



## **CLEARING PERMIT**

*Granted under section 51E of the Environmental Protection Act 1986*

<b>Purpose Permit number:</b>	CPS 9210/1
<b>Permit Holder:</b>	Shire of Augusta Margaret River
<b>Duration of Permit:</b>	From 15/7/2021 to 14/7/2026

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 widening and reconstruction of Leeuwin Road.

#### **2. Land on which clearing is to be done**

Leeuwin Road reserve (PINs 11607702, 11607703), Leeuwin  
Unnamed road reserve (PIN 11622189), Leeuwin  
Lot 4127 on Plan 7032 (Crown reserve 25141), Leeuwin

#### **3. Clearing authorised**

The permit holder must not clear more than 0.4 hectares of native vegetation within the area cross-hatched yellow in Figure 1 and Figure 2 of Schedule 1.

### **PART II – MANAGEMENT CONDITIONS**

#### **4. 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.

## 5. 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;
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared;
- (d) only move soils in *dry conditions*;
- (e) where *dieback* or *weed*-affected soil, *mulch*, *fill*, or other material is to be removed from the area to be cleared, ensure it is transferred to areas of comparable soil disease status; and
- (f) at least once in each 12-month period, for the term of this permit the permit holder must remove or kill any *weeds* growing within areas cleared under this permit.

## 6. Fauna management – western ringtail possums

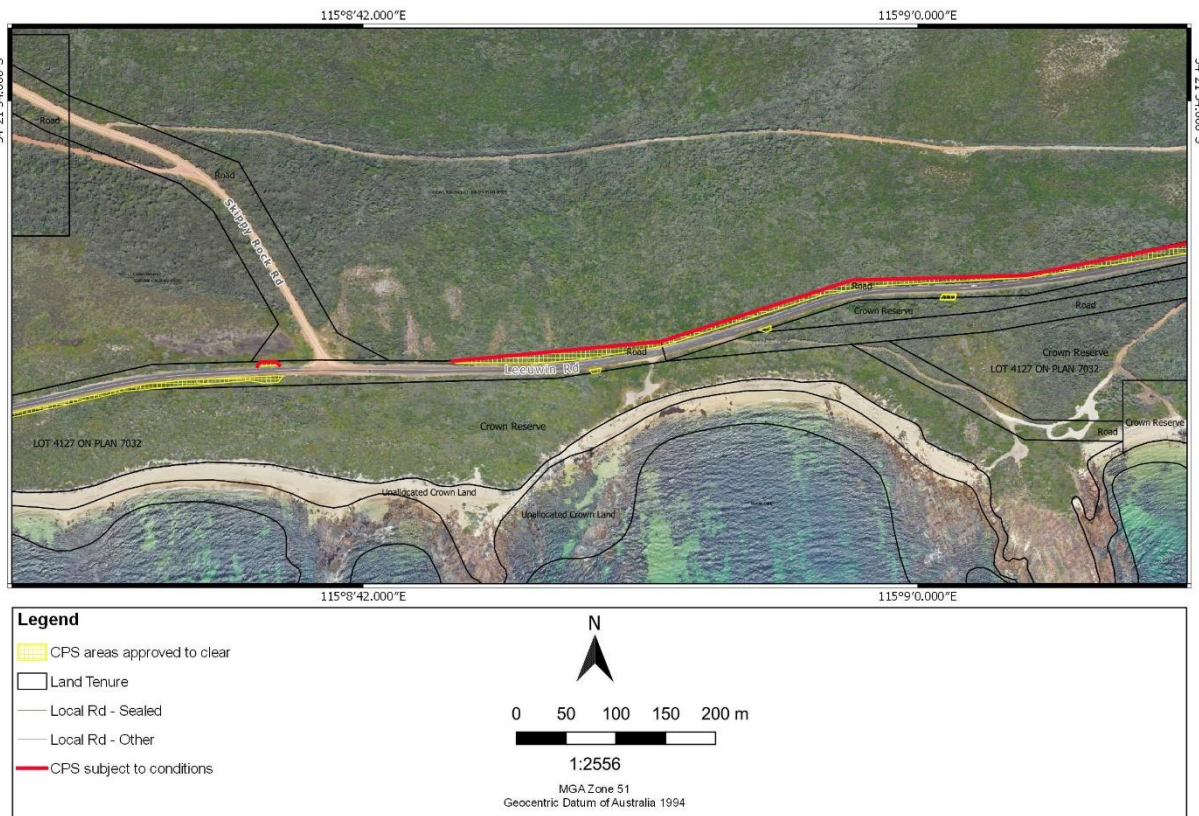
- (a) In relation to the area cross-hatched yellow in Figure 1 and Figure 2 of Schedule 1, the permit holder must engage a fauna specialist to inspect that area immediately prior to, and for the duration of clearing activities, for the presence of western ringtail possum(s) (*Pseudocheirus occidentalis*).
- (b) Clearing activities must cease in any area where fauna referred to in condition 6(a) are identified until either:
  - (i) the western ringtail possum(s) individual has moved on from that area to adjoining *suitable habitat*; or
  - (ii) the western ringtail possum(s) individual has been removed by a *western ringtail possum specialist*.
- (c) Any western ringtail possum(s) individual removed in accordance with condition 6(b)(ii) must be relocated by a *western ringtail possum specialist* to a *suitable habitat*.
- (d) Where fauna is identified under condition 6(a), the permit holder must within 14 calendar days provide the following records to the CEO:
  - (i) the number of individuals identified;
  - (ii) the date each individual was identified;
  - (iii) the location where each individual was identified recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
  - (iv) the number of individuals removed and relocated;
  - (v) the relevant qualifications of the *western ringtail possum specialist* undertaking removal and relocation;
  - (vi) the date each individual was removed;
  - (vii) the method of removal;
  - (viii) the date each individual was relocated;
  - (ix) the location where each individual was relocated to, recorded using a GPS unit set to GDA94, expressing the geographical coordinates in Eastings and Northings or decimal degrees; and
  - (x) details pertaining to the circumstances of any death of, or injury sustained by, an individual.

**7. Wind erosion management**

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

**8. Vegetation management – fencing (pre-clearing)**

- (a) Prior to commencing clearing, the permit holder shall construct temporary fencing at the locations shown in Figure 3, Figure 4 and Figure 5 of Schedule 1.



**PART III - RECORD KEEPING AND REPORTING**

**9. 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"> <li>(a) the species composition, structure, and density of the cleared area;</li> <li>(b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94),</li> </ul>

No.	Relevant matter	Specifications
		<p>expressing the geographical coordinates in Eastings and Northings;</p> <p>(c) the date that the area was cleared;</p> <p>(d) the size of the area cleared (in hectares);</p> <p>(e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 4; and</p> <p>(f) actions taken to minimise the risk of the introduction and spread of weeds and dieback in accordance with condition 5;</p> <p>(g) actions taken to manage and mitigate impacts to western ringtail possums in accordance with condition 6; and</p> <p>(h) actions taken to manage wind erosion in accordance with condition 7.</p>

## 10. Reporting

The permit holder must provide to the *CEO* the records required under condition 9 of this permit when requested by the *CEO*.

## DEFINITIONS

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

**Table 2: Definitions**

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
dry conditions	means when soils (not dust) do not freely adhere to rubber tyres, tracks, vehicle chassis or wheel arches.
fauna specialist	means a person who holds a tertiary qualification specialising in environmental science or equivalent, and has a minimum of 2 years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the CEO as a suitable fauna specialist for the bioregion, and who holds a valid fauna licence issued under the <i>Biodiversity Conservation Act 2016</i> .
fill	means material used to increase the ground level, or to fill a depression.
dieback	means the effect of <i>Phytophthora</i> species on native vegetation.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	<i>Environmental Protection Act 1986</i> (WA)

<b>Term</b>	<b>Definition</b>
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.
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"> <li>(a) that is a declared pest under section 22 of the <i>Biosecurity and Agriculture Management Act 2007</i>; or</li> <li>(b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or</li> <li>(c) not indigenous to the area concerned.</li> </ul>
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> .

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**END OF CONDITIONS**



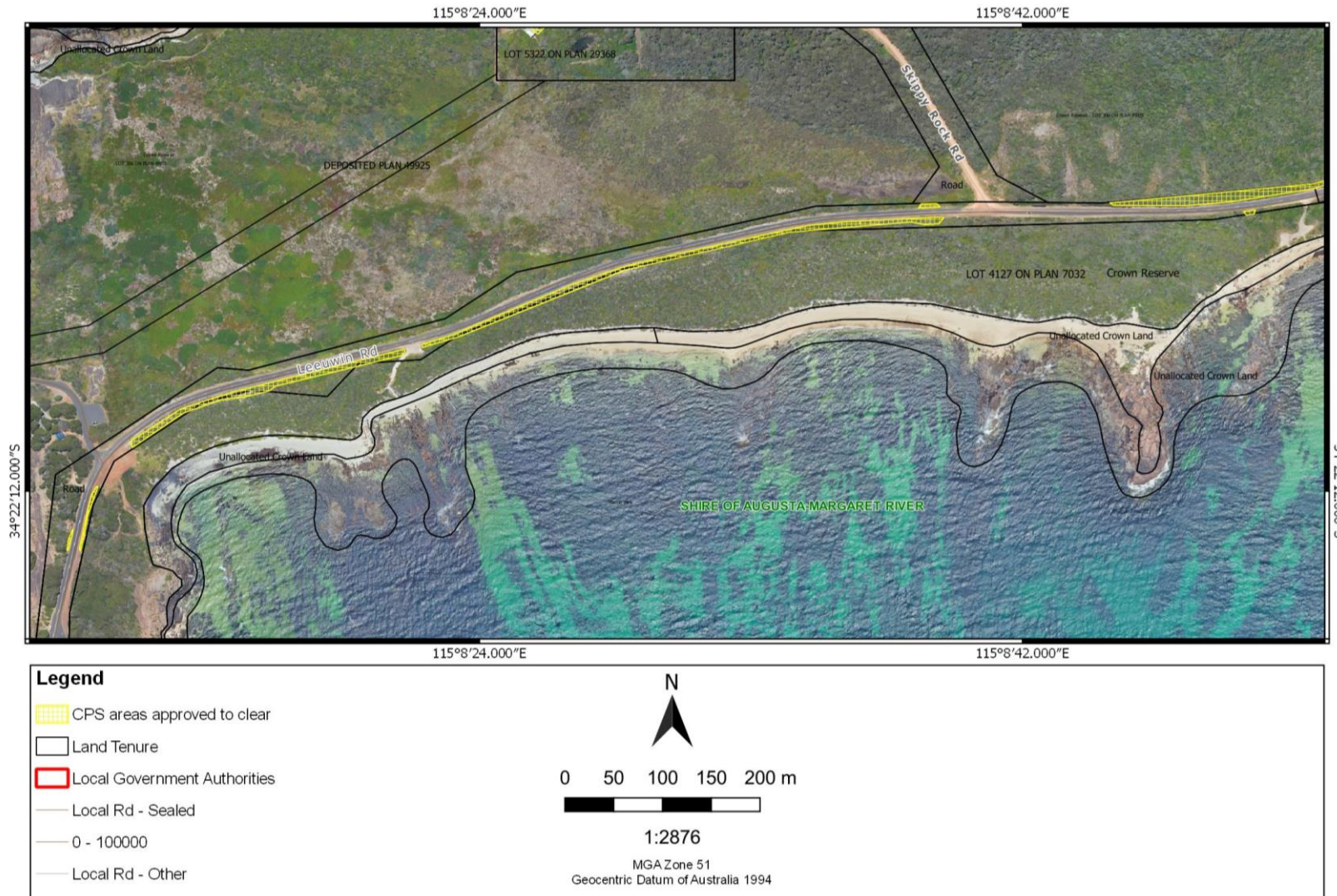

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**Richard Newman**  
**DIRECTOR**  
NATIVE VEGETATION PROTECTION

