GOVERNMENT OF
WESTERN AUSTRALIA

# CLEARING PERMIT

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

| | |
|---|---|
| **Purpose Permit number:** | CPS 9581/1 |
| **Permit Holder:** | Junja Solar Farm Pty Ltd |
| **Duration of Permit:** | From 07 July 2022 to 07 July 2027 |

The permit holder is authorised to clear *native vegetation* subject to the following conditions of this permit.

## PART I – CLEARING AUTHORISED

### 1. Clearing authorised (purpose)

The permit holder is authorised to clear *native vegetation* for the purpose of constructing a solar farm.

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

Lot 268 on Deposited Plan 218421, Pippingarra

### 3. Clearing authorised

The permit holder must not clear more than 27.29 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 2.

## PART II – MANAGEMENT CONDITIONS

### 4. Avoid, minimise, and reduce impacts and extent of clearing

In determining the *native vegetation* authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending order of preference:

(a) avoid the clearing of *native vegetation*;

(b) minimise the amount of *native vegetation* to be cleared; and

(c) reduce the impact of clearing on any environmental value.

## 5. Weed 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;

(c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

## 6. Directional clearