



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 9301/1
File Number: DWERVT7999
Duration of Permit: From 6 July 2022 to 29 June 2033

PERMIT HOLDER

Mr M Guggenheimer, Ms S Guggenheimer, Ms S Koefler, Mr N Koefler and Indian Coast Resort Pty Ltd

LAND ON WHICH CLEARING IS TO BE DONE

Lot 510 on Plan 302267, Lancelin

AUTHORISED ACTIVITY

The permit holder must not clear more than 6.9 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

CONDITIONS

1. Period during which clearing is authorised

The permit holder must not clear any *native vegetation* after 29 June 2023.

2. 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.

3. 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.

4. Directional clearing

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

5. Erosion management

The permit holder shall begin works associated with the authorised activities under this permit within two (2) months of undertaking *clearing* authorised under this permit.

6. Revegetation

- (a) The permit holder must retain the vegetative material and topsoil removed by clearing authorised under this permit and stockpile the vegetative material and topsoil in an area that has already been cleared;
- (b) The permit holder must within 12 months of the commencement of clearing and no later than 29 June 2024, and at an *optimal time*, *revegetate* the areas that are no longer required for the purpose for which they were cleared under this permit by implementing the ‘*Proposed Sand Extraction Lot 510 Old Ledge Point Road, Lancelin Revegetation Plan*, , *Report No. J20013c, 20 October 2021*’ prepared by Bayley Environmental Services, including but not limited to the following actions:
 - (i) laying the appropriate vegetative material and topsoil retained under condition 6(a);
 - (ii) deliberately *planting* tube stock and salvaged *native vegetation*;
 - (iii) ensuring only *local provenance* seeds and propagating material are used to *revegetate* the areas; and
 - (iv) ensuring the *revegetation* composition comprises vegetation resistant to wind erosion.
- (c) implement hygiene protocols by cleaning earth-moving machinery of soil and vegetation prior to entering and leaving the *revegetation* sites;
- (d) establish at least four 10 x 10 metre quadrat monitoring sites within *revegetated* areas;
- (e) monitor quadrats specified in condition 6(d) at least annually;
- (f) monitoring of quadrats specified in condition 6(d) is to be undertaken by an *environmental specialist*;

- (g) achieve the completion criteria specified in the attached Schedule 2 (revegetation completion criteria) after the five-year monitoring period for areas *revegetated* under this permit;
- (h) undertake weed control activities on an 'as needs' basis to maintain a minimum criterion in the attached Schedule 2 (revegetation completion criteria);
- (i) undertake *remedial actions* for areas *revegetated* where monitoring indicates that revegetation has not met the completion criteria, including:
 - (i) *revegetate* the areas by deliberately *planting native vegetation* that will result in the minimum targets specified in the attached Schedule 2 (*revegetation* completion criteria) ensuring only *local provenance* seeds and propagating material are used;
 - (ii) undertake further weed control activities;
 - (iii) undertake watering activities between November and May each year;
 - (iv) undertake annual monitoring of each *revegetated* site, until the completion criteria outlined in the attached Schedule 2 (*revegetation* completion criteria) is met; and.
 - (v) undertake all other *remedial actions* as described in the document '*Proposed Sand Extraction Lot 510 Old Ledge Point Road, Lancelin Revegetation Plan*';

7. 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 <i>clearing</i> occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994/2020 (GDA94/GDA2020), expressing the geographical coordinates in Eastings and Northings; (c) the date that the area was cleared; (d) direction of clearing; (e) the size of the area cleared (in hectares); (f) actions taken to avoid, minimise, and reduce the impacts and extent of <i>clearing</i> in accordance with condition 2; (g) actions taken to minimise the risk of the introduction and spread of weeds and dieback in accordance with condition 3; and (h) evidence supporting compliance with conditions 4 and 5 of this Permit.

No.	Relevant matter	Specifications
2.	In relation to <i>revegetation</i> of areas pursuant to condition 6 of this permit.	<p>(a) the location of areas <i>revegetated</i> recorded using a GPS unit set to GDA94/GDA2020, expressing the geographical coordinates in Eastings and Northings or decimal degrees;</p> <p>(b) description of the <i>revegetation</i> activities undertaken;</p> <p>(c) the size of the area <i>revegetated</i> (in hectares);</p> <p>(d) <i>remedial actions</i> required to be undertaken; and</p> <p>(e) evidence supporting compliance with condition 6 of this permit.</p>

8. Reporting

- (a) The permit holder must provide to the *CEO* on or before 30 June of each calendar year, a written report containing:
- (i) the records required under condition 7 of this permit; and
 - (ii) records of activities done by the permit holder under this permit between 1 January and 31 December of the preceding calendar year.
- (b) If no clearing authorised under this permit has been undertaken, a written report confirming that no clearing under this permit has been carried out, must be provided to the *CEO* on or before 31 December of each calendar year.
- (c) The permit holder must provide to the *CEO*, no later than 90 calendar days prior to the expiry date of this permit, a written report of records required under condition 7, where these records have not already been provided under condition 8(a).

DEFINITIONS

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

Table 2: Definitions

Term	Definition
<i>CEO</i>	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .
<i>clearing</i>	has the meaning given under section 3(1) of the EP Act.
<i>condition</i>	a condition to which this clearing permit is subject under section 51H of the EP Act.
<i>department</i>	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.
<i>dieback</i>	means the effect of <i>Phytophthora</i> species on native vegetation.