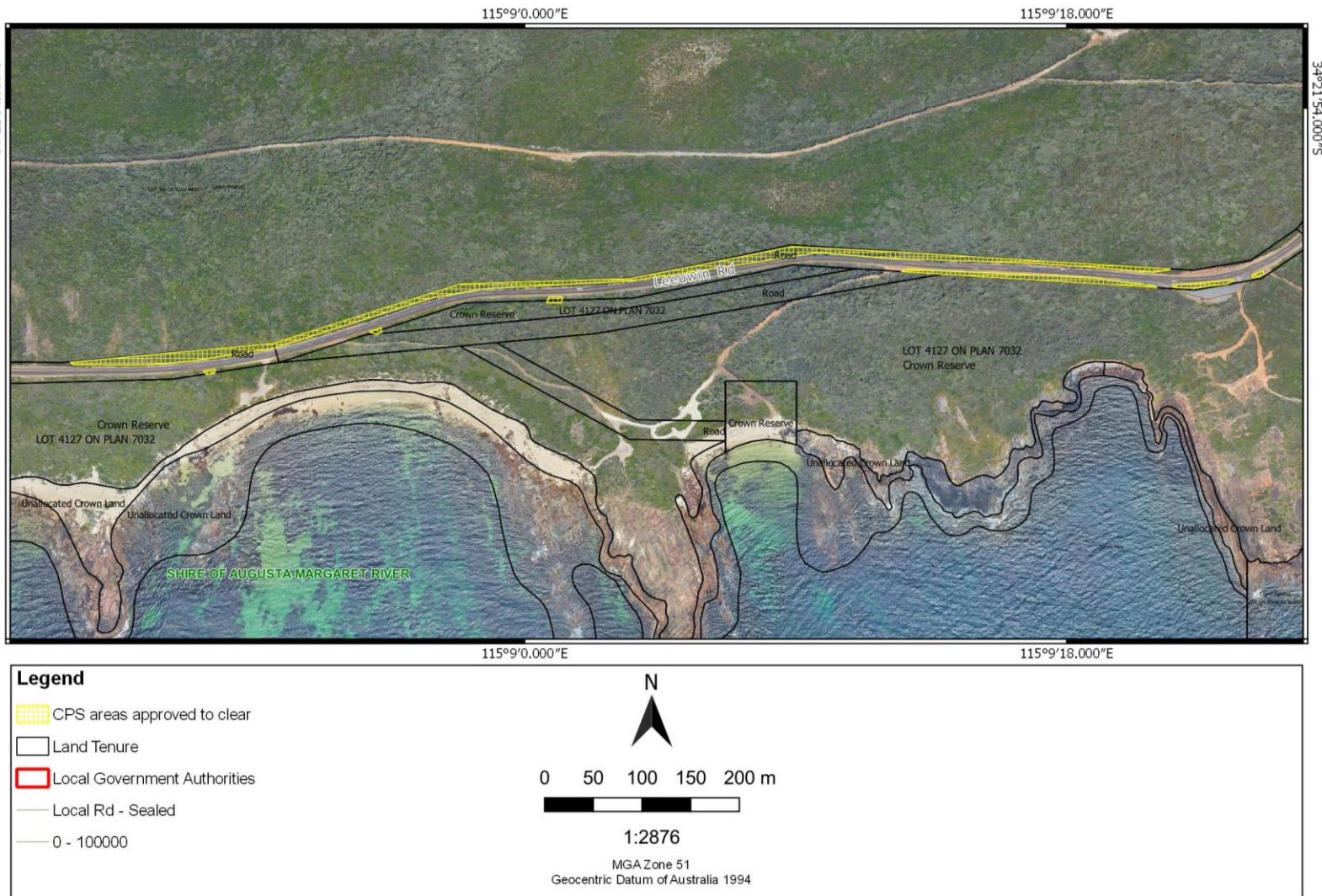
*Officer delegated under Section 20  
of the Environmental Protection Act 1986*

