



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 10620/1
Permit Holder:	Shire of Augusta Margaret River
Duration of Permit:	From 10 March 2025 to 10 March 2035

ADVICE NOTE

Allocation of offset site

The offset referred to in condition 9 of this permit is intended to contribute towards the conservation in perpetuity of a total of 9.64 hectares of native vegetation within Crown Reserve 25141, Leeuwin, that comprises significant foraging habitat for *black cockatoo species*, habitat for the western ringtail possum, and vegetation representative of the Coastal granitic shrublands and herblands of the exposed western and southern sides of the Leeuwin Block major landform (Previously known as Low shrublands on acidic grey-brown sands of the Gracetown soil-landscape system) priority ecological community.

Revegetation and rehabilitation offset

The *revegetation* and *rehabilitation* referred to in condition 10 of this permit is intended to facilitate the *revegetation* and *rehabilitation* of a total of 0.39 hectares of native vegetation within Lot 4125 on Diagram 17667 and Lot 4127 on Plan 7032 (Crown Reserve 25141), Leeuwin, that comprises 0.39 hectares of *suitable habitat* for western ringtail possum (*Pseudocheirus occidentalis*) and 0.13 hectares of significant foraging habitat for *black cockatoo species*.

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 reconstruction and widening of the Leeuwin trail.

2. Land on which clearing is to be done

Lot 4127 on Plan 7032 (Crown Reserve 25141), Leeuwin

Lot 4125 on Diagram 17667 (Crown Reserve 25141), Leeuwin

Leeuwin Road reserve (PIN 11607702), Leeuwin

Unnamed road reserve (PIN 11622189), Leeuwin

3. Clearing authorised

The permit holder must not clear more than 0.51 hectares of *native vegetation* within the area cross-hatched yellow in Figures 1, 2, and 3 of Schedule 1.

4. Period during which clearing is authorised

The permit holder must not clear any *native vegetation* after 10 March 2030.

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. Wind erosion management

The permit holder must commence construction activities no later than three (3) months after undertaking the authorised clearing activities to reduce the potential for wind erosion.

8. Fauna management – Western ringtail possums

- (a) In relation to the area cross-hatched yellow in Figures 1-3 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 western ringtail possum(s) (*Pseudocheirus occidentalis*).
- (b) Clearing activities must cease in any area where fauna referred to in condition 8(a) are identified until either:
 - (ii) the western ringtail possum(s) individual has moved on from that area to adjoining *suitable habitat*; or
 - (iii) 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 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:
 - (ii) the number of individuals identified;
 - (iii) the date each individual was identified;
 - (iv) 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;
 - (v) the number of individuals removed and relocated;
 - (vi) the relevant qualifications of the *western ringtail possum specialist* undertaking removal and relocation;
 - (vii) the date each individual was removed;
 - (viii) the method of removal;
 - (ix) the date each individual was relocated;
 - (x) 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
 - (xi) details pertaining to the circumstances of any death of, or injury sustained by, an individual.

9. Offset – Crown Reserve 25141

- (a) Prior to 10 March 2027 the permit holder must provide to the CEO a copy of the executed change in reserve purpose of the area cross-hatched red in Figure 4 of Schedule 2, within Lot 4127 on Plan 7032 and Lot 4125 on Diagram 17667 (Crown Reserve 25141), Leeuwin, from ‘Recreation’ to ‘Conservation and Recreation’.
- (b) No later than 10 September 2027, if the change in reserve purpose pursuant to condition 9(a) of this permit has not been executed, the permit holder must provide to the CEO for approval, an alternative *offset proposal* prepared in accordance with the *Western Australian Environment Offsets Policy* (2011) and *Western Australian Environmental Offsets Guidelines* (2014). The *offset proposal* that must counterbalance the significant residual impacts of the clearing of native vegetation authorised under condition 3 of this permit that provides habitat for western ringtail possum (*Pseudocheirus occidentalis*), *black cockatoo species*, and vegetation representative of the Coastal granitic shrublands and herblands of the exposed western and southern sides of the Leeuwin Block major landform (Previously known as Low shrublands on acidic grey-brown sands of the Gracetown soil-landscape system) priority ecological community.
- (c) If it is necessary to modify the *offset proposal* approved by the CEO in accordance with condition 9(c), then the permit holder must provide that modified *offset proposal* to the CEO for the CEO’s approval, prior to implementing the modified *offset proposal*.
- (d) The permit holder must implement the latest version of the *offset proposal* approved by the CEO.

10. Offset – revegetation and rehabilitation

Within 24 months of undertaking clearing authorised under this permit and no later than 10 March 2030, the permit holder must:

- (a) commence *revegetating* and *rehabilitating* the areas cross-hatched red on Figures 5-7 of Schedule 3, by way of:
 - (ii) deliberately *planting* and/or *direct seeding native vegetation* that provides:
 - (A) suitable foraging habitat for *black cockatoo species*; and
 - (B) *suitable habitat* for western ringtail possums;
 - (iii) ensuring only *local provenance* seeds and propagating material are used to *revegetate* and *rehabilitate* the area; and
 - (iv) ensuring that *revegetation* and *rehabilitation* is undertaken at the *optimal time*.
- (b) undertake watering of *planted* vegetation for at least two years post planting, as required;
- (c) install signage to educate reserve users of the *revegetation* activities being undertaken;
- (d) implement hygiene protocols by cleaning earth-moving machinery of soil and vegetation prior to entering and leaving the *revegetation* site;
- (e) establish at least four 5 x 5 metre quadrat monitoring sites within the *revegetated* areas as specified in condition 10(a);
- (f) monitor quadrats specified in condition 10(e) at least annually;
- (g) monitoring of quadrats specified in condition 8(f) is to be undertaken by an *environmental specialist*;
- (h) undertake *weed* control activities on an ‘as needs’ basis to maintain a minimum criteria specified in Table 3 of Schedule 4;
- (i) achieve the Completion Criteria specified in Table 3 of Schedule 4 after the three-year monitoring period for areas *revegetated* and *rehabilitated* under this permit;
- (j) undertake *remedial actions* for areas *revegetated* and *rehabilitated* where monitoring indicates that the *revegetation* has not met the Completion Criteria, outlined in Table 3 of Schedule 4, including:
 - (i) *revegetate* the area by deliberately *planting* and/or *direct seeding native vegetation* that will result in the minimum targets specified in the Completion Criteria specified in Table 3 of Schedule 4, ensuring only *local provenance* seeds and propagating material are used;
 - (ii) undertake further *weed* control activities;
 - (iii) undertake further watering activities; and
 - (iv) undertake annual monitoring of the *revegetated* and *rehabilitated* sites, until the Completion Criteria outlined in Table 3 of Schedule 4 are met.
- (k) where an *environmental specialist* determines that the Completion Criteria specified in Table 3 of Schedule 4 has been met, a report is to be submitted to the *CEO* within three months of the determination being made by the *environmental specialist*.

PART III - RECORD KEEPING AND REPORTING**11. Records that must be kept**

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

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	<ul style="list-style-type: none"> (a) the species composition, structure, and density of the cleared area; (b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings; (c) the date that the area was cleared; (d) the size of the area cleared (in hectares); (e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 5; (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 wind erosion in accordance with condition 7; (h) action taken to manage and mitigate impacts to western ringtail possums in accordance with condition 8; and (i) actions taken to change the purpose of Crown Reserve 25141 in accordance with condition 9.
2.	In relation to the <i>revegetation</i> and <i>rehabilitation</i> pursuant to condition 10.	<ul style="list-style-type: none"> (a) a description of the <i>revegetation</i> and <i>rehabilitation</i> activities undertaken, including <i>planted</i> species composition and density, and actions taken to implement watering and weed control; (b) the size of the area rehabilitated; (c) the date/s on which the rehabilitation was undertaken; (d) the boundaries of the area rehabilitated (recorded digitally as a shapefile using a Global Positioning System (GPS) unit set to GDA2020, expressing the geographical coordinates in Eastings

No.	Relevant matter	Specifications
		<p>and Northings);</p> <p>(e) a copy of the <i>environmental specialist's</i> monitoring report and determination in accordance with condition 10(k); and</p> <p>(f) any other actions taken in accordance with condition 10.</p>

12. Reporting

The permit holder must provide to the *CEO* the records required under condition 11 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
black cockatoo species	means one or more of the following species: (a) <i>Zanda latirostris</i> (Carnaby's cockatoo); (b) <i>Zanda baudinii</i> (Baudin's cockatoo); and/or (c) <i>Calyptorhynchus banksii naso</i> (forest red-tailed black cockatoo).
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
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.
dieback	means the effect of <i>Phytophthora</i> species on native vegetation.
direct seeding	means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species.
environmental specialist	means a person who holds a tertiary qualification in environmental science or equivalent, and has a minimum of two (2) years work experience relevant to the type of environmental advice that an environmental specialist is required to provide under this permit, or who is approved by the <i>CEO</i> as a suitable environmental specialist.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
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

Term	Definition
	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.
local province	means <i>native vegetation</i> seeds and propagating material from natural sources within 50 kilometres and the same Interim Biogeographic Regionalisation for Australia (IBRA) subregion of the area cleared.
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.
offset proposal	means a documented plan that addresses the principles outlined the <i>Government of Western Australia's Environmental Offsets Policy, September 2011</i> .
optimal time	means the period from May to July for undertaking <i>planting</i> and <i>direct seeding</i> .
planted/ing	means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species.
rehabilitate/ed/ing/ion	means actively managing an area containing native vegetation in order to improve the ecological function of that area.
remedial action/s	means any activity that is required to ensure successful reestablishment of vegetation to its pre-clearing composition, structure and density, and may include a combination of soil treatments and <i>revegetation</i> .
revegetate/ed/ing/ion	means the re-establishment of a cover of <i>local provenance native vegetation</i> in an area using methods such as <i>natural regeneration</i> , <i>direct seeding</i> and/or <i>planting</i> , so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.
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.

Term	Definition
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


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Temika Mathieson
 A/MANAGER
 NATIVE VEGETATION REGULATION

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

14 February 2025

Schedule 1

The boundary of the area authorised to be cleared is shown in the maps below (Figure 1, 2, and 3).

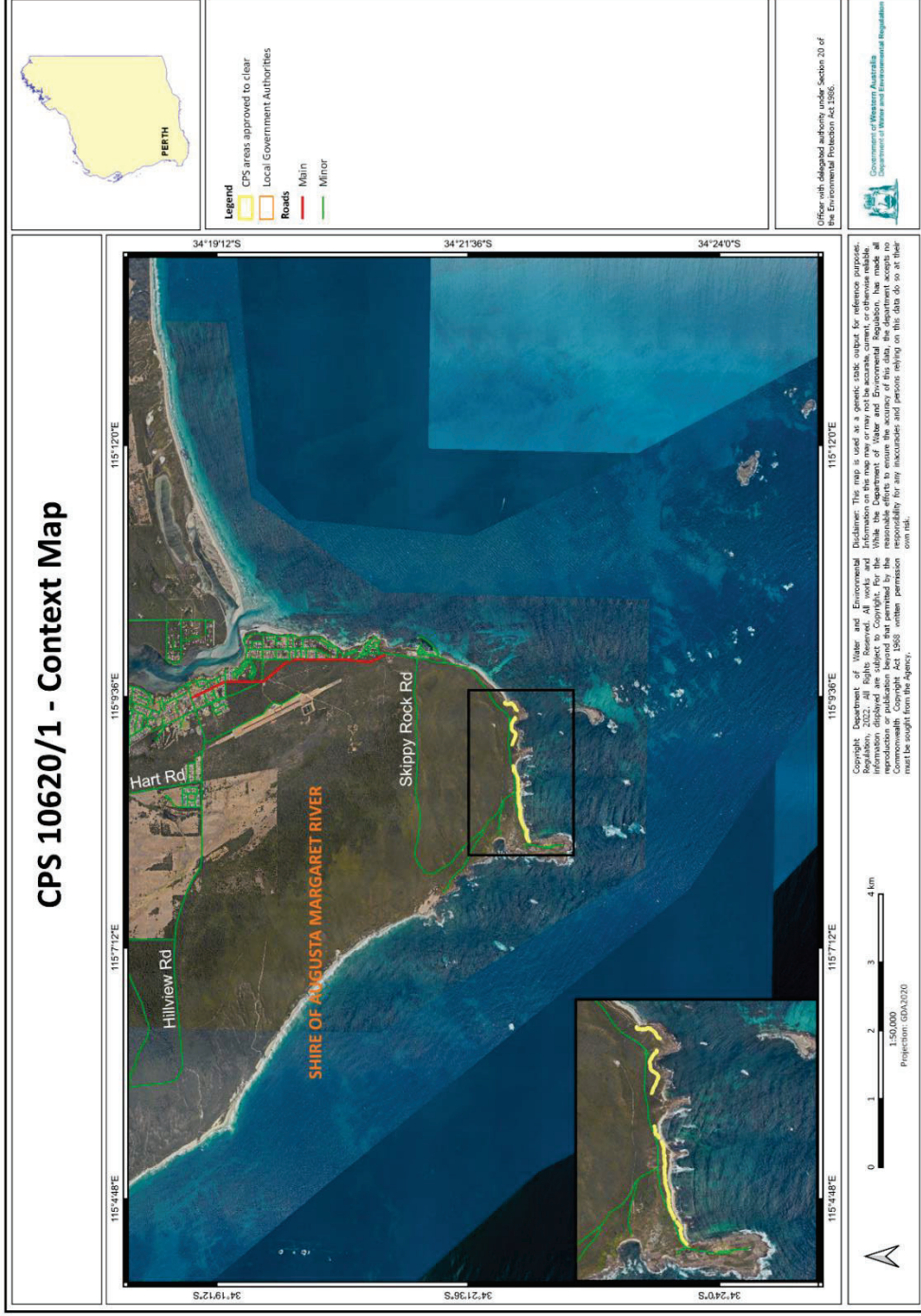


Figure 1: Context map of the boundary of the area within which clearing may occur.

CPS 10620/1 - Map A



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Legend

- CPS areas subject to clear
- Local Government Authorities
- Land Tenure

Roads

- Minor

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986.



Figure 2: Map A of the boundary of the area within which clearing may occur.

CPS 10620/1 - Map B



- Legend**
- CPS areas subject to clear
 - Local Government Authorities
 - Land Tenure
- Roads**
- Major
 - Minor

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986.



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Figure 3: Map B of the boundary of the area within which clearing may occur.

Schedule 2

The boundary of the area subject to offset conditions is shown in the map below (Figure 4).

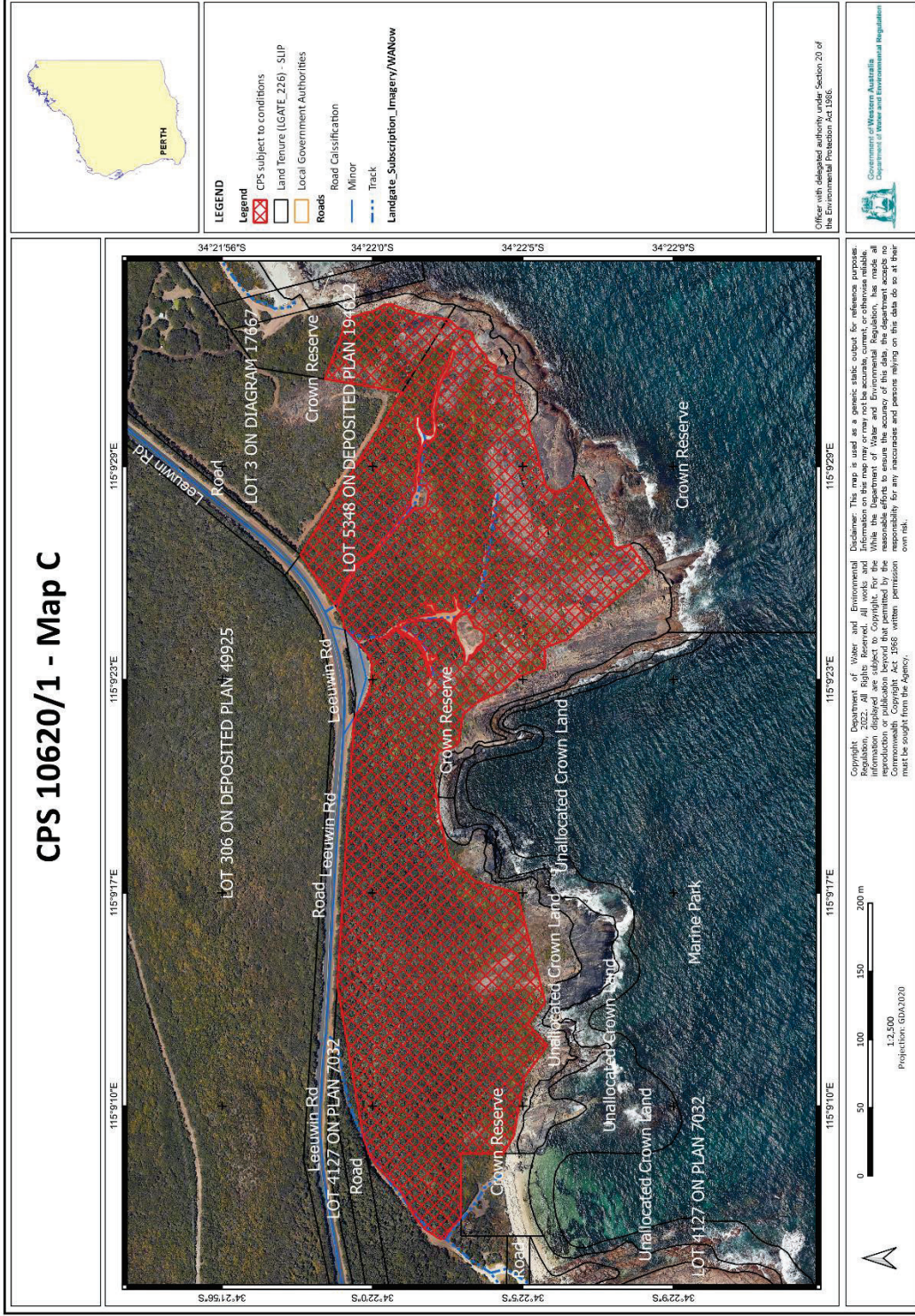


Figure 4: Map of the boundary of the area subject to offset condition 8.

Schedule 3

The boundary of the area to be rehabilitated is shown in the maps below (Figures 5, 6, and 7).