Term	Definition
<i>fill</i>	means material used to increase the ground level, or to fill a depression.
<i>environmental specialist</i>	means a person who holds a tertiary qualification in environmental science or equivalent, and has a minimum of two (2) years' work experience relevant to the type of environmental advice that an environmental specialist is required to provide under this permit, or who is approved by the CEO as a suitable environmental specialist.
<i>EP Act</i>	<i>Environmental Protection Act 1986 (WA)</i>
<i>mulch</i>	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.
<i>native vegetation</i>	has the meaning given under section 3(1) and section 51A of the EP Act.
<i>Local provenance</i>	means native vegetation seeds and propagating material from natural sources within 25 kilometres and the same Interim Biogeographic Regionalisation for Australia (IBRA) subregion of the area cleared.
<i>planting</i>	means the re-establishment of vegetation by creating soil conditions and planting seedlings of the desired species.
<i>remedial action/s</i>	means for the purpose of this permit, any activity that is required to ensure successful re-establishment of understorey to its pre-clearing composition, structure and density, and may include a combination of soil treatments and <i>revegetation</i> .
<i>revegetate/revegetated/revegetation</i>	means the re-establishment of a cover of local provenance native vegetation in an area using methods such as natural regeneration, direct seeding and/or planting so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.
<i>weeds</i>	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.

END OF CONDITIONS



Meenu Vitarana
A/MANAGER
NATIVE VEGETATION REGULATION

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

13 June 2022

SCHEDULE 1

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



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

SCHEDULE 2

CPS 9301/1 *revegetation* completion criteria are shown in Table 3 below.

Table 3: Revegetation completion criteria

Criterion	Baseline floristic data	Completion targets	Completion criteria	Monitoring
1. Overall species richness	Overall species richness is 76 species	Minimum of 70% of the previous species richness of native vegetation species.	No less than 53 native species over the revegetated sites	Species count over all revegetated areas
2. Quadrat species richness	Quadrat species counts: PC01 = 25 PC02 = 31 PC03 = 21 PC04 = 23 PC05 = 20 Average = 24	70% of previous quadrat species richness.	Average 17 native species per quadrat	Species count over revegetated quadrats.
3. Native species cover	~100% cover in vegetated areas	60% of previous native species cover	60% native cover in revegetated quadrats	Measurement of cover in quadrat
4. Weed species	Total weed species = 11	No more weed species than previous	<=11 weed species across site	Weed species count over all revegetated areas
5. Weed cover	Weeds <5% cover	No more weed cover than previous	<5% average weed cover in revegetated quadrats	Measurement of weed cover in revegetated quadrats
6. Declared weeds	No declared weeds present	No declared weeds present	No declared weeds present	Search over all revegetated areas
7. Bare ground	Bare ground ~ 9% in Stage 1	No more bare ground than previous	<9% bare ground	Measurement of cover in quadrats
8. Floristic communities	Identified as FCT 29a &/or 29b	Floristic communities reinstated	Vegetation identifiable as FCT 29a &/or 29b	Statistical analysis of quadrat species data



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 9301/1
Permit type:	Area permit
Applicant name:	Mr M Guggenheimer, Ms S Guggenheimer, Ms S Koefler, Mr N Koefler and Indian Coast Resort Pty Ltd
Application received:	25 May 2021
Application area:	6.9 hectares of native vegetation
Purpose of clearing:	Extractive industry
Method of clearing:	Mechanical
Property:	Lot 510 on Deposited Plan 302267
Location (LGA area/s):	Shire of Gingin
Localities (suburb/s):	Lancelin

1.2. Description of clearing activities

The vegetation proposed to be cleared is contained within a single contiguous area (see Figure 1, Section 1.4). The application is to clear 6.9 hectares of native vegetation to allow for underlying line sand quarrying activities to occur.

1.3. Decision on application

Decision:	Granted
Decision date:	13 June 2022
Decision area:	6.9 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 one submission was received. Consideration of matters raised in the public submission is summarised in Appendix A.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix B), relevant datasets (see Appendix F.1), the findings of a flora and vegetation survey (see Appendix E), 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 potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values

- potential land degradation in the form of wind erosion
- the loss of approximately 6.78 hectares of vegetation representative of the Priority Ecological Communities (PECs) Coastal shrublands on shallow sands (FCT 29a) or Acacia shrublands on taller dunes (FCT 29b), both of which are ranked as Priority 3 PECs by Department of Biodiversity Conservation and Attractions
- impacts on individual terrestrial fauna if present while clearing is being undertaken

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), and the applicant's revegetation plan, the Delegated Officer determined the proposed clearing is unlikely to have long-term adverse impacts on the PECs, and wind erosion impacts can be minimised and managed to be unlikely to lead to an unacceptable risk to environmental values.

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

- avoid, minimise to reduce the impacts and extent of clearing
- take hygiene steps to minimise the risk of the introduction and spread of weeds
- staged clearing to minimise wind erosion
- undertake slow, progressive directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity
- undertake revegetation and rehabilitation activities to reinstate vegetation to its pre-clearing condition

1.5. Site map



Figure 1 Map of the application area

The area crosshatched yellow indicates the area authorised to be cleared under the granted clearing permit.

2 Legislative context

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

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.3), 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)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P&D Act)

The key guidance documents which inform this assessment are:

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

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

Evidence was submitted by the applicant, demonstrating that vegetation representative of the Priority Ecological Communities identified within a survey conducted would be retained within the boundary setbacks and within an area northwest of the site (a total area of approximately 2.93 hectares).

In addition, the applicants Revegetation Plan has specifically stated the objective of reinstating the pre-existing floristic communities (the Priority Ecological Communities).

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

The assessment against the clearing principles (see Appendix C) identified that the impacts of the proposed clearing present a risk to biological values including Priority 3 ecological communities, fauna, adjacent vegetation and poses land degradation risk. 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 (Biodiversity) - Clearing Principle (a)

Assessment

The area proposed to be cleared, is representative of a PEC and may provide habitat for conservation significant fauna.

