the volumes of general heavy traffic. It is proposed to reconstruct and widen the sealed road to 6.5 metres, with one metre unsealed edges on either side, and associated drainage works (Shire of Augusta Margaret River, 2023). The vegetation proposed to be cleared includes eight trees within an area of 0.087 hectares of native vegetation (see Figure 1, Section 1.5) (SLK 4.16 to 4.66).

1.3. Decision on application

Decision:	Granted
Decision date:	4 August 2023
Decision area:	0.087 hectares of native vegetation and eight (8) native trees, as depicted in Section 1.5, below.

1.4. Reasons for decision

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix A.1), relevant datasets (see Appendix A.2.3.4), the clearing principles set out in Schedule 5 of the EP Act (see Appendix B), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3). The Delegated Officer also took into consideration that the purpose of the clearing is to improve community safety by widening Glenarty Road due to an increased volume of traffic in the area.

The assessment identified that the proposed clearing would result in:

- The loss of native vegetation that is suitable foraging habitat for the forest red-tailed black cockatoo, Baudin's cockatoo and Carnaby's cockatoo (black cockatoo species),
- the loss of native vegetation that is suitable habitat for the western ringtail possum (WRP),
- the potential loss of habitat for chuditch, south-western brush-tailed phascogale, eastern osprey and hooded plover,
- the possible introduction and spread of weeds and dieback into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values, and
- potential land degradation in the form of wind erosion.

To minimise impacts to fauna, progressive one directional clearing is required and pre-inspection for WRP to allow individuals present at the time of clearing to move to adjacent vegetation. The planting of species suitable for black cockatoo and WRP foraging and breeding habitat will be undertaken to reduce impacts to black cockatoos and WRP. 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 minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined that the applicant has suitably demonstrated avoidance and minimisation measures and that the impacts of the proposed clearing listed above can be minimised and managed to be unlikely to 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,
- a minimum of 24 marri and peppermint trees (of which eight must be marri) will be required to be planted and maintained within the road reserve, as mitigation measures for the clearing of the eight native trees that provide fauna habitat for black cockatoo and WRP,
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback,
- a pre-clearing inspection by a fauna specialist is required to inspect areas for western ringtail possums, and clearing cannot take place in areas where WRPs are present until individuals have left the area or have been removed by a western ringtail possum specialist,
- undertake slow, progressive one directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity, and