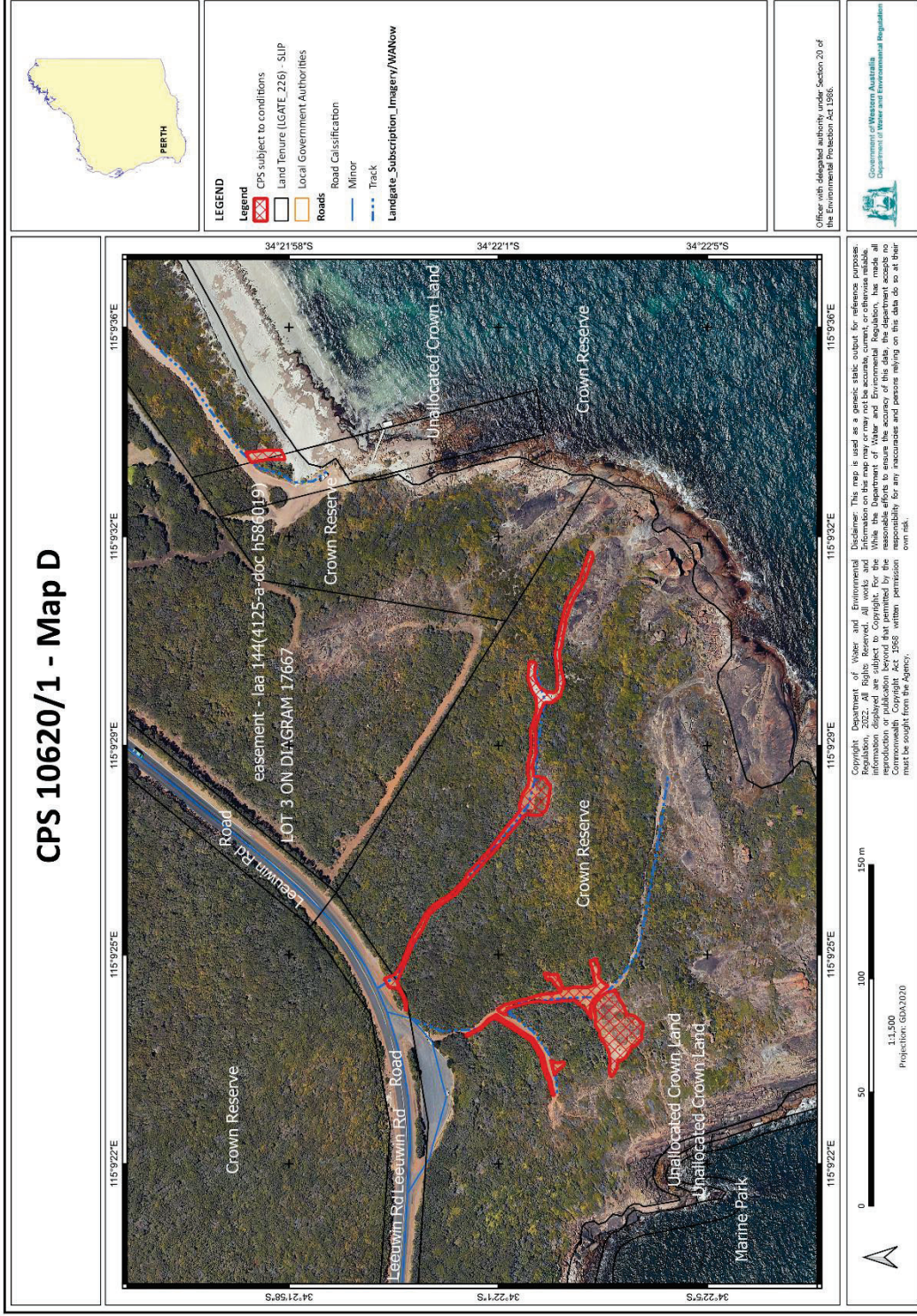
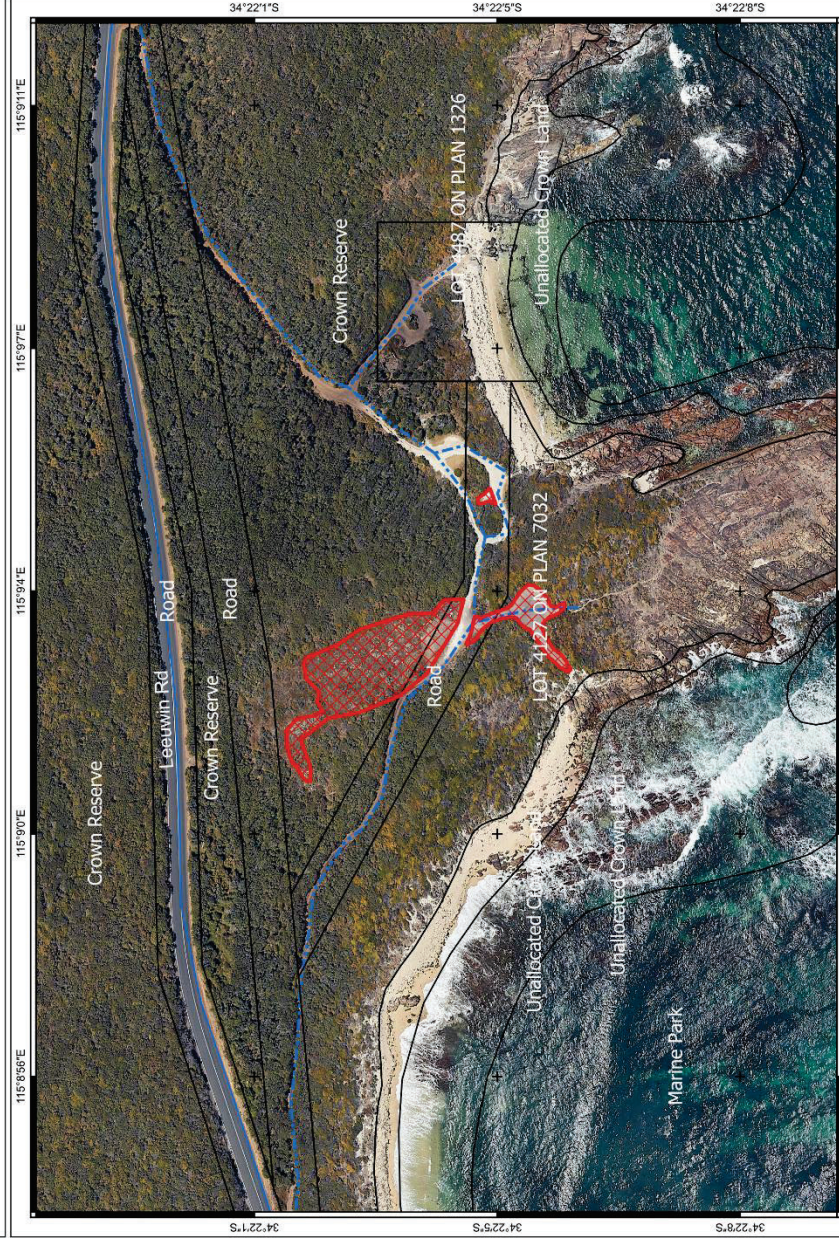


Figure 5: Map of the boundary of the area subject to rehabilitation condition 10.

CPS 10620/1 - Map E



LEGEND

- CPS subject to conditions
- Land tenure (LGATE 226) - SUP
- Local Government Authorities
- Roads**
- Road Classification
- Minor
- Track
- Landgate_Subscription_Imagery/WANow**



Officer with delegated authority under Section 20 of the Environmental Protection Act 1986.

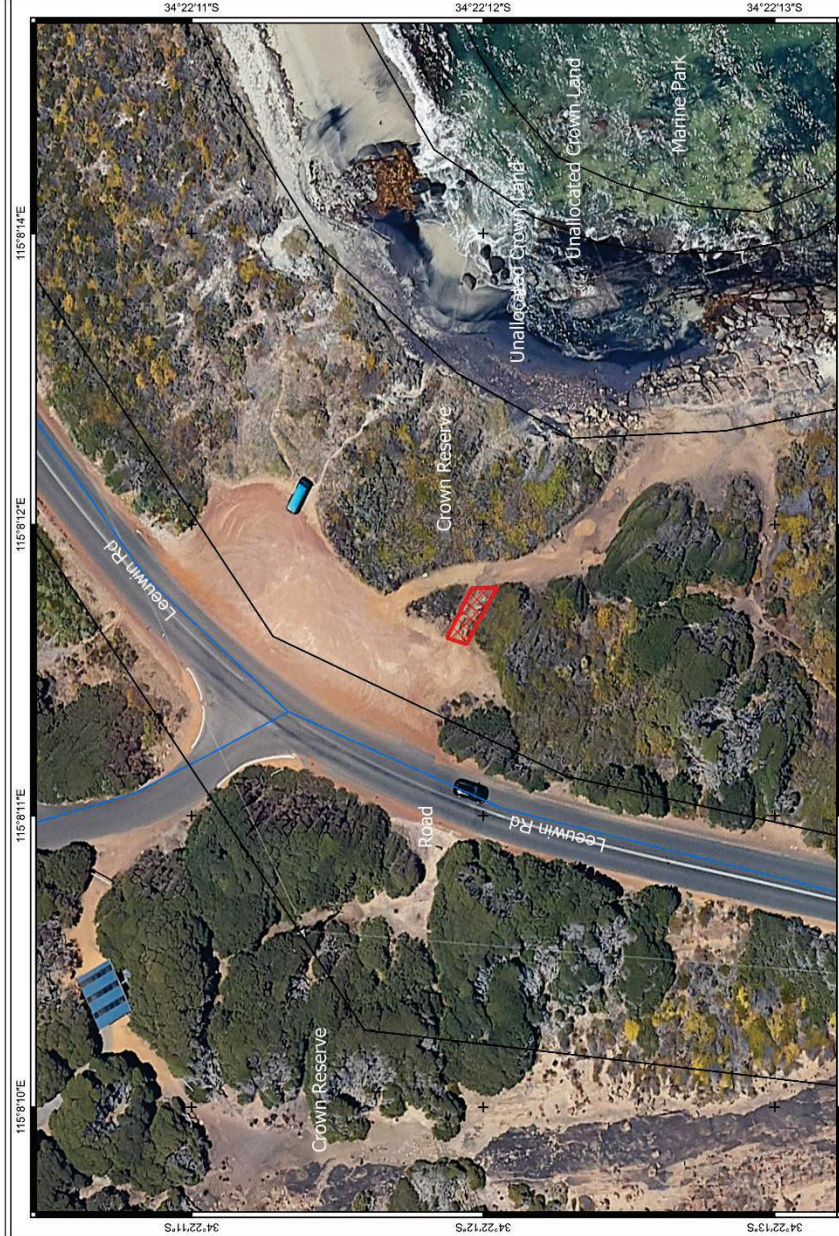
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Scale: 1:1,500
Projection: GDA2020

0 50 100 150 m

Figure 6: Map of the boundary of the area subject to rehabilitation condition 10.

CPS 10620/1 - Map F



LEGEND

- CPS subject to conditions
- Land tenure (LCATE, 226) - SUP
- Local Government Authorities
- Roads**
- Road Classification
- Minor
- Landgate_Subscription_Imagery/MANow**

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986.

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Projection: GDA2020

Figure 7: Map of the boundary of the area subject to rehabilitation condition 10.

Schedule 4

Table 3: Completion criteria for the *revegetation and rehabilitation* subject to condition 10.

Aspect	Completion Criteria	Monitoring
Survival rate to be achieved	The <i>revegetation</i> site needs to ensure a survival rate of at least 70 per cent of the seedlings initially planted to be established.	The stems of species in the <i>revegetation</i> area, within the monitoring quadrants to be counted annually by an <i>environmental specialist</i> in spring for a minimum of three years after the last year plants were established.
Vegetation structure	Vegetation in the <i>revegetation</i> site to be broadly representative of the mapped South West Forest vegetation complexes described by Mattiske and Havel (1998); Gracetown, characterised as, closed heath of <i>Olearia axillaris-Rhagodia baccata-Agonis flexuosa</i> on seaward slopes in hyperhumid to humid zones, and Wilyabrup, characterised as a mosaic of coastal heath and low woodland to woodland of <i>Corymbia calophylla-Eucalyptus marginata</i> subsp. <i>marginata-Banksia</i> spp. on westward slope in hyperhumid to humid zones.	The structure within the monitoring quadrants is to be assessed annually by an <i>environmental specialist</i> in spring for a minimum of three years after the last year plants were established.
Black cockatoo foraging habitat	Vegetation in the <i>revegetation</i> site contains at least 0.13 hectares that provides foraging species suitable for <i>black cockatoo</i> species with a minimum cover of 60 per cent.	Assessed within the monitoring quadrants annually by an <i>environmental specialist</i> in spring until completion criteria has been met and maintained for two years (i.e., three successive monitoring events).
Western ringtail possum habitat	Vegetation in the <i>revegetation</i> site contains at least 0.39 hectares that provides <i>suitable habitat</i> for <i>western ringtail possum</i> with a minimum cover of 60 per cent	Assessed within the monitoring quadrants annually by an <i>environmental specialist</i> in spring until completion criteria has been met and maintained for two years (i.e., three successive monitoring events).
Percentage of weeds present	Weed coverage within the <i>revegetation</i> site to have no more than 15 per cent weed coverage.	Monitor the <i>revegetation</i> site for weeds by quadrates annually in spring for a minimum of three years after the last year plants were established.
Percentage of bare ground	Bare ground coverage within the <i>revegetation</i> area is no more than 15 per cent.	The patch size of bare ground is to be assessed annually by an <i>environmental specialist</i> in spring for a minimum of three years after the last year plants were established.
Declared weeds	No Declared Weeds under the <i>Biosecurity and Agricultural Management Act 2007</i> present.	Monitor the <i>revegetation</i> site for Declared weeds by quadrats annually in spring for a minimum of three years after the last year plants were established.



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 10620/1
Permit type:	Purpose permit
Applicant name:	Shire of Augusta Margaret River
Application received:	17 May 2024
Application area:	0.51-hectares (revised) of native vegetation
Purpose of clearing:	Constructing a section of the multi-use Leeuwin trail
Method of clearing:	Mechanical
Property:	Lot 4127 on Plan 7032 (Crown Reserve 25141) Lot 4125 on Diagram 17667 (Crown Reserve 25141) Leeuwin Road reserve (PIN 11607702) Unnamed road reserve (PIN 11622189)
Location (LGA area/s):	Shire of Augusta Margaret River
Localities (suburb/s):	Leeuwin

1.2. Description of clearing activities

The applicant proposes to clear 0.51 hectares of native vegetation distributed across eight linear areas within multiple land parcels in the locality of Leeuwin, within the Shire of Augusta Margaret River (see Figure 1, Section 1.5). The clearing will allow for the reconstruction and widening of the multi-use (walk/cycling) Leeuwin trail. The upgrades will widen trail width to 2.5 metres and will construct the final section of the Leeuwin trail, providing a safe means of waling and cycling between Dead Finish and the Cape Leeuwin lighthouse.

During the assessment of the clearing permit application, the area proposed to be cleared was reduced from 0.62 hectares to 0.51 hectares of native vegetation to avoid and minimise clearing impacts, through a redesign of the proposed trail alignment (Shire of Augusta Margaret River, 2024d).

1.3. Decision on application

Decision:	Granted
Decision date:	14 February 2025
Decision area:	0.51-hectares of native vegetation as depicted in Section 1.5, below.

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 21 days and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix B), relevant datasets (see Appendix G.1.), the findings of flora and fauna surveys (Ecosystem Solutions, 2024a; Ottelia Ecology, 2021; Litoria Ecoservices, 2019a; Litoria Ecoservices, 2019b), expert advice received from the Department of Biodiversity, Conservation and Attractions (DBCA) (DBCA, 2024), the clearing principles set out in Schedule 5 of the EP Act (see Appendix C), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3).

The assessment identified that the proposed clearing will result in:

- the loss of 0.08 hectares of native vegetation that is significant foraging habitat for *Zanda latirostris* (Carnaby's cockatoo), *Zanda baudinii* (Baudin's cockatoo) and *Calyptrorhynchus banksia naso* (forest red-tailed black cockatoo) (collectively referred to as black cockatoos),
- the loss of 0.51 hectares of native vegetation that is significant habitat for *Pseudocheirus occidentalis* (western ringtail possum, Ngwayir),
- the loss of 0.08 hectares of native vegetation that represents the Coastal granitic shrublands and herblands of the exposed western and southern sides of the Leeuwin Block major landform (Previously known as Low shrublands on acidic grey-brown sands of the Gracetown soil-landscape system) Priority Ecological Community (referred to as the Coastal granitic shrublands and herblands PEC),
- the potential introduction and spread of weeds 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.

After consideration of the available information, as well as the applicant's avoidance, minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined that some of the potential impacts of the proposed clearing, including potential land degradation through wind erosion and the potential spread of weeds, can be minimised and managed to be unlikely to lead to an unacceptable risk to environmental values through appropriate conditions on the clearing permit. However, impacts to native vegetation that provides significant foraging habitat for black cockatoo species, vegetation representative of the Coastal granitic shrublands and herblands PEC, and significant western ringtail possum habitat, are considered a significant residual impact even after the application of minimisation and mitigation measures.

In accordance with the Government of Western Australia's *Environmental Offsets Policy* (2011) and *Environmental Offsets Guidelines* (2014), the Delegated Officer determined that an environmental offset consisting of the conservation in perpetuity of a total of 9.64 hectares of native vegetation within Crown Reserve 25141 that includes significant foraging habitat for black cockatoo species, significant habitat for western ringtail possum, and vegetation representative of the Coastal granitic shrublands and herblands PEC, in conjunction with the revegetation and conservation in perpetuity of a total of 0.39 hectares of native vegetation within Crown Reserve 25141, is required to address the significant residual impacts of the proposed clearing (see Section 4).

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

- avoid, minimise and reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds;
- undertake slow, progressive one-directional clearing to allow terrestrial fauna to move into adjacent habitats ahead of the clearing activity;
- commence trail construction no later than three months after undertaking clearing activities to reduce the potential for wind erosion;
- engage a fauna specialist to inspect the proposed clearing area prior to, and for the duration of clearing activities for the presence of western ringtail possums and cease clearing activities in any area where individuals are identified until those individuals have moved on or been relocated to suitable habitat; and
- implement an environmental offset, as outlined above.