A survey conducted within the application area recorded 70 native flora taxa and eight non-native taxa (Plant Ecology, 2021). Two flora species listed as Priority flora by DBCA were recorded that encompasses the application but all records were outside the application area (Plant Ecology, 2021).

Stylidium maritimum (P3) was recorded at eight locations within the survey undertaken with a total abundance of 22 individuals (Plant Ecology, 2021). The species is known from 44 records within the Geraldton Sandplains and Swan Coastal Plain IBRA regions with most records noting frequencies of more than one individual or described as locally frequent. Noting the recording of these species in the survey is outside of the proposed clearing area, it is considered they will not be impacted directly but could be impacted by disturbance following the proposed clearing.

A second species of priority flora was recorded within the survey area, *Conostylis pauciflora* var. *euryrhipis* (P4). The survey report noted that the three specimens collected could not be identified to the subspecies level though it is considered likely to be correct based on previous recordings within the application area in 2007. There are 31 records of this species within the available databases which spread along the coastline for 75 kilometres and inland as far as 10 kilometres. The recording of this species in the survey was determined to be a density of 10 per cent at one location, this was recorded outside of the proposed clearing area. Noting the recording of these species is outside of the proposed clearing, it is considered they will not be impacted directly but could be impacted by disturbance following the proposed clearing.

The application area comprises of the following units and respective area as detailed in Table 1 below and Figure 2 below.

Table 1: Vegetation units within the application area

Vegetation Unit	Area (hectares)
<i>Stylidium globulosum</i>	0.640
Blowout areas	0.125
<i>Acacia rostellifera</i>	1.188
<i>Melaleuca systena</i>	4.945
Total	6.90

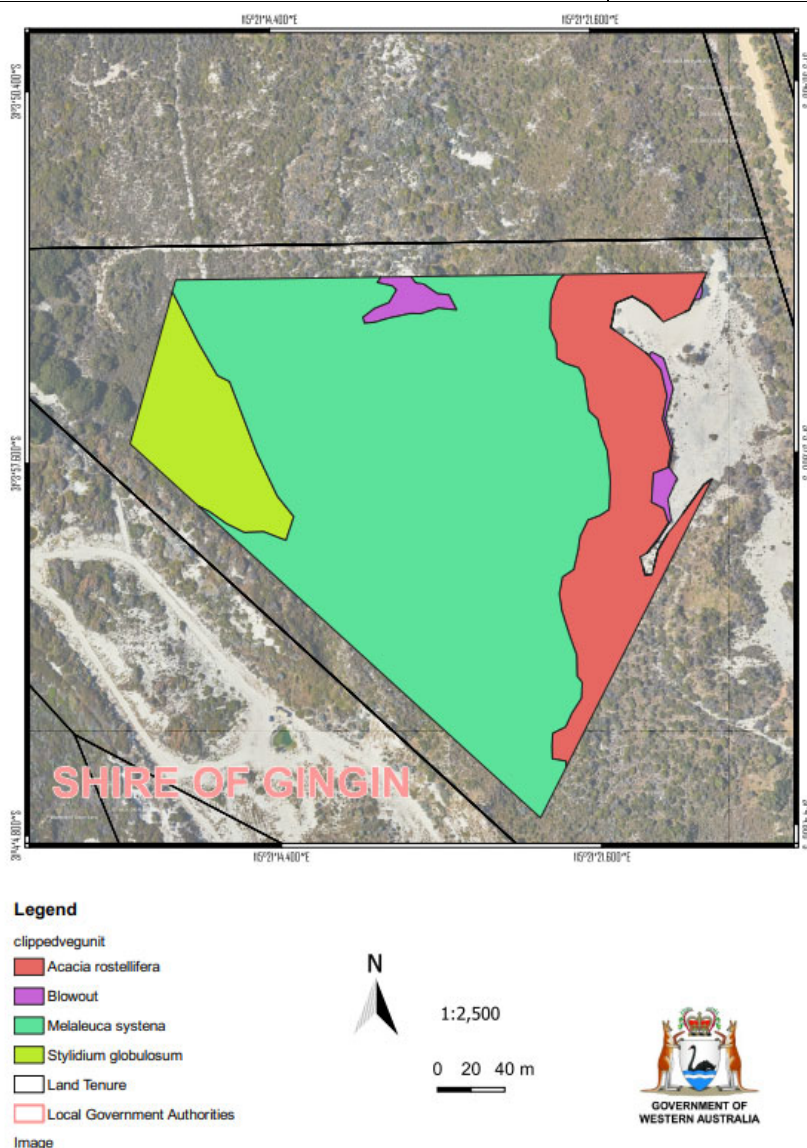


Figure 2 Map of the vegetation units within the application area

A Floristic Community Type (FCT) assessment was undertaken on the vegetation units identified within the survey resulting in the indication that the vegetation within the application area is either FCT 29a 'Coastal shrublands on shallow sands' or FCT 29b 'Acacia shrublands on taller dunes' which are both P3 communities. However, it is noted within the survey provided that Floristic Community Type classifications can be also misclassifications due to hierarchical clustering using relative similarities between plots. In addition, the survey noted misclassifications can occur within the Swan Coastal Plain datasets due to classifications relying on the absence and presence of species rather than dominance.

The 'Coastal shrublands on shallow sands, southern Swan Coastal Plain' (FCT 29a) (Priority 3) PEC is characterised by heaths on shallow sands over limestone close to the coast, with no single dominant but including *Spyridium globulosum*, *Rhagodia baccata* and *Olearia axillaris* (DBCA, 2021). Advice received from DBCA noted this community is known from 24 point locations between Gingin and Bunbury with some of the mapped occurrences already cleared. The total area of occurrence of this community is not known with databases showing only three mapped areas of this community with a total of 143.4 hectares (DBCA, 2021b).