22 June 2021

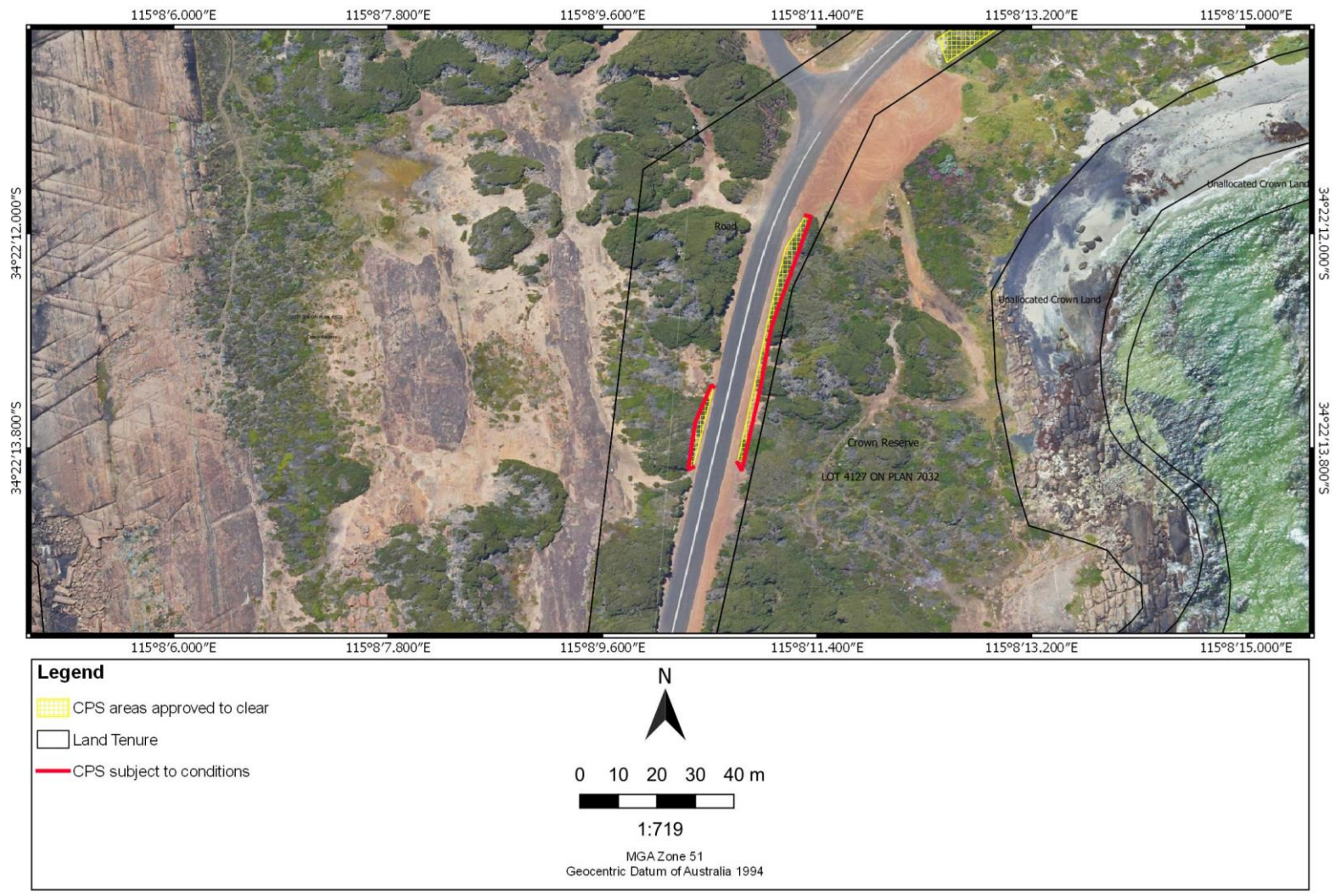
# Schedule 1



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

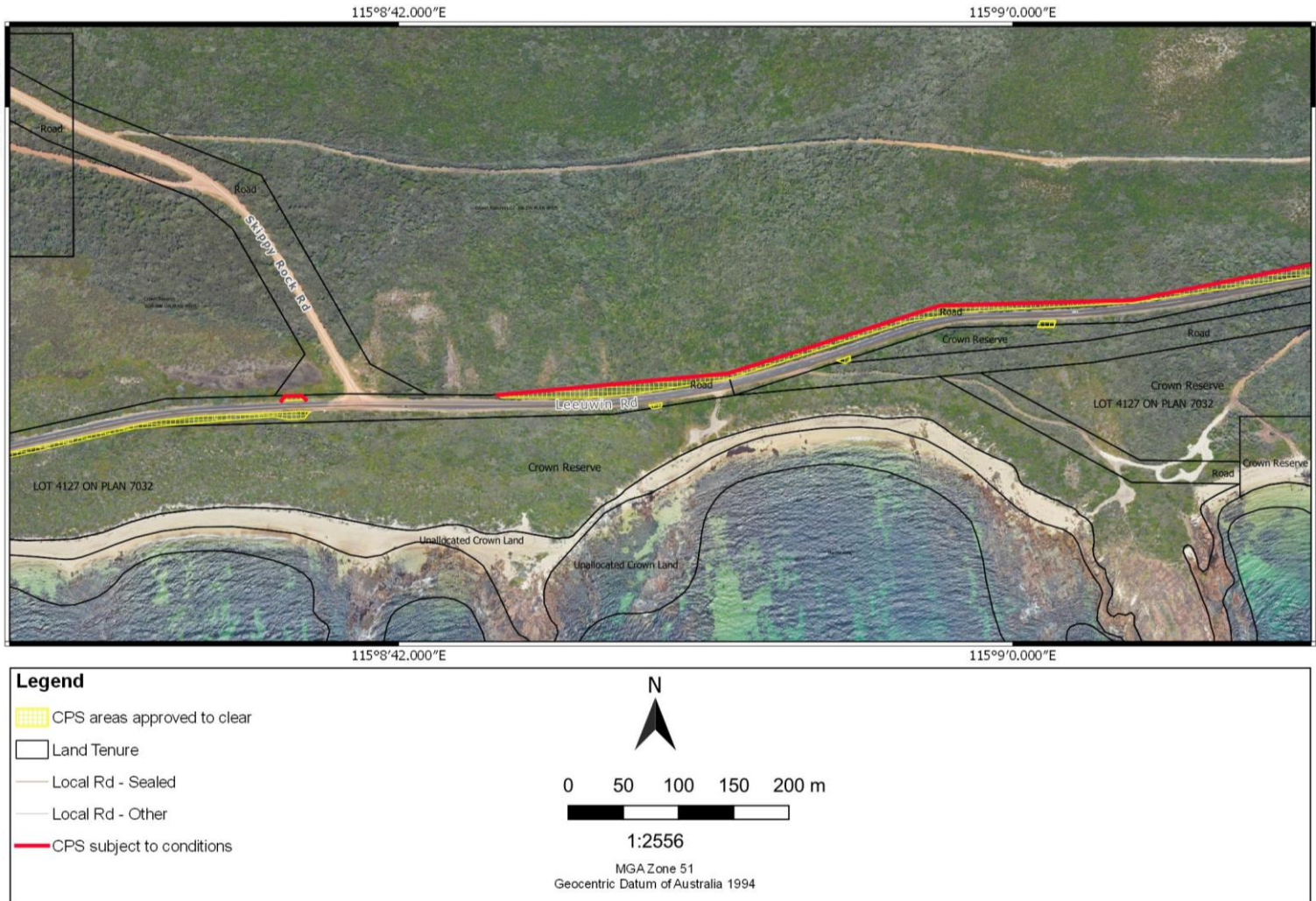


**Figure 2: Map of the boundary of the area within which clearing may occur**

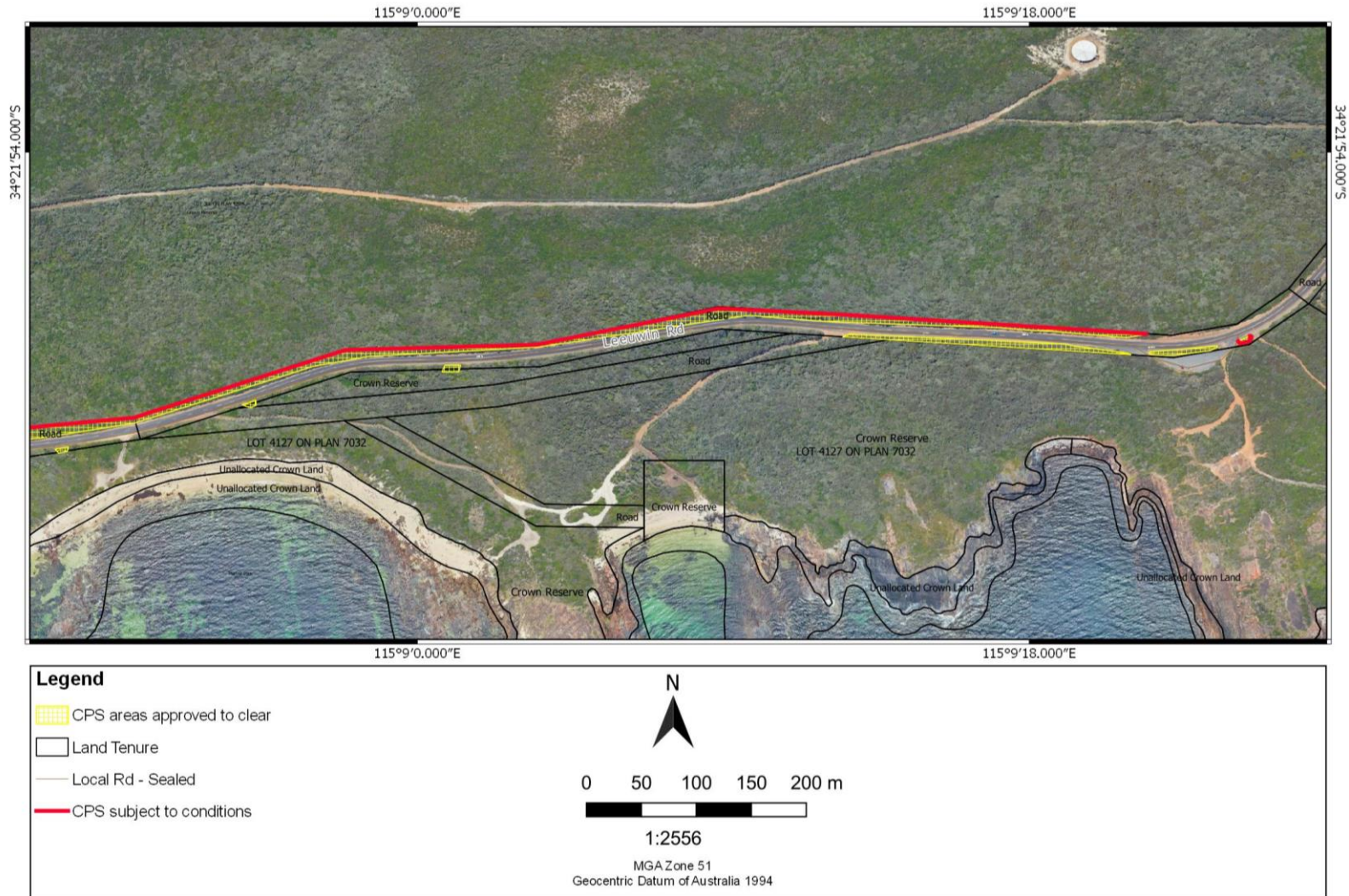


**Figure 3: Map of area subject to condition 8**





**Figure 4: Map of area subject to condition 8**



**Figure 5: Map of area subject to condition 8**



## Clearing Permit Decision Report

### 1 Application details and outcome

#### 1.1. Permit application details

<b>Permit number:</b>	CPS 9210/1
<b>Permit type:</b>	Purpose permit
<b>Applicant name:</b>	Shire of Augusta Margaret River
<b>Application received:</b>	11 February 2021
<b>Application area:</b>	0.4 hectares of native vegetation
<b>Purpose of clearing:</b>	Widening and reconstruction of Leeuwin Road
<b>Method of clearing:</b>	Mechanical
<b>Property:</b>	Leeuwin Road reserve (PINs 11607702, 11607703) Unnamed road reserve (PIN 11622189) Lot 4127 on Plan 7032 (Crown reserve 25141)
<b>Location (LGA area/s):</b>	Shire of Augusta Margaret River
<b>Localities (suburb/s):</b>	Leeuwin

#### 1.2. Description of clearing activities

The applicant proposes to clear 0.4 hectares of native vegetation within a 1.04 hectare footprint (see Figure 1 and Figure 2, Section 1.5). The footprint in which vegetation is proposed to be cleared is distributed across thirteen linear areas with widths of up to 8 metres situated on either side of Leeuwin Road. The clearing will allow the reconstruction and widening of the existing 5-6 metre wide sealed road to a width of 6.5 metres, with 1 metre unsealed shoulders on either side, and associated drainage works (including culverts), and erosion control works. Clearing of wider areas of roadside vegetation is required in some areas where the ground is elevated above the road surface and wider banks are required past the road shoulders to minimise erosion.

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#### 1.3. Decision on application

<b>Decision:</b>	Granted
<b>Decision date:</b>	22 June 2021
<b>Decision area:</b>	0.4 hectares of native vegetation as depicted in Section 1.5 below

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#### 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 A), relevant datasets (see Appendix ) and the findings of flora and fauna surveys, the clearing principles set out in Schedule 5 of

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the EP Act (see 0), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3).

The assessment identified that the proposed clearing may result in:

- Impacts to habitat for western ringtail possum, Cape Leeuwin snail, black cockatoo species, chuditch, quenda, western brush wallaby, masked owl, south-western brush-tailed phascogale and peregrine falcon, however impacts are not likely to be significant; #
- Impact on western ringtail possum (WRP) individuals;#
- Removal of 0.014 hectares of the *Melaleuca lanceolata* forests, Leeuwin Naturaliste Ridge Priority ecological community (PEC);
- Removal of individuals of the Priority 4 flora species *Banksia sessilis* var. *cordata*;
- Impacts to the adjacent Leeuwin-Naturaliste National Park.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined that the impacts of the proposed clearing can be minimised and managed to be unlikely to lead to an unacceptable risk to environmental values, and that the applicant has suitably demonstrated avoidance and minimisation measures.

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

- avoid and minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds;
- stage clearing to minimise wind erosion;
- a pre-clearing inspection by a fauna specialist is required to inspect areas for western ringtail possums, and clearing to not take place in areas where WRPs are present until individuals have left the area or have been removed by a western ringtail possum specialist; and
- temporarily fence clearing boundaries prior to clearing where they are adjacent to areas of the *Melaleuca lanceolata* forests Leeuwin Naturaliste Ridge PEC, populations of *Banksia sessilis* var. *cordata*, the Leeuwin-Naturaliste National Park and potential habitat for the Cape Leeuwin snail.



# Clearing Permit Decision Report

## 1.5. Site maps

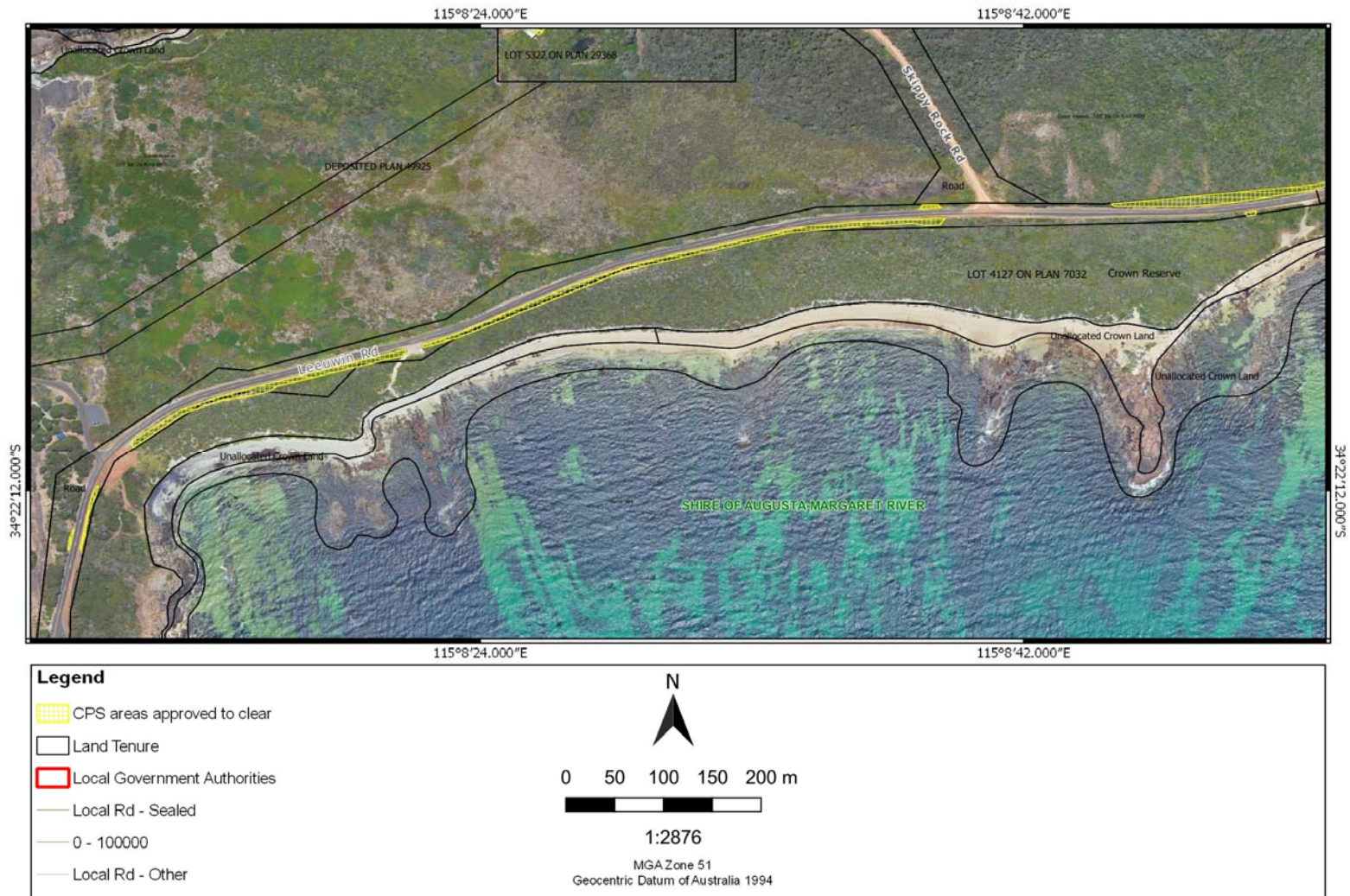


Figure 1. Map of the application area. The areas crosshatched yellow indicate the areas authorised to be cleared under the granted clearing permit.