1.5. Site maps

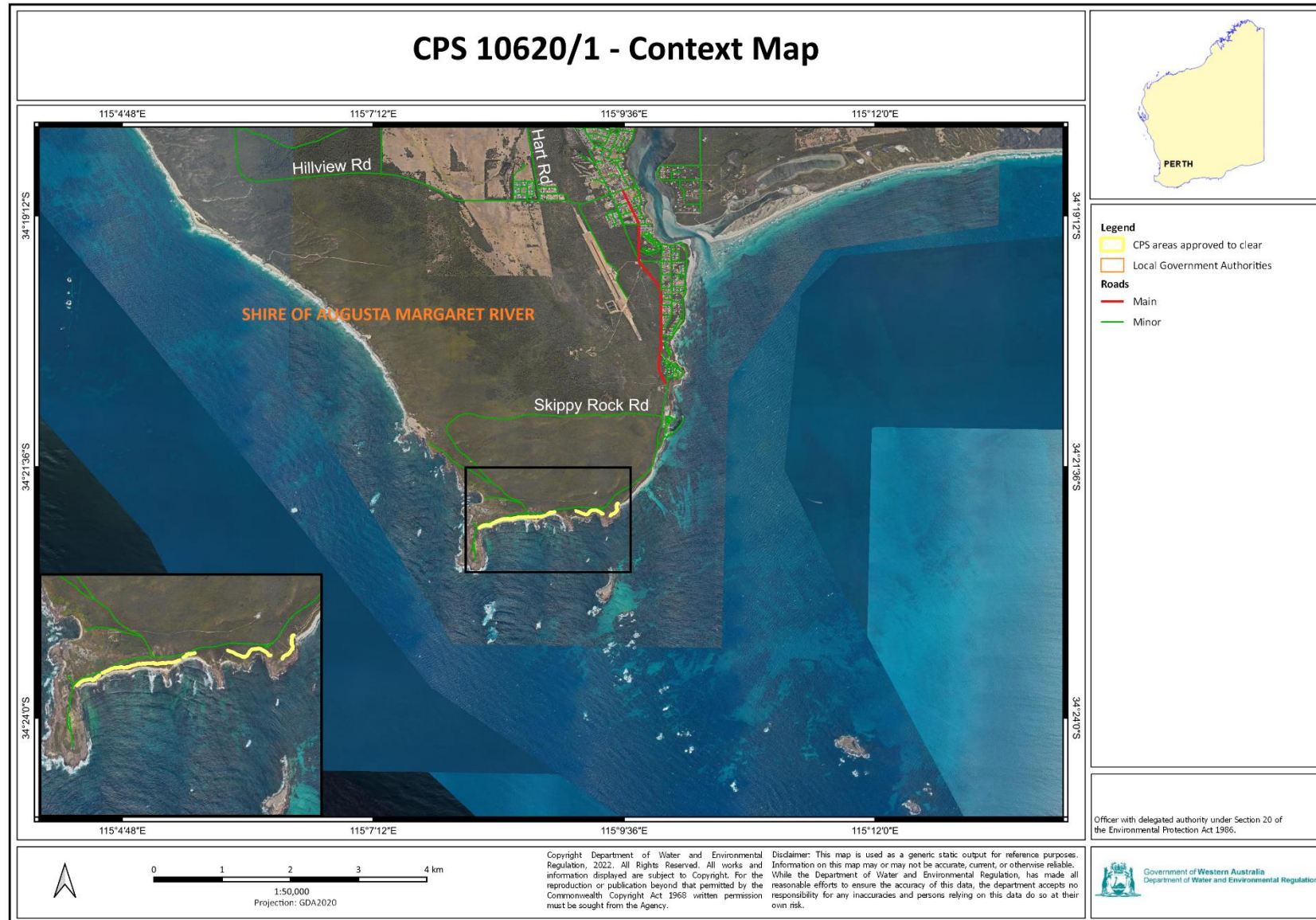
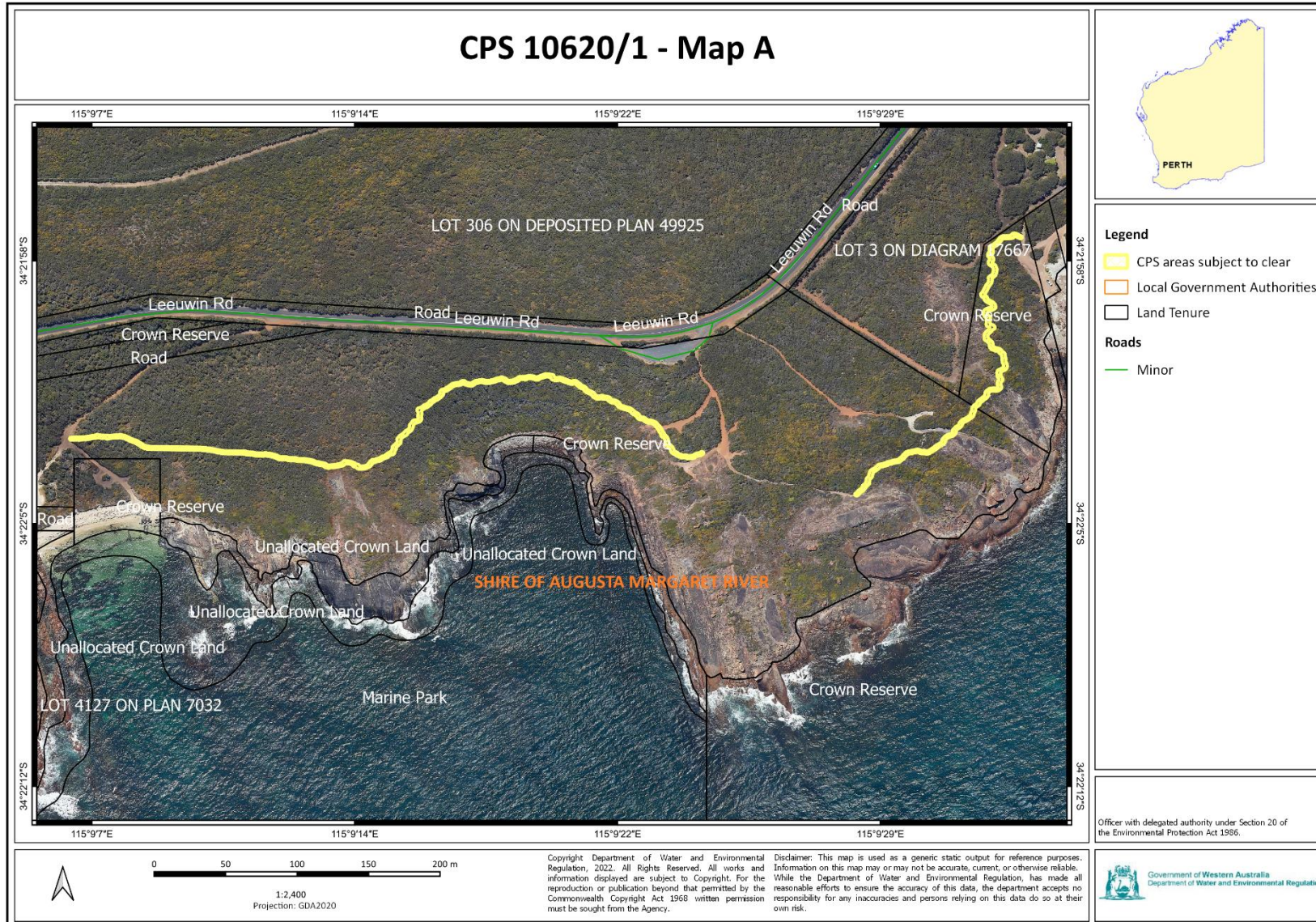


Figure 1: Context map of the application area. The area crosshatched yellow indicates the area authorised to be cleared under the granted clearing permit.



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Figure 2: Map A of the application area. The area crosshatched yellow indicates the area authorised to be cleared under the granted clearing permit.

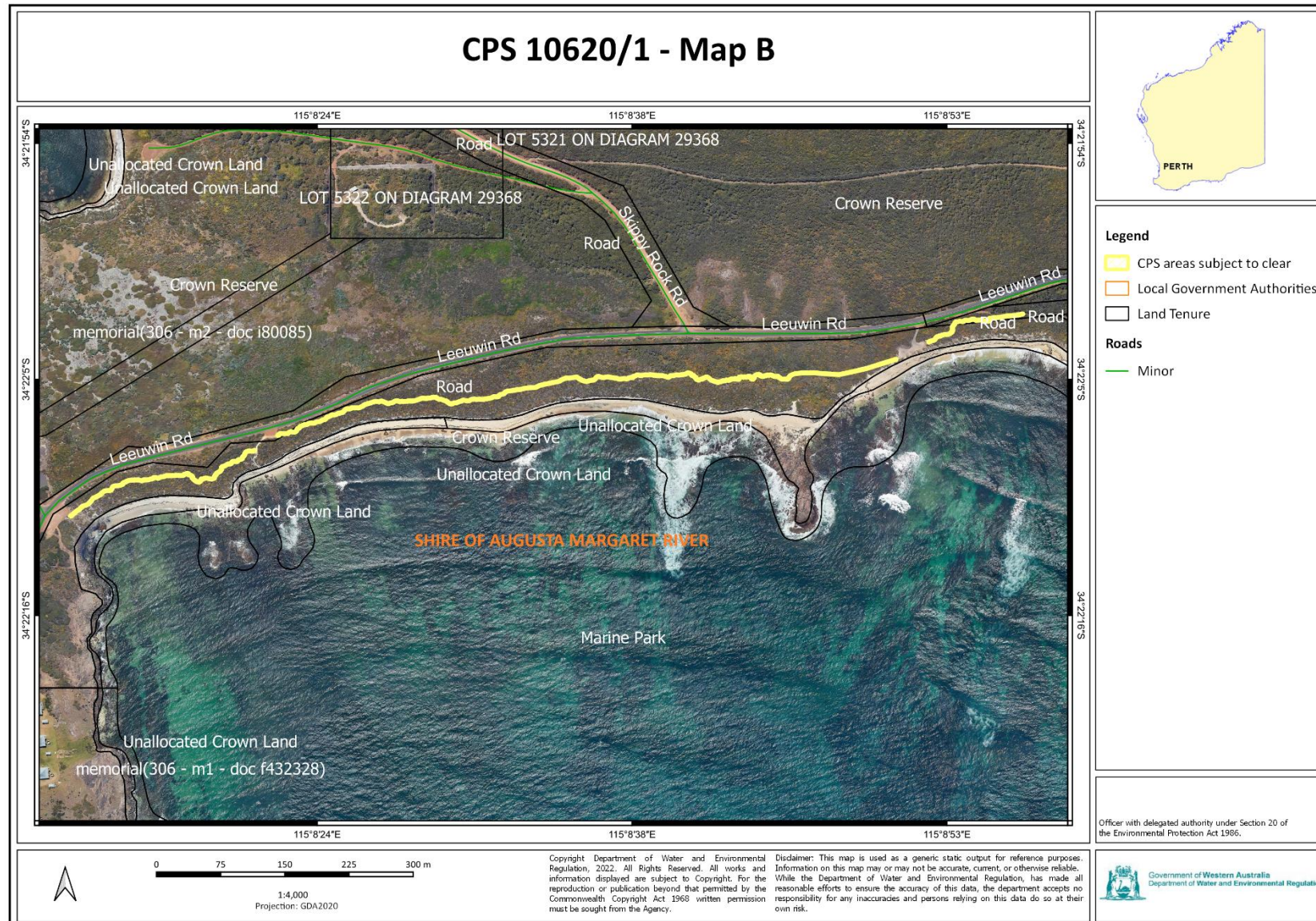


Figure 3: Map B of the application area. The area crosshatched yellow indicates the area authorised to be cleared under the granted clearing permit.

2 Legislative context

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

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

- the precautionary principle
- the principle of intergenerational equity
- the polluter pays principle
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)

Relevant policies considered during the assessment include:

- *Environmental Offsets Policy* (2011)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- *Environmental Offsets Guidelines* (August 2014)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment* (EPA, 2020)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

The Shire of Augusta Margaret River (the Shire) has advised that the following avoidance and mitigation measures have been or will be undertaken (Shire of Augusta Margaret River, 2024a and 2024b).

Avoidance

The Shire commissioned a detailed trails options analysis undertaken by Common Ground to ensure that an alignment was identified that best protects both environmental and cultural values (Shire of Augusta Margaret River, 2024a). This involved assessing each discrete section of each trail option against evaluation criteria, which included flora and fauna values, cultural features, vegetation clearing, hygiene, land tenure, cut/fill requirements, gradient, user experience, user risk, and constructability. Data collected in the flora and fauna surveys and the Shire's Taalinup Boya Healthy Country Plan were used to inform the analysis.

A total eight total alignments were identified and investigated in the options analysis (see Figure 4), with the proposed trail alignment being recommended as having the smallest impact on both environmental and cultural value. Due to the trail alignment analysis, the following avoidances were possible with final alignment of the proposed clearing area:

- Utilisation of existing trails and clearing areas by aligning around significant features such as dunes and granite outcrops to avoid unnecessary disturbances to habitat.
- A 500-metre section originally identified for trail construction at the eastern extent was subsequently realigned to the existing vehicle track, resulting in the reduction of approximately 0.11 hectares of clearing.
- The trail width has been designed to range between 2.0 meters to 2.5 meters to minimise impacts to vegetation and habitat.
- A boardwalk with handrail will be constructed on one section of the trail on the coastal granites to restrict user movement in fragile areas protecting the granite ecosystems in the long term.
- The trail designed incorporates surface water flows and allows for natural cross slope drainage, which will maintain natural flows and prevent erosion.



Figure 4: Map of the potential Leeuwin train clearing locations considered during trails options analysis, with sensitive areas mapped.

As a result of a request for further information from the Department and expert advice received from DBCA (DBCA, 2024), the Shire further reduced the extent of clearing during the assessment of the clearing permit application by realigning the trail alignment (Shire of Augusta Margaret River, 2024d). The realignment resulted in the following:

- reduction of the total clearing footprint by a total of 0.11 hectares, from 0.62 hectares of native vegetation to 0.51 hectares (Figure 5),
- avoidance of a potentially unique form of *Xanthorrhoea* species associated with shallow exposed soils over granite within the Leeuwin Block landform that had been identified as occurring within two locations during DBCA's site visit (DBCA, 2024),
- the reduction in total clearing of the Coastal granitic shrublands and herblands PEC by 0.04 hectares, from 0.12 hectares to 0.08 hectares, and
- the avoidance of all *Banksia sessilis* var *cordata* (Priority 4) individuals.

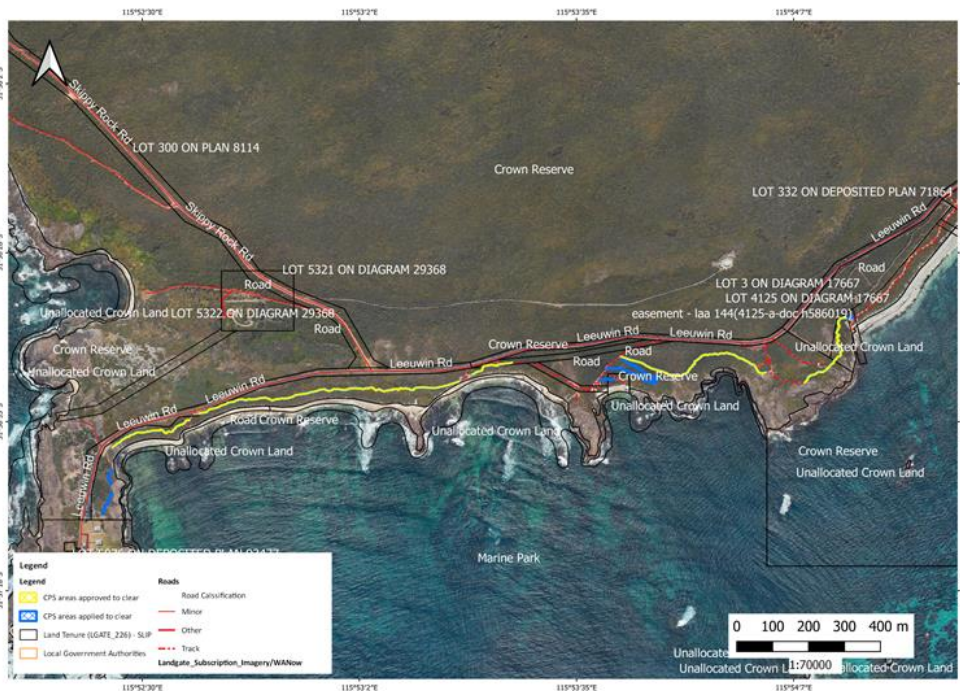


Figure 5. Map of the original application area (crosshatched blue) and the revised application area (crosshatched yellow).

Mitigation

The Shire advised that an environmental management plan will be developed prior to the proposed trail works, which will identify environmental risks during trail construction, and document the control measures that will be implemented to manage these risks (Shire of Augusta Margaret River, 2024a and 2024b), including the following:

- Site demarcation through temporary on ground demarcation with flagging/bunting of the approved clearing area and work areas, including the trail footprint and approved parking and laydown areas.
- Weed hygiene and management: all machines, vehicles, and personnel are to be free of soil and weed material prior to entering the site.
- Dieback management: All imported materials are to be derived from crushed granite, which is low risk for harbouring *Phytophthora* dieback.
- Topsoil and vegetative material can be collected and used for direct on-site rehabilitation or otherwise removed from the site.
- Fauna management: a fauna specialist will be present to inspect the site prior to and during clearing to minimise risks to fauna.
- Surface water management: works will not modify or impede natural surface water flows during or after construction.
- Dust emissions generated during construction will be managed so that there are no impacts on surrounding vegetation, communities or fauna habitats.

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.

However, after consideration of avoidance and mitigation measures, it was determined that offsets to counterbalance the significant residual impacts to significant foraging habitat for black cockatoo species, significant habitat for western ringtail possum, and vegetation representative of the Coastal granitic shrublands and herblands PEC were necessary. In accordance with the Government of Western Australia's *Environmental Offsets Policy* (2011) and *Environmental Offsets Guidelines* (2014), these significant residual impacts have been addressed through the conditioning of environmental offset requirements on the permit. The nature and suitability of the offsets provided are summarised in Section 4.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix B), and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, and land and water resource values.

The assessment against the clearing principles (see Appendix C) identified that the impacts of the proposed clearing to biological values (fauna, flora and vegetation), and land and water resources required further consideration. 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 and ecological communities) - Clearing Principles (a) and (b)

Assessment

According to available databases, 56 conservation significant fauna species have been recorded within the local area comprising of one Priority 3, four Priority 4, nine Endangered, 12 Vulnerable, three critically endangered, 23 migratory, one specially protected species (OS), and three conservation dependent fauna taxa. Based on the location of the proposed clearing and the site characteristics (Appendix B), the application area may provide habitat for the following conservation significant species:

- *Austroassiminea lethae* (Cape Leeuwin freshwater snail)
- *Calyptorhynchus banksii naso* (forest red-tailed black cockatoo)
- *Dasyurus geoffroyi* (chuditch, western quoll)
- *Falco peregrinus* (Peregrine falcon)
- *Isodon fusciventer* (Quenda, southwestern brown bandicoot)
- *Notamacropus irma* (Western brush wallaby)
- *Pseudocheirus occidentalis* (Western ringtail possum, ngwayir)
- *Tyto novaehollandiae novaehollandiae* (masked owl (southwest))
- *Zanda baudinii* (Baudin's cockatoo)
- *Zanda latirostris* (Carnaby's cockatoo)

Black cockatoos (Baudin's cockatoo, Carnaby's cockatoo and forest red-tailed black cockatoo).

The habitat for black cockatoos can be categorized into three groups: foraging, breeding, and roosting. Black cockatoos typically forage within a 12-kilometre radius of their active breeding site (Commonwealth of Australia, 2022). Following breeding, they will flock in search of food sources within six kilometres of their night roost (Commonwealth of Australia, 2022). However, they can travel up to 20 kilometres or more in search of food (Commonwealth of Australia, 2022). To maintain their population, it is crucial to have an abundance of food resources within the range of breeding and roosting sites. Consequently, foraging resources are evaluated based on known breeding and night roosting sites, primarily within 12 kilometres of a breeding or roosting site (Commonwealth of Australia, 2022). The application area is located within the modelled potential breeding range of both Carnaby's cockatoo and Baudin's cockatoo, and within the core distributed range of the forest red-tailed black-cockatoo. The range of black cockatoo species has contracted west and south from its historical range.

Breeding habitat

Black cockatoo species are known to nest in hollows of live or dead trees, including *Corymbia calophylla* (Marri), *Eucalyptus marginata* (Jarrah), *Eucalyptus diversicolor* (Karri), *Eucalyptus wandoo* (Wandoo), *Eucalyptus gomphocephala* (Tuart), *Eucalyptus rudis* (Flooded gum), and other *Eucalyptus* spp. (Commonwealth of Australia, 2022). 'Breeding habitat' for black cockatoos includes trees of these species that either have a suitable nest hollow or are of a suitable diameter at breast height (DBH) to develop a nest hollow, where suitable DBH for nest hollows is ≥ 50 centimetres for most tree species (Commonwealth of Australia, 2022).

According to spatial data, there are 51 records of black cockatoos within 15 kilometres of the application area, with the closest recorded Carnaby's cockatoo being approximately 0.8 kilometres and Baudin's cockatoo being approximately 2.0 kilometres from the proposed application area, respectively. There are no known nesting sites within 12 kilometres of the application area and no known roost sites within six kilometres, with the closest known roost being approximately eight kilometres from the application area.

During the Litoria Ecoservices (2019a) survey, one Baudin's black cockatoo was observed within the survey area. The Ecosystem Solutions (2024a) survey did not observe any direct or secondary signs of black cockatoos within the site. Ecosystem Solutions (2024a) did not identify any trees with a DBH over 30 centimetres within the site and therefore, the proposed clearing area is not considered to provide suitable breeding habitat for black cockatoo species.

Foraging habitat

Baudin's, Carnaby's and forest red-tailed black cockatoos forage on a variety of seeds, nuts, flowers, and 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 & Stock, 2008). The Ecosystem Solutions (2024a) survey identified that the (Tall) Closed Scrub and Low Closed Heath vegetation types contains suitable foraging habitat for black cockatoo species in the form of marri, *Banksia sessilis* var. *cordata*, *Xanthorrhoea preissii*, and *Hakea oleifolia*. Based on the survey mapping, approximately 0.05 hectares of the Tall (Closed) Scrub vegetation type and 0.03 hectares of the Low Closed Heath vegetation type occurs within the eastern extent of the application area (see Appendix F, Figure 12).

Whilst it is acknowledged that the area of foraging habitat proposed to be cleared is relatively small compared to the total remaining vegetation in the region, critical habitat for Carnaby's cockatoo includes any habitat that provides for feeding and critical habitat for Baudin's and forest red-tailed black cockatoos includes all woodlands and remnants containing marri in the south-west region. Noting that Baudin's cockatoos were observed utilising the area during surveys and the cumulative loss of foraging habitat across the species' range, the loss of 0.08 hectares of foraging habitat is considered a significant residual impact.

Roosting habitat

Following breeding, black cockatoos will assemble into a flock and move through the landscape searching for suitable food resources, usually foraging within six kilometres of a night roost (Commonwealth of Australia 2012). Black cockatoo species will utilise a wide range of native and non-native trees situated within a variety of land-use types to roost. Black cockatoos will usually roost in tall (average of >25 metres) trees species that have a relatively thick trunk (DBH of 1 metre) and medium foliage density (average of 50%) (Le Roux, 2017). According to advice received from DBCA, there are four roosts known within 12 kilometres and an additional roost just under 13 kilometres from the application area. Within the application area itself, according to the Litoria Ecoservices (2019a) survey, the application

area does not contain any trees with a DBH over 30 centimetres and therefore, does not provide habitat suitable for roosting or nesting.