The 'Acacia shrublands on taller dunes, southern Swan Coastal Plain (FCT 29b) is dominated by Acacia shrublands or mixed heaths on the larger dunes. This community stretches from Seabird to south of Mandurah. No consistent dominance but important species include *Acacia rostellifera*, *Acacia lasiocarpa*, and *Melaleuca acerosa* (DBCA, 2021). Advice received from DBCA noted this community is known from 43 point locations between Seabird and Preston Beach. The total area of occurrence of this community is not known with databases showing only three mapped areas of this community with a total of 41 hectares (DBCA, 2021b).

Priority 3 (i) PECs are poorly known ecological communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation. Given the connectivity and condition of vegetation within the application area with the surrounding remnant vegetation condition, the distribution of both PECs is likely to extend beyond the surveyed study and clearing area.

Advice from DBCA for the two communities above noted that the vegetation within the application area aligns with the FCP 29a or FCP29b, it is recommended that areas proposed to be retained within Lot 510 on Deposited Plan 302267, are protected from indirect impacts of the proposed extraction (DBCA, 2021b)

Noting the above, the extent and composition of the vegetation proposed to be cleared, and proposed revegetation of temporary cleared areas to resemble that of preclearing vegetation, the proposed clearing is not likely to significantly impact the 'Coastal shrublands on shallow sands, southern Swan Coastal Plain' or 'Acacia shrublands on taller dunes, southern Swan Coastal Plain' Priority 3 PECs or change their conservation status.

The proposed clearing may impact adjacent vegetation in the form of weeds or dieback which may impact the quality and structure including of any neighbouring PECs

Conclusion:

Based on the above assessment, the proposed clearing will result in the following:

- clearing of approximately 6.78 hectares of vegetation which may represent 'Coastal shrublands on shallow sands, southern Swan Coastal Plain' or 'Northern Spearwood shrublands and woodlands' Priority 3 (i) PECs (this excludes the area of blowout)
- potential introduction of weed and dieback to adjacent remnant vegetation.

Conditions:

To address the above impacts, the following management measures have been conditioned on the clearing permit:

- implement weed and dieback management measures to mitigate impacts to adjacent vegetation.
- implement the revegetation and rehabilitation of temporary cleared areas following the completion of extraction to ensure habitat is not permanently lost.

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

Assessment:

According to available databases, 21 conservation significant fauna species have been recorded within the local area. These species comprise one Threatened, one vulnerable, two Priority 3, three Priority 4, thirteen specially protected migratory species and one other specially protected species (OS). None of these records occur within the application area.

Priority species

Quenda typically prefer dense understorey vegetation (DEC 2012) and have a wide coastal distribution from Guilderton to east of Esperance with a patchy distribution within the jarrah and karri forests and the Swan Coastal Plain. It is understood that individuals have overlapping home ranges between 1-2 hectares. This species is known from one record within the local area occurring approximately two kilometres from the application area. Noting the proximity of the nearest record and the suitable habitat within the application area, quenda is likely to utilise the

application area while moving through the landscape. Noting the extent of clearing proposed, the vegetation within the application area is not likely to be significant for the continued survival of this species.

Black-striped snake is a small-bodied, terrestrial burrowing snake that lives in Banksia woodlands and sandy areas of the Perth region (Western Australian Museum 2017). Black-striped snake is known from three records within the local area, with the nearest occurring approximately six kilometres from the application area. Noting the proximity of the nearest record, this species is likely to utilise the application area while moving through the landscape. Noting the extent of the clearing proposed and the proximity of the nearest record, the vegetation proposed to be cleared is not likely to be significant for the continued survival of this species.

The *Synemon gratiosa* (graceful sunmoth; Priority 4) is most common in sedgeland, heathlands, woodlands and occasionally within open parts of forest where their 'foodplants' (various grasses, sedges and mat-rushes) are found (DEC, 2011). The species typically prefers Banksia woodland habitat that comprises *Lomandra hermaphrodita* or coastal heath comprising *Lomandra maritima* (DEC, 2011). The graceful sunmoth is known from 13 records within the local area, with the nearest occurring approximately five kilometres from the application area. Given vegetation within the application area comprises areas of *Spyridium globulosum* closed heath (Plant Ecology Consulting, 2021), the application area may provide suitable habitat for the graceful sunmoth. Noting the extent of clearing proposed, the number and distribution of records, and that the vegetation within the application area is contiguous with adjacent remnant vegetation that provides similar habitat values, the vegetation within the application is not likely to comprise significant habitat for this species or the continued survival of this species.

The remaining Priority species listed in Appendix B.3 are not considered to have suitable habitat within the application area.

Migratory species

Migratory bird species have been recorded within the local area (96 recordings of migratory bird species, 13 species recorded). It is noted that these species breed in the northern hemisphere and migrate to Australia after the breeding season. Most of the migratory species have habits of wading in the shallow coastal waters and lakes for feeding. The application area is not likely to comprise significant feeding habitat for these species but may provide habitat where species may sleep/rest. It is considered that the proposed clearing is not likely to significantly reduce the available habitat for these species given the remaining habitat within the local area.

Threatened and vulnerable species

The *Ctenotus lanceolini* (Lancelin Island skink) has been recorded both on Lancelin Island (19 recordings) and on the mainland. The habitat preference for this species is on Lancelin Island is shrubland with introduced annual grasses growing on sand dunes, swales and on limestone outcrops. (CALM, 2000). The closest recording of the species to the application area is on the mainland approximately six kilometres from the application area. The Lancelin Island Skink Recovery Plan notes that 'despite intensive trapping at the site of the mainland capture and survey work elsewhere from Wedge Island south to Guilderton, there have been no further mainland captures. This makes determination of the mainland distribution problematic: the taxon's status on the mainland is most appropriately considered as rare'. It is noted that the application area contains vegetation which may provide habitat for the species but given survey efforts within the mainland that have failed to locate the species, it is not considered to be likely present within the application area.