1.5. Site map

CPS 10118/1

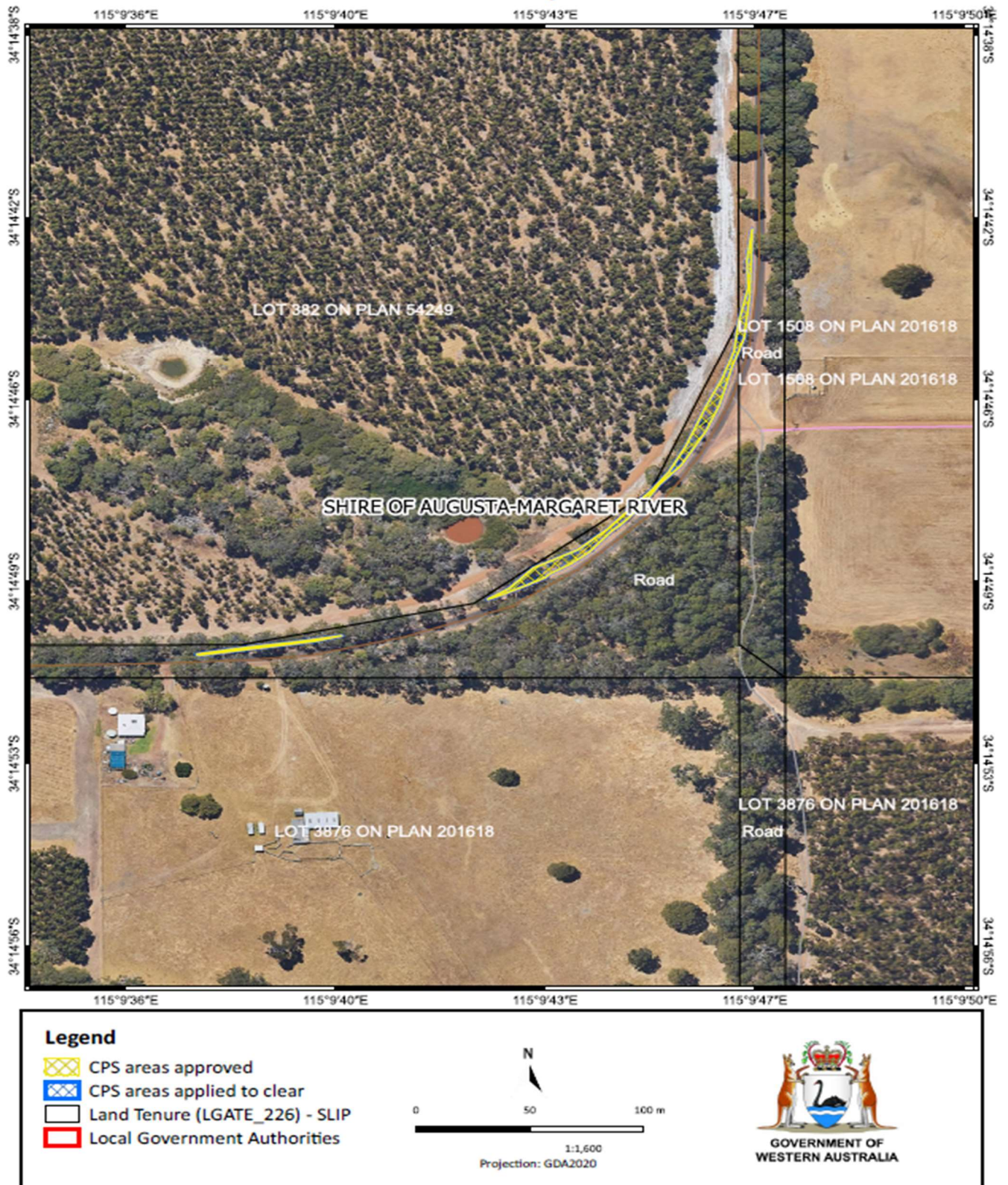


Figure 1 Map of the application area

The areas crosshatched yellow indicates the areas 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)
- *Rights in Water and Irrigation Act 1914* (WA) (RIWI Act)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

The applicant has advised that the following avoidance and mitigation measures have been/will be undertaken (Shire of Augusta Margaret River, 2023):

- The road reconstruction has been designed to minimise disturbance to native vegetation and retain large trees. Retrenchment pruning will be implemented as an alternative to tree removal where possible, where branches pose a safety hazard,
- one marri tree over 50 centimetres diameter at breast height (DBH) may be impacted during clearing, however this tree is unlikely to provide nesting habitat for threatened fauna such as black cockatoo species or WRP, based on its poor condition, lack of suitable nesting hollows or dreys, and lack of visible evidence of feeding residue or scats. No other potential habitat trees will be impacted,
- clearing will be implemented in strict accordance with DCBA's *Procedures to Minimise the Risk to Western Ringtail Possums during Vegetation Clearing and Building Demolition* (DBCA, 2015), including the presence of a fauna specialist on site prior to and during construction in order to inspect trees and manage any disturbed animals,
- existing surface drainage patterns will be maintained during road reconstruction, with no changes to surface hydrology or movement of sediment into the surrounding environment, and
- best practice weed and dieback hygiene measures will be implemented during clearing and construction (clean vehicles and machinery prior to entering the site).

DWER have identified that the planting and maintaining of 24 marri (*Corymbia calophylla*) and peppermint trees (*Agonis flexuosa*) of which a minimum of eight trees will be required to be marri, would be required to ensure a significant residual impact to fauna habitat does not remain after the proposed clearing. The Shire of Augusta Margaret River have agreed to the planting of 24 trees within Kardardup and Glenarty Road Reserves to reduce the significant residual impacts of clearing.