Chuditch

The chuditch, or Western quoll, (*Dasyurus geoffroi*), is the largest carnivorous marsupial occurring in Western Australia. It is largely restricted to southwest Western Australia and is listed as vulnerable under the EPBC Act. The chuditch primarily inhabits jarrah forests and woodlands, mallee shrublands, and heathlands. Their home ranges extend up to 15 square kilometres for males and 3 to 4 square kilometres for females. They are dependent on an adequate number of suitable dens and refuge sites, which are typically found in hollow logs, tree limbs, rocky outcrops and burrows. They also require a sufficient prey biomass (large invertebrates, reptiles and small mammals) to survive (DCCEEW, 2017b). Available datasets show two records of the chuditch occur within the local area with the closest record mapped 3.8 kilometres from the application area. The application area provides some minor areas of habitat that could be suitable for the Chuditch within the Dense (Closed) Heath and Low (Closed) Heath vegetation types. However, given the linear nature and extent of the clearing area and the most recent record in the local area being over 20 years old, it is unlikely the proposed clearing will significantly impact the species.

Cape Leeuwin freshwater snail

The Cape Leeuwin Freshwater Snail (CLS) (*Austroassiminea lethra*) is restricted to six (known) distinctly fragmented populations from Cape Leeuwin in the south to Cape Naturaliste in the north, with its known habitats significantly reduced from fossil evidence. The CLS inhabits splash zones alongside small freshwater streams and springs draining from limestone near the coast. The CLS is a short-range endemic species as it is confined to small areas of discontinuous habitat due to the species' limited ability for dispersal (Onton, 2009). During Litoria Ecoservices' (2019b) flora and vegetation assessment, one new occurrence of the CLS was discovered to the south of the clearing area, making a total of seven (known) populations of the CLS (See Appendix F, Figure 14).

The Shire designed the final trail alignment to avoid all CLS habitats identified in the 2019 survey, with the trail being approximately 70 meters from the known CLS occurrence. However, the Litoria Ecoservices (2019b) survey only investigated the likelihood of Cape Leeuwin snail populations being found in association with the Augusta Microbial threatened ecological community (tufa communities). The remainder of the study area was not searched for this vulnerable species, nor its habitat.

Ecosystem Solutions' (2024b) updated survey found no evidence of freshwater springs or dampland that makes up the known habitat for the CLS within the clearing footprint. The likelihood of snails being present within the application area is highly unlikely according to Ecosystem Solutions' survey.

Considering the vegetation types and lack of suitable dampland vegetation within the application area according to survey information, the known location of CLS habitats to the south of the clearing footprint, and the species' tendency to have a short-range distribution, it is highly unlikely that this species occurs within the clearing footprint.

Western ringtail possum

The western ringtail possum (WRP) (*Pseudocheirus occidentalis*) is a small arboreal nocturnal marsupial listed as critically endangered under the EPBC Act. According to the western ringtail possum recovery plan (DCCEEW, 2017a), habitat critical to the survival for western ringtail possum is not well understood and is therefore based on observations of where western ringtail possums are most commonly recorded. There are three key management zones: the Swan Coastal Plain, Southern Forest and South Coast zones, which are known to currently or previously support large numbers of the species. The common themes of these management zones include habitats with high nutrient foliage availability for food, suitable structure for protection and nesting, as well as canopy continuity to avoid and escape predation and other threats. Other important characteristics include vegetation communities with long unburnt mature remnants of peppermint woodlands with high canopy continuity and high foliage nutrients, jarrah /marri forests and woodlands with limited anthropogenic disturbance, coastal heath, jarrah/marri woodland and forest, peppermint (*Agonis flexuosa*) woodlands, myrtaceous heaths and shrublands, Eucalyptus megacarpa dominated riparian zones and karri forest. There are a number of threatening processes impacting the western ringtail possum including habitat loss and fragmentation, introduced predators, climate change, timber harvesting, fire, hollow competition, habitat tree declines and disease.

Although the application area is located outside of the mapped distribution range of the WRP, it can still be classified as supporting habitat according to the significant impact guidelines for the WRP (Department of the Environment, Water, Heritage, and the Arts, 2009). Within the local area, there are 122 mapped records of the WRP, with the

nearest recorded sighting approximately 600 meters from the application site. Additionally, according to Litoria Ecoservices (2019a), WRP scats and several dreys were identified along the survey area (See Appendix F, Figure 14), with a total of 14 WRPs recorded within the eastern half of the area. However, no dreys were found within the proposed clearing area.

The Low Closed Forest of *Agonis flexuosa* and (Tall) Closed Scrub provide particularly suitable habitats for the WRP due to their canopy connectivity, dense vegetation for shelter, and the variety of food sources available. However, all vegetation types within the application area are considered to provide suitable habitat for WRP. Advice from DBCA (2024) notes WRPs are known to build dreys in a range of shrubs and trees and are not limited to *Agonis flexuosa* as their habitat. Additionally, the 2019 survey noted the observation of several juveniles in the area, along with other signs of usage, suggesting that the application area and surrounding vegetation likely represents breeding habitat for WRP. Given the above, the proposed clearing is likely to impact significant WRP habitat and the loss of 0.51 hectares represents a significant residual impact.

Western Brush wallaby

The western brush wallaby (*Notamacropus Irma*) was common in WA in the past, but its population reduced significantly due to agricultural development. Their preferred habitat is associated with open, seasonally wet flats with low grasses and open scrubby thickets (DEC, 2012c). There are two records of this species in the local area, with the closest record is mapped approximately 5.5 kilometres from the application area. However, given the limited number of records, the distance of closest record and the vegetation types within the application area not representing preferred habitat, this site is unlikely to be significant habitat for this species.

Other Fauna

The quenda, masked owl, and peregrine falcon may utilise the application area as transient habitat. However, the proposed clearing is considered unlikely to have a significant effect on habitat for these species, given:

- the extent and linear nature of the application area;
- the presence of abundant areas of adjacent vegetation providing suitable habitat;
- the vegetation types within the application area are not considered to comprise significant habitat values for these species; and
- the proposed clearing will not result in a loss of habitat connectivity.

Coastal granitic shrublands and herblands Priority Ecological Community (PEC)

The Coastal granitic shrublands and herblands of the exposed western and southern sides of the Leeuwin Block major landform (Previously known as Low shrublands on acidic grey-brown sands of the Gracetown soil-landscape system) priority ecological community (Coastal granitic shrublands and herblands PEC), is known from 36 occurrences between Cape Naturalist and Cape Leeuwin, with an area of occupancy of approximately 221.4 hectares (DBCA, 2023; DBCA, 2024). The Coastal granitic shrublands and herblands PEC is associated with outcropping granite (exposed or shallow sub-surface) and is characterised by a series of flora within the landform that only occur on outcropping granite, including the shrubs *Dodonaea ceratocarpa*, *Hakea trifurcata*, *Darwinia citriodora*, *Dillwynia laxiflora*, *Cryptandra arbutiflora*, *Kunzea ciliata*, *Verticordia plumosa* var. *plumosa* and *Daviesia horrida*, and the herbs *Stylidium megacarpum*, *Neurachne alopecuroidea*, *Stypantra glauca*, *Cheilanthes austrotenuifolia*, and a large robust form of *Lepidosperma squamatum* (*sensu lato*) (DBCA, 2023).

According to spatial data, there are 12 occurrences of coastal granitic shrublands within 10-kilometres of the application area, with the closest known occurrence being within the clearing footprint and mapped as Very Good to Excellent (Keighery, 1994) condition during surveys of the application area (Litoria Ecoservices, 2019b; Ecosystem Solutions, 2024a). The original clearing footprint overlapped approximately 0.12 hectares of mapped PEC split, being within two locations, between Dead Finish and Sarge Bay Beach in the east and a western location due north of the lighthouse.

Advice from DBCA stated that the Coastal granitic shrublands and herblands PEC is characterised by highly exposed low wind-pruned vegetation, which is particularly vulnerable to direct impacts from trampling. Expert advice from DBCA indicated that, due to the nature of the purpose of clearing, the section closest to the lighthouse was particularly vulnerable to trampling, given the proposed trail alignment tracked directly through the centre of the occurrence of the PEC (DBCA 2024). As a result, the Shire modified the design plans for the proposed trail by redesigning the trail to avoid the occurrence of the PEC located in the western part of the map near the lighthouse. As a result, approximately 0.04 hectares of Coastal granitic shrublands and herblands PEC was removed from the total clearing.

As a result of this avoidance and minimisation, the proposed clearing will impact 0.08 hectares of vegetation representative of the Coastal granitic shrublands and herblands PEC between Dead Finish and Sarge Bay Beach. Advice from DBCA indicates that the risk of significant direct impacts to the PEC in this area is relatively low as the trail alignment is generally along existing tracks or on the interface of the granite at the edge of the occurrence of the PEC (DBCA, 2024). However, given the restricted distribution and small area of occupancy of the PEC, and that the high quality of the vegetation (predominantly Very Good to Excellent (Keighery, 1994) condition), the loss of 0.08 hectares of vegetation representative of the Coastal granitic shrublands and herblands PEC is considered a significant residual impact.

Conclusion

Based on the above assessment, the application area is not likely to comprise significant habitat for quenda, masked owl, chuditch, western brush wallaby or peregrine falcon, nor be significant for their continued survival of conservation. However, individuals may be present at the time of clearing whilst they traverse the landscape. Slow, directional clearing will mitigate the risk to individuals. In addition, the clearing activities have the potential to impact the quality of the surrounding fauna habitat by facilitating the spread of weeds and dieback, which can be managed through hygiene practices conditioned on the permit.

However, for the reasons set out above, the clearing is considered to constitute a significant residual impact due to the loss of black cockatoo foraging habitat, western ringtail possum habitat, and vegetation representative of the Coastal granitic shrublands and herblands PEC. In accordance with the Government of Western Australia's *Environmental Offsets Policy* (2011) and *Environmental Offsets Guidelines* (2014), this significant residual impact is addressed through the conditioning of environmental offset requirements, as outlined under Section 4.

Conditions

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

- take hygiene steps to minimise the risk of the introduction and spread of weeds,
- undertake slow, progressive one, directional clearing to allow terrestrial fauna to move into adjacent habitats ahead of the clearing activity,
- engage a fauna specialist to inspect the proposed clearing area prior to, and for the duration of clearing activities for the presence of western ringtail possums and cease clearing activities in any area where individuals are identified until those individuals have moved on or been relocated to suitable habitat,
- implement an offset consisting of the revegetation and conservation in perpetuity of a total of 0.39 hectares of native vegetation within Crown Reserve 25141, and
- implement an offset involving the conservation in perpetuity of a total of 9.64 hectares of native vegetation within Crown Reserve 25141 through a change in vesting order from "Recreation" to "Conservation and Recreation".

3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on DWER's website on 24 July 2024, inviting submissions from the public within a for 21-day period. No submissions were received.

It is acknowledged that the land tenure in which the application area is situated is located adjacent to the Leeuwin-Naturaliste National Park, although the clearing area itself is separated from the National Park by remnant vegetation within Crown Reserve 25141 and Leeuwin Road reserve. The Leeuwin-Naturaliste National Park is subject to the *Leeuwin-Naturaliste capes area parks and reserves management plan* (2015). The Delegated Officer considers that the proposed clearing is consistent with the objectives of the *Leeuwin-Naturaliste capes area parks and reserves management plan* (2015) to maintain and enhance the Leeuwin-Naturaliste National Park trail networks, in particular the Cape to Cape Track, to provide a range of bushwalking experiences while not adversely impacting on key values.

The closest Aboriginal Site of Significance to the application area is mapped approximately 23 metres southeast of 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.

The Shire has been in contact with the traditional custodians of the land, the Wadandi people, and has created the Taalinup Healthy Country Plan and undertaken a heritage assessment of the area that encompasses the clearing footprint (See Figure 6). In addition, the Shire sought advice on the alignment of the clearing footprint to avoid culturally significant areas. Furthermore, the Taalinup Healthy Country Plan identifies and outlines management

actions for six central management objectives within the broader area (see Figure 6) (Shire of Augusta Margaret River, 2024f):

1. Cultural Rangers & Cultural Monitoring
2. Heritage & Cultural Natural Resource Management Projects
3. Dual Naming, Signage & Artworks
4. Cultural Biodiversity Management
5. Ongoing Cultural Mapping & Research
6. Active Joint Management



Figure 6: Footprint of the coastal study area that the Taalinup Healthy Country Plan is to be implemented within.

4 Suitability of offsets

Avoidance and Mitigation

The Delegated Officer is satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values (Section 3.1).

Assessment of Impacts

Through the assessment of the impacts of the proposed clearing outlined in Section 3.2 above, the Delegated Officer has determined that the following significant residual impacts remain after the application of the avoidance and mitigation measures:

- The loss of 0.51 hectares of native vegetation that provides significant western ringtail possum habitat.
- The loss of 0.08 hectares of native vegetation that is representative of the Coastal granitic shrublands and herblands PEC.
- The loss of 0.08 hectares of native vegetation that provides significant black cockatoo foraging habitat.

Offset

The offset proposed by the Shire consists of two actions:

1. The revegetation and rehabilitation of 0.39 hectares of informal tracks in Degraded to Completely Degraded (Keighery, 1994) condition within Crown Reserve 25141 that will be closed following construction of the Leeuwin Trail (see Figures 9-11); and

2. The change of vesting of Crown Reserve 25141 from “Recreation” to “Conservation and Recreation” (see Figure 8).

Biological survey information submitted in support of the application (Ecosystem Solutions, 2024a; 2024b; Litoria Ecoservices, 2019b) covers the majority of Crown Reserve 25141. The surveys indicate that the proposed offset area contains native vegetation in predominantly Very Good to Excellent (Keighery, 1994) condition (see Appendix F, Figures 15-18). The vegetation has also been confirmed to provide significant habitat for western ringtail possum and black cockatoo species, and to contain vegetation representative of the Coastal granitic shrublands and herblands PEC.

The Delegated Officer understands that the Shire intends to allocate the area of Crown Reserve 25141 required to counterbalance the significant residual impacts of the proposed clearing under CPS 10620/1 by 100% as an offset for this proposal, and bank the remaining area of the reserve as a potential offset for future proposals. The total area of Crown Reserve 25141 is approximately 39.1 hectares.

In assessing whether the proposed offset is adequately proportionate to the significance of the environmental values being impacted, calculations using the WA Environmental Offset Metric Calculator were undertaken. The justifications for the values used in the offset calculations are provided under Appendix E.

These calculations determined that the following offset is required to counterbalance the significant residual impacts of the proposed clearing:

1. The revegetation and conservation in perpetuity of at least 0.39 hectares of existing informal tracts within Crown Reserve 25141 from Degraded to Completely Degraded (Keighery, 1994) condition to a Good to Very Good (Keighery, 1994) condition, including:
 - The revegetation of at least 0.39 hectares of native vegetation that provides habitat for western ringtail possum; and
 - The revegetation of at least 0.13 hectares of native vegetation provides black cockatoo foraging habitat.
2. The conservation in perpetuity of at least 9.64 hectares of remnant native vegetation within Crown Reserve 25141 in Very Good to Excellent (Keighery, 1994) condition through a change in vesting to “Conservation and Recreation”, comprising at least:
 - 9.64 hectares of significant habitat for western ringtail possums;
 - 0.18 hectares of significant foraging habitat for black cockatoo species; and
 - 1.56 hectares of native vegetation that is representative of the Coastal granitic shrublands and herblands PEC.

The Delegated Officer considers that the proposed offset adequately counterbalances the significant residual impacts resulting from the proposed clearing and is consistent with the *WA Environmental Offsets Policy* (2011) and *WA Environmental Offset Guidelines* (2014).

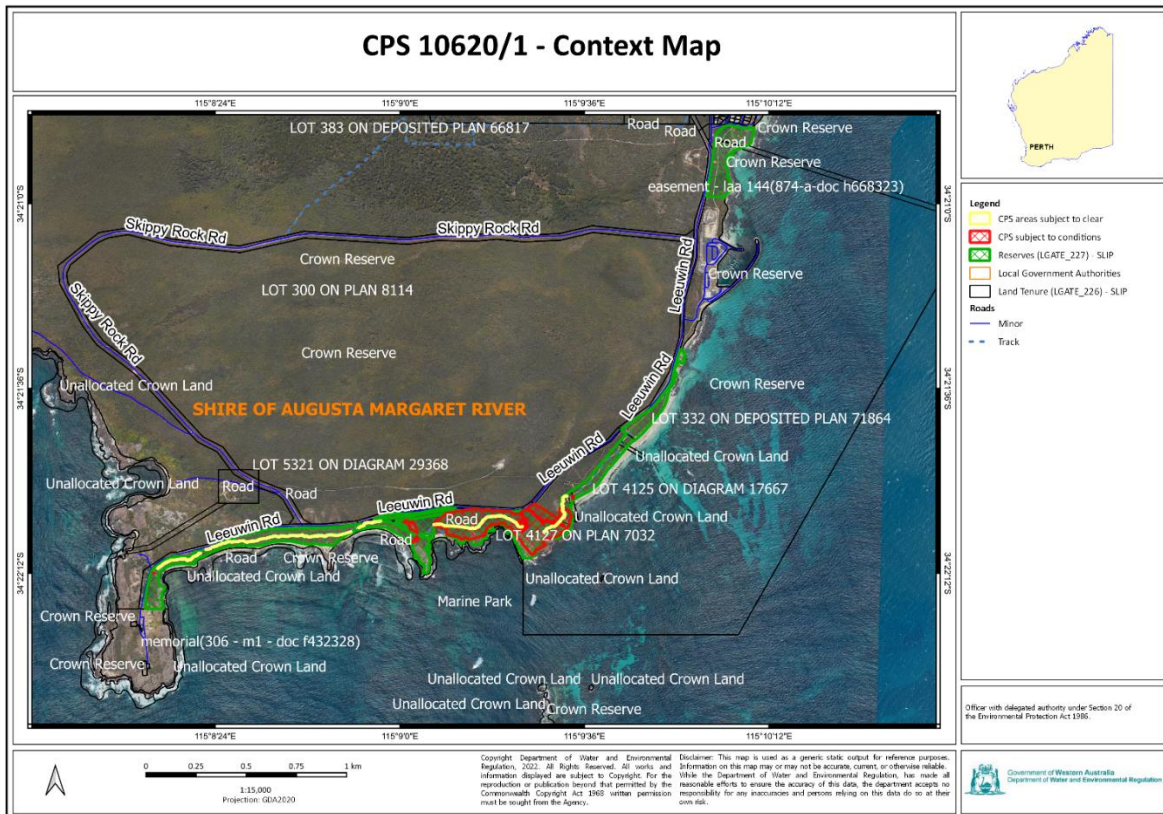


Figure 7: Context map of the offset site. The areas cross-hatched yellow indicate the areas authorised to be cleared under the granted clearing permit, the areas cross-hatched red indicate the areas subject to offset conditions, and the areas cross-hatched green indicate the boundaries of Crown Reserve 25141.