Calyptorhynchus latirostris (Carnaby's cockatoo) is not considered to have suitable habitat within the application area.

Conclusion:

The vegetation within the application area likely provides suitable habitat for quenda (Priority 4), black-striped snake (Priority 3) and the graceful sunmoth (Priority 4). The proposed clearing of 6.9 hectares will further reduce available habitat for fauna species. The clearing and extraction activities have the potential to fragment ecological connectivity and faunal movements within the landscape and could result in the introduction or spread of weeds and dieback into adjacent vegetation.

Based on the above assessment, and the avoidance and mitigation measures provided by the applicant (Section 3.1), it is considered that the potential impacts of the proposed clearing to fauna and fauna habitat can be managed by:

- taking steps to ensure that the impact of clearing on any individuals present is minimised

- minimising the risk of introduction and spread of weeds and dieback into adjacent fauna habitat
- rehabilitating the temporary cleared areas to ensure fauna habitat is not permanently lost.

Conditions:

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

- Implement slow and directional clearing to allow any fauna present to move into adjacent vegetation ahead of the clearing activity
- Implement weed and dieback management measures to mitigate impacts to adjacent vegetation and fauna habitat.
- Revegetation and rehabilitation conditions

3.2.3. Land and water (Land degradation) - Clearing Principles (g)

Assessment:

The application area is located within the Quindalup South third dune phase which is described as loose calcareous sand with little surface organic staining and incipient cementation at depth. The risk of subsurface acidification, waterlogging, flooding, water logging and salinity has been assessed to be low (Appendix B.4.). Wind erosion risk has been assessed to be moderate to high for this soil type (DPIRD 2019).

Conclusion:

For the reasons set out above, it is considered that the potential impacts of the proposed clearing on land and water resources can be managed by the implementation of wind erosion management methods.

Conditions: To address the above impacts, a wind erosion management condition for extraction activity works to begin with two months of clearing will mitigate impacts of the wind erosion on the adjacent vegetation.

3.3. Relevant planning instruments and other matters

Other relevant authorisations required for the proposed land use include:

- Development approval under the *Planning and Development Act 2005* (issued by the Shire of Gingin).
- Extractive Industry Licence (issued by the Shire of Gingin).
- Works approval / licence issued under Part V Division 3 of the EP Act (Instrument issued 12/08/2021 works approval number W6562/2021/1).

The Shire of Gingin advised DWER that local government approvals are required, and that the Shire did not have any objections to the proposed clearing. These approvals have been granted by the Shire. It is noted the Extractive Industry Licence has an expiry date of 29 June 2023. The period during which clearing is authorised under the permit has been aligned to match this expiry date.

An Aboriginal site of significance (mapped as other Heritage places Ledge Point) has been mapped within the application area. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972 (WA)* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

End

Appendix A. Details of public submissions

One public submission was received noting the following.

Summary of comments	Consideration of comments
<p>The applicant if there are some areas of failure then the area will be direct seeded with the right species, but there is no qualification as to the seed provenance. It is not clear as to why direct seeding will work, either.</p> <p>The submission reiterates that the area should be restored to the satisfaction of DWER.</p>	<p>DWER's permit condition requires the applicant to use 'local provenance' seeds and propagation material, until completion criteria are met (Condition 6 of the permit), which are aimed at restoring the PEC. The condition allows for the use of other propagation material if direct seeding doesn't work, to ensure the completion criteria are met.</p>
<p>The submission disputes the following statements within the applications supporting document:</p> <p>Principle (a) – The report noted that the vegetation within the application area does not comprise a high level of diversity when compared to other vegetation, either of the same type or different types.</p> <p>Principle (d) – The survey identified FCT29a and FCT29b are listed as Priority 3 Ecological Communities under WA state Policy. There is not much of these communities within reserves. An offset should be required.</p>	<p>DWER has undertaken its own assessment of biodiversity under Principle (a) within the decision report (refer section 3.2.1 above) and acknowledges that the application area comprise a high level of diversity noting it is representative of a PEC and may provide habitat for conservation significant fauna.</p> <p>Consideration of the loss of vegetation that may represent a Priority 3 community is assessed under Principle (a). Refer 3.2.1 above.</p>

Appendix B. Site characteristics

B.1. Site characteristics

Characteristic	Details
Local context	<p>The area proposed to be cleared is part of an expansive tract of native vegetation in the intensive land use zone of Western Australia. It is adjacent to several other properties which have been cleared, in part, for the same purpose. The proposed clearing area contributes to a remnant running north-south along the coastline.</p> <p>Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 65 per cent of the original native vegetation cover.</p>
Ecological linkage	<p>There are no mapped ecological linkages within the application area. The vegetation within the application area provides some linkage values at a local level as it is part of the larger remnant.</p>
Conservation areas	<p>There are no conservation areas within the immediate vicinity of the application area. The closest conservation area is an A class reserve, the Lancelin and Edwards Islands Nature Reserve. This reserve is located approximately five kilometres from the application area.</p>
Vegetation description	<p>The vegetation survey (Plant Ecology, 2021) indicates the vegetation within the proposed clearing area consists of four plant communities, described as:</p> <ul style="list-style-type: none"> • <i>Melaleuca systema</i> Low Shrubland, described as; Low shrubland of <i>Melaleuca systema</i>, <i>Olearia axillaris</i> and <i>Spyridium globulosum</i> with <i>Cryptandra mutila</i> over a herbland of <i>Conostylis candicans</i> subsp. <i>calcicola</i>, <i>Conostylis ?pauciflora</i> subsp. <i>euryrhipis</i> and <i>Hemiandra glabra</i> on grey-cream sand on dunes. • <i>Acacia rostelifera</i> Tall Shrubland described as; Tall shrubland of <i>Acacia rostelifera</i>, <i>Spyridium globulosum</i> and <i>Santalum acuminatum</i> over a herbland of <i>Acanthocarpus preissii</i>, <i>Lomandra maritima</i> and <i>Rhagodia baccata</i> subsp. <i>baccata</i> on grey-cream sands of flats and swales.