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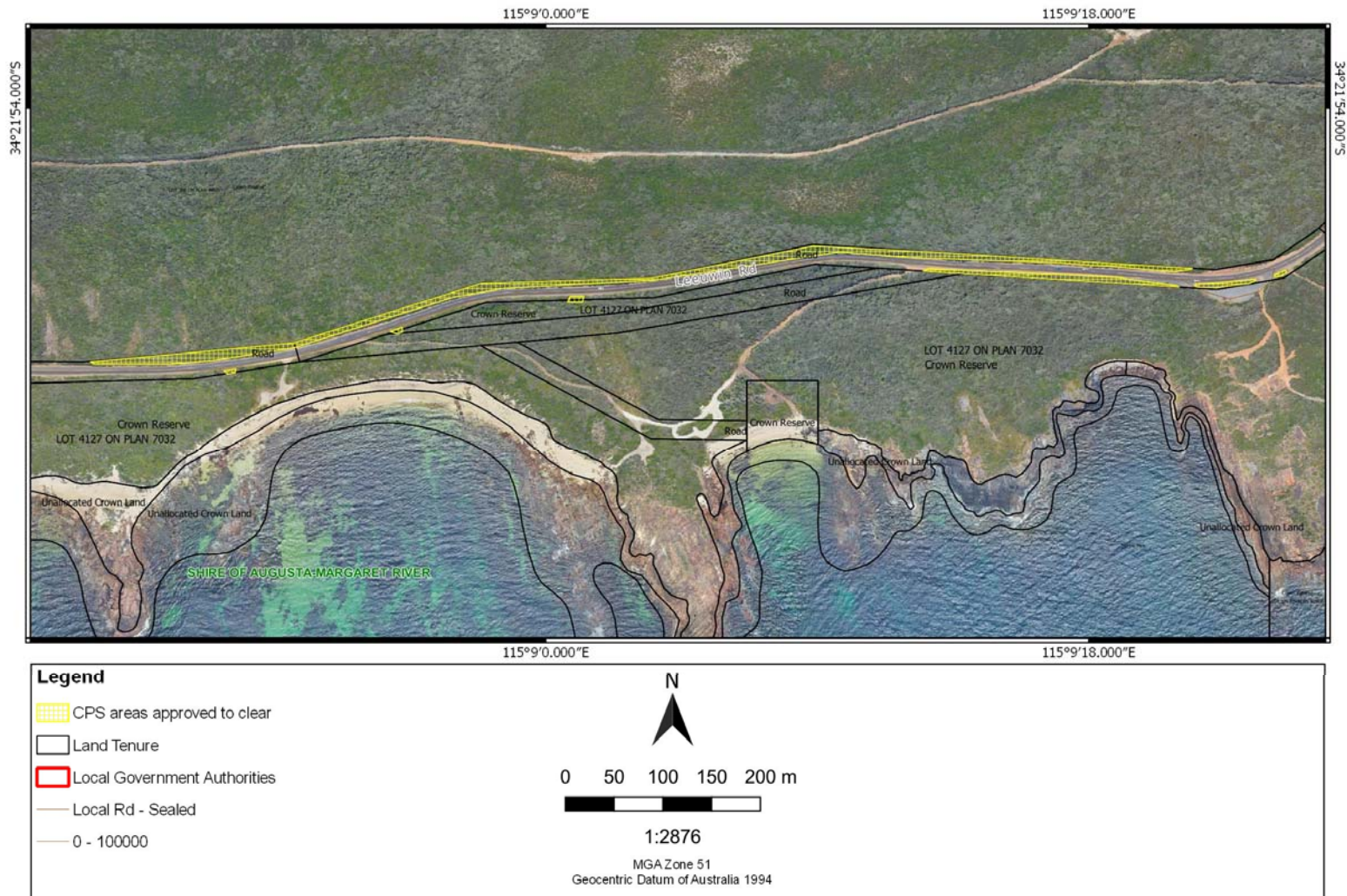


Figure 2. Map of the application area. The areas crosshatched yellow indicate the areas authorised to be cleared under the granted clearing permit.

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## 2 Legislative context

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

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

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

Other legislation of relevance for this assessment include:

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

The key guidance documents which inform this assessment are:

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

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## 3 Detailed assessment of application

### 3.1. Avoidance and mitigation measures

The applicant has advised that the following avoidance and mitigation measures have been or will be undertaken (Shire of Augusta Margaret River, 2021a):

- The road has been designed to minimise clearing of native roadside vegetation and to avoid environmental sensitivities, including habitat for threatened fauna (western ringtail possum and Leeuwin Freshwater Snail), a Priority 2 PEC *Melaleuca lanceolata* forest, and other PECs in the vicinity. Earlier road upgrade designs have been amended and redesigned based on biological field surveys to avoid impacts to these significant biodiversity values.
- Clearing of native vegetation will be minimised wherever possible.
- In order to ensure that access and disturbance is restricted to the approved clearing areas and does not extend into conservation-significant areas, prior to clearing the Shire will survey and temporarily demarcate the following boundaries in the field:
  - Clearing boundaries within the *Melaleuca lanceolata* PEC;
  - Edge of roadside vegetation between the water wheel carpark and Skippy Rock Road intersection to protect Leeuwin Freshwater Snail habitat and the Sedgeland of the Cape Leeuwin Spring PEC; and
  - Boundary between the Leeuwin Road Reserve and the Leeuwin Naturaliste National Park along the eastern extent of the project area.
- If any plants of *Banksia sessilis* var. *cordata* require removal or pruning, all seed present will be collected and stored at DBCA's Threatened Seed Centre, in accordance with DBCA-approved procedures and licensing requirements.
- Existing surface drainage patterns will be maintained during road reconstruction, with no runoff of water or sediment into the surrounding environment.
- Retrenchment pruning of large branches will be undertaken as an alternative to tree removal where branches pose a safety hazard.
- Best practice weed and dieback hygiene measures will be implemented during clearing and construction (clean vehicles and machinery prior to entering the site).
- Early contact will be made with the DBCA District Office regarding the scheduling of road reconstruction works.
- Clearing will be implemented in strict accordance with DBCA's *Procedures to Minimise the Risk to Western Ringtail Possums during Vegetation Clearing and Building Demolition* (DBCA, 2015), including the presence of a fauna spotter and handler on site prior to and during construction in order to manage any disturbed animals.
- pH testing of road material and lime-dosing of the material used in road shoulders will be undertaken, if required.

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The applicant has also advised that the current width of Leeuwin Road is insufficient given the type and volumes of traffic it receives, and that road reconstruction is essential to improve driver visibility and overall road safety (Shire of Augusta Margaret River, 2021a).

In response to the findings of an additional flora survey requested by DWER for the proposed clearing areas north of Leeuwin Road (Litoria, 2021), the applicant provided the following further avoidance and minimisation considerations:

- Impacts to the two populations of *Banksia sessilis* var. *cordata* recorded in the survey will be minimised. Clearing on the north side of the road is unavoidable in this section due to the steep terrain, and it is possible that some plants may occur along the verge within the clearing area. Clearing boundaries will be temporarily demarcated on the ground to ensure there is no disturbance outside the approved clearing area. The Shire will implement best practice weed and dieback hygiene measures to minimise the risk of introducing weeds or dieback to the area, and existing drainage patterns will be maintained. The Shire will also undertake pH testing of road material and lime-dose the material used in road shoulders, if required, to reduce the dieback risk. As recommended by DBCA, if any plants of *Banksia sessilis* var. *cordata* require removal or pruning, seed will be collected and stored at DBCA's Threatened Seed Centre, in accordance with DBCA-approved procedures and licensing requirements.
- The road has been designed to minimise clearing within the *Melaleuca lanceolata* forests PEC as much as possible by widening the road in this section on the south side where the roadside vegetation is more degraded, and to avoid higher quality vegetation on the north side of the road. The clearing may result in the removal of up to 0.01 ha of the *Melaleuca lanceolata* forests PEC in the south-western extent of the project area, with the widest section unlikely to exceed 2.5 metres. The clearing area will be temporarily demarcated on the ground to ensure there is no disturbance outside the approved clearing boundaries. Wherever possible, branches will be pruned as an alternative to tree removal. This PEC extends well outside the clearing area on both sides of Leeuwin Road, including within the adjoining National Park as well as other locations within the region, and it is not considered that the clearing will have any impact on its conservation significance.
- With respect to bush regeneration and weed control works, the Shire is currently in the process of preparing a *Taalilup Boya* Healthy Country Plan that will identify the cultural and environmental values of the Shire-managed reserve south of Leeuwin Rd, and which includes a prioritised and costed works program to protect and restore these values. It is anticipated this Plan will identify degraded areas for restoration, and the Shire is committed to implementing environmental restoration activities in this area. This Shire is unable to commit to restoration activities on the north side of Leeuwin Road due to the proximity to the Leeuwin Naturaliste National Park, but will continue to engage with DBCA about the road reconstruction works and ensuring there will be no impacts to the adjoining national park.

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

### 3.2. Assessment of impacts on environmental values

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

The assessment against the clearing principles (see Appendix B) identified that the impacts of the proposed clearing to biological values (fauna, flora and vegetation), conservation areas, 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) - Clearing Principles (a) and (b)

##### Assessment

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

- *Pseudocheirus occidentalis* (Western ringtail possum, ngwayir) (CR);
- *Calyptorhynchus banksii naso* (forest red-tailed black cockatoo) (VU);
- *Calyptorhynchus baudinii* (Baudin's cockatoo) (EN);
- *Calyptorhynchus latirostris* (Carnaby's cockatoo) (EN);
- *Austroassiminea lethra* (Cape Leeuwin freshwater snail) (VU);
- *Dasyurus geoffroyi* (chuditch, western quoll) (VU);



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- *Tyto novaehollandiae novaehollandiae* (masked owl (southwest)) (P3)
- *Isoodon fusciventer* (Quenda, southwestern brown bandicoot) (P4);
- *Notamacropus irma* (Western brush wallaby) (P4);
- *Phascogale tapoatafa wambenger* (south-western brush-tailed phascogale, wambenger) (CD); and
- *Falco peregrinus* (Peregrine falcon) (OS).