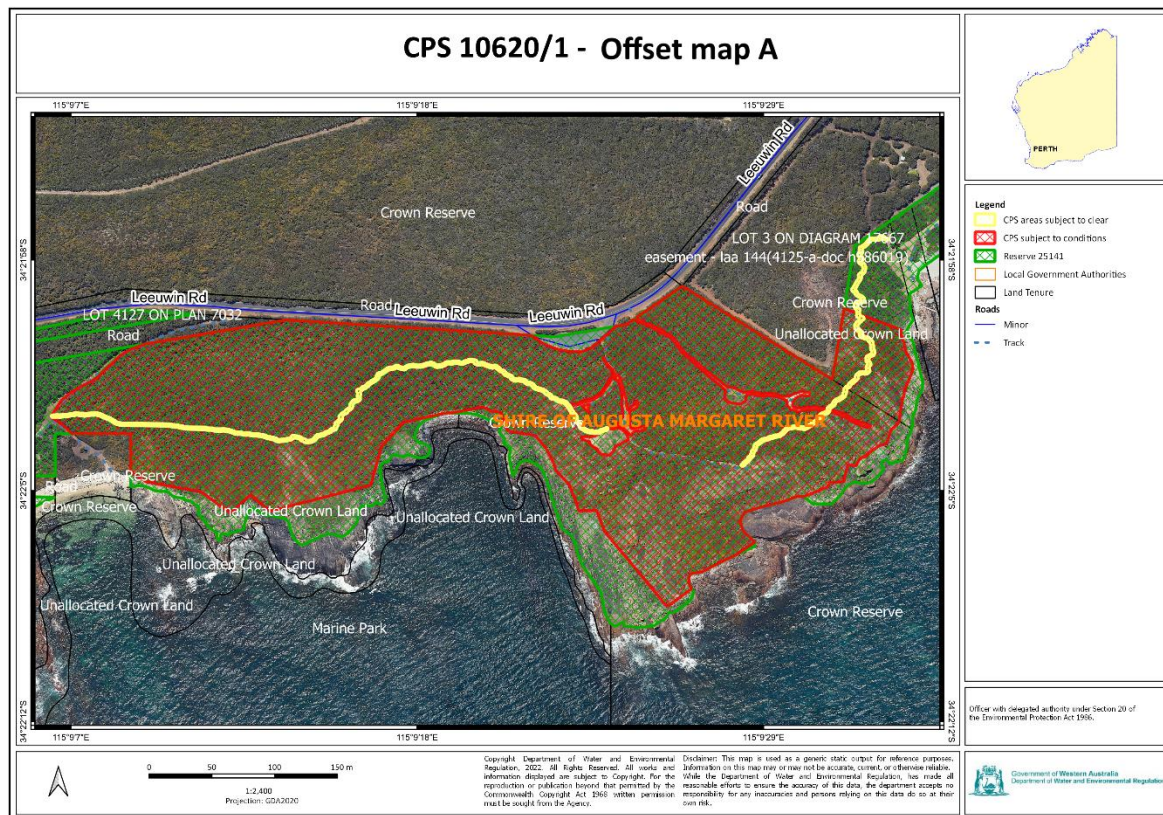


Figure 8: Map of the offset area. The areas cross-hatched yellow indicate the areas authorised to be cleared under the granted clearing permit, the area cross-hatched red indicates the 9.64-hectare area allocated as an offset for CPS 10620/1, and the areas cross-hatched green indicate the boundaries of Crown Reserve 25141.

CPS 10620/1 - Offset map B

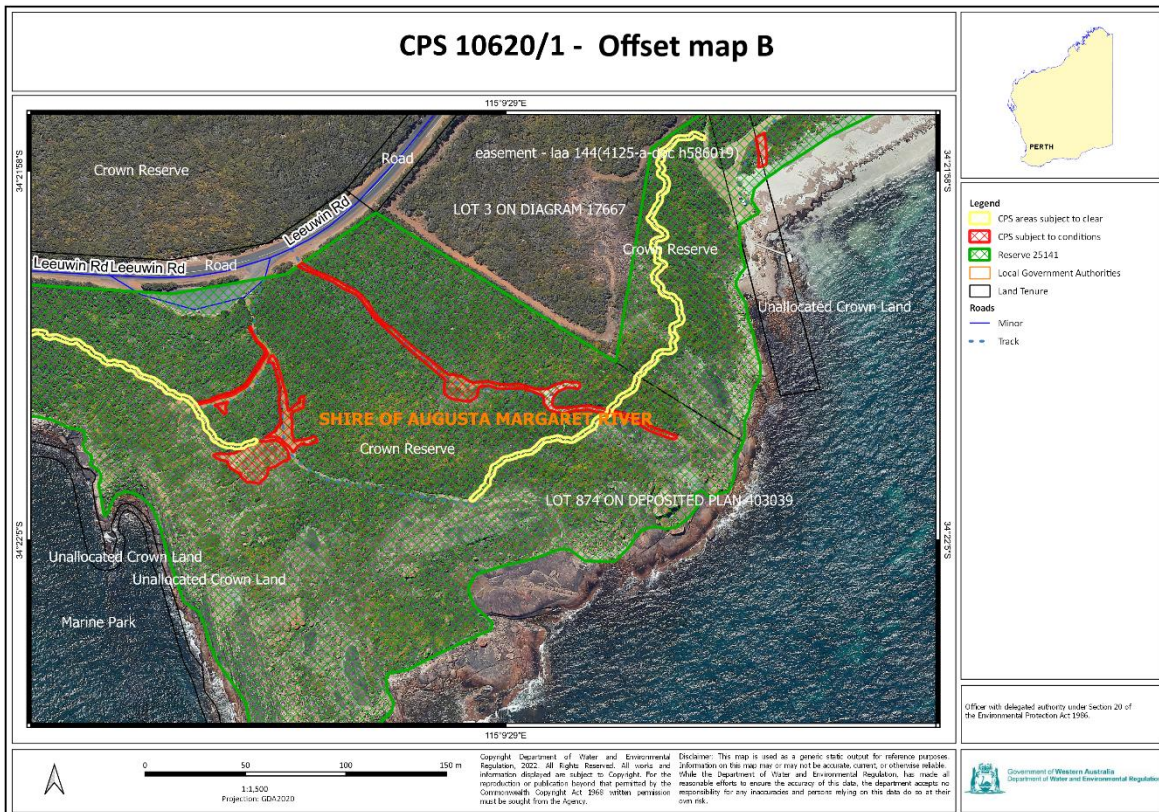


Figure 9: Map of the offset area. The areas cross-hatched yellow indicate the areas authorised to be cleared under the granted clearing permit, the areas cross-hatched red indicate areas to be revegetated subject to offset conditions, and the areas cross-hatched green indicate the boundaries of Crown Reserve 25141.

CPS 10620/1 - Offset map C

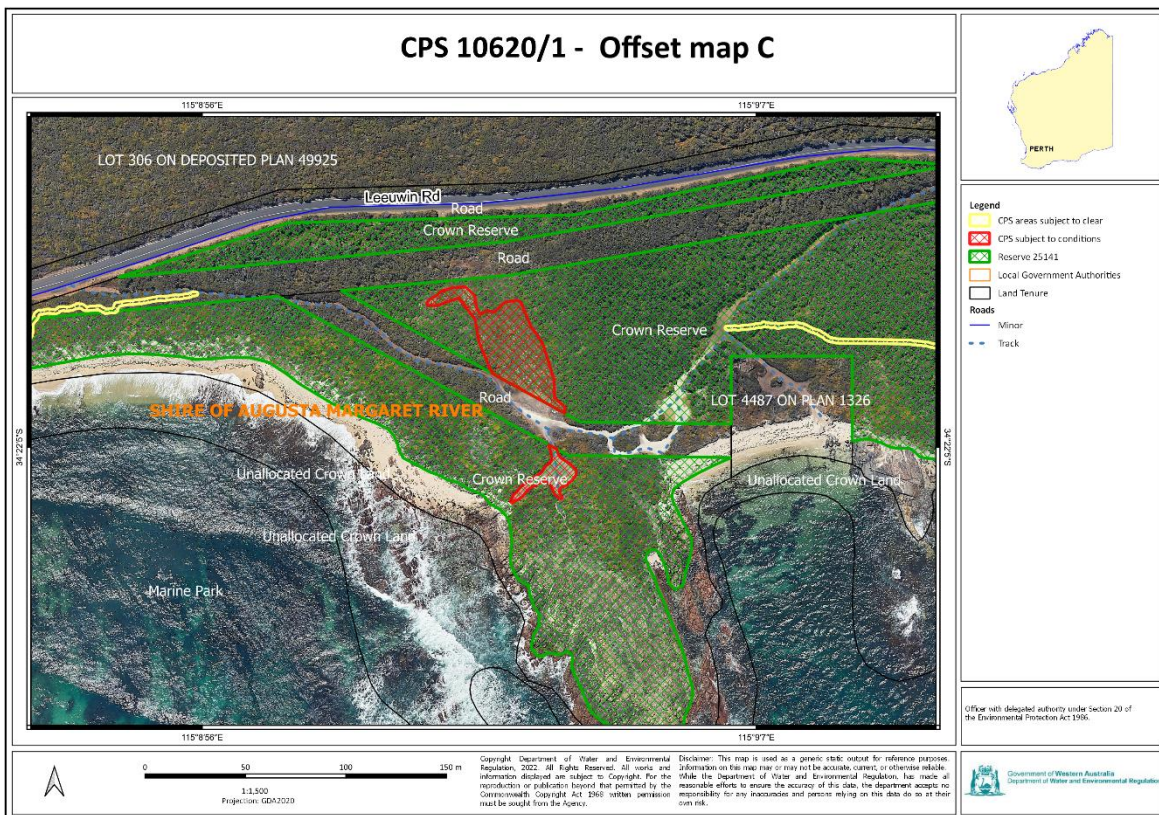


Figure 10: Map of the offset area. The areas cross-hatched yellow indicate the areas authorised to be cleared under the granted clearing permit, the areas cross-hatched red indicate areas to be revegetated subject to offset conditions, and the areas cross-hatched green indicate the boundaries of Crown Reserve 25141.

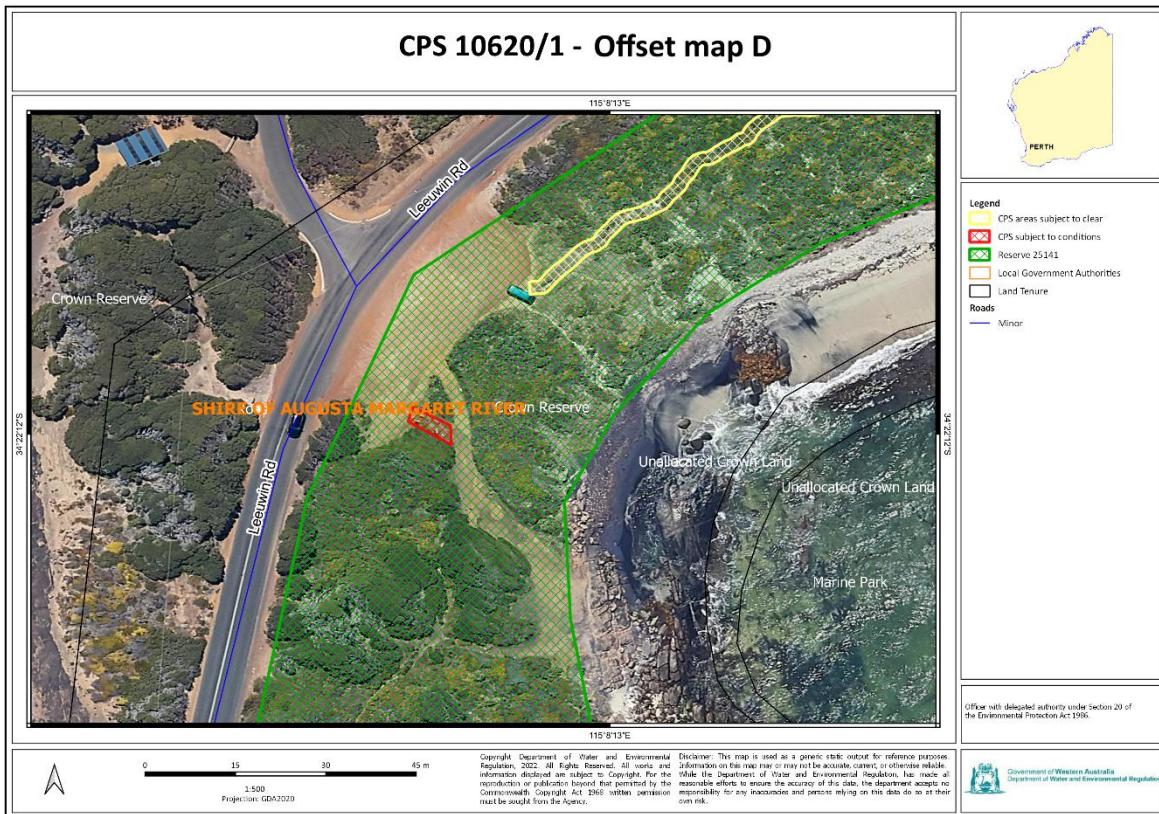


Figure 11: Map of the offset area. The areas cross-hatched yellow indicate the areas authorised to be cleared under the granted clearing permit, the areas cross-hatched red indicate areas to be revegetated subject to offset conditions, and the areas cross-hatched green indicate the boundaries of Crown Reserve 25141.

End

Appendix A. Additional information provided by applicant

Summary of comments	Consideration of comment
In response to a request for further information from DWER, the Shire provided additional avoidance and minimisation measures on 19 December 2024 (Shire of Augusta Margaret River, 2024d).	This information is presented in <i>Avoidance and mitigation measures</i> (see Section 3.1)
In response to a request for further information from DWER, the Shire provided an offset proposal on 19 December 2024 (Shire of Augusta Margaret River, 2024d).	This information is presented in <i>Suitability of offsets</i> (see Section 4) and <i>Offset calculator value justification</i> (see Appendix E), and has been enforced as a condition of the clearing permit.