Characteristic	Details
	<ul style="list-style-type: none"> • <i>Spyridium globulosum</i> Closed Shrubland, described as; Closed shrubland of <i>Spyridium globulosum</i>, <i>Melaleuca huegelii</i> subsp. <i>huegelii</i> and <i>Templetonia retusa</i> over a herbland of <i>Lepidosperma gladiatum</i>, <i>Rhagodia baccata</i> subsp. <i>baccata</i> and <i>Acanthocarpus preissii</i> on grey-cream sands of swales. • <i>Melaleuca lanceolata</i> Low Closed Forest, described as; Closed low forest of <i>Melaleuca lanceolata</i> over open shrubland of <i>Melaleuca huegelii</i> subsp. <i>huegelii</i> over a sedgeland of <i>Ficinia nodosa</i> and <i>Lepidosperma pubisquameum</i> on grey-cream sands of swales. <p>The full survey descriptions and maps are available in Appendix EE.</p> <p>This is consistent with the mapped vegetation type(s):</p> <ul style="list-style-type: none"> • Quindalup Complex, which is described as Coastal dune complex consisting mainly of two alliances - the strand and fore-dune alliance and the mobile and stable dune alliance. Local variations include the low closed forest of <i>Melaleuca lanceolata</i> (Rottnest Teatree) - <i>Callitris preissii</i> (Rottnest Island Pine), the closed scrub of <i>Acacia rostellifera</i> (Summer-scented Wattle) and the low closed <i>Agonis flexuosa</i> (Peppermint) forest of Geographe Bay. <p>The mapped vegetation type retains approximately 60 per cent of the original extent (Government of Western Australia, 2019).</p>
Vegetation condition	<p>The vegetation survey (Plant Ecology Consulting, 2021), indicated the vegetation within the proposed clearing area is in excellent to completely degraded (Keighery, 1994) condition, described as:</p> <ul style="list-style-type: none"> • Excellent: Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species. • Very good: Vegetation structure altered, with obvious signs of disturbance. • Good: Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. • Degraded: Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. <p>The full Keighery (1994) condition rating scale is provided in Appendix D. The full survey descriptions and mapping are available in Appendix E.</p>
Climate and landform	<p>The application area is within the 5-to-10-meter isoheight. The average annual rainfall for the local area is 600 millimetres.</p>
Soil description	<p>The soil within the application area is mapped as Quindalup South third dune phase described as; the third phase. Irregular dunes with high relief and slopes up to 20 per cent. Loose calcareous sand with little surface organic staining and incipient cementation at depth.</p>
Land degradation risk	<p>The soil type within the application area has a high risk of wind erosion but low to moderate risk of other land degradation risk categories.</p>
Waterbodies	<p>The desktop assessment and aerial imagery indicated that there are no watercourses or wetlands mapped within the application area. .</p>
Hydrogeography	<p>The application area is within the Gingin Groundwater Area proclaimed under the RIWI Act 1914.</p>

Characteristic	Details
Flora	According to available databases, there are eight conservation significant flora species recorded within the local area. The most frequent occurring is <i>Scholtzia laciniata</i> (P2) which has been recorded six times within the local area. The closest record is of <i>Thryptomene</i> sp. Lancelin (M.E. Trudgen 14000) (P3) located approximately 1200 meters from the application area and is within similar soil and vegetation types.
Ecological communities	There are no mapped threatened ecological communities within the application area. The closest mapped threatened ecological community to the application area is 'Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region' located approximately 3.7 kilometres from the application area. Approximately 6.78 hectares of vegetation within the application area is representative of the Priority Ecological Communities (PECs) Coastal shrublands on shallow sands (FCT 29a) or Acacia shrublands on taller dunes (FCT 29b), both of which are ranked as Priority 3 PECs by Department of Biodiversity Conservation and Attractions.
Fauna	According to available databases, 22 conservation significant fauna species have been recorded within the local area. The most frequently occurring is Carnaby's cockatoo (<i>Calyptorhynchus latirostris</i>) which has been recorded 151 times within the local area.

B.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion*					
Swan Coastal Plain	1,501,221.93	579,813.47	38.62	222,916.97	14.85
Vegetation complex					
Quindalup Complex **	54,573.87	33,011.64	60.49	5,994.64	10.98
Local area					
10km radius			65	-	-

*Government of Western Australia (2019a)

**Government of Western Australia (2019b)

B.3. Fauna analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Arenaria interpres</i> (Ruddy turnstone)	MI	N	N	4.9	13	N/A
<i>Calidris acuminata</i> (Sharp-tailed sandpiper)	MI	N	N	6.1	3	N/A
<i>Calidris subminuta</i> (Long-toed Stint)	MI	N	N	6.1	2	N/A
<i>Chlidonias leucopterus</i> (White-winged black tern)	MI	N	N	6.1	2	N/A
<i>Thalasseus bergii</i> (Crested tern)	MI	N	N	1.6	41	N/A