The western ringtail possum (WRP) is an arboreal foliovore, associated with long unburnt mature remnant peppermint woodlands along the Swan Coastal Plain management zone from Mandurah to Augusta, characterised by high canopy cover and connectivity (DPAW, 2017). Areas of low closed forest vegetation and closed scrub vegetation containing *Agonis flexuosa* within the application area are therefore likely to provide suitable habitat for the WRP, and it is possible that the dense heath and *Melaleuca lanceolata* vegetation may also be suitable (Litoria Ecoservices, 2019a). Litoria Ecoservices (2019a and 2021) recorded dreys, scats and numerous spotlighting observations of WRP within the vicinity of the proposed clearing areas, including one drey within a proposed clearing area on the northern side of Leeuwin Road. Given the extent of the application area, the presence of adjoining vegetation providing suitable habitat, and that the proposed clearing will not result in a loss of connectivity of WRP habitat, the proposed clearing is unlikely to have a significant effect on WRP habitat. To mitigate impacts to WRP individuals, WRP management conditions will be placed on the permit.

The Cape Leeuwin snail (CLS) is restricted to seven (known) isolated populations from Cape Naturaliste to Cape Leeuwin (Onton 2009, Litoria Ecoservices 2019a), one of which is the Cape Leeuwin System wetland. The CLS requires conditions that are perennially moist or highly humid, with all known occurrences associated with freshwater seeps and springs draining from limestone formations near the coast (Solem et al. 1982, Onton 2009). Ottelia Ecology (2021) assessed the likelihood of areas alongside Leeuwin Road to provide suitable habitat for the CLS, and identified areas containing high soil moisture, granular soils and/or low lying areas as likely or possible suitable habitat. Within the proposed clearing areas, only the 0.006 hectare area of Degraded vegetation north of Leeuwin Road and immediately west of Skippy Rock Road was identified as providing possibly suitable habitat for the CLS, although areas on the southern side of the road associated with drainage culverts were also considered at risk to contain CLS. Ottelia Ecology (2021) searched for the CLS in all potentially suitable CLS areas, and while several dead shells were found close to the application area, no dead or living snail shells were found within locations of suitable habitat searched within the application area. Given this, and the small extent of potentially suitable CLS habitat proposed to be cleared, it is considered unlikely that the proposed clearing will have a significant impact upon the CLS. The applicant has advised that, to mitigate impacts to CLS habitat, the following management actions will be undertaken during clearing:

- Existing surface drainage patterns will be maintained during road reconstruction, with no runoff of water or sediment into the surrounding environment.
- Best practice weed and dieback hygiene measures will be implemented during clearing and construction (clean vehicles and machinery prior to entering the site).
- pH testing of road material and lime-dosing of the material used in road shoulders will be undertaken, if required.

A condition will also be placed on the permit requiring the permit holder to temporarily fence the boundary of the 0.006 hectare area of vegetation north of Leeuwin Road and immediately west of Skippy Rock Road prior to clearing to protect adjacent areas of potential habitat for the Cape Leeuwin snail from unintentional clearing.

*Corymbia calophylla* (marri) trees present within areas of closed scrub vegetation may provide suitable foraging habitat for *Calyptorhynchus banksii naso* (forest red-tailed black cockatoo), *Calyptorhynchus baudinii* (Baudin's cockatoo) and *Calyptorhynchus latirostris* (Carnaby's cockatoo). However, noting the small extent of closed scrub vegetation within the proposed clearing area and that marri trees do not comprise a large proportion of this vegetation, the proposed clearing is not likely to have a significant impact on black cockatoo foraging habitat. A fauna survey conducted within vegetation south of Leeuwin Road (Litoria Ecoservices, 2019a) did not find any suitable trees for black cockatoo nesting or roosting, and street view imagery and photograph provided by the applicant indicate that vegetation along the northern side of Leeuwin Road would also not have any suitably large marri trees for nesting or roosting.

The chuditch, quenda, western brush wallaby, masked owl, south-western brush-tailed phascogale and peregrine falcon may utilise the application area as habitat. However, given:

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

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the proposed clearing is unlikely to have a significant effect on habitat on these species.

### Conclusion

Based on the above assessment, the proposed clearing may clear habitat for western ringtail possum, Cape Leeuwin snail, chuditch, quenda, western brush wallaby, masked owl, south-western brush-tailed phascogale and peregrine falcon, however is not likely to result in significant impacts to habitat for these species. Conditions on the permit will mitigate potential impacts to adjacent habitat of the Cape Leeuwin snail and to western ringtail possum (WRP) individuals utilising vegetation within the application area. #

### Conditions

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

- Fauna management – western ringtail possums: a fauna specialist is required to inspect areas prior to clearing for WRPs and clearing cannot take place in areas where WRPs are present until individuals have left the area or have been removed by a western ringtail possum specialist;
- Temporarily fencing of the boundary of the 0.006 hectare area of vegetation north of Leeuwin Road and immediately west of Skippy Rock Road prior to clearing to prevent unintentional clearing of adjacent areas of potential habitat for the Cape Leeuwin snail.

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### **3.2.2. Biological values (flora and vegetation) - Clearing Principles (a) and (c)**

#### Assessment #

The application area may provide suitable habitat for Threatened flora species *Kennedia lateritia* and Priority 4 flora species *Banksia sessilis* var. *cordata*. Surveys conducted did not record the presence of *Kennedia laterita*, and as such it is considered unlikely that individuals of this species are present. Flora surveys recorded the presence of three populations of *Banksia sessilis* var. *cordata* within the application area (Litoria, 2019b and 2021). Two of these populations extend beyond the boundaries of the application area, and as such the proposed clearing will not completely remove these populations. Noting this, and that there are many records (58) present for this species within Western Australia, the proposed clearing is not likely to significantly impact the conservation status of this species. Weed and dieback management conditions, and a condition requiring the permit holder to temporarily fence the boundary of proposed clearing areas adjacent to populations of *Banksia sessilis* var. *cordata* that extend outside of the proposed clearing area, will limit impacts to *Banksia sessilis* var. *cordata* individuals outside of the application area. It is also noted that the applicant has advised that, as recommended by DBCA, if any plants of *Banksia sessilis* var. *cordata* require removal or pruning, seed will be collected and stored at DBCA's Threatened Seed Centre, in accordance with DBCA-approved procedures and licensing requirements.

The Priority 2 listed ecological community (PEC) 'Melaleuca lanceolata forests, Leeuwin Naturaliste Ridge' has been recorded in the two portions of "Mel lanceolata" vegetation comprising 0.014 hectares (Litoria Ecoservices, 2019b and 2021). This vegetation is mapped as being in Very Good condition. This PEC is described as low closed forest to closed forest of *Melaleuca lanceolata* ("moonah") occurring near the coastline of the Leeuwin-Naturaliste Ridge adjacent to limestone cliffs and down steeply sloping rock slopes on dark-grey, brown or, less commonly, pale-grey sands, often with outcropping limestone. The moonah varies from 2 to 15 metres, reflecting depth of soil and wind pruning. Typical understorey shrubs are *Tetragonia implexicoma*, *Rhagodia baccata*, *Leucopogon propinquus*, and *Suaeda australis*. Given the small extent of the proposed clearing of this PEC in the context of the local area, the proposed clearing is unlikely to impact upon the conservation status of this PEC. Weed management conditions, and a condition requiring the permit holder to temporarily fence the boundary of proposed clearing areas adjacent to areas of this PEC prior to clearing, will limit impacts to adjacent areas of this PEC.

The Priority 1 PEC 'Tall closed sedgeland on shallow soils derived from granite gneiss on the Leeuwin Naturaliste Ridge ('Sedgelands of the Cape Leeuwin Spring')' is mapped to the north of the proposed clearing area, associated with the Cape Leeuwin System wetland. This PEC is described as tall closed sedgeland of *Juncus kraussii*, *Baumea juncea*, and *Schoenoplectus validus*; tall closed sedgeland of *Typha orientalis*, over *S. validus*, *Lepidosperma gladiatum* and *Muehlenbeckia adpressa*; low closed sedgeland of *Ficinia nodosa* and *Baumea juncea* on shallow soils derived from granite gneiss on the Leeuwin Naturaliste Ridge. Vegetation of this type was not recorded within the application area by Litoria (2019b or 2021). Given the small extent of proposed clearing areas close to the mapped occurrence of this PEC, the proposed clearing is unlikely to impact the mapped PEC area. Weed management conditions, and a condition requiring the permit holder to temporarily fence the boundary of the 0.006 hectare area

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of vegetation north of Leeuwin Road and immediately west of Skippy Rock Road prior to clearing, will limit impacts to PEC areas adjacent to the proposed clearing area.

#### Conclusion

Based on the above assessment, the proposed clearing will remove 0.014 hectares of the *Melaleuca lanceolata* forests, Leeuwin Naturaliste Ridge Priority ecological community (PEC) and will reduce the size of three populations of the Priority 4 flora species *Banksia sessilis* var. *cordata*. The proposed clearing is unlikely to impact an adjacent area of the Tall closed sedgeland on shallow soils derived from granite gneiss on the Leeuwin Naturaliste Ridge ('Sedgelands of the Cape Leeuwin Spring') Priority 1 ecological community.

For the reasons set out above, it is considered that the impacts of the proposed clearing on these values will not constitute a significant residual impact, and that weed and dieback management conditions and fencing conditions will mitigate impacts to adjacent PEC areas and *Banksia sessilis* var. *cordata*.

#### Conditions

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

- Weed and dieback management conditions to mitigate impacts to adjacent PEC areas and *Banksia sessilis* var. *cordata*.
- Temporarily fencing of the boundaries of proposed clearing areas that are adjacent to PEC areas and *Banksia sessilis* var. *cordata* populations prior to clearing, to prevent unintentional clearing of adjacent PEC and *Banksia sessilis* var. *cordata* areas.

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### **3.2.3. Conservation Areas - Clearing Principle (h)**

#### Assessment

The Leeuwin-Naturaliste National Park is immediately north of the application area. The proposed clearing may facilitate the spread of weeds into the National Park. Given the limited extent of the proposed clearing, it is considered that these impacts can largely be managed through suitable weed and dieback conditions and a condition requiring the permit holder to temporarily fence the boundaries of proposed clearing areas where they are adjacent to the National Park will limit impacts to PEC areas adjacent to the proposed clearing area. The applicant has also advised that existing surface drainage patterns will be maintained during road reconstruction, with no runoff of water or sediment into the surrounding environment, which will further limit effects of the clearing to the National Park (Shire of Augusta Margaret River, 2021).

#### Conclusion

Based on the above assessment, the proposed clearing may result in the spread of weeds into the adjacent Leeuwin-Naturaliste National Park. These impacts can be managed through suitable conditions.

#### Conditions

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

- Weed and dieback management conditions to mitigate impacts to the adjacent Leeuwin-Naturaliste National Park;
- Temporarily fencing of the boundaries of proposed clearing areas that are adjacent to the Leeuwin-Naturaliste National Park prior to clearing, to prevent unintentional clearing from occurring within the National Park.