Appendix B. Site characteristics

B.1. Site characteristics

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

Characteristic	Details												
Local context	The areas in which clearing is proposed are part of expansive tracts of native vegetation present to the north and south of Leeuwin trail, in the intensive land use zone of Western Australia. Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 70 per cent of the original native vegetation cover.												
Ecological linkage	The areas in which clearing is proposed, particularly north of Leeuwin Road, may form part of a mapped Southwest Regional Ecological Linkage, however they are not considered to form a significant part of this linkage given the extent of surrounding vegetation.												
Conservation areas	The application area is adjacent to the Leeuwin-Naturaliste National Park.												
Vegetation description	The following vegetation units were mapped by Ecosystem solutions (2024a) in the areas proposed to be cleared: <table border="1" data-bbox="427 1420 1469 2007"> <thead> <tr> <th>Name</th> <th>Description of vegetation</th> <th>Approximate area of total clearing (ha)</th> </tr> </thead> <tbody> <tr> <td>Low Closed Forest</td> <td><i>Agonis flexuosa</i> over open grassland/ sedgeland/herbland of <i>Lepidosperma gladiatum</i>, <i>Rhagodia baccata</i>, <i>Dichondra repens</i>, <i>Microlaena stipoides</i>, <i>Pteridium esculentum</i>, <i>Muehlenbeckia adpressa</i> and <i>Acanthocarpus preissii</i>.</td> <td>0.18</td> </tr> <tr> <td>Dense (Closed) Heath</td> <td><i>Spyridium globulosum</i>, <i>Olearia axillaris</i>, <i>Scaevola crassifolia</i>, <i>Agonis flexuosa</i> and <i>Leucopogon parviflorus</i> over a predominantly sedgeland/herbland of <i>Lepidosperma gladiatum</i>, <i>Rhagodia baccata</i>, <i>Muehlenbeckia adpressa</i>, <i>Acanthocarpus preissii</i>, <i>Senecio elegans</i>, <i>Phyllanthus calycinus</i>, <i>Ficinia nodosa</i>, <i>Lagurus ovatus</i> and <i>Carpobrotus viresecens</i>.</td> <td>0.25</td> </tr> <tr> <td>(Tall) Closed Scrub</td> <td><i>Spyridium globulosum</i>, <i>Olearia axillaris</i>, and <i>Leucopogon parviflorus</i>, <i>Corymbia callophylla</i>, <i>Banksia sessilis var. cordata</i> with scattered <i>Agonis flexuosa</i>, over an open grassland/ sedgeland of <i>Lepidosperma gladiatum</i>, <i>Hibbertia grossularifolia</i>, <i>Dichondra repens</i>, <i>Clematis pubescen</i>, <i>Dianella revoluta</i> and <i>Hardenbergia comptoniana</i></td> <td>0.05</td> </tr> </tbody> </table>	Name	Description of vegetation	Approximate area of total clearing (ha)	Low Closed Forest	<i>Agonis flexuosa</i> over open grassland/ sedgeland/herbland of <i>Lepidosperma gladiatum</i> , <i>Rhagodia baccata</i> , <i>Dichondra repens</i> , <i>Microlaena stipoides</i> , <i>Pteridium esculentum</i> , <i>Muehlenbeckia adpressa</i> and <i>Acanthocarpus preissii</i> .	0.18	Dense (Closed) Heath	<i>Spyridium globulosum</i> , <i>Olearia axillaris</i> , <i>Scaevola crassifolia</i> , <i>Agonis flexuosa</i> and <i>Leucopogon parviflorus</i> over a predominantly sedgeland/herbland of <i>Lepidosperma gladiatum</i> , <i>Rhagodia baccata</i> , <i>Muehlenbeckia adpressa</i> , <i>Acanthocarpus preissii</i> , <i>Senecio elegans</i> , <i>Phyllanthus calycinus</i> , <i>Ficinia nodosa</i> , <i>Lagurus ovatus</i> and <i>Carpobrotus viresecens</i> .	0.25	(Tall) Closed Scrub	<i>Spyridium globulosum</i> , <i>Olearia axillaris</i> , and <i>Leucopogon parviflorus</i> , <i>Corymbia callophylla</i> , <i>Banksia sessilis var. cordata</i> with scattered <i>Agonis flexuosa</i> , over an open grassland/ sedgeland of <i>Lepidosperma gladiatum</i> , <i>Hibbertia grossularifolia</i> , <i>Dichondra repens</i> , <i>Clematis pubescen</i> , <i>Dianella revoluta</i> and <i>Hardenbergia comptoniana</i>	0.05
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Characteristic	Details																						
	Low Closed Heath/ Granite	<p><i>Eutaxia myrtifolia</i>, <i>Pimelea ferrugineae</i>, <i>Agonis flexuosa</i>, <i>Acacia saligna</i>, <i>Dodonaea ceratophylla</i>, <i>Xanthorrea preissi</i>, <i>Hakea oliefolia</i>, <i>Acacia pulchella</i>, <i>Spyridium globulosum</i> and <i>Leucopogon parviflorus</i> over a sedgeland/grassland/herbland of <i>Lepidosperma gladiatum</i>, <i>Lepidosperma squamatum</i>, introduced annual grasses and <i>Carpobrotus virescens</i> interspersed with patches of exposed granite.</p> <p>0.03</p>																					
	<p>This is consistent with the mapped vegetation type(s):</p> <ul style="list-style-type: none"> Mattiske vegetation complex 294 (Wilyabrup): Mosaic of coastal heath and low woodland to woodland of <i>Corymbia calophylla</i>- <i>Eucalyptus marginata subsp. marginata</i>-<i>Banksia spp.</i> on westward slope in hyperhumid to humid zones. Mattiske vegetation complex 126 (Gracetown): Closed heath of <i>Olearia axillaris</i>-<i>Rhagodia baccata</i>-<i>Agonis flexuosa</i> on seaward slopes in hyperhumid to humid zones. <p>The mapped vegetation types retain approximately >80 per cent of the original extent (Government of Western Australia, 2019).</p>																						
Vegetation condition	<p>Based on biodiversity surveys (Ecosystem Solutions, 2024a), vegetation within the proposed clearing areas ranged from Degraded to Excellent (Keighery, 1994) condition with the majority of the clearing area being Very Good to Excellent (Keighery, 1994) condition (see Appendix F, Figures 17-18).</p> <p>The full Keighery (1994) condition rating scale is provided in Appendix D.</p>																						
Climate and landform	<p>The climate experienced in the application is Mediterranean, characterized by hot and dry summers and cool and wet winters. According to the Bureau of Meteorology (2021), An average of 950.4millimetres of rainfall is recorded annually from the Cape Leeuwin weather station (no. 9518), which is the closest weather station, located approximately 150 meters from the proposed clearing area. The majority of this rainfall is received between the months of May and September (BoM 2022). The elevation of the application area ranges from 10-15 meters Isohyet.</p>																						
Soil description	<table border="1"> <tr> <td data-bbox="432 1193 639 1229">Name</td> <td data-bbox="639 1193 1463 1229">Gracetown exposed slopes Phase</td> </tr> <tr> <td data-bbox="432 1229 639 1265">Soils</td> <td data-bbox="639 1229 1463 1265">216GrGTEe</td> </tr> <tr> <td data-bbox="432 1265 639 1357">Description</td> <td data-bbox="639 1265 1463 1357">Moderate slopes (gradients 10-15%) on the west coast exposed to prevailing wind directly off the ocean, with deep and shallow yellow brown siliceous sands over limestone (i.e. Spearwood Sands).</td> </tr> </table> <table border="1"> <tr> <td data-bbox="432 1402 639 1438">Name</td> <td data-bbox="639 1402 1463 1438">Wilyabrup granitic headland Phase</td> </tr> <tr> <td data-bbox="432 1438 639 1473">Soils</td> <td data-bbox="639 1438 1463 1473">216GrWLRE</td> </tr> <tr> <td data-bbox="432 1473 639 1518">Description</td> <td data-bbox="639 1473 1463 1518">Areas on the west coast dominated by granitic outcrop.</td> </tr> </table>		Name	Gracetown exposed slopes Phase	Soils	216GrGTEe	Description	Moderate slopes (gradients 10-15%) on the west coast exposed to prevailing wind directly off the ocean, with deep and shallow yellow brown siliceous sands over limestone (i.e. Spearwood Sands).	Name	Wilyabrup granitic headland Phase	Soils	216GrWLRE	Description	Areas on the west coast dominated by granitic outcrop.									
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Land degradation risk	<p>The degradation risk factors mapped over the application area are detailed below:</p> <table border="1"> <thead> <tr> <th data-bbox="432 1592 687 1628"></th> <th data-bbox="687 1592 1078 1628">216GrGTEe</th> <th data-bbox="1078 1592 1463 1628">216GrWLRE</th> </tr> </thead> <tbody> <tr> <td data-bbox="432 1628 687 1697">Wind erosion</td> <td data-bbox="687 1628 1078 1697">>70% of map unit has a high to extreme wind erosion risk</td> <td data-bbox="1078 1628 1463 1697">10-30% of map unit has a high to extreme wind erosion risk</td> </tr> <tr> <td data-bbox="432 1697 687 1767">Water erosion</td> <td data-bbox="687 1697 1078 1767">10-30% of map unit has a high to extreme water erosion risk</td> <td data-bbox="1078 1697 1463 1767">3-10% of map unit has a high to extreme water erosion risk</td> </tr> <tr> <td data-bbox="432 1767 687 1803">Salinity risk</td> <td data-bbox="687 1767 1078 1803">-</td> <td data-bbox="1078 1767 1463 1803">-</td> </tr> <tr> <td data-bbox="432 1803 687 1872">Phosphorous export</td> <td data-bbox="687 1803 1078 1872">30-50% of map unit has a high to extreme phosphorus export risk</td> <td data-bbox="1078 1803 1463 1872">3-10% of map unit has a high to extreme phosphorus export risk</td> </tr> <tr> <td data-bbox="432 1872 687 1908">Waterlogging</td> <td data-bbox="687 1872 1078 1908">-</td> <td data-bbox="1078 1872 1463 1908">-</td> </tr> <tr> <td data-bbox="432 1908 687 2004">Subsurface acidification</td> <td data-bbox="687 1908 1078 2004">>70% of map unit has a high subsurface acidification risk or is presently acid</td> <td data-bbox="1078 1908 1463 2004">3-10% of map unit has a high subsurface acidification risk or is presently acid</td> </tr> </tbody> </table>			216GrGTEe	216GrWLRE	Wind erosion	>70% of map unit has a high to extreme wind erosion risk	10-30% of map unit has a high to extreme wind erosion risk	Water erosion	10-30% of map unit has a high to extreme water erosion risk	3-10% of map unit has a high to extreme water erosion risk	Salinity risk	-	-	Phosphorous export	30-50% of map unit has a high to extreme phosphorus export risk	3-10% of map unit has a high to extreme phosphorus export risk	Waterlogging	-	-	Subsurface acidification	>70% of map unit has a high subsurface acidification risk or is presently acid	3-10% of map unit has a high subsurface acidification risk or is presently acid
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Characteristic	Details																																
	Acid sulphate soils	-	-																														
	Flooding	-	-																														
	Floodplains	-	-																														
Waterbodies	A wetland mapped in the Directory of Important Wetlands in Australia, the Cape Leeuwin System, is mapped approximately 15 meters of the proposed clearing area immediately west of Skippy Rock Road. A sumpland wetland in the Geomorphic wetlands, Augusta to Walpole database is mapped with similar boundaries to the Cape Leeuwin system wetland, although the boundaries of this sumpland overlap portions of the proposed clearing areas.																																
Hydrogeography	<table border="1"> <tr> <td>Hydrological Zone</td> <td colspan="2">Leeuwin Zone</td> </tr> <tr> <td>Basin</td> <td colspan="2">Blackwood river (609)</td> </tr> <tr> <td>Hydrographic Catchment</td> <td colspan="2">Coastal</td> </tr> </table> <table border="1"> <tr> <td>RIWI Act Surface Water and Irrigation District</td> <td>Yes</td> <td>Lower Blackwood River</td> </tr> <tr> <td>RIWI Act Rivers</td> <td>No</td> <td></td> </tr> <tr> <td>RIWI Act Groundwater Areas</td> <td>Yes</td> <td>Blackwood</td> </tr> <tr> <td>CAWS Act Clearing Control Catchment</td> <td>No</td> <td></td> </tr> <tr> <td>Public Drinking Water Source Areas</td> <td>No</td> <td></td> </tr> <tr> <td>Wellhead Protection Zone</td> <td>No</td> <td></td> </tr> <tr> <td>Reservoir Protection Zone</td> <td>No</td> <td></td> </tr> </table> <p>The salinity of the application area is mapped at <500 total dissolved solids milligrams per litre.</p>			Hydrological Zone	Leeuwin Zone		Basin	Blackwood river (609)		Hydrographic Catchment	Coastal		RIWI Act Surface Water and Irrigation District	Yes	Lower Blackwood River	RIWI Act Rivers	No		RIWI Act Groundwater Areas	Yes	Blackwood	CAWS Act Clearing Control Catchment	No		Public Drinking Water Source Areas	No		Wellhead Protection Zone	No		Reservoir Protection Zone	No	
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Flora	<p>According to available database, 24 conservation significant flora species have been recovered within the local area (10-kilometre buffer). Comprising one Priority 1, three Priority 2, seven Priority 3, eight Priority 4, and five threatened flora taxa.</p> <p>Of these taxa, <i>Banksia sessilis</i> var. <i>cordata</i> (Priority 4) has been found within vegetation adjacent to the application area according to the flora survey by Ecosystem Solutions (2024a). However, the Shire has redesigned the trail alignment to ensure all individuals of <i>Banksia sessilis</i> var. <i>cordata</i> identified in the surveys have been removed from the proposed clearing area. Therefore, it is not anticipated that the proposed clearing will impact any threatened or priority flora species or their critical habitat.</p>																																
Ecological communities	There are records of two threatened and three priority ecological communities within the local area, the closest of which is the Priority 2 ecological community; Coastal granitic shrublands and herblands of the exposed western and southern sides of the Leeuwin Block major landform, that is within the application area (Ecosystem Solutions, 2024a). Impacts to this community required further consideration through the detailed assessment of the application (see Section 3.2.1).																																
Fauna	<p>According to available database, 56 conservation significant fauna species have been recorded within the local area comprising of one Priority 3, four Priority 4, nine Endangered, 12 Vulnerable, three critically endangered, 23 migratory, one specially protected species (OS), and three conservations dependent. fauna taxa.</p> <p>Of these 56 significant species, according to the distance from the application area, suitable habitat features, and biodiversity survey information provided in support of the application, 10 species may be found within the application area including:</p> <ul style="list-style-type: none"> • <i>Austroassiminea lethra</i> (Cape Leeuwin freshwater snail) 																																

Characteristic	Details
	<ul style="list-style-type: none"> • <i>Calyptorhynchus banksii naso</i> (forest red-tailed black cockatoo) • <i>Isoodon fusciventer</i> (Quenda, southwestern brown bandicoot) • <i>Zanda baudinii</i> (Baudin's cockatoo) • <i>Zanda latirostris</i> (Carnaby's cockatoo) • <i>Dasyurus geoffroii</i> (chuditch, western quoll) • <i>Pseudocheirus occidentalis</i> (Western ringtail possum, ngwayir) • <i>Falco peregrinus</i> (Peregrine falcon) • <i>Notamacropus irma</i> (Western brush wallaby) • <i>Tyto novaehollandiae novaehollandiae</i> (masked owl (southwest)) <p>There are 51 records of black cockatoos from the three species occur within 15 kilometres of the application area, with the closest recorded Carnaby's cockatoo being approximately 0.8 kilometres and Baudin's cockatoo being approximately 2.0 kilometres from the proposed application area, respectively. There are no known roosting or nesting sites within 12 kilometres of the application 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*					
Warren	833,985.56	659,432.21	79.07	558,485.38	66.97
Vegetation complex					
Mattiske vegetation complex 126**	5,064.15	4,791.22	94.61	4,182.96	82.60
Mattiske vegetation complex 294**	254.86	214.11	84.01	156.25	61.31
Local area					
10km radius	7,185.74	5,087.30	70.79	-	-

*Government of Western Australia (2019a)

**Government of Western Australia (2019b)

B.3. Fauna analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Most recent record	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Austroassiminea lethra</i> (Cape Leeuwin freshwater snail)	VU	Y	2019	0.03	26	Y
<i>Calyptorhynchus banksii naso</i> (forest red-tailed black cockatoo)	VU	Y	2012	8.8	1	Y
<i>Zanda baudinii</i> (Baudin's cockatoo)	EN	Y	2018	2.0	36	Y
<i>Zanda latirostris</i> (Carnaby's cockatoo)	EN	Y	2017	0.8	14	Y
<i>Dasyurus geoffroii</i> (chuditch, western quoll)	VU	Y	2003	3.8	2	Y
<i>Falco peregrinus</i> (Peregrine falcon)	OS	Y	1978	4.0	1	Y
<i>Isoodon fusciventer</i> (Quenda, southwestern brown bandicoot)	P4	Y	2019	0.03	11	Y
<i>Notamacropus irma</i> (Western brush wallaby)	P4	Y	-	5.5	2	Y
<i>Pseudocheirus occidentalis</i> (Western ringtail possum, ngwayir)	CR	Y	2019	0.6	122	Y

Species name	Conservation status	Suitable habitat features? [Y/N]	Most recent record	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Tyto novaehollandiae novaehollandiae</i> (masked owl (southwest))	P3	Y	2003	3.1	1	Y

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

B.4. Ecological community analysis table

Community 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]
Aquatic Root Mat Community Number 1 of Caves of the Leeuwin-Naturaliste Ridge (Easter and Jewel Caves)	CR	N	N	9.80	1	Y
Coastal granitic shrublands and herblands of the exposed western and southern sides of the Leeuwin Block major landform (Previously known as Low shrublands on acidic grey-brown sands of the Gracetown soil-landscape system).	P2	Y	Y	0.00	12	Y
Rimstone pools and cave structures formed by microbial activity on marine shorelines (Augusta microbialites)	EN	Y	Y	0.04	6	Y
Subtropical and Temperate Coastal Saltmarsh	P3	N	N	5.29	7	Y
Tall closed sedgeland on shallow soils derived from granite gneiss on the Leeuwin Naturaliste Ridge ('Sedgelands of the Cape Leeuwin Spring')	P1	Y	Y	0.61	1	Y

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><u>Principle (a):</u> “Native vegetation should not be cleared if it comprises a high level of biodiversity.”</p> <p><u>Assessment:</u> A portion of the area proposed to be cleared contains a Priority Ecological Community (Coastal granitic shrublands and herblands of the exposed western and southern sides of the Leeuwin Block major landform). The application area contains a diverse array of flora species and habitats for conservation significant fauna.</p>	At variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (b):</u> “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.”</p> <p><u>Assessment:</u> The area proposed to be cleared may contain habitat for conservation significant fauna. The habitat is likely to be significant to a critically endangered fauna species.</p>	At variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (c):</u> “Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</p> <p><u>Assessment:</u> The area proposed to be cleared contain doesn’t contain any threatened fauna species. Prior to the redesign of the proposed clearing area, it did contain <i>Banksia sessilis var. cordata</i> a priority fauna species. However, after the redesign of the clearing area no threatened or priority flora species are within the area proposed to be cleared.</p>	Not likely to be at variance	No
<p><u>Principle (d):</u> “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.”</p> <p><u>Assessment:</u> The area proposed to be cleared does not contain species indicative of a threatened ecological community listed under the BC Act.</p>	Not at variance	No
Environmental value: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> “Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</p> <p><u>Assessment:</u> The extents of the mapped vegetation types 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 a significant part of an ecological linkage in the local area.</p>	Not at variance	No
<p><u>Principle (h):</u> “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.”</p> <p><u>Assessment:</u> Given the application area is separated from the nearest conservation area by an expansive tract of native vegetation, the proposed clearing is unlikely to have an impact on the environmental values of nearby conservation areas.</p>	Not likely to be at variance	No
Environmental value: land and water resources		
<p><u>Principle (f):</u> “Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</p>	Not at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Assessment:</u> Given the distance from the closest water course, the linear nature of the proposed clearing, and the small footprint of the proposed clearing, it is unlikely that clearing will impact on- or off-site hydrology and water quality.</p>		
<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> The mapped soils are highly susceptible to wind erosion and Subsurface acidification. Noting the extent and linear nature of the clearing area, and that the design of the pathway to incorporates surface water flows and allows for natural cross slope drainage to maintain natural flows and prevent erosion, it is likely that permit conditioning will be adequate to mitigate impacts from wind erosion.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.2, above.</i>
<p><u>Principle (i):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.”</i></p> <p><u>Assessment:</u> Given the small extent of the proposed clearing in the vicinity of the nearest mapped wetland and the mitigation measures proposed by the applicant, the proposed clearing is unlikely to impact surface water or ground water quality</p>	Not 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> The mapped soils and topographic contours in the surrounding area and small extent of the proposed clearing do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding or waterlogging. Furthermore, the mitigation measures proposed by the shire mean that the proposed works will be designed in a way that incorporates natural surface water flows and allows for natural cross slope drainage to maintain natural flow patterns.</p>	Not 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.

Condition	Description
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 E. Offset calculator value justification

E.1. Western Ringtail Possum (*Pseudocheirus occidentalis*)

WA Environmental Offsets Calculator Rational for scores used in the offset calculator

Vesting Change

Calculation	Score (area)	Rationale
Conservation significance		
Description	Native vegetation that represents Western ringtail possum (<i>Pseudocheirus occidentalis</i>) habitat.	Clearing of 0.51 hectares of native vegetation that provides significant habitat for western ringtail possums.
Type of environmental value	Species (flora/fauna)	The western ringtail possum is listed as a threatened fauna species under the Commonwealth EPBC Act and state BC Act
Conservation significant of environmental value	Rare/threatened species - critically endangered.	The western ringtail possum is listed as Critically Endangered under both the EPBC Act and BC Act
Landscape-level value impacted	yes/no	The impact is to an area of habitat in hectares.
Significant impact		
Description	Clearing of native vegetation that comprises significant habitat for western ringtail possum.	0.51 hectares of native vegetation that comprises significant habitat for western ringtail possums is proposed to be cleared for constructing a multi-use trail.
Significant impact (hectares) / Type of feature	0.51	Based on vegetation mapping undertaken by Ecosystem Solutions (2024a) and Litoria Ecoservices (2019a; 2019b), all vegetation types within the proposed clearing area have the potential to provide foraging habitat for western ringtail possums. Therefore, the impact to western ringtail possum habitat is 0.51 hectares.
Quality (scale) / Number	8.00	Based on vegetation mapping undertaken by Ecosystem Solutions (2024a) and Litoria Ecoservices (2019a; 2019b), western ringtail possum habitat within the application area is in Completely Degraded to Excellent (Keighery, 1994) condition, with the majority (approximately 92%) in Very Good or Excellent (Keighery, 1994) condition. The application area provides good quality habitat for western ringtail possums with canopy connectivity, dense vegetation for sheltering, and a variety of available food sources. Advice received from DBCA and

		available survey information (Ecosystem Solutions, 2024a; Litoria Ecoservices, 2019a; 2019b) indicates that the vegetation within the proposed clearing area provides good quality habitat with canopy connectivity, dense vegetation for sheltering, and a variety of available food sources. likely to provide breeding habitat for western ringtail possums, based on records of juveniles in the immediate vicinity.
Rehabilitation credit		
N/A	None proposed.	No onsite rehabilitation or revegetation proposed (i.e., within the application area).
Offset		
Description	Change in vesting and conservation in perpetuity of significant habitat for western ringtail possum.	The Shire has proposed to alter the vesting of Crown Reserve 25141 (Lot 4127 on Plan 7032, Lot 4125 on Diagram 17667, and Lot 332 on Deposited Plan 71864), an A-class reserve to include Conservation in addition to the current vesting, which contains significant habitat for western ringtail possums.
Proposed offset (area in hectares)	9.64	The area required to be conserved in perpetuity to counterbalance the significant residual impacts to native vegetation that provides significant habitat for western ringtail possums by 82.9%. Noting that the revegetation of closed informal trails within Crown Reserve 25141 counterbalances 17.1% of the significant residual impact, the combined area counterbalances the significant residual impacts by 100%.
Current quality of offset site / Start number (of type of feature)	8.00	Based on the surveys undertaken within Crown Reserve 25141 (Ecosystem Solutions, 2024a; Litoria Ecoservices, 2019a; 2019b) the quality of the western ringtail possum habitat within the offset site is similar to that of the proposed clearing area, providing potential breeding habitat, canopy connectivity, dense vegetation for sheltering, and a variety of available food sources in predominantly Very Good to Excellent (Keighery, 1994) condition.
Future quality WITHOUT offset (scale) / Future number WITHOUT offset	8.00	Given that native vegetation within Crown Reserve 25141 contains western ringtail possum habitat in Very Good to Excellent (Keighery, 1994) condition and is not currently subject to any ongoing management measures or significant threatening processes, it is reasonable to assume no change in quality in the absence of the offset.
Future quality WITH offset (scale) / Future number WITH offset	8.00	Given that native vegetation within Crown Reserve, 25141 contains western ringtail possum habitat in Very Good to Excellent (Keighery, 1994) condition and the proposed offset consists of changing the vesting order of the reserve to include conservation, the quality of western ringtail possum habitat will likely be maintained with the offset.
Time until ecological benefit (years)	1	As the proposed offset relates to conserving an existing area of native vegetation in perpetuity, the minimum of one year for this field is applied.
Confidence in offset result (%)	0.9	There is a high level of confidence that the offset will be achieved, and that conservation of the offset site (in perpetuity) would successfully mitigate the future risk of loss of the site and maintain its current quality.
Duration of offset implementation (maximum 20 years)	20	Crown Reserve 25141 will be vested in "Recreation and Conservation" in perpetuity. Therefore, a maximum of 20 years is applied.
Time until offset site secured (years)	2.0	It is assumed that the change in vesting of Crown Reserve 25141 to include "Conservation" will occur within two years.
Risk of future loss WITHOUT offset (%)	15%	Crown Reserve 25141 is currently vested as "Recreation" and, therefore currently has a moderate to low risk of loss.
Risk of future loss WITH offset (%)	10%	The vesting of Crown Reserve 25141 will be changed to "Recreation and Conservation", which will reduce the risk of loss.