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 A) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles (see Appendix B **Error! Reference source not found.**) identified that the impacts of the proposed clearing present a risk to biological values (fauna) 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)

The Application area may provide habitat for the following conservation significant fauna species:

- *Calyptorhynchus banksii naso* (forest red-tailed black cockatoo) (VU)
- *Zanda baudinii* (Baudin's cockatoo) (EN)
- *Zanda latirostris* (Carnaby's cockatoo) (EN)
- *Dasyurus geoffroii* (chuditch, western quoll) (VU)
- *Pandion cristatus* (eastern osprey) (MI)
- *Phascogale tapoatafa wambenger* (south-western brush-tailed phascogale, wambenger) (CD)
- *Pseudocheirus occidentalis* (western ringtail possum, ngwayir) (CR)
- *Thinornis rubricollis* (hooded plover) (P4)

Western Ringtail Possum

The WRP is an arboreal folivore, associated with long unburnt mature remnant peppermint woodlands along the Swan Coastal Plain management zone from Mandurah to Augusta, characterised by high canopy cover and connectivity (DPAW, 2017). The application area is therefore likely to provide suitable habitat for the WRP. An inspection of the application area identified no evidence of WRP dreys in either the marri or peppermint trees with no signs of WRP scats (Shire of Augusta Margaret River, 2023). Whilst no evidence of WRP was identified, the road provides a linkage for WRP to traverse through the landscape. Noting this, and that the trees provide potential foraging and breeding habitat for WRP, the application area may be considered significant foraging habitat. Revegetation with suitable foraging species will mitigate against the impacts of clearing suitable foraging habitat for WRP. To minimise impacts to individuals that may be present at the time of clearing, a pre-inspection of the area being cleared will be required.

Black Cockatoos

Corymbia calophylla (marri) trees present within the application area provide suitable foraging habitat for *Calyptorhynchus banksii naso* (forest red-tailed black cockatoo), *Zanda baudinii* (Baudin's cockatoo) and *Zanda* (Carnaby's cockatoo).

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 trees, the application area is likely to provide suitable foraging habitat for 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 known night roosting sites to the application area. Available databases show that there are two 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. Noting the presence of foraging habitat within the range of known roosting locations, the application area contains significant foraging habitat for black cockatoos. To reduce the impacts of clearing significant foraging habitat, the Shire propose to plant 24 trees that are suitable for black cockatoo foraging within the adjacent road reserve.

Other fauna

The chuditch, south-western brush-tailed phascogale, hooded plover and eastern osprey may utilise the application area as habitat. However, given the extent of the application area, that habitat types within the application area are not considered to be significant habitat types for these species and that the proposed clearing will not result in a loss of habitat connectivity, the proposed clearing is unlikely to have a significant effect on habitat on these species.

Ecological linkage

The application area may function as an ecological linkage for fauna, including WRP, 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 proposed clearing includes suitable habitat for black cockatoos and WRP. 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 mitigation planting proposed was input into the WA Environmental Offsets Metric Calculator to determine the ratio required to mitigate the loss of eight trees. From this, 24 trees are required to be planted to mitigate the loss (of which a minimum of eight trees will be required to be marri). The Shire will be required to ensure the survival of at least 24 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:

- Slow directional clearing to allow terrestrial fauna to disperse ahead of the clearing activity should they occur on the site at time of clearing,
- A fauna specialist to be present to monitor clearing and to take steps as specified in the permit conditions if WRP are present during the clearing,
- planting and maintaining of 24 trees marri and peppermint trees (of which a minimum of eight trees will be required to be marri), would be essential to ensure a significant residual impact to fauna habitat does not remain after the proposed clearing.