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### **3.2.4. Land and water resources - Clearing Principles (f), (g) and (i)**

#### Assessment

The Cape Leeuwin System wetland is mapped within 3 metres of the proposed clearing area immediately west of Skippy Rock Road and north of Leeuwin Road. Vegetation within this proposed clearing area appears to be riparian. Given that this area of proposed clearing is small (approximately 0.006 hectares) and is in Degraded condition comprising largely of introduced grasses and weeds, it is considered unlikely that clearing of this area will significantly impact upon water quality or ecological values within this wetland. The applicant has advised that this proposed clearing area will be temporarily marked in the field to ensure that clearing is restricted to the approved clearing

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boundaries, and it will be ensured that there is no movement of soil or water into the wetland (Shire of Augusta Margaret River, 2021). Clearing to the south of Leeuwin Road in this area is also unlikely to significantly impact upon the wetland given that Leeuwin Road will act as a partial barrier to the spread of weeds and that the applicant has advised that existing surface drainage patterns will be maintained during road reconstruction, with no runoff of water or sediment into the surrounding environment to occur. Clearing to the east of Skippy Rock Road is considered to have a sufficient buffer of dense vegetation to the wetland (approximately 17 metres) such that impacts to the wetland from clearing of this area are unlikely to be significant.

Soils within the majority of the application area are mapped as having a high risk of wind erosion, however given the small extent of the proposed clearing area the impacts are not likely to be appreciable. A condition will be placed on the permit to mitigate any impacts from wind erosion.

#### Conclusion

Based on the above assessment, the proposed clearing is not likely to result in impacts to the Cape Leeuwin system wetland. Effects of wind erosion can be managed through suitable conditions.

#### Conditions

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

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

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

The closest Aboriginal Site of Significance to the application area is mapped 185 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.

**End**

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## Appendix A - Site characteristics


### A.1. Site characteristics

Characteristic	Details
Local context	<p>The areas in which clearing is proposed are part of expansive tracts of native vegetation present to the north and south of Leeuwin Road, in the intensive land use zone of Western Australia. Most areas are bordered by Leeuwin Road on one side and native vegetation on the other side, with the exception of one area which is an island of native vegetation between Leeuwin Road and a carpark.</p> <p>Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 84 per cent of the original native vegetation cover.</p>
Ecological linkage	The areas in which clearing is proposed, particularly north of Leeuwin Road, may form part of a mapped South West Regional Ecological Linkage, however they are not considered to form a significant part of this linkage.
Conservation areas	The nearest conservation area is Leeuwin-Naturaliste National Park, located immediately north of some of the areas proposed to be cleared.
Vegetation description	<p>The following vegetation units were mapped by Litoria Ecoservices (2019b and 2021) in the areas proposed to be cleared:</p> <ul style="list-style-type: none"> <li>• <b>Veg Unit 1 [Low closed forest]:</b> Very Good Condition Low Closed Forest of <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>.</li> <li>• <b>Veg Unit 2 [Dense heath]:</b> Very Good Condition Closed Heath of <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>.</li> <li>• <b>Veg Unit 3 [Closed scrub]:</b> Tall closed scrub <i>Spyridium globulosum</i>, <i>Olearia axillaris</i>, and <i>Leucopogon parviflorus</i>, <i>Corymbia calophylla</i>, <i>Banksia sessilis</i> var. <i>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 pubescens</i>, <i>Dianella revoluta</i> and <i>Hardenbergia comptoniana</i>.</li> <li>• <b>Veg Unit 6 [Mel lanceolata]:</b> Very Good condition Low Closed Forest of <i>Melaleuca lanceolata</i> over sparse <i>Rhagodia baccata</i>, <i>Lepidosperma gladiatum</i>, <i>Spyridium globulosum</i>.</li> <li>• <b>Veg Unit 7 [Closed sedgeland/grassland]:</b> Degraded closed sedgeland/grassland of <i>Lepidosperma gladiatum</i> and <i>Stenotaphrum secundatum</i> with emergent <i>Rhagodia baccata</i> subsp. <i>baccata</i> and <i>Muehlenbeckia adpressa</i>.</li> </ul> <p>Maps are available in 0.</p> <p>This is consistent with the mapped vegetation types:</p> <ul style="list-style-type: none"> <li>• Gracetown (126), which is described as Closed heath of <i>Olearia axillaris</i>-<i>Rhagodia baccata</i>-<i>Agonis flexuosa</i> on seaward slopes in hyperhumid to humid zones.; and</li> <li>• Wilyabrup (294), which is described as Mosaic of coastal heath and low woodland to woodland of <i>Corymbia calophylla</i>-<i>Eucalyptus marginata</i> subsp. <i>marginata</i>-<i>Banksia</i> spp. on westward slope in hyperhumid to humid zones. (Mattiske and Havel, 1998)</li> </ul> <p>The above mapped vegetation types retain approximately 94.6 and 84.0 per cent respectively of their original extents (Government of Western Australia, 2019b).</p>
Vegetation condition	Based on surveys (Litoria Ecoservices, 2019b and 2021), vegetation within the proposed clearing areas are in Degraded, Very Good and Excellent (Keighery, 1994) condition, described as:

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Characteristic	Details
	<ul style="list-style-type: none"> <li>• Degraded (only small area north of Leeuwin Road and immediately west of Skippy Rock road) - 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.</li> <li>• 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; and</li> <li>• Excellent - Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.</li> </ul> <p>The full Keighery (1994) / Trudgen (1991) condition rating scale is provided in Appendix C. Representative photos and mapping are available in Appendix D.</p>
Climate	Rainfall: 1100 mm Evapotranspiration: 800 mm
Topography	10m AHD (west) to 35 m AHD (east)
Soil description	The soil is mapped as: <ul style="list-style-type: none"> <li>• Gracetown exposed slopes phase (216GrGTEe), described as 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); and</li> <li>• Wilyabrup granitic headland Phase (216GrWLRE), described as areas on the west coast dominated by granitic outcrop (DPIRD, 2019).</li> </ul>
Land degradation risk	<ul style="list-style-type: none"> <li>• Flood risk: &lt;3% of the map units have a moderate to high flood risk</li> <li>• Waterlogging risk: &lt;3% of map units have a moderate to very high waterlogging risk</li> <li>• Wind erosion risk:               <ul style="list-style-type: none"> <li>○ Gracetown exposed slopes phase: &gt;70% of map unit has a high to extreme wind erosion risk</li> <li>○ Wilyabrup granitic headland Phase: 10-30% of map unit has a high to extreme wind erosion risk</li> </ul> </li> <li>• Water erosion risk:               <ul style="list-style-type: none"> <li>○ Gracetown exposed slopes phase: 10-30% of map unit has a high to extreme water erosion risk</li> <li>○ Wilyabrup granitic headland Phase: 3-10% of map unit has a high to extreme water erosion risk</li> </ul> </li> <li>• Phosphorus export risk:               <ul style="list-style-type: none"> <li>○ Gracetown exposed slopes phase: 30-50% of map unit has a high to extreme phosphorus export risk</li> <li>○ Wilyabrup granitic headland Phase: 30-50% of map unit has a high to extreme phosphorus export risk</li> </ul> </li> <li>• Subsurface acidification risk:               <ul style="list-style-type: none"> <li>○ Gracetown exposed slopes phase: &gt;70% of map unit has a high subsurface acidification risk or is presently acid</li> <li>○ Wilyabrup granitic headland Phase: 3-10% of map unit has a high subsurface acidification risk or is presently acid</li> </ul> </li> <li>• Salinity risk: &lt;3% of map units have a moderate to high salinity risk or is presently saline (Schoknecht et al., 2004).</li> </ul>
Waterbodies	A wetland mapped in the Directory of Important Wetlands in Australia, the Cape Leeuwin System, is mapped within 3 m 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.

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Characteristic	Details
	
Hydrogeography	<p>Hydrogeology: Surficial Sediments - Shallow Aquifers (limestone, calcrete lithology). Groundwater salinity: &lt;500 mg/L TDS</p> <p>The application area is mapped within the Lower Blackwood Surface Water Area and Blackwood Groundwater Area proclaimed under the <i>Rights in Water and Irrigation Act 1914</i>.</p>
Flora	<p>There are records of 4 threatened and 16 priority flora species within the local area, the closest of which to the application area is <i>Banksia sessilis</i> var. <i>cordata</i> (approximately 1 m south of the proposed clearing area).</p>
Ecological communities	<p>There are records of 2 threatened and 2 priority ecological communities within the local area, the closest of which to the application area is the P1 Tall closed sedgeland on shallow soils derived from granite gneiss on the Leeuwin Naturaliste Ridge ('Sedgelands of the Cape Leeuwin Spring').</p>
Fauna	<p>There are records of 23 threatened, 8 priority, two conservation dependent, 20 migratory and 2 other specially protected fauna species within the local area, the closest of which to the application area is the P1 Tall closed sedgeland on shallow soils derived from granite gneiss on the Leeuwin Naturaliste Ridge ('Sedgelands of the Cape Leeuwin Spring').</p>

## A.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion*					
Warren	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

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	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
Local area					
10km radius	72,008.20	60,801.50	84.44	-	-

\*Government of Western Australia (2019a)

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

### A.3. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix E), and biological survey information (Litoria Ecoservices, 2019b), impacts to the following conservation significant flora required further consideration.

Species name	Conservation status	Suitable habitat features?	Suitable vegetation type?	Suitable soil type?	Distance of closest record to application area (km)	Number of records in Florabase	Number of records in local area	Are surveys adequate to identify?
<i>Banksia sessilis</i> var. <i>cordata</i>	P4	Y	Y	Y	0.001	4	58	Y
<i>Caladenia excelsa</i>	T	N	N	N	5.5	1	18	Y
<i>Caladenia lodgeana</i>	T	N	Y	N	1.8	5	4	Y
<i>Caladenia pholcoidea</i> subsp. <i>augustensis</i>	P1	N	Y	Y	3.8	2	2	Y
<i>Galium leptogonium</i>	P3	N	Y	Y	0.4	1	18	Y
<i>Grevillea brachystylis</i> subsp. <i>australis</i>	T	N	N	N	4.4	2	14	Y
<i>Kennedia lateritia</i>	T	Y	Y	Y	0.3	14	14	Y

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

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### A.4. Fauna analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix E), and biological survey information (Litoria Ecoservices, 2019a and Ottelia Ecology, 2021), impacts to the following conservation significant flora required further consideration.

Species name	Conservation status	Suitable habitat features?	Most recent record	Distance of closest record to application area (km)	Number of known records in local area	Are surveys adequate to identify?
<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>Calyptorhynchus baudinii</i> (Baudin's cockatoo)	EN	Y	2018	2.0	36*	Y
<i>Calyptorhynchus latirostris</i> (Carnaby's cockatoo)	EN	Y	2017	0.8	14*	Y
<i>Dasyurus geoffroyi</i> (chuditch, western quoll)	VU	Y	2003	3.8	2	Y
<i>Falco peregrinus</i> (Peregrine falcon)	OS	Y	1978	4.0	1	Y



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<i>Isoodon fusciventer</i> (Quenda, southwestern brown bandicoot)	P4	Y	2019	0.03	11	Y
<i>Notamacropus irma</i> (Western brush wallaby)	P4	Y	0	5.5	2	Y
<i>Phascogale tapoatafa wambenger</i> (south-western brush-tailed phascogale, wambenger)	CD	N	2019	0.5	15	Y
<i>Pseudocheirus occidentalis</i> (Western ringtail possum, ngwayir)	CR	Y	2019	0.6	122	Y
<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

\* An additional 20 records of *Calyptorhynchus* sp. 'white-tailed black cockatoo' were recorded within the local area, which may comprise either of these species

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## A.5. Ecological community analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix E), and biological survey information (Litoria Ecoservices, 2019b), impacts to the following conservation significant flora required further consideration.

