



## CLEARING PERMIT

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

### PERMIT DETAILS

Area Permit Number: CPS 9201/1  
File Number: DWERVT7417  
Duration of Permit: From 2 July 2021 to 2 July 2023

### PERMIT HOLDERS

DHI Development Pty Ltd, Mr John Gardner, Mr Leon Frederick Hodges and Ms Verity Fay Hodges

### LAND ON WHICH CLEARING IS TO BE DONE

Lot 304 on Deposited Plan 50257, Dirk Hartog Island

### AUTHORISED ACTIVITY

The permit holder must not clear more than 0.038 hectares of native vegetation within the area cross-hatched yellow in Figure 1 of Schedule 1.

### CONDITIONS

#### 1. **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.

#### 2. **Weed 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*

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no known 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.

**3. Wind erosion management**

The Permit Holder must commence construction no later than three months after undertaking clearing authorised under this Permit, to reduce the risk of soil erosion by minimising the exposure time of soils prior to construction.

**4. Directional clearing**

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

**5. 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), expressing the geographical coordinates in Eastings and Northings;</li> <li>(c) the date that the area was cleared;</li> <li>(d) the size of the area cleared (in hectares); and</li> <li>(e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 1 of this permit; and</li> <li>(f) actions taken to minimise the risk of the introduction and spread of weeds in accordance with condition 2 of this permit; and</li> <li>(g) actions undertaken in accordance with condition 3 of this permit; and</li> <li>(h) actions undertaken in accordance with condition 4 of this permit.</li> </ul>

## 6. Reporting


The permit holder must provide to the *CEO* the records required under condition 5 of this permit when requested by the *CEO*.

## DEFINITIONS

In this permit, the terms in Table 2 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.
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)
fill	means material used to increase the ground level, or to fill a depression.
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.
weeds	means any plant – (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.

  
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Ryan Mincham  
MANAGER  
NATIVE VEGETATION REGULATION

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

9 June 2021

# SCHEDULE 1

The boundary of the area authorised to be cleared is shown in the map below.