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

Assessment

A non-perennial tributary of the Blackwood River intersects 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. It is acknowledged that the extent of the application area that runs adjacent to this watercourse is approximately 0.087 hectares. The vegetation in these areas is in a Degraded (Keighery, 1994) condition and is subject to ongoing disturbance from the adjacent Glenarty Road. Therefore, it is unlikely that the vegetation within the application area is contributing significantly to the function of riparian communities within the Blackwood River System. Given the extent and location of the proposed clearing, the condition of the vegetation, and adjacent land use, the proposed clearing is not considered likely to result in any significant or long-term impacts to the ecological values of the vegetation communities associated with the non-perennial tributaries of the Blackwood River System

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. The road reconstruction has been designed to maintain existing surface water flows, with no runoff of water or sediment into the surrounding environment. Surface and underground water will not be intercepted.

Conclusion

Based on the above assessment, it is considered that the impacts of the proposed clearing on land and water resources is not likely to cause long-term deterioration in the quality of surface water.

Conditions

No conditions are proposed due to the temporary and minimal impact likely from the proposed clearing.

3.3. Relevant planning instruments and other matters

The Shire of Augusta Margaret River identified that Glenarty road, Karridale, was currently failing with deformations causing safety hazards, and the width of the sealed road around the bend being insufficient given the volumes of general heavy traffic. The proposed clearing is consistent with the Shire's Local Planning Scheme (Shire of Augusta Margaret River, 2023).

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

End

Appendix A. 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 B.

A.1. Site characteristics

Characteristic	Details
Local context	<p>The areas proposed to be cleared are two patches of 0.087 hectares of native vegetation in the intensive land use zone of Western Australia. It is immediately adjacent to Glenarty Road, Karridale. The proposed clearing area appears to be in a degraded condition.</p> <p>Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 47.94 per cent of the original native vegetation cover.</p>
Ecological linkage	<p>A South West Regional Ecological Linkage intersects the proposed clearing are. The proposed clearing is not considered to significantly impact this linkage.</p>
Conservation areas	<p>The nearest conservation area is Scott National Park located 4.5 kilometres east of the areas proposed to be cleared. Leeuwin-Naturaliste National Park is located nine kilometres west of the areas proposed to be cleared.</p> <p>These conservation areas will not be impacted by this project.</p>
Vegetation description	<p>A flora and vegetation assessment (Shire of Augusta Margaret River, 2023) undertaken for the application area indicates the vegetation within the proposed clearing area consists of four vegetation types;</p> <ul style="list-style-type: none"> • Vegetation Type 1- Degraded condition of scattered trees of <i>Corymbia calophylla</i> over an open shrubland/scattered shrubs of <i>Macrozamia riedlei</i>, <i>Bossiaea linophylla</i> and <i>Pteridium esculentum</i> over scattered low shrubs of <i>Hibbertia furfuracea</i> and <i>Conostylis aculeata</i> over a Closed Grassland and Herbland of <i>*Ehrharta longifolia</i>, <i>*Oxalis incarnata</i> and <i>*Freesia alba x leichtlinii</i>. • Vegetation Type 2: Degraded condition of isolated <i>Corymbia calophylla</i> and <i>Agonis flexuosa</i> saplings and low shrubland of <i>Bossiaea linophylla</i>, <i>Leucopogon verticillatus</i>, <i>Acacia myrtifolia</i>, <i>Hibbertia hypericoides</i>, <i>Leucopogon capitellatus</i>, <i>Macrozamia riedlei</i>, <i>Pteridium esculentum</i> and <i>Bossiaea ornata</i> over a Herbland of <i>Opercularia hispidula</i>, <i>*Hypochaeris glabra</i>, <i>*Gladiolus sp.</i> <i>*Asparagus asparagoides</i> and <i>*Freesia alba x leichtlinii</i> over a grassland of <i>*Ehrharta longifolia</i> and <i>*Briza maxima</i>. • Vegetation Type 3: Degraded to completely degraded condition of very open shrubland of <i>Lepidosperma tetraquetrum</i> with scattered <i>Pteridium esculentum</i>, <i>*Juncus microcephalus</i> and <i>Gladiolus sp.</i> over a closed grassland of <i>*Cenchrus clandestinus</i> and scattered herbs of <i>*Hypochaeris glabra</i>. • Vegetation Type 4: Degraded to good condition of open woodland of <i>Corymbia calophylla</i> and <i>Eucalyptus marginata</i> over a tall open shrubland of <i>Acacia myrtifolia</i>, <i>Leucopogon capitellatus</i>, <i>Bossiaea linophylla</i> over a very open shrubland/scattered shrubs of <i>Hibbertia hypericoides</i>, <i>Pimelea rosea</i>, <i>Hibbertia cuneiformis</i>, <i>Hibbertia furfuracea</i>, <i>Leucopogon verticillatus</i> over scattered herbs of <i>Opercularia hispidula</i>, <i>Anigozanthos flavidus</i>, <i>Hardenbergia comptoniana</i>, <i>*Lysimachia arvensis</i> <i>*Hypochaeris glabra</i>, <i>*Gladiolus sp.</i>, <i>*Oxalis pes-caprae</i> and very open grassland of <i>Tetrarrhena laevis</i> and <i>*Briza maxima</i>. <p>Representative photographs are available in Appendix D.</p> <p>This is consistent with the mapped vegetation types:</p>