Community name	Conservation status	Suitable habitat features?	Suitable vegetation type?	Distance of closest mapped record to application area (km)	Number of mapped records in local area	Are surveys adequate to identify?
Tall closed sedgeland on shallow soils derived from granite gneiss on the Leeuwin Naturaliste Ridge ('Sedgelands of the Cape Leeuwin Spring')	P1	Y	Y	0.002	3	Y
<i>Melaleuca lanceolata</i> forests, Leeuwin Naturaliste Ridge	P2	Y	Y	32.7	0	Y
Rimstone Pools and Cave Structures Formed by Microbial Activity on Marine Shorelines (Augusta microbialites)	EN	N	N	0.36	3	Y

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## Appendix B - Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
<b>Environmental value: biological values</b>		
<p><u>Principle (a):</u> "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 (<i>Melaleuca lanceolata</i> forests, Leeuwin Naturaliste Ridge) and a priority flora species (<i>Banksia sessilis</i> var. <i>cordata</i>). The application area contains a diverse array of flora species and habitats for conservation significant fauna.</p>	At variance	Yes <i>Refer to Sections 3.2.1 and 3.2.2 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, however this habitat is not likely to be significant.</p>	Not likely to be 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>	Not likely to be at variance	Yes

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Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Assessment:</u> The area proposed to be cleared is unlikely to contain flora species listed under the BC Act.</p>		Refer to Section 3.2.2, above.
<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></p> <p>The area proposed to be cleared does not contain species indicative of a threatened ecological community listed under the BC Act.</p>	Not likely to be at variance	No
<b>Environmental value: significant remnant vegetation and conservation areas</b>		
<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></p> <p>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 likely to be 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 distance to the nearest conservation area, the proposed clearing may have an impact on the environmental values of nearby conservation areas.</p>	May be at variance#	Yes Refer to Section 3.2.3, above.
<b>Environmental value: land and water resources</b>		
<p><u>Principle (f):</u> "Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."</p> <p><u>Assessment:</u> The proposed clearing area intersects a mapped wetland and some of the vegetation proposed to be cleared is riparian.</p>	At variance#	Yes Refer to Section 3.2.4, above.
<p><u>Principle (g):</u> "Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."</p> <p><u>Assessment:</u> The mapped soils are highly susceptible to wind erosion. Noting the extent of the application area, a condition requiring commencement of road construction activities within three months of the clearing is considered adequate to mitigate impacts from wind erosion.</p>	Not likely to be at variance#	Yes Refer to Section 3.2.4, above.
<p><u>Principle (i):</u> "Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water."</p> <p><u>Assessment:</u> Given 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 likely to be at variance#	Yes Refer to Section 3.2.4, above.
<p><u>Principle (j):</u> "Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."</p> <p><u>Assessment:</u> The mapped soils and topographic contours in the surrounding area and small extent of the proposed clearing do not indicate the proposed</p>	Not likely to be at variance#	No

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Assessment against the clearing principles	Variance level	Is further consideration required?
clearing is likely to contribute to increased incidence or intensity of flooding or waterlogging.		

### Appendix C - Vegetation condition rating scale

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

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Keighery (1994).

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

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

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## Appendix D - Biological survey information excerpts and photographs of the vegetation



Figure D-1 - Map of vegetation unit mapping south of Leeuwin Road by Litoria Ecoservices (2019a) (western section). #

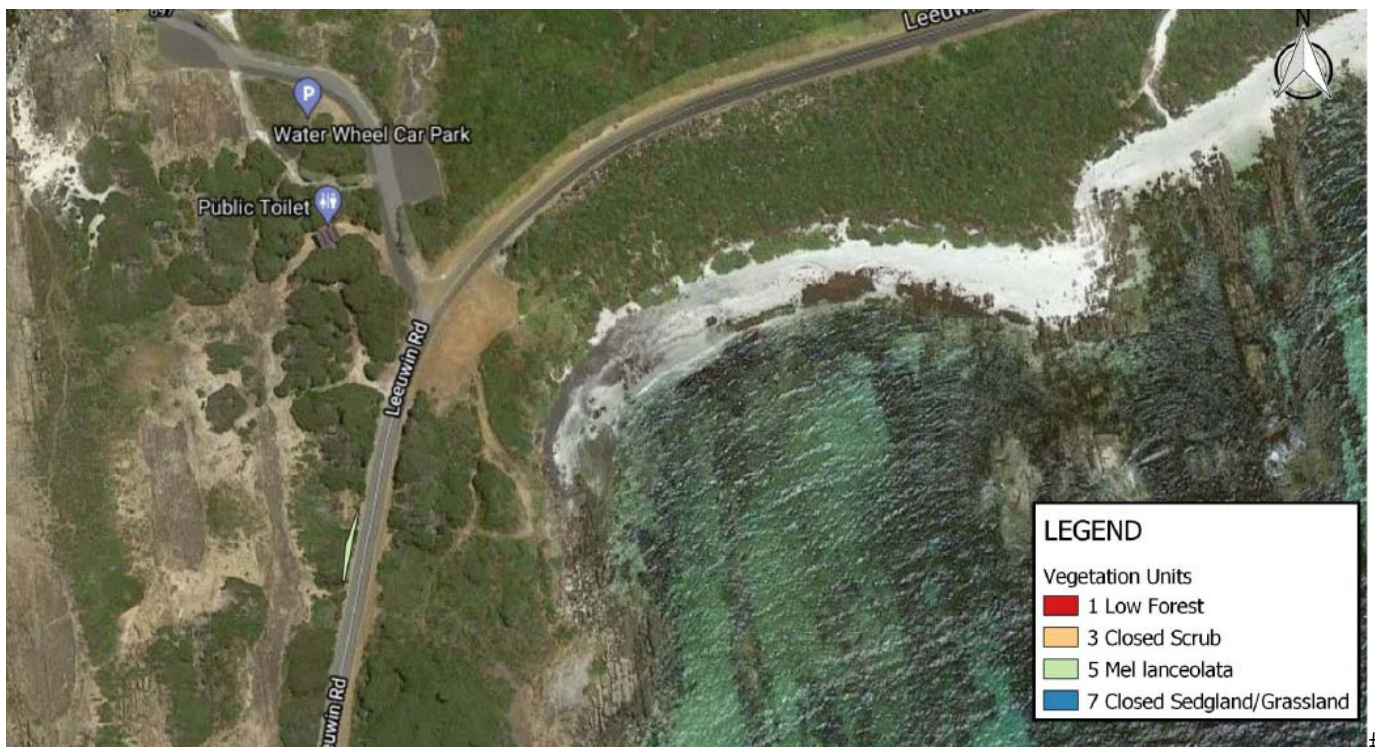
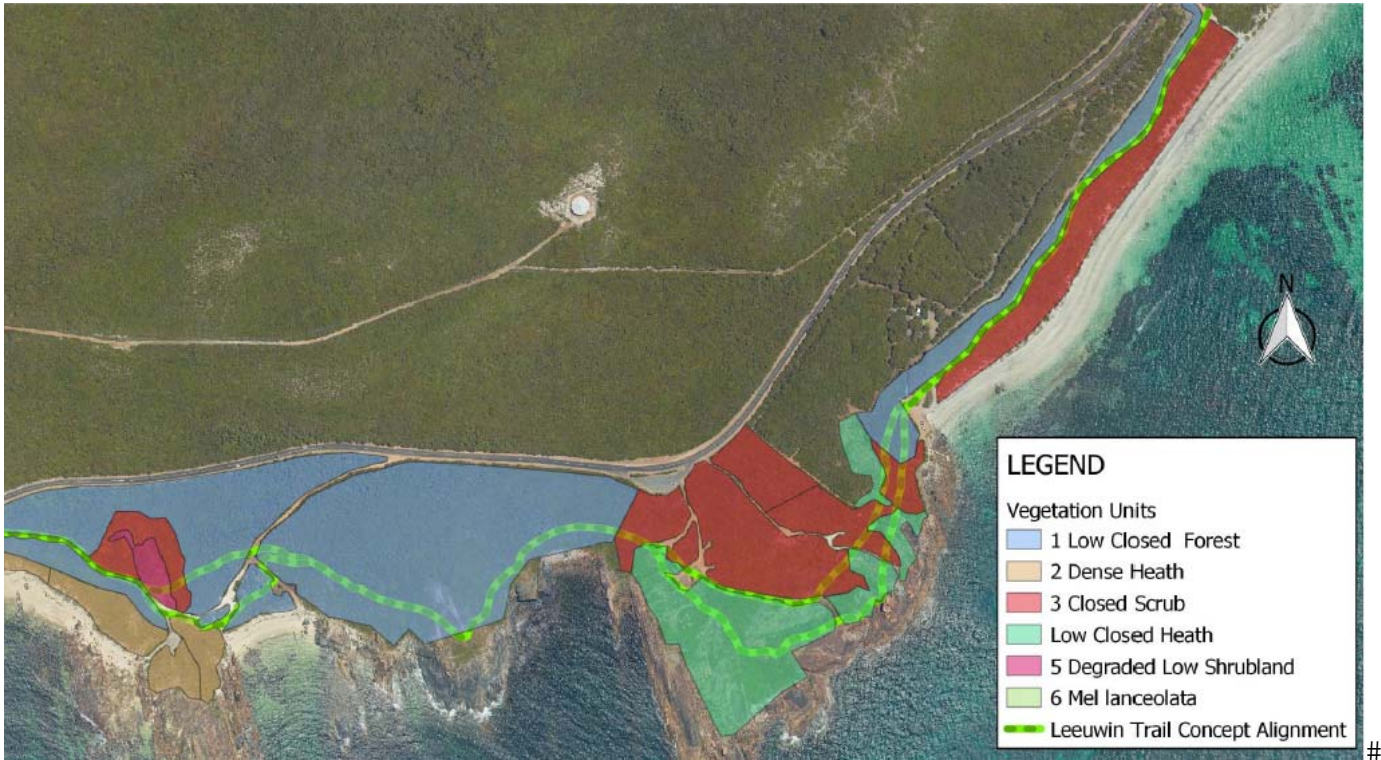


Figure D-2 - Map of vegetation unit mapping west of Leeuwin Road by Litoria Ecoservices (2021) (western section). #

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Figure D-3 - Map of vegetation unit mapping south of Leeuwin Road by Litoria Ecoservices (2019a) (eastern section).



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Figure D-4 - Map of vegetation unit mapping north of Leeuwin Road by Litoria Ecoservices (2021) (eastern section).