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Tringa nebularia</i> (Common greenshank)	MI	N	N	6.1	2	N/A
<i>Calidris alba</i> (sanderling)	MI	N	N	4.9	4	N/A
<i>Calyptorhynchus latirostris</i> (Carnaby's cockatoo)	EN	N	N	4.5	151	N/A
<i>Ctenotus lanceolini</i> (Lancelin Island skink)	VU	Y	Y	5.7	21	N
<i>Pluvialis squatarola</i> (Grey plover)	MI	N	N	4.9	3	N/A
<i>Limosa lapponica</i> (Bar-tailed godwit)	MI	N	N	4.9	7	N/A
<i>Calidris ruficollis</i> (Red-necked stint)	MI	N	N	4.9	5	N/A
<i>Sterna dougallii</i> (Roseate tern)	MI	N	N	5.9	2	N/A
<i>Synemon gratiosa</i> (Graceful sunmoth)	P4	Y	Y	4.7	13	N
<i>Neelaps calonotos</i> (black-striped snake)	P3	Y	Y	5.7	3	N
<i>Falco peregrinus</i> (Peregrine falcon)	OS	N	N	5.7	1	N/A
<i>Anous stolidus</i> (common noddy)	MI	N	N	4.8	7	N/A
<i>Notamacropus irma</i> (western brush wallaby)	P4	N	N	8.0	1	N/A
<i>Idiosoma sigillatum</i> (Swan Coastal Plain shield-backed trapdoor spider)	P3	N	N	3.7	1	N/A
<i>Calidris melanotos</i> (pectoral sandpiper)	MI	N	N	6.1	2	N/A
<i>Isoodon fusciventer</i> (southwestern brown bandicoot/quenda)	P4	Y	Y	2.0	1	N

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

B.4. Land degradation risk table

Risk categories	Quindalup South third dune Phase
Wind erosion	50-70% 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
Salinity	<3% of map unit has a moderate to high salinity risk or is presently saline
Subsurface Acidification	<3% of map unit has a high subsurface acidification risk or is presently acid
Flood risk	<3% of the map unit has a moderate to high flood risk
Water logging	<3% of map unit has a moderate to very high waterlogging risk
Phosphorus export risk	30-50% of map unit has a high to extreme phosphorus export risk

Appendix C. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p>Principle (a): <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared may be representative of a Priority Ecological Community and may provide habitat for conservation significant fauna.</p>	May be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p>Principle (b): <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared may contain habitat for conservation significant fauna.</p>	May be at variance	Yes <i>Refer to Section 3.2.2, above.</i>
<p>Principle (c): <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared is unlikely to contain habitat for flora species listed under the BC Act.</p>	Not likely to be at variance	No
<p>Principle (d): <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared does not contain species that can indicate a threatened ecological community</p>	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
<p>Principle (e): <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u> The extent of the mapped vegetation type and the native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.</p>	Not likely to be at variance	No
<p>Principle (h): <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.”</i></p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Assessment:</u> Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of these areas.</p>		
Environmental value: land and water resources		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u> Given no water courses or wetlands are recorded within over three kilometres of the application area, the proposed clearing is unlikely to impact on- or off-site hydrology and water quality.</p>	Not likely to be at variance	No
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u> The mapped soil type within the application area is moderately to highly susceptible to wind erosion but is not susceptible to other forms of land degradation.</p>	May be at variance	Yes <i>Refer to Section 3.2.3, 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 no water courses, wetlands or Public Drinking Water Source Areas are recorded within 3.7 kilometres of the application area, the proposed clearing is unlikely to impact surface or ground water quality.</p>	Not likely to be at variance	No
<p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u> The mapped soil type and topographic contours in the surrounding area do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding.</p> <p>Given no water courses or wetlands are recorded within 3.7 kilometres of the application area and considering the sandy soils within the application area, the proposed clearing is unlikely to contribute to waterlogging.</p>	Not likely to be at variance	No