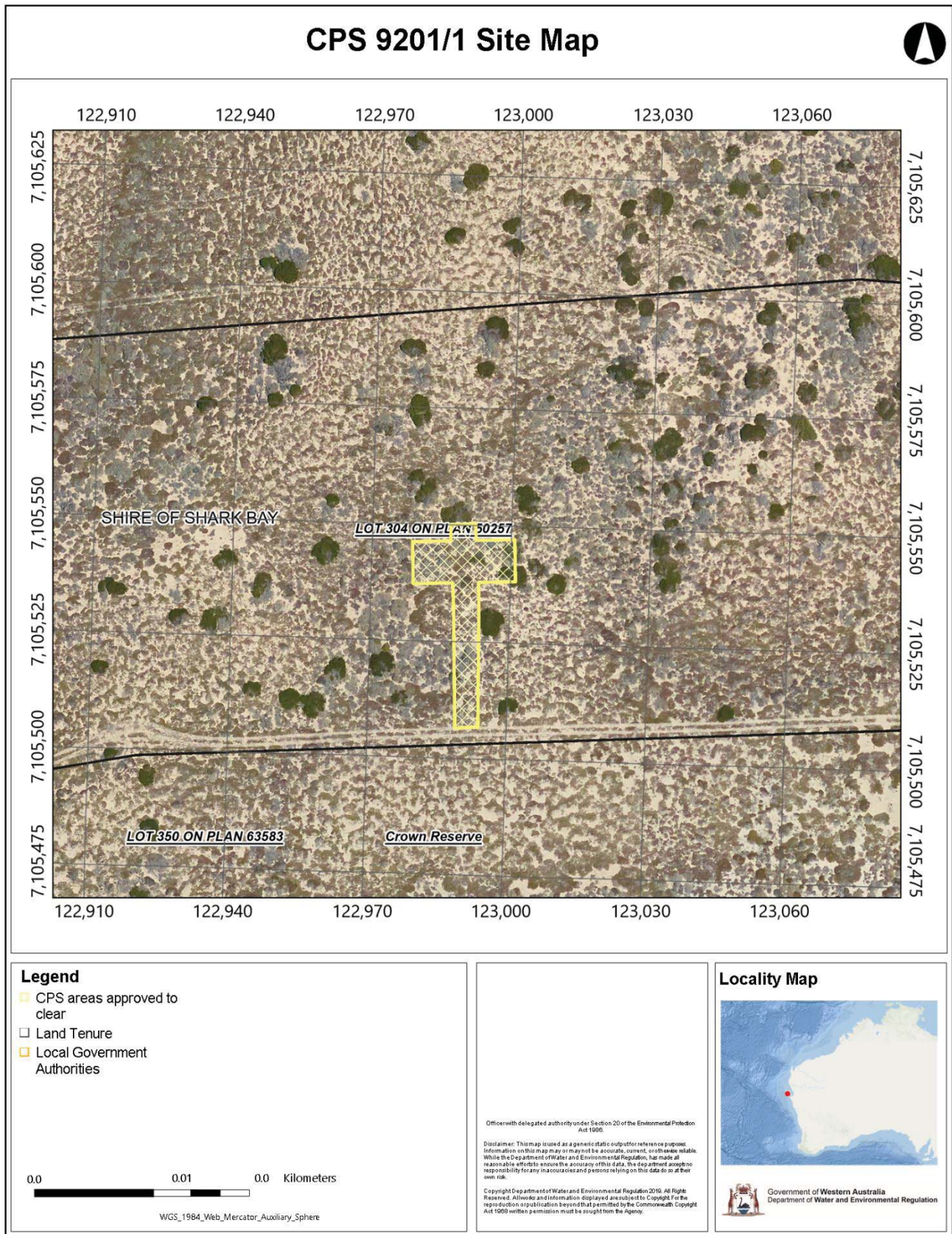


Figure 1: Map of the boundary of the area within which clearing may occur



# Clearing Permit Decision Report

## 1 Application details and outcome

### 1.1. Permit application details

<b>Permit number:</b>	CPS 9201/1
<b>Permit type:</b>	Area permit
<b>Applicant name:</b>	DHI Development Pty Ltd, Mr John Gardner, Mr Leon Frederick Hodges and Ms Verity Fay Hodges
<b>Application received:</b>	29 January 2021
<b>Application area:</b>	0.038 hectares of native vegetation
<b>Purpose of clearing:</b>	Construction of a house
<b>Method of clearing:</b>	Mechanical
<b>Property:</b>	Lot 304 on Deposited Plan 50257, Dirk Hartog Island
<b>Location (LGA area/s):</b>	Shire of Shark Bay
<b>Localities (suburb/s):</b>	Shark Bay

### 1.2. Description of clearing activities

The vegetation proposed to be cleared is 0.038 hectares of native vegetation contained within a single contiguous area (see Figure 1, Section 1.5) for the purpose of constructing a dwelling. The application area is located on Dirk Hartog Island, Shark Bay.

### 1.3. Decision on application

<b>Decision:</b>	Granted
<b>Decision date:</b>	9 June 2021
<b>Decision area:</b>	0.038 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 14 days and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix B), relevant datasets (see Appendix F.1), the findings of a flora and vegetation survey, 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 Delegated Officer also took into consideration that the application area is located adjacent to a national park and World Heritage Area.

The assessment identified that the proposed clearing may result in:

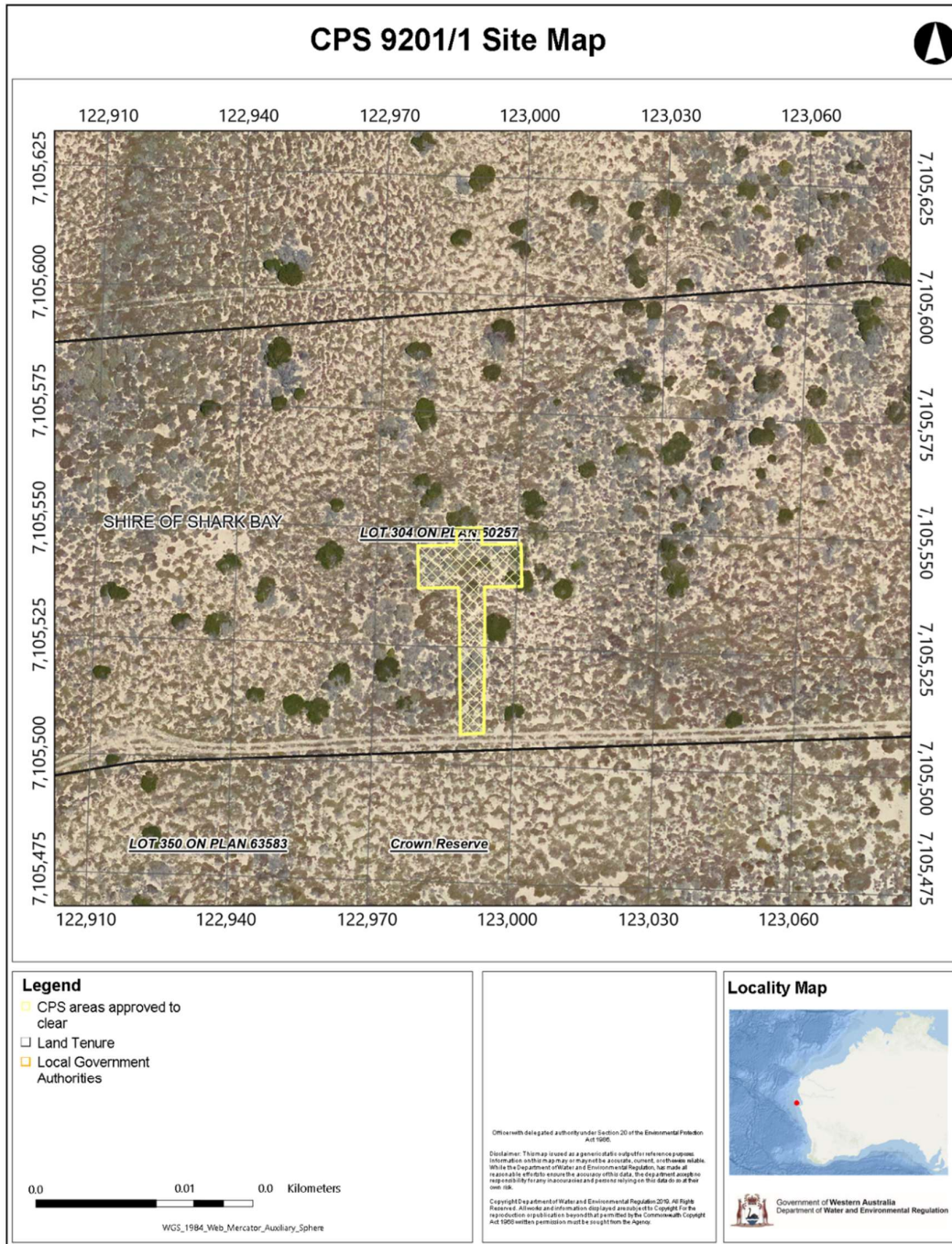
- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values; and
- impacts to conservation significant flora.

After consideration of the available information, the Delegated Officer determined the proposed clearing is unlikely to have long-term adverse impacts on conservation significant flora or adjacent vegetation and 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 and minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds;
- undertake slow, progressive one-directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity;
- commence construction no later than three months after undertaking clearing to reduce the risk of erosion.

### 1.5. Site map



**Figure 1:** Map of the application area. The area cross-hatched yellow indicates the area authorised to be cleared under the granted clearing permit.

## 2 Legislative context

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

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

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

Other legislation of relevance for this assessment include:

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

The key guidance documents which inform this assessment are:

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

## 3 Detailed assessment of application

### 3.1. Avoidance and mitigation measures

Given the small scale of the clearing area and based on the results of a targeted flora survey, the Delegated Officer is satisfied that no further measures for avoidance and mitigation of the impacts of the clearing are warranted.