Offset ratio (Conservation area only)	N/A	
Landscape level values of offset?	N/A	

Revegetation

Calculation	Score (area)	Rationale
Conservation significance		
Description	Native vegetation that represents Western ringtail possum (<i>Pseudocheirus occidentalis</i>) habitat.	The clearing of hectares of 0.51 hectares of native vegetation that provides significant habitat for western ringtail possums.
Type of environmental value	Species (flora/fauna)	The western ringtail possum is listed as a threatened fauna species under the commonwealth EPBC act and state BC act.
Conservation significant of environmental value	Rare/threatened species - critically endangered.	The western ringtail possum is listed as Critically Endangered under both the EPBC Act and BC Act.
Landscape-level value impacted	yes/no	The impact is to an area of habitat in hectares.
Significant impact		
Description	Clearing of native vegetation that comprises significant habitat for western ringtail possum.	0.51 hectares of native vegetation that comprises significant habitat for western ringtail possum habitat is proposed to be cleared for construction of a multi-use trail.
Significant impact (hectares) / Type of feature	0.51	Based on vegetation mapping undertaken by Ecosystem Solutions (2024a) and Litoria Ecoservices (2019a; 2019b), all vegetation types within the proposed clearing area have the potential to provide foraging habitat for western ringtail possums. Therefore, the impact to western ringtail possum habitat is 0.51 hectares.
Quality (scale) / Number	8.00	Based on vegetation mapping undertaken by Ecosystem Solutions (2024a) and Litoria Ecoservices (2019a; 2019b), western ringtail possum habitat within the application area is in Completely Degraded to Excellent (Keighery, 1994) condition, with the majority (approximately 92%) in Very Good or Excellent (Keighery, 1994) condition. The application area provides good quality habitat for western ringtail possums with canopy connectivity, dense vegetation for sheltering, and a variety of available food sources. Advice received from DBCA and available survey information (Ecosystem Solutions, 2024a; Litoria Ecoservices, 2019a; 2019b) indicates that the vegetation within the proposed clearing area provides good quality habitat with canopy connectivity, dense vegetation for sheltering, and a variety of available food sources. likely to provide breeding habitat for western ringtail possums, based on records of juveniles in the immediate vicinity.
Rehabilitation credit		
N/A	None proposed.	No onsite rehabilitation or revegetation proposed (i.e., within the application area).
Offset		
Description	Revegetation of native vegetation that provides habitat for western ringtail possum.	The Shire proposes to undertake revegetation of existing informal tracks within Lot 4127 on Deposited Plan 7032 (Crown Reserve 25141), that will be closed following construction of the new multi-use trail alignment, utilising species that provide significant habitat for western ringtail possum in the region. The vesting of Crown Reserve 25141, within which the revegetation

		areas occur, is also proposed to be changed to include "Conservation" in addition to the current vesting. the road reserves will not have their vesting order changed.
Proposed offset (area in hectares)	0.39	The total area proposed to be revegetated utilising suitable species for western ringtail possum is 0.39 hectares. The revegetation of this area counterbalances 17.1% of the significant residual impacts of the proposed clearing. Combined with the change in vesting of an additional 9.03 hectares of significant habitat for western ringtail possum within Crown Reserve 25141, the significant residual impact is counterbalanced by 100%.
Current quality of offset site / Start number (of type of feature)	1.00	The areas to be revegetated consists of existing informal tracks which are currently devoid of native vegetation but are immediately adjacent to habitat for western ringtail possums and retain some site context.
Future quality WITHOUT offset (scale) / Future number WITHOUT offset	1.00	Given the revegetation site is currently devoid of native vegetation and being utilised as informal tracks, it is reasonable to assume there will be no change in quality in the absence of onsite revegetation.
Future quality WITH offset (scale) / Future number WITH offset	6.00	It is assumed that revegetation will utilise topsoil and vegetative material from cleared areas that comprise significant foraging habitat and achieve measurable completion criteria based on the composition of habitat for western ringtail possum within adjacent Very Good to Excellent (Keighery, 1994) condition vegetation. Therefore, with best practice revegetation methodology, it is assumed that onsite revegetation will improve the quality of habitat for western ringtail possums to a Good to Very Good (Keighery, 1994) condition.
Time until ecological benefit (years)	1	It is assumed that the benefits of revegetation of western ringtail possum habitat will be available after 12 years. This is a conservative estimate of the time required to establish native vegetation and reach a sufficient height to provide canopy connectivity between areas of suitable habitat for western ringtail possums. An extra two years has been allowed to account for the delay in commencement of the revegetation (assuming revegetation will commence within 2 years of the permit start date).
Confidence in offset result (%)	0.8	There is a moderate to high level of confidence that the quality of western ringtail possum habitat within the revegetation site will improve, given the revegetation, including measurable completion criteria based on the composition of habitat for western ringtail possum within adjacent Very Good to Excellent (Keighery, 1994) condition vegetation.
Duration of offset implementation (maximum 20 years)	20	It is assumed that the revegetation offset site will be maintained in perpetuity, noting the proposed closure of the existing informal tracks within Crown Reserve 25141. Therefore, the maximum of 20 years is applied.
Time until offset site secured (years)	2.0	It is assumed that the change in vesting of Crown Reserve 25141 to include "Conservation" will occur within two years.
Risk of future loss WITHOUT offset (%)	15%	Crown Reserve 25141 is currently vested as "Recreation" and therefore currently has a moderate to low risk of loss.
Risk of future loss WITH offset (%)	10%	The vesting of Crown Reserve 25141 will be changed to "Recreation and Conservation", which will reduce the risk of loss.
Offset ratio (Conservation area only)	N/A	
Landscape level values of offset?	N/A	

E.2. Black cockatoo habitat (Carnaby's cockatoo, Baudin's cockatoo, and forest red-tailed black cockatoo habitat).

Vesting Change

Calculation	Score (area)	Rationale
Conservation significance		
Description	Carnaby's cockatoo, Baudin's cockatoo and forest red-tailed black cockatoo habitat.	Clearing of 0.08 hectares of native vegetation that provides significant habitats for all three species of black cockatoo.
Type of environmental value	Species (flora/fauna)	Baudin's cockatoo, Carnaby's cockatoo, and forest red-tailed black cockatoo are listed as a threatened fauna species under the Commonwealth EPBC Act and state BC Ac.
Conservation significant of environmental value	Rare/threatened species - endangered.	Baudin's cockatoo and Carnaby's cockatoo are listed as Endangered under both the EPBC Act and BC Act. The forest red-tailed black cockatoo is listed as Vulnerable under both the EPBC Act and BC Act. The highest level of conservation significance has been utilised.
Landscape-level value impacted	yes/no	The impact is to an area of habitat in hectares
Significant impact		
Description	Clearing of native vegetation that comprises significant habitat for western ringtail possum.	0.08 hectares of native vegetation that comprises significant foraging habitat for all three species of black cockatoo is proposed to be cleared for constructing a multi-use trail.
Significant impact (hectares) / Type of feature	0.07	The approximate amount of black cockatoo foraging habitat within the proposed clearing area is 0.08 hectares based on foraging habitat mapping by Ecosystem Solutions (2024a).
Quality (scale) / Number	5.00	Based on foraging habitat mapping by Ecosystem Solutions (2024a), the foraging habitat proposed to be cleared is in Very Good to Excellent (Keighery, 1994) condition. Available food sources include <i>Banksia sessilis</i> var. <i>cordata</i> for Carnaby's and Baudin's cockatoo and <i>Hakea oleifolia</i> for forest red-tailed black cockatoo. The available foraging habitat consists of secondary foraging species and there are no black cockatoo roosting sites recorded within 6 kilometres or breeding sites recorded within 12 kilometres of the proposed clearing area.
Rehabilitation credit		
N/A	None proposed.	No onsite rehabilitation or revegetation proposed (i.e., within the application area).
Offset		
Description	Change in vesting and conservation in.	The Shire has proposed to alter the vesting of Crown Reserve 25141 (Lot 4127 on Plan 7032, Lot 4125 on Diagram 17667, and Lot 332 on Deposited Plan 71864), an A-class reserve to include Conservation in addition to the current vesting, which contains significant habitat for western ringtail possums.
Proposed offset (area in hectares)	0.18	The area required to be conserved in perpetuity to counterbalance the significant residual impacts of the proposed clearing on black cockatoo foraging habitat by 15.5%. Noting revegetation of closed informal trails within Crown Reserve 25141 counterbalances 84.5% of the significant residual impact, the combined area counterbalances the significant residual impacts by more than 100%.
Current quality of offset site / Start	7.00	Based on the surveys undertaken within Crown Reserve 25141 (Ecosystem Solutions, 2024a; Litoria Ecoservices, 2019a; 2019b) the offset site contains Closed Scrub vegetation that

number (of type of feature)		provides black cockatoo foraging habitat in predominantly Excellent (Keighery, 1994) condition. In addition to the secondary foraging species recorded within the proposed clearing area (<i>Banksia sessilis</i> var. <i>cordata</i> and <i>Hakea oleifolia</i>), the broader Closed Scrub vegetation type also contains some primary foraging habitat in the form of marri trees. However, the offset site is not located within proximity to roosting or breeding sites.
Future quality WITHOUT offset (scale) / Future number WITHOUT offset	7.00	Given native vegetation within Crown Reserve 25141 contains black cockatoo foraging habitat in predominantly Excellent (Keighery, 1994) condition and is not currently subject to any ongoing management measures or significant threatening processes, it is reasonable to assume no change in quality in the absence of the offset.
Future quality WITH offset (scale) / Future number WITH offset	7.00	Given native vegetation within Crown Reserve 25141 contains black cockatoo foraging habitat in predominantly Excellent (Keighery, 1994) condition and the proposed offset consists of conservation of the existing native vegetation in perpetuity with no ongoing land management proposed to improve vegetation quality, it is likely that the quality of foraging habitat will be maintained with the offset.
Time until ecological benefit (years)	1.00	As the proposed offset relates to conserving an existing area of native vegetation in perpetuity, the minimum of one year for this field is applied.
Confidence in offset result (%)	0.9	There is a high level of confidence that the offset will be achieved, and that conservation of the offset site (in perpetuity) would successfully mitigate the future risk of loss of the site and maintain its current quality.
Duration of offset implementation (maximum 20 years)	20	Crown Reserve 25141 will be vested in "Recreation and Conservation" in perpetuity. Therefore, the maximum of 20 years is applied.
Time until offset site secured (years)	2.0	It is assumed that the change in vesting of Crown Reserve 25141 to include "Conservation" will occur within two years.
Risk of future loss WITHOUT offset (%)	15%	Crown Reserve 25141 is currently vested as "Recreation" and therefore currently has a moderate to low risk of loss.
Risk of future loss WITH offset (%)	10%	The vesting of Crown Reserve 25141 will be changed to "Recreation and Conservation", which will reduce the risk of loss.
Offset ratio (Conservation area only)	N/A	
Landscape level values of offset?	N/A	

Revegetation

Calculation	Score (area)	Rationale
Conservation significance		
Description	Carnaby's cockatoo, Baudin's cockatoo and forest red-tailed black cockatoo habitat.	Clearing of 0.08 hectares of native vegetation that provides significant habitats for all three species of black cockatoo.
Type of environmental value	Species (flora/fauna)	Baudin's cockatoo, Carnaby's cockatoo, and forest red-tailed black cockatoo are listed as a threatened fauna species under the Commonwealth EPBC Act and state BC Ac.
Conservation significant of environmental value	Rare/threatened species - endangered.	Baudin's cockatoo and Carnaby's cockatoo are listed as Endangered under both the EPBC Act and BC Act. The forest red-tailed black cockatoo is listed as Vulnerable under both the EPBC Act and BC Act. The highest level of conservation significance has been utilised.

Landscape-level value impacted	yes/no	The impact is to an area of habitat in hectares
Significant impact		
Description	Clearing of native vegetation that comprises significant habitat for western ringtail possum.	0.08 hectares of native vegetation that comprises significant foraging habitat for all three species of black cockatoo is proposed to be cleared for constructing a multi-use trail.
Significant impact (hectares) / Type of feature	0.08	The approximate amount of black cockatoo foraging habitat within the proposed clearing area is 0.08 hectares based on foraging habitat mapping by Ecosystem Solutions (2024a).
Quality (scale) / Number	5.00	Based on foraging habitat mapping by Ecosystem Solutions (2024a), the foraging habitat proposed to be cleared is in Very Good to Excellent (Keighery, 1994) condition. Available food sources include <i>Banksia sessilis</i> var. <i>cordata</i> for Carnaby's and Baudin's cockatoo and <i>Hakea oleifolia</i> for forest red-tailed black cockatoo. The available foraging habitat consists of secondary foraging species and there are no black cockatoo roosting sites recorded within 6 kilometres or breeding sites recorded within 12 kilometres of the proposed clearing area.
Rehabilitation credit		
N/A	None proposed.	No onsite rehabilitation or revegetation proposed (i.e., within the application area).
Offset		
Description	Revegetation of native vegetation that provides foraging habitat for Carnaby's cockatoo, Baudin's cockatoo, forest red-tailed black cockatoo.	The Shire proposes to undertake revegetation of existing informal tracks within Lot 4127 on Deposited Plan 7032 (Crown Reserve 25141), that will be closed following construction of the new multi-use trail alignment, utilising species that provide significant foraging habitat for black cockatoo species in the region. The vesting of Crown Reserve 25141, within which the revegetation areas occur, is also proposed to be changed to include "Conservation" in addition to the current vesting.
Proposed offset (area in hectares)	0.13	The total area proposed to be revegetated utilising suitable foraging species for black cockatoo species is 0.13 hectares. The revegetation of this area counterbalances 84.5% of the significant residual impacts of the proposed clearing. Combined with the change in vesting of an additional 0.18 hectares of significant foraging habitat for black cockatoos within Crown Reserve 25141, the significant residual impact is counterbalanced by 100%.
Current quality of offset site / Start number (of type of feature)	1.00	The areas to be revegetated consist of existing informal tracks which are currently devoid of native vegetation but are immediately adjacent to foraging habitat for black cockatoo species and retain some site context.
Future quality WITHOUT offset (scale) / Future number WITHOUT offset	1.00	Given the revegetation site is currently devoid of native vegetation and being utilised as informal tracks, it is reasonable to assume there will be no change in quality in the absence of onsite revegetation.
Future quality WITH offset (scale) / Future number WITH offset	5.00	It is assumed that revegetation will utilise topsoil and vegetative material from cleared areas that comprise significant foraging habitat and achieve measurable completion criteria based on the composition of foraging habitat for black cockatoos within adjacent Very Good to Excellent (Keighery, 1994) condition vegetation. Therefore, with best practice revegetation methodology, it is assumed that onsite revegetation will improve the quality of foraging habitat for black cockatoos to a Good to Very Good (Keighery, 1994) condition.
Time until ecological benefit (years)	12	It is assumed that the benefits of revegetation of black cockatoo foraging habitat will be available after 12 years. This is a conservative measure based on available literature (e.g., Lee et al. (2013) who identified evidence of foraging on marri and

		Banksia in rehabilitated mine pit areas, ranging from 8-14 years of age) and the understanding that the species to be planted include Proteaceous species that may mature and provide calorific benefit over a shorter period of time. An extra two years has been allowed to account for the delay in commencement of the revegetation (assuming revegetation will commence within 2 years of the permit start date).
Confidence in offset result (%)	0.8	There is a moderate to high level of confidence that the quality of black cockatoo foraging habitat within the revegetation site will improve, given the revegetation is undertaken in accordance with best practice methodology, including measurable completion criteria based on the composition of foraging habitat for black cockatoos within adjacent Very Good to Excellent (Keighery, 1994) condition vegetation.
Duration of offset implementation (maximum 20 years)	20	It is assumed that the revegetation offset site will be maintained in perpetuity, noting the proposed closure of the existing informal tracks within Crown Reserve 25141. Therefore, the maximum of 20 years is applied.
Time until offset site secured (years)	2.0	It is assumed that the change in vesting of Crown Reserve 25141 to include "Conservation" will occur within two years.
Risk of future loss WITHOUT offset (%)	15%	Crown Reserve 25141 is currently vested as "Recreation" and therefore currently has a moderate to low risk of loss.
Risk of future loss WITH offset (%)	10%	The vesting of Crown Reserve 25141 will be changed to "Recreation and Conservation", which will reduce the risk of loss.
Offset ratio (Conservation area only)	N/A	
Landscape level values of offset?	N/A	

E.3. Coastal granitic shrublands and herblands of the exposed western and southern sides of the Leeuwin Black PEC

Calculation	Score (area)	Rationale
Conservation significance		
Description	Coastal granitic shrublands and herblands of the exposed western and southern sides of the Leeuwin.	Clearing of 0.078 hectares of native vegetation that is representative of the Coastal granitic shrublands and herblands of the exposed western and southern sides of the Leeuwin Block (Coastal granitic shrublands and herblands) priority ecological community (PEC).
Type of environmental value	Species (flora/fauna)	The Coastal granitic shrublands and herblands is considered a priority ecological community.
Conservation significant of environmental value	Rare/threatened species - critically endangered.	The Coastal granitic shrublands and herblands PEC is considered a Priority 2 ecological community in Western Australia by DBCA.
Landscape-level value impacted	yes/no	The impact is to an area of Coastal granitic shrublands and herblands PEC in hectares.
Significant impact		
Description	Clearing of native vegetation that is representative of the Coastal granitic shrublands and herblands PEC.	0.078 hectares of native vegetation that is representative of the Coastal granitic shrublands and herblands PEC is proposed to be cleared for constructing a mult

Significant impact (hectares) / Type of feature	0.51	Based on vegetation mapping undertaken by Ecosystem Solutions (2024a) and Litoria Ecoservices (2019a; 2019b) and advice received from DBCA, the total extent of native vegetation that is representative of the Coastal granitic shrublands and herblands PEC within the proposed clearing area is 0.078 hectares.
Quality (scale) / Number	8.00	Based on vegetation mapping undertaken by Ecosystem Solutions (2024a) and Litoria Ecoservices (2019b), native vegetation that is representative of the Coastal granitic shrublands and herblands PEC within the proposed clearing area is in Good to Excellent (Keighery, 1994) condition, with the majority of the area in Very Good to Excellent (Keighery, 1994) condition).
Rehabilitation credit		
N/A	None proposed.	No onsite rehabilitation or revegetation proposed (i.e., within the application area).
Offset		
Description	Change in vesting and conservation in perpetuity of native vegetation that is representative of the Coastal granitic shrublands and herblands PEC.	The Shire has proposed to alter the vesting of Crown Reserve 25141 (Lot 4127 on Plan 7032, Lot 4125 on Diagram 17667, and Lot 332 on Deposited Plan 71864) to include Conservation in addition to the current vesting, which contains native vegetation that is representative of the Coastal granitic shrublands and herblands PEC.
Proposed offset (area in hectares)	1.56	The area required to be conserved in perpetuity to counterbalance the significant residual impacts to native vegetation that is representative of the Coastal granitic shrublands and herblands PEC by 100%.
Current quality of offset site / Start number (of type of feature)	8.00	Based on the surveys undertaken within Crown Reserve 25141 (Ecosystem Solutions, 2024a; Litoria Ecoservices, 2019b) and DBCA mapping, native vegetation that is representative of the Coastal granitic shrublands and herblands PEC within the offset area is predominantly in Very Good to Excellent (Keighery, 1994) condition.
Future quality WITHOUT offset (scale) / Future number WITHOUT offset	8.00	Given native vegetation within Crown Reserve 25141 contains native vegetation that is representative of the Coastal granitic shrublands and herblands PEC in Very Good to Excellent (Keighery, 1994) condition and is not currently subject to any ongoing management measures or significant threatening processes, it is reasonable to assume no change in quality in the absence of the offset.
Future quality WITH offset (scale) / Future number WITH offset	8.00	Given native vegetation within Crown Reserve 25141 contains native vegetation that is representative of the Coastal granitic shrublands and herblands PEC in Very Good to Excellent (Keighery, 1994) condition and the proposed offset consists of conservation of the existing native vegetation in perpetuity with no ongoing land management proposed to improve vegetation quality, it is likely that the quality of native vegetation that is representative of the Coastal granitic shrublands and herblands PEC will be maintained with the offset.
Time until ecological benefit (years)	1	As the proposed offset relates to conserving an existing area of native vegetation in perpetuity, the minimum of one year for this field is applied.
Confidence in offset result (%)	0.9	There is a high level of confidence that the offset will be achieved, and that conservation of the offset site (in perpetuity) would successfully mitigate the future risk of loss of the site and maintain its current quality.
Duration of offset implementation (maximum 20 years)	20	Crown Reserve 25141 will be vested in "Recreation and Conservation" in perpetuity. Therefore, the maximum of 20 years is applied.

Time until offset site secured (years)	2.0	It is assumed that the change in vesting of Crown Reserve 25141 to include "Conservation" will occur within two years.
Risk of future loss WITHOUT offset (%)	15%	Crown Reserve 25141 is currently vested as "Recreation" and therefore currently has a moderate to low risk of loss.
Risk of future loss WITH offset (%)	10%	The vesting of Crown Reserve 25141 will be changed to "Recreation and Conservation", which will reduce the risk of loss.
Offset ratio (Conservation area only)	N/A	
Landscape level values of offset?	N/A	

Appendix F. Biological survey information excerpts



Figure 12: Map of black cockatoo foraging habitat identified within the Cape Leeuwin Trail alignment (Ecosystem Solutions, 2024).