Characteristic	Details
	<ul style="list-style-type: none"> • Glenarty Hills (H) which is described as open forest of <i>Eucalyptus marginata</i> subsp. <i>marginata</i>-<i>Corymbia calophylla</i>-<i>Banksia grandis</i> with some <i>Eucalyptus diversicolor</i> on upland and slopes in hyperhumid and perhumid zones. • Glenarty Hills (Hw) which is described as a mixture of open forest of <i>Eucalyptus diversicolor</i>-<i>Callistachys lanceolata</i>, woodland of <i>Eucalyptus patens</i>-<i>Corymbia calophylla</i> and woodland of <i>Eucalyptus rudis</i>-<i>Melaleuca raphiophylla</i> on depressions in hyperhumid and perhumid zones. <p>The above mapped vegetation types retain approximately 31.7 and 35.3 per cent respectively of their original extents (Government of Western Australia, 2019b). Photographs supplied by the applicant indicate the vegetation within the proposed clearing area consists of remnant native <i>Corymbia calophylla</i> trees.</p>
Vegetation condition	<p>The flora site inspection (Shire of Augusta Margaret River, 2023) indicates the vegetation within the proposed clearing areas are in a completely degraded to good condition (Keighery, 1994).</p> <p>The full Keighery (1994) condition rating scale is provided in Appendix C. Representative photos are available in Appendix D.</p>
Climate and landform	<p>Rainfall: 953 mm</p> <p>Evapotranspiration: 800 mm</p>
Soil description	<p>The soil is mapped as:</p> <ul style="list-style-type: none"> • Glenarty gentle slope phase (216WvGL3) Described as slopes (gradients mainly 5-10%) with a variety of soil types. It occurs on the valleys to the south of Forest Grove. • Glenarty wet valley phase (216WvGLvw) Described as Broad U-shaped drainage depressions with swampy floors. It occurs along drainage lines in the Glenarty Subsystem.
Land degradation risk	<ul style="list-style-type: none"> • Flood risk: <ul style="list-style-type: none"> ○ Glenarty gentle slope phase: 0% of map unit has a low flood risk ○ Glenarty wet phase: 3-34% of map unit has a low to high flood risk • Waterlogging: <ul style="list-style-type: none"> ○ Glenarty gentle slope phase: 11% of map unit has a moderate risk ○ Glenarty wet phase: 6-38% of map unit has a moderate to very high risk • Wind erosion risk: <ul style="list-style-type: none"> ○ Glenarty gentle slope phase: 70% of map unit has a high to extreme wind erosion risk ○ Glenarty wet phase: 23% of map unit has a high wind erosion risk • Water erosion risk: <ul style="list-style-type: none"> ○ Glenarty gentle slope phase: 4% of map unit has a high risk ○ Glenarty wet phase: 15-25% of map unit has a high to very high risk • Phosphorus export risk: <ul style="list-style-type: none"> ○ Glenarty gentle slope phase: 4-5% of map unit has a high to extreme risk ○ Glenarty wet phase: 6-34% of map unit has a high to extreme risk • Subsurface acidification risk: <ul style="list-style-type: none"> ○ Glenarty gentle slope phase: 29-58% of map unit has a high subsurface acidification risk or is presently acid ○ Glenarty wet phase: 42% of map unit has a high subsurface acidification risk or is presently acid • Salinity risk: <ul style="list-style-type: none"> ○ 0% of map units have a high salinity risk or is presently saline