### 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 potential risk to conservation significant flora. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

#### 3.2.1. Biological values (Flora) - Clearing Principles (a)

##### Assessment

A desktop assessment identified that 34 flora species of conservation significance from 147 records occur within the local area. Of these, three species occur in the same soil, vegetation, and habitat type as the application area:

- *Lepidium biplicatum* (P3)
- *Ptilotus alexandri* (P2)
- *Thryptomene repens* (P2)

A targeted flora survey was undertaken by Ecosystem Solutions (Applicant, 2021b) on 4 and 5 September 2019 with a focus on the proposed areas of disturbance. Potential suitable habitat was surveyed for the presence of conservation significant flora. Known locations of conservation significant flora within similar soil types to the application area were inspected before the formal survey was undertaken of the application area. These species included *P. alexandri* and *L. biplicatum*. Any species not able to be identified in situ were sampled and botanical advice was sought from the Western Australian Herbarium (Applicant, 2021b)

DWER's assessment of a previous clearing permit (CPS 8163/1) over the site noted that *Thryptomene baeckecea* may have been incorrectly identified and had the potential to be the Priority 2 species *T. repens* (DWER, 2020).

Samples taken during the targeted flora survey (Applicant, 2021b) were identified by a botanist at the Western Australian Herbarium as *T. dampieri*, a common species on Dirk Hartog Island (Applicant, 2021b). Noting the perennial nature of *T. repens*, *P. alexandri*, and *L. biplicatum*, the timing of the survey is considered adequate in identifying the presence of these species.

The desktop assessment did not identify any records of priority species within the application area, or within close proximity. The species list for the relev  associated with the application area did not identify any priority flora to be present (Applicant, 2021b).

The application area is located within the Yalgoo Vegetation Complex (Hartog) which retains approximately 100 percent of the pre-European extent.

Given the size of the application area, the findings of the flora survey and the confirmed identification of *T. dampieri*, it is unlikely that any conservation significant flora occur within the application area.

#### Conclusion

For the reasons set out above, it is considered that the potential impacts of the proposed clearing on conservation significant flora are low and will not represent a significant residual impact. Given the approximate 100 percent retention of pre-European vegetation within the Yalgoo vegetation complex, the clearing does not represent a significant risk to biodiversity.

The identification of samples taken during the assessment by the Western Australian Herbarium satisfy concerns held by DWER for the previous clearing permit (CPS 8163/1).

#### Conditions

No flora conditions required.

### **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 Shark Bay on 19 December 2019).

The Shire of Shark Bay (2021) advised DWER that existing local government approvals are still valid. The Shire did not have any objections or further comments regarding the clearing as per this application.

The Shark Bay World Heritage Advisory Committee advised that they had no objections to the proposed clearing, however, recommended that a condition be placed on the permit to minimise wind erosion (DBCA, 2021).

There are no mapped Aboriginal Sites of Significance within 10 km 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**



## Appendix A. Additional information provided by applicant

Summary of comments	Consideration of comment
Floristic Survey	The floristic survey supplied by the applicant was assessed to inform the impact of the clearing on conservation significant flora.
Correspondence with Botanist	The correspondence between the applicant and a botanist at the WA herbarium identifying a <i>Thryptomene</i> species within the application area was assessed to help inform the potential impact of the clearing on conservation significant flora.
Site Photos	Photos supplied by the applicant were assessed to determine the species composition and condition of the application area.