Figure 13: Map of Western ringtail possum dreys and quenda diggings identified within the Cape Leeuwin Trail alignment (Ecosystem Solutions, 2024).

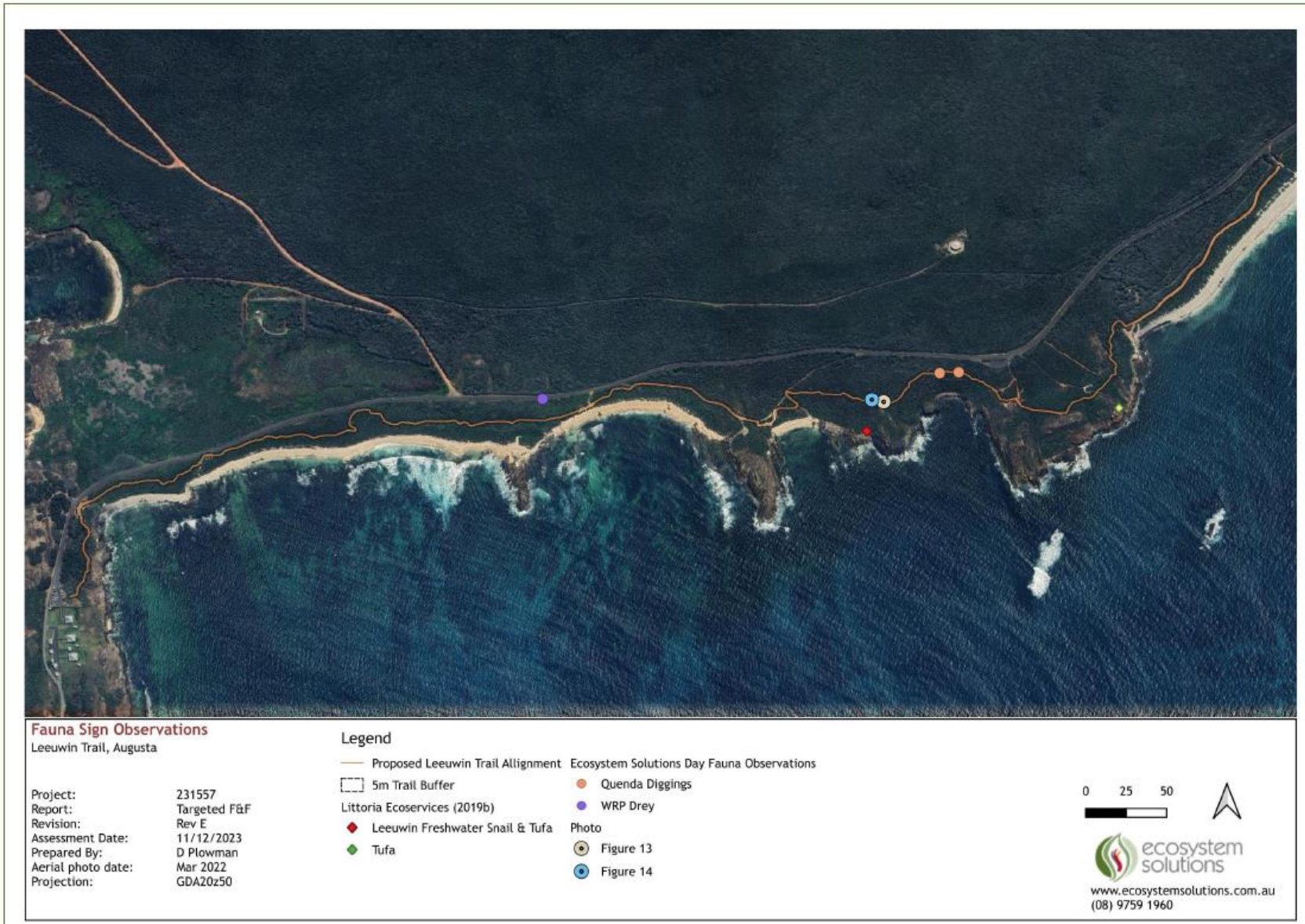


Figure 14: Map of the location of Cape Leeuwin Freshwater Snail and Tufa identified within the Cape Leeuwin Trail alignment (Ecosystem Solutions, 2024).

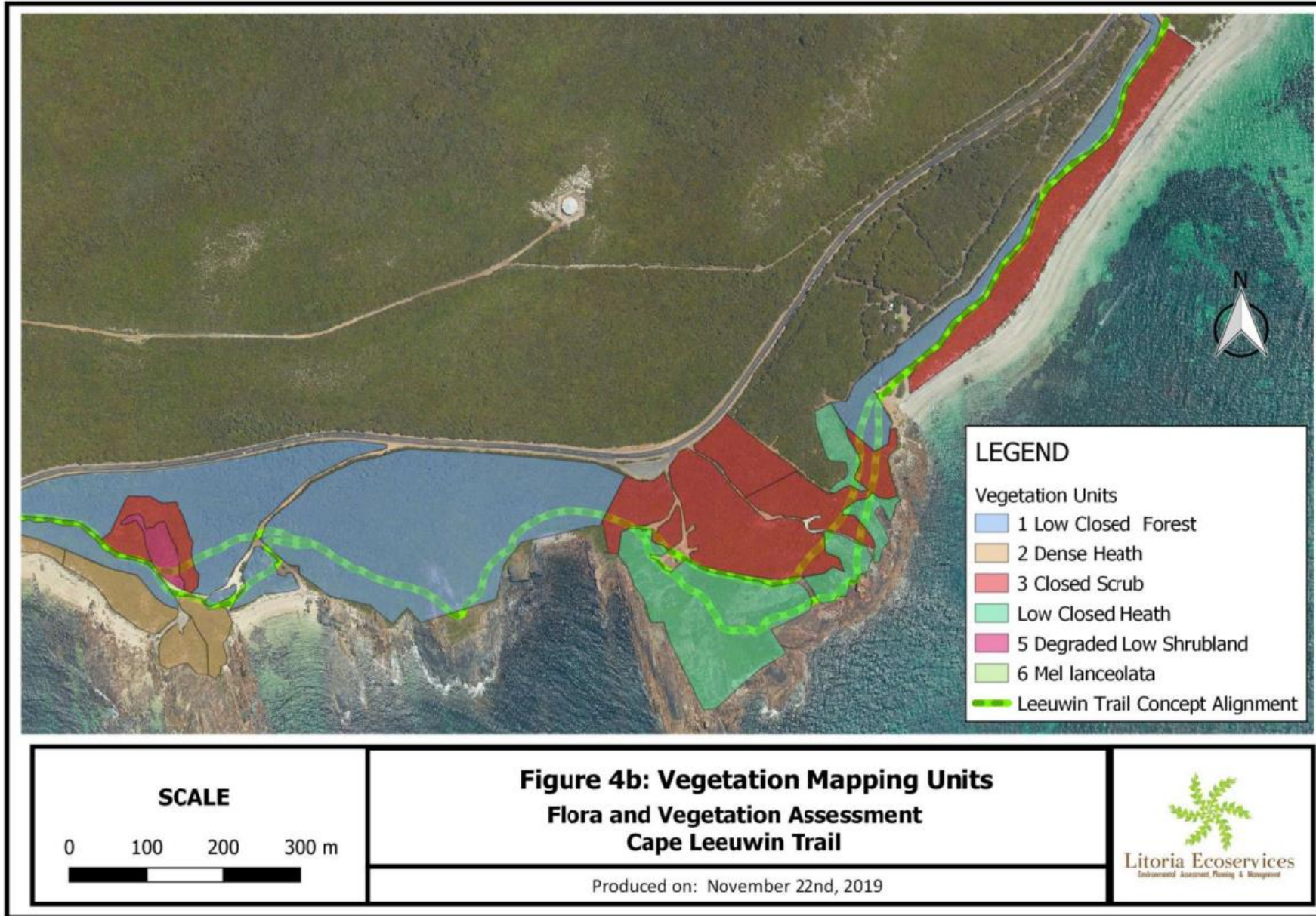


Figure 15: Map of vegetation types and conceptual Cape Leeuwin Trail locations (Litoria Ecoservices, 2019b).

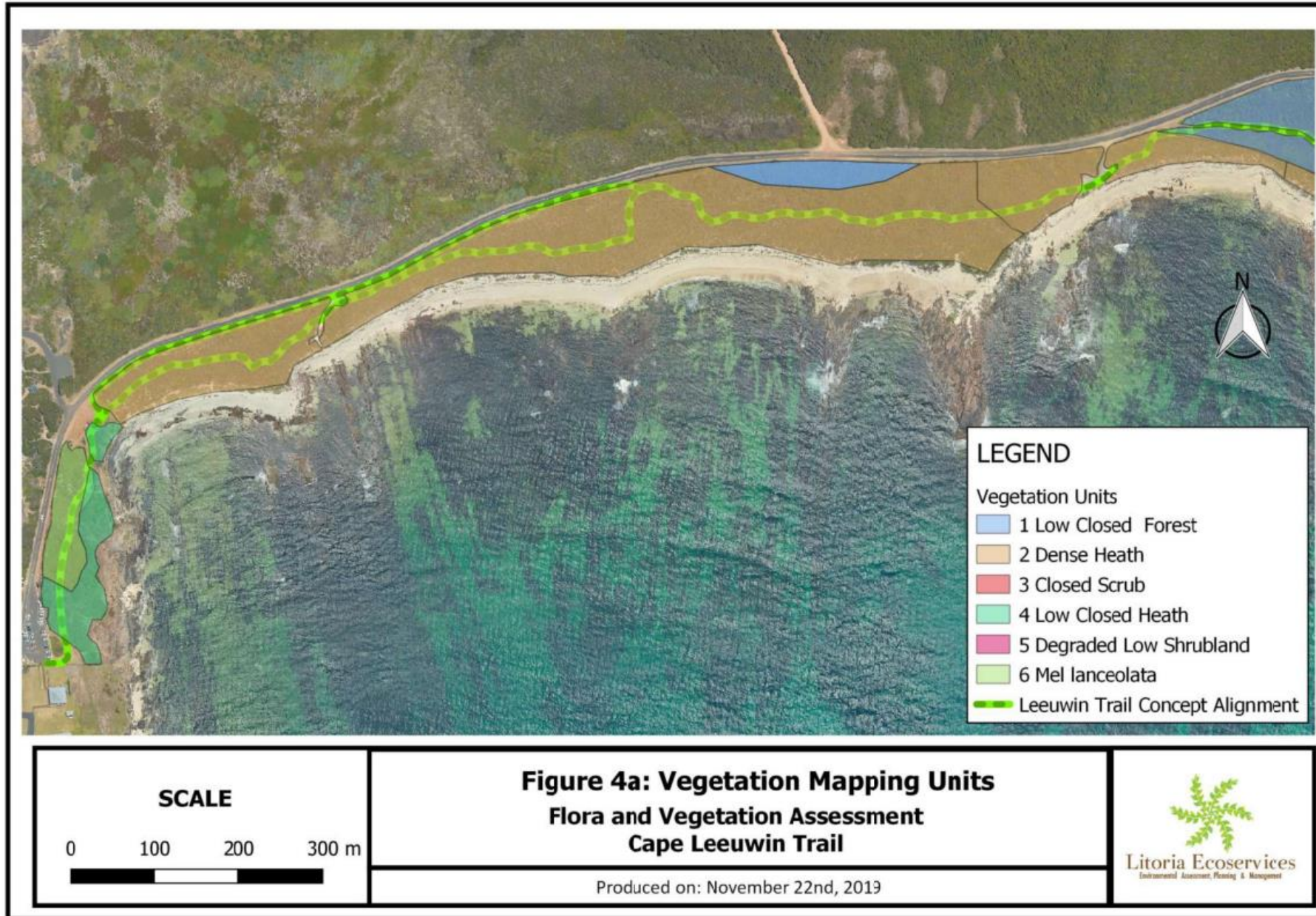


Figure 16: Map of the vegetation types and conceptual Cape Leeuwin Trail locations (Litoria Ecoservices, 2019b).

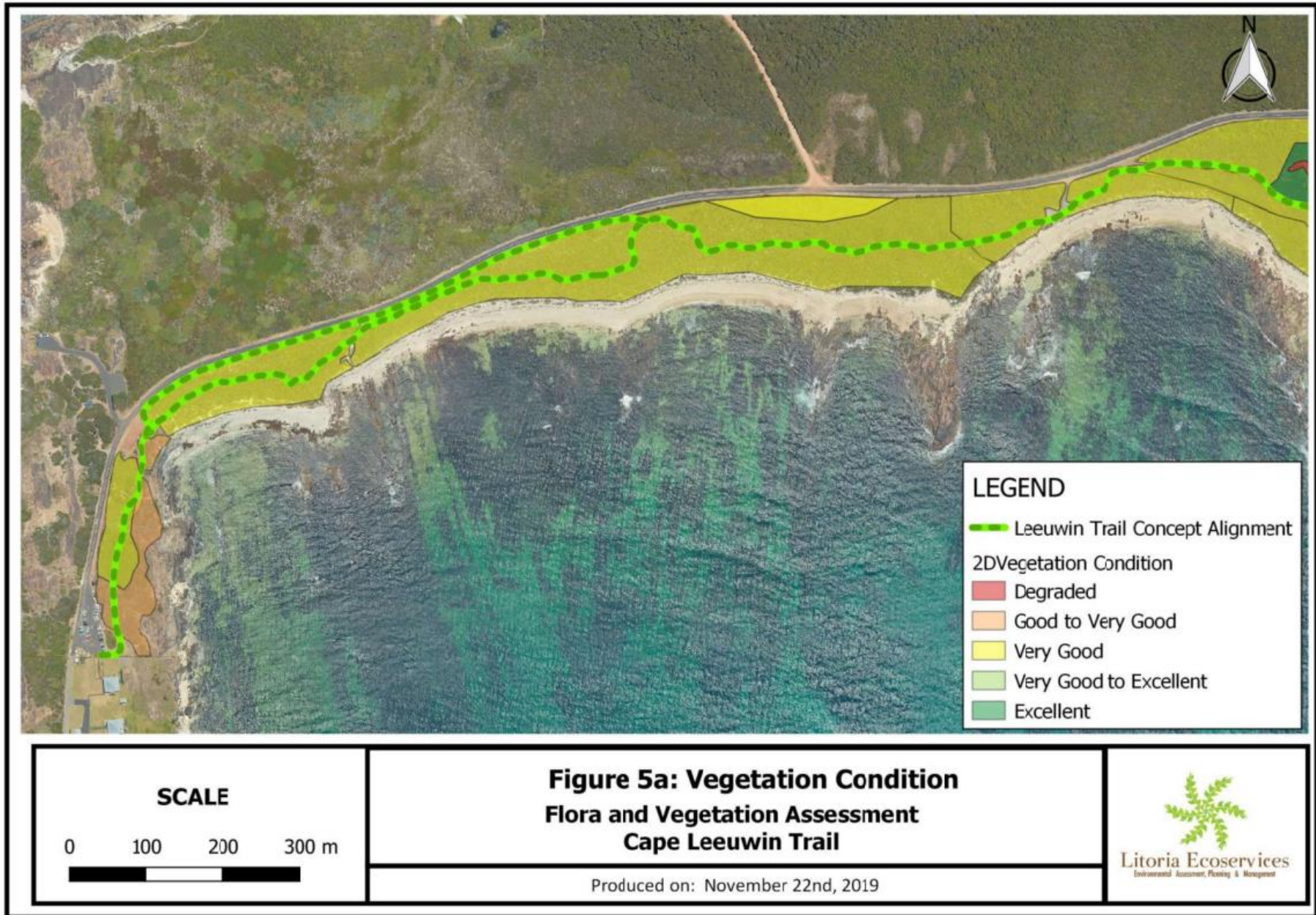


Figure 17: Map of the vegetation condition and conceptual Cape Leeuwin Trail locations (Litoria Ecoservices, 2019b).

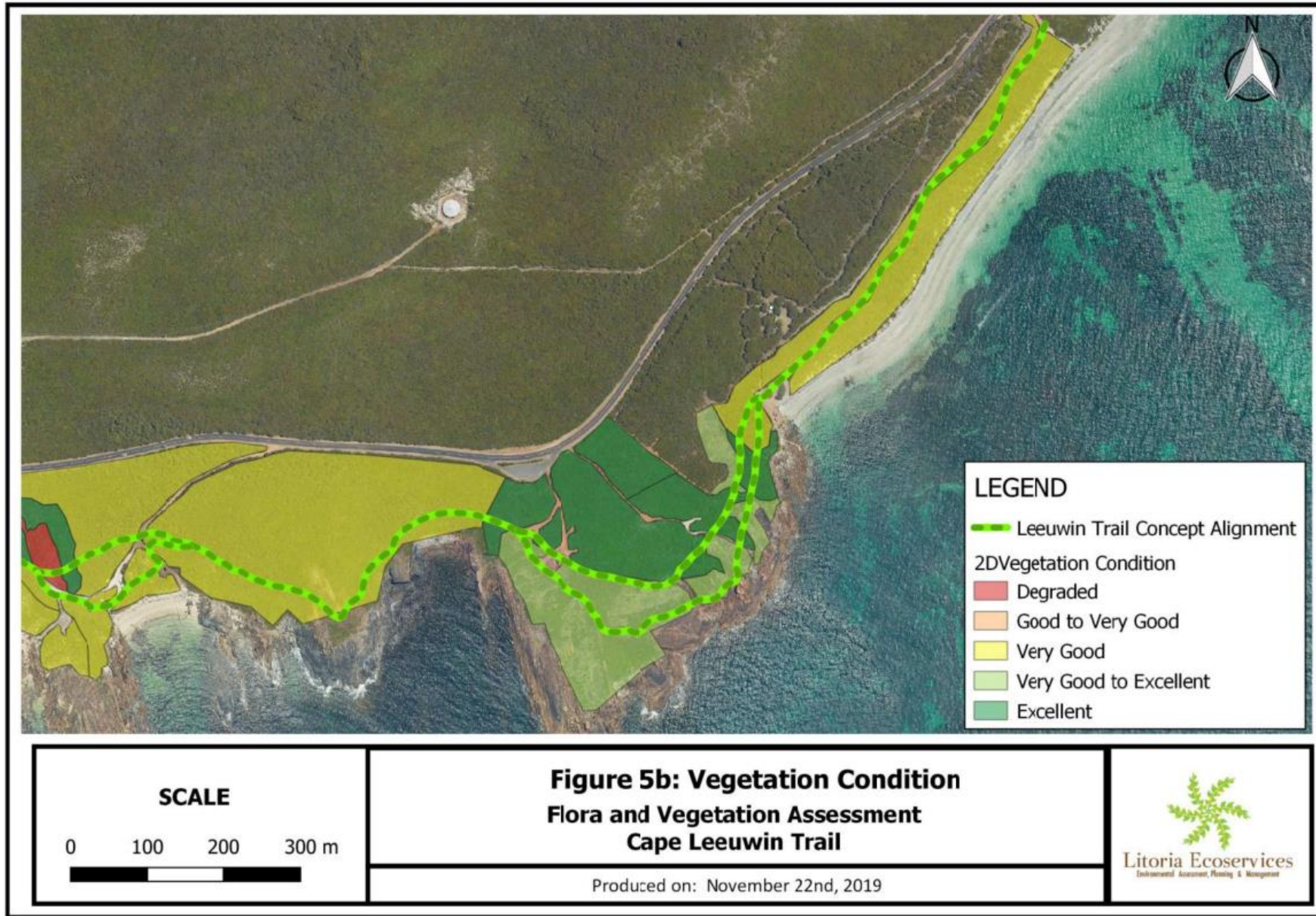


Figure 18: Map of the vegetation condition and conceptual Cape Leeuwin Trail locations (Litoria Ecoservices, 2019b).

Appendix G. Sources of information

G.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)
- Offsets Register – Offsets (DWER-078)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems

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)

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