Appendix D. Vegetation condition rating scale

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

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

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

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

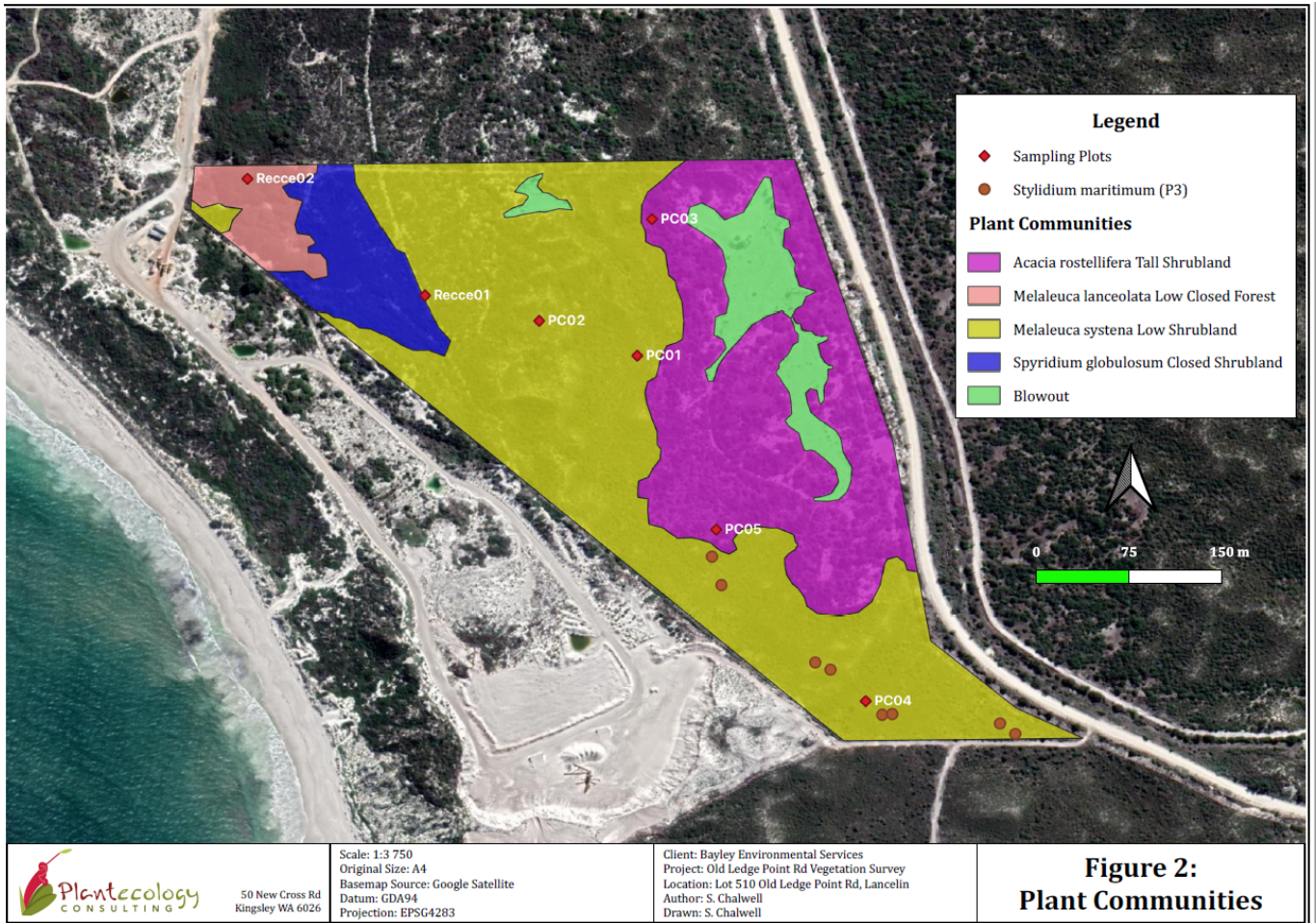


Figure 3: Map showing the vegetation types described within the application area (Plant Ecology Consulting, 2021)

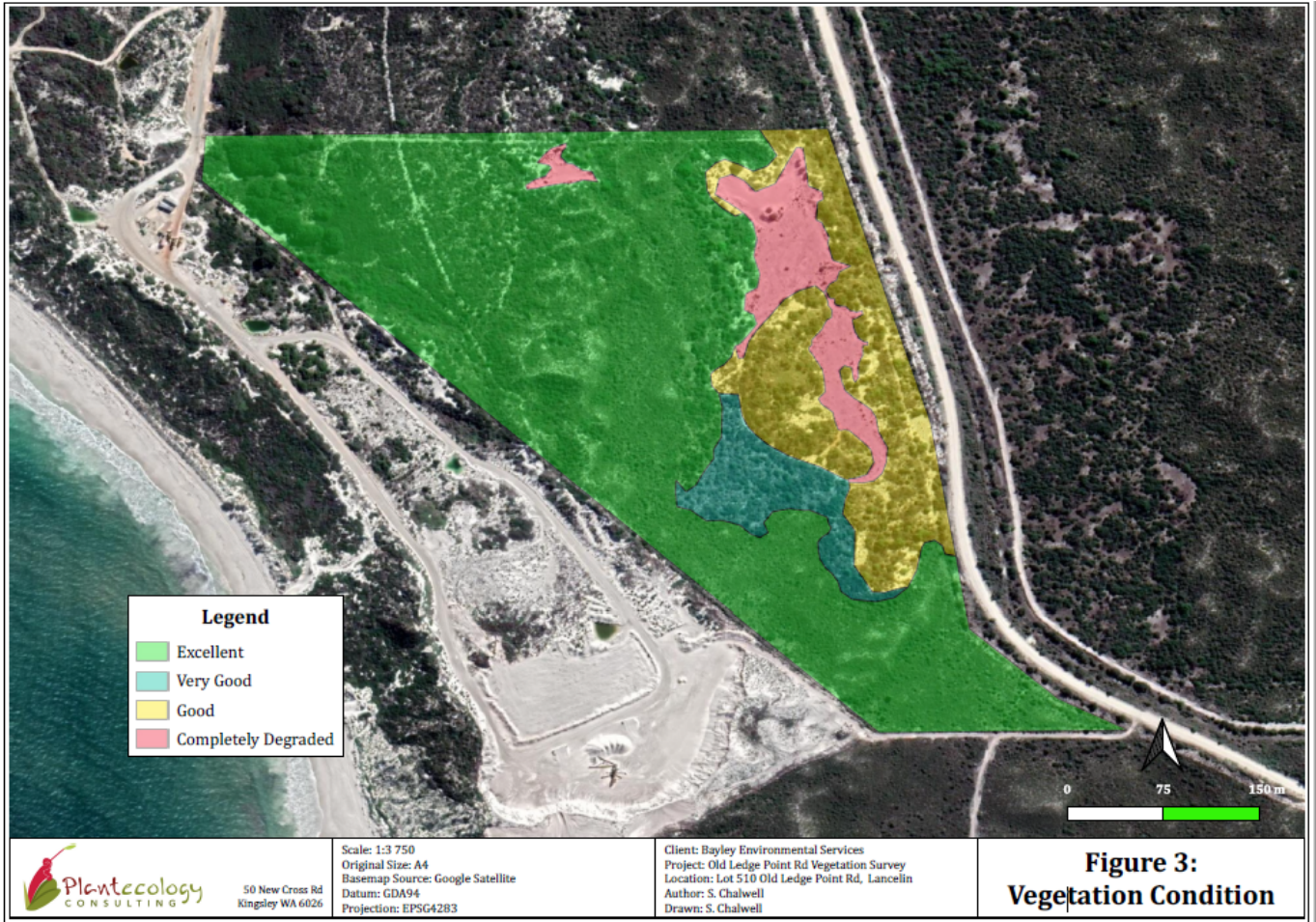


Figure 4: Map showing the vegetation condition assessed within the application area (Plant Ecology Consulting, 2021)

Appendix F. Sources of information

F.1. GIS databases

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- 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
- Wheatbelt Wetlands Stage 1 (DBCA-021)

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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