## 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 extensive land use zone of Western Australia.</p> <p>It is located within Dirk Hartog Island, an undeveloped island approximately 36 km west of Denham. The application area is surrounded by remnant vegetation, with the beach 30 m south and 500 m to the east.</p> <p>Aerial imagery indicates the local area (50-kilometre radius from the centre of the area proposed to be cleared) retains at least 95 per cent of the original native vegetation cover.</p>
Ecological linkage	The application area is not located within any formal, mapped ecological linkages. Given the small size of the application area, it is unlikely to serve a significant, informal ecological function.
Conservation areas	<p>The application area is located within the Shark Bay World Heritage Area and within an area on the Register of National Estate.</p> <p>The application area is directly adjacent to the Class A Dirk Hartog Island National Park and approximately 75 m from the Shark Bay Marine Park.</p>
Vegetation description	<p>Photographs supplied by the applicant and a field survey undertaken by Ecosystem Solutions in September 2019 (Applicant 2021b) indicates the vegetation within the proposed clearing area consists of <i>Acacia ligulata</i>, <i>Thryptomene dampieri</i>, <i>Scaevola crassifolia</i>, <i>Senecio pinnatifolius</i>, <i>Poaceae sp.</i> and <i>Spinifex longifolius</i>. Representative photos are available in Appendix E.</p> <p>The vegetation present is broadly consistent with the mapped vegetation type(s):</p> <ul style="list-style-type: none"> <li>• Yalgoo - Beard 1100, which is described as Hummock grassland; shrub steppe; mixed ericoid shrubs &amp; spinifex (Shepherd et al, 2001)</li> </ul> <p>The mapped vegetation type retains approximately 100 per cent of the original extent (Government of Western Australia, 2019).</p>
Vegetation condition	<p>Photographs supplied by the applicant indicate the vegetation within the proposed clearing area is in Very Good to Excellent (Keighery, 1994) condition, described as:</p> <ul style="list-style-type: none"> <li>• Excellent - Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.</li> </ul>

Characteristic	Details
	<ul style="list-style-type: none"> <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.</li> </ul> <p>The full Keighery (1994) condition rating scale is provided in Appendix D. Representative photos are available in Appendix D.</p>
Climate	<p>The mean annual rainfall for the area is between 200 mm and 300 mm.</p> <p>The evapotranspiration for the application area is between 200 mm and 300 mm.</p>
Topography	<p>The elevation of the application area ranges from 5 to 10 m AHD.</p>
Soil description	<p>The soil is mapped as being within the Edel System (237Ed) described as undulating sandy plains with occasional dunes, limestone rises and saline flats supporting acacia shrublands with some saltbush and heath communities.</p>
Land degradation risk	<p>&lt; 3% of the map unit has a high susceptibility of subsurface compaction</p>
Waterbodies	<p>Aerial imagery indicates that a non-perennial salt lake is located approximately 870 m from the application area. The ocean is located approximately 30 m from the application area.</p>
Hydrogeography	<p>The application area is not within any proclaimed ground or surface water areas or within any public drinking water source areas.</p>
Flora	<p>There are 147 flora records from 34 species of conservation significance within the local area. The most common species is the Priority 3 <i>Triodia plurinervata</i> with 20 records, followed by <i>Triodia bromoides</i> (Priority 4) with 16 records. A total of 16 species are found on the same soil type as the application area.</p> <p>The closest records to the application area are 4 species, <i>Lepidium biplicatum</i> (P3), <i>Melaleuca huegelii subsp pristicensis</i> (P3), <i>Triodia bromoides</i> (P4), and <i>Triodia plurinervata</i> (P3) located approximately 1.5 km to the south-west. Another 36 records are found within Dirk Hartog Island.</p>
Ecological communities	<p>The application area does not intersect and Priority or Threatened Ecological Communities. There are no TECs or PECs within the local area.</p>
Fauna	<p>The local area contains 1891 records from 70 conservation significant fauna (including aquatic and marine species). The most common species is the Vulnerable Shark Bay Rufous Hare-Wallaby (<i>Lagorchestes hirsutus</i>) with 752 records. The Vulnerable Western Barred Bandicoot (<i>Perameles bougainville</i>) and Vulnerable Banded Hare-wallaby (<i>Lagostrophus fasciatus fasciatus</i>) have 105 and 169 records within the local area respectively.</p> <p>Given the extent of clearing and the representation of the vegetation within the Yalgoo complex, it is unlikely the clearing will represent significant habitat for local fauna.</p>

## B.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion*					
Yalgoo	5,057,325.85	4,923,840.47	97.36	1,576,718.27	31.18
Beard Vegetation complex*					
Yalgoo vegetation complex 1100*	31,549.39	29,885.41	94.73	15,540.57	49.26
Beard Vegetation Complex within IBRA Bioregion					
Yalgoo vegetation complex 1100 (Hartog)	113.41	113.41	100	108.93	96.05

\*Government of Western Australia (2019a)

## B.3. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix F.1) and survey information, impacts to the following conservation significant flora required further consideration.