Characteristic	Details
Waterbodies	A non-perennial tributary of the Blackwood River intersects the proposed clearing area.
Hydrogeography	Groundwater salinity: <500 mg/L TDS The application area is mapped within the Lower Blackwood Surface Water Area and Blackwood Groundwater Area proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> . The road construction has been designed to maintain existing surface water flows, with no runoff of water or sediment into the surrounding environment. Underground water will not be intercepted.
Flora	Thirty-six flora species were recorded in the application area, with 16 of these invasive weed species. There were no threatened or priority flora (DBCA, 2022a) recorded.
Ecological communities	There are records of one critically endangered and one endangered threatened ecological community (TEC) and one priority 3 priority ecological community (PEC) within the local area. The closest of which to the application area is the Subtropical and Temperate Coastal Saltmarsh which is approximately 2.4 kilometres from the application area. The vegetation within the application area is not representative of any TEC/PEC recorded within the local area.
Fauna	There are records of 39 threatened, 10 priority, 23 migratory, three conservation dependent fauna species within the local area. The closest record is of the <i>Zanda latirostris</i> (Carnaby's cockatoo) foraging habitat 6.5 kilometres from the local area.

A.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion*					
Warren	833985.56	659432.21	79.07	558485.37	66.97
Vegetation complex					
Glenarty Hills_H	7709.53	2444.64	31.71	657.15	8.35
Glenarty Hills_Hw	2735.95	967.84	35.37	206.84	7.43
Local area					
10km radius	29709.54	14241.37	47.94	-	-

*Government of Western Australia (2019a)

**Government of Western Australia (2019b)

A.3. Fauna analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	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	6.5	9	N/A
<i>Calyptorhynchus baudinii</i> (Baudin's cockatoo)	EN	Y	Y	6.5	70	N/A
<i>Calyptorhynchus latirostris</i> (Carnaby's cockatoo)	EN	Y	Y	6.5	45	N/A
<i>Dasyurus geoffroii</i> (chuditch, western quoll)	VU	Y	Y	2.3	65	N/A
<i>Pandion cristatus</i> (Eastern Osprey)	MI	Y	Y	4.6	45	N/A
<i>Phascogale tapoatafa wambenger</i> (south-western brush-tailed phascogale, wambenger)	CD	Y	Y	2.9	52	N/A
<i>Pseudocheirus occidentalis</i> (Western ringtail possum, ngwayir)	CR	Y	Y	5	287	N/A
<i>Thinornis rubricollis</i> (Hooded Plover)	P4	Y	Y	0.6	27	N/A

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

A.4. Ecological community analysis table

Community name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil 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]
Aquatic Root mat Community Number 1 or Caves of the Leeuwin Naturaliste Ridge (Easter and Jewel Caves)	CR	N	N	N	6.1	1	N/A
Scott River Ironstone Association	EN	N	Y	N	9	8	N/A
Subtropical and Temperate Coastal Saltmarsh	P3	N	N	Y	2.4	11	N/A