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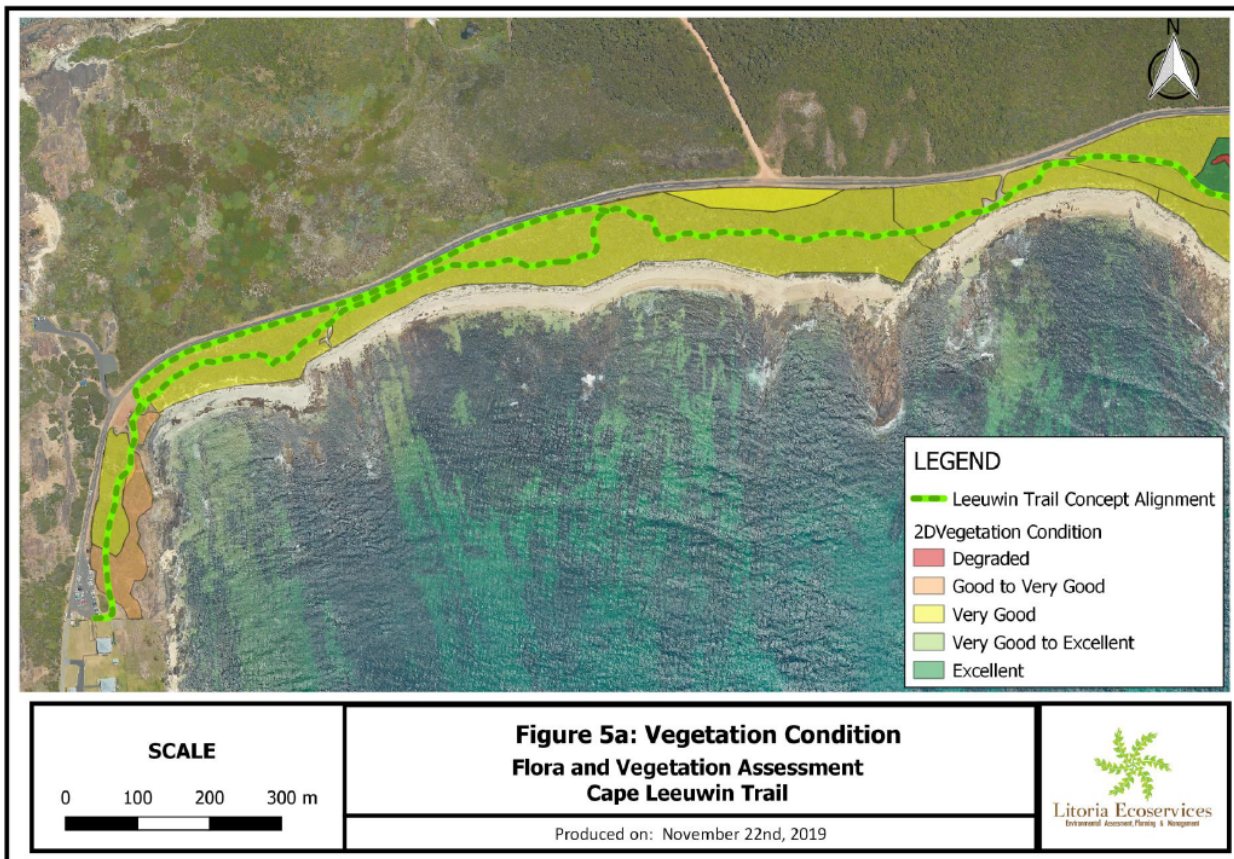


Figure D-5 – Vegetation condition mapping of vegetation south of Leeuwin Road (Litoria Ecoservices, 2019b) (western section).

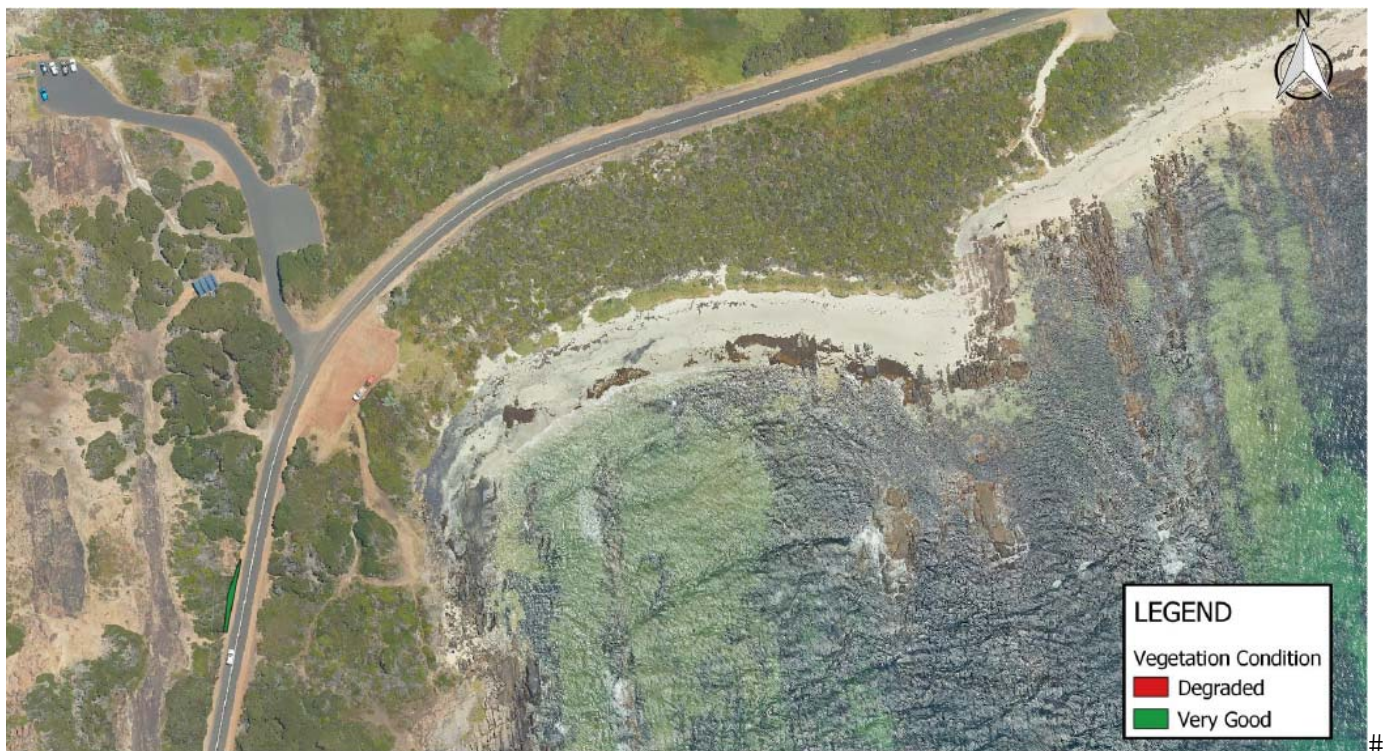


Figure D-6 – Vegetation condition mapping of vegetation west of Leeuwin Road (Litoria Ecoservices, 2021) (western section).

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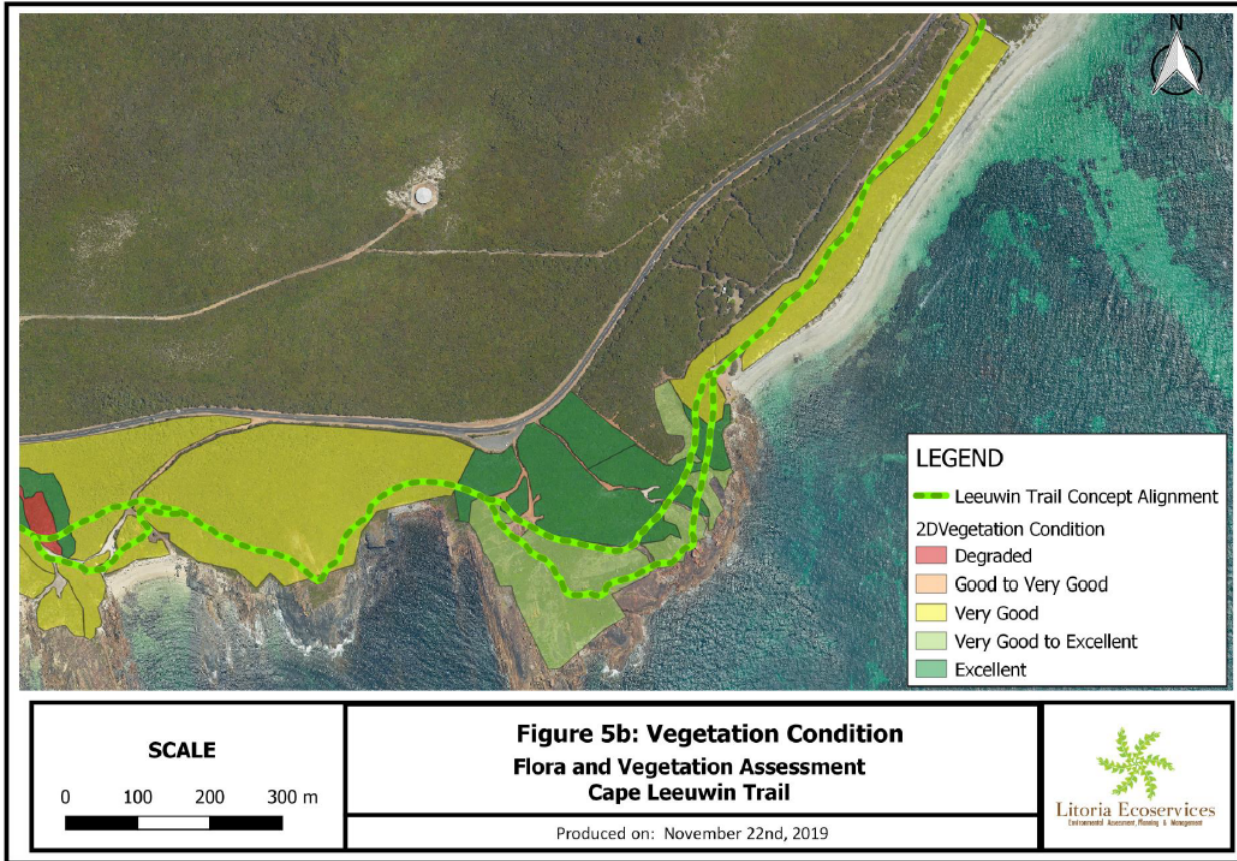


Figure D-7 – Vegetation condition mapping of vegetation south of Leeuwin Road (Litoria Ecoservices, 2019b) (eastern section).



Figure D-8 – Vegetation condition mapping of vegetation north of Leeuwin Road (Litoria Ecoservices, 2021) (eastern section).

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Figure D-9 – Vegetation along southern side of Leeuwin Road – low closed forest of *Agonis flexuosa*



Figure D-10 – Vegetation along northern side of Leeuwin Road – low closed forest of *Agonis flexuosa*



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Figure D-11 – Vegetation along northern side of Leeuwin Road immediately west of Skippy Rock Road – introduced weeds and grasses with native sedges.



Figure D-12 – Western-most proposed clearing area along Leeuwin Road – closed shrub and *Melaleuca lanceolata* vegetation.

## Appendix E - Sources of information

### E.1. GIS databases

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Geomorphic wetlands, Augusta to Walpole (DBCA-017)
- 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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