Species name	Conservation status	Suitable habitat features ? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (Local Area)	Are surveys adequate to identify? [Y, N, N/A]
<i>Lepidium bicipitatum</i>	P3	Y	Y	Y	1.6	8	Y
<i>Ptilotus alexandri</i>	P2	Y	Y	Y	6.9	4	N
<i>Thryptomene repens</i>	P2	Y	Y	Y	5.7	7	Y

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

## Appendix C. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
<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></p> <p>The local area contains records of conservation significant flora that occur on the same soil, vegetation, and habitat type as the application area. The assessment of a previous clearing permit over the area raised concerns of the misidentification of a priority 2 species. Given the results of the field survey and the small scale of clearing, it is unlikely that the area proposed to be cleared represents an area of high biodiversity value relative to other remnant vegetation within the local area.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (b):</u> <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared contains suitable habitat for a number of conservation significant fauna. Given that the Yalgoo vegetation complex on Dirk Hartog Island retains approximately 100% of its pre-European vegetation and the application area represents a small fraction (0.038 ha), it is unlikely the clearing will impact significant fauna habitat.</p>	Not likely to be at variance	No
<p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u></p> <p>The local area does not contain any flora listed as ‘Threatened’ under the BC Act that occur on the same soil type as the application area. A survey (Applicant 2021b) did not identify any Threatened flora within the relevé inside the application area.</p>	Not likely to be at variance	No
<p><u>Principle (d):</u> <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared does not intersect any mapped ecological communities listed as ‘Threatened’ under the BC Act and does not contain species indicative of a threatened ecological community.</p>	Not likely to be at variance	No
<b>Environmental value: significant remnant vegetation and conservation areas</b>		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u></p> <p>The extent of the mapped vegetation type and 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><u>Principle (h):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.”</i></p> <p><u>Assessment:</u></p> <p>Given its small extent, the proposed clearing is not likely to have an impact on the environmental values of the adjacent Dirk Hartog Island National Park.</p>	Not likely to be at variance	No
<b>Environmental value: land and water resources</b>		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>The application area is located approximately 850 m from the nearest waterbody, an ephemeral salt lake, and is located approximately 100 m from the Indian Ocean. Given this, the proposed clearing is unlikely to impact on- or off-site hydrology and water quality.</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>The surveyed soils are highly susceptible to wind erosion. Noting the size of the application area, the proposed clearing is not likely to have an appreciable impact on land degradation. The Shark Bay World Heritage Committee recommended the inclusion of a wind erosion condition on the permit. The Department has adopted this advice in determining to grant the permit.</p>	Not likely to be at variance	No
<p><u>Principle (i):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.”</i></p> <p><u>Assessment:</u></p> <p>Given no watercourses, wetlands or Public Drinking Water Sources Areas are recorded within the application area or within close proximity, the proposed clearing is unlikely to impact surface or groundwater quality.</p>	Not likely to be at variance	No
<p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u></p> <p>Given the extent of the clearing and the distance to the nearest ephemeral salt lake (850 m), the proposed clearing is unlikely to contribute to flooding or 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.

Condition	Description
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. Photographs of the vegetation**





**Figure 2:** Photographs of the application area (Applicant, 2021b)



**Figure 3:** Photograph of relevé 2 (Application Area) (Applicant, 2021b)

## Appendix F. Sources of information

### F.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)
- 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)

## F.2. References

Applicant (2021a) *Clearing permit application CPS 9201/1*, received 29 January 2021 (DWER Ref: A1986244).