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

Appendix B. 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>Assessment: The area proposed to be cleared contains habitat for black cockatoo species and the western ringtail possum.</p> <p>No conservation significant flora or vegetation communities have been recorded within the application area.</p>	May be at variance	Yes <i>Refer to Section 3.2.1, above.</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>Assessment: Several conservation significant fauna have been recorded within the local area. The application area exhibits the habitat characteristics of at least nine of the fauna, including the threatened species of Black cockatoos. The application area comprises marri and juvenile peppermint trees that may provide habitat for black cockatoo species and western ringtail possum.</p>	At variance	Yes <i>Refer to Section 3.2.1, 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>Assessment: The area proposed to be cleared is unlikely to contain threatened flora species. No threatened flora have been recorded within the application area .</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>Assessment: The area proposed to be cleared does not contain species that can indicate a threatened ecological community. The nearest threatened ecological community is located approximately 2.4 kilometres from the proposed clearing area. Given the distance and separation from the nearest occurrence, the proposed clearing is unlikely to comprise, or be necessary for the maintenance of, a TEC.</p>	Not likely to be at variance	No
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>Assessment: Extents of the mapped vegetation type and native vegetation in the local area are consistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.</p>	Not likely to be at variance	No
<p>Principle (h): <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>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<u>Assessment:</u> Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas.		
Environmental value: land and water resources		
<p><u>Principle (f):</u> “Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</p> <p><u>Assessment:</u> A non-perennial tributary of the Blackwood River intersects the application area, therefore, the vegetation within the application is considered to be growing in association with a watercourse.</p>	At variance	Yes <i>Refer to Section 3.2.2, above.</i>
<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 highly susceptible to wind erosion and subsurface acidification. Noting the extent of the proposed clearing being adjacent to an existing road, the proposed clearing is not likely to cause appreciable land degradation.</p>	Not likely to be at variance	No
<p><u>Principle (i):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.”</p> <p><u>Assessment:</u> 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. Impacts to groundwater are not likely to result from the clearing.</p>	May be at variance	Yes <i>Refer to Section 3.2.2, 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> Noting the mapped soils and topographic contours in the surrounding area and small extent of the proposed clearing, the proposed clearing is not likely to contribute to increased incidence or intensity of flooding or waterlogging.</p>	Not likely to be at variance	No

Appendix C. Vegetation condition rating scale

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

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

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

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

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.

Condition	Description
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

Appendix D. Photographs of the vegetation in the application area along Glenarty Road, Karridale



Figure 2. Photograph of vegetation (Marri- *Corymbia calophylla*) proposed to be cleared at 34 degrees, 14'50"S, 115 degrees, 09'37"E (Shire of Augusta Margaret River, 2023)



Figure 3. Photograph of vegetation (Peppermint- *Agonis flexuosa* in foreground of photo and Marri- *Corymbia calophylla* in background) proposed to be cleared at 34 degrees, 14'49"S, 115 degrees, 09'45"E(Shire of Augusta Margaret River, 2023)



Figure 4. Photograph of vegetation (Peppermint- *Agonis flexuosa*) proposed to be cleared at 34 degrees, 14'49"S, 115 degrees, 09'45"E (Shire of Augusta Margaret River, 2023)



Figure 5. Photograph of vegetation (Marri- *Corymbia calophylla*) proposed to be cleared at 34 degrees, 14'46"S, 115 degrees, 09'37"E (Shire of Augusta Margaret River, 2023)



Figure 6. Photograph of vegetation (Marri- *Corymbia calophylla*) proposed to be cleared at 34 degrees, 14'46"S, 115 degrees, 09'47"E (Shire of Augusta Margaret River, 2023)



Figure 7. Photograph of vegetation (Marri- *Corymbia calophylla*) proposed to be cleared at 34 degrees, 14'46"S, 115 degrees, 09'47"E (Shire of Augusta Margaret River, 2023)



Figure 8. Photograph of vegetation (Marri- *Corymbia calophylla*) proposed to be cleared at 34 degrees, 14'46"S, 115 degrees, 09'47"E (Shire of Augusta Margaret River, 2023)



Figure 9. View facing west of vegetation proposed to be cleared. (Shire of Augusta Margaret River, 2023)



Figure 10. View facing east of vegetation proposed to be cleared. (Shire of Augusta Margaret River, 2023)



Figure 11. Creekline vegetation- culvert pipe to be extended (Shire of Augusta Margaret River, 2023)



Figure 12. Bracken and introduced grass understorey (Shire of Augusta Margaret River, 2023)



Figure 13. Trees 5-8 in the distance (Shire of Augusta Margaret River, 2023)

Appendix E. Sources of information

E.1. GIS databases

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- 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
- 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)

E.2. References

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