Applicant (2021b) *Supporting information for clearing permit application CPS 9201/1*, received 29 January 2021 (DWER Ref: A1986245).

Commonwealth of Australia (2001) *National Objectives and Targets for Biodiversity Conservation 2001-2005*, Canberra.

Department of Biodiversity, Conservation and Attractions (DBCA) (2021) *Shark Bay World Heritage Advisory Committee advice for clearing permit application CPS 9201/1*, received 31 May 2021. Department of Biodiversity, Conservation and Attractions, Western Australia (DWER Ref: A2012896).

Department of Environment Regulation (DER) (2013). *A guide to the assessment of applications to clear native vegetation*. Perth. Available from: [https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2\\_assessment\\_native\\_veg.pdf](https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf).

Department of Primary Industries and Regional Development (DPIRD) (2019). *NRInfo Digital Mapping. Department of Primary Industries and Regional Development*. Government of Western Australia. URL: <https://maps.agric.wa.gov.au/nrm-info/> (accessed 14 April 2021).

Department of Water and Environmental Regulation (DWER) (2019). *Procedure: Native vegetation clearing permits*. Joondalup. Available from: [https://dwer.wa.gov.au/sites/default/files/Procedure\\_Native\\_vegetation\\_clearing\\_permits\\_v1.PDF](https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits_v1.PDF).

Department of Water and Environmental Regulation (DWER) (2020). *Decision report for clearing permit 8163/1*. Joondalup. (DWER Ref: A1861497)

Environmental Protection Authority (EPA) (2016). *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment*. Available from: [http://www.epa.wa.gov.au/sites/default/files/Policies\\_and\\_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey\\_Dec13.pdf](http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey_Dec13.pdf).

Environmental Protection Authority (EPA) (2016). *Technical Guidance – Terrestrial Fauna Surveys*. Available from: [https://www.epa.wa.gov.au/sites/default/files/Policies\\_and\\_Guidance/Tech%20guidance-%20Terrestrial%20Fauna%20Surveys-Dec-2016.pdf](https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/Tech%20guidance-%20Terrestrial%20Fauna%20Surveys-Dec-2016.pdf).

- Government of Western Australia (2019) *2018 South West Vegetation Complex Statistics. Current as of March 2019*. WA Department of Biodiversity, Conservation and Attractions, Perth, <https://catalogue.data.wa.gov.au/dataset/dbca>
- Government of Western Australia. (2019) *2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019*. WA Department of Biodiversity, Conservation and Attractions. <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>
- Hedde, E. M., Loneragan, O. W., and Havel, J. J. (1980) *Vegetation Complexes of the Darling System, Western Australia*. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.
- Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Molloy, S., Wood, J., Hall, S., Wallrodt, S. and Whisson, G. (2009) *South West Regional Ecological Linkages Technical Report*, Western Australian Local Government Association and Department of Environment and Conservation, Perth.
- Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68) *Atlas of Australian Soils*, Sheets 1 to 10, with explanatory data. CSIRO and Melbourne University Press: Melbourne.
- Schoknecht, N., Tille, P. and Purdie, B. (2004) *Soil-landscape mapping in South-Western Australia – Overview of Methodology and outputs* Resource Management Technical Report No. 280. Department of Agriculture.
- Shah, B. (2006) *Conservation of Carnaby's Black-Cockatoo on the Swan Coastal Plain, Western Australia*. December 2006. Carnaby's Black-Cockatoo Recovery Project. Birds Australia, Western Australia.
- Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) *Native Vegetation in Western Australia, Extent, Type and Status*. Resource Management Technical Report 249. Department of Agriculture, Western Australia.
- Shire of Shark Bay (2021) *Advice for clearing permit application CPS 9201/1*, received 23 March 2021 (DWER Ref: A1999112).
- Western Australian Herbarium (1998-). *FloraBase - the Western Australian Flora*. Department of Biodiversity, Conservation and Attractions, Western Australia. <https://florabase.dpaw.wa.gov.au/> (Accessed 15 April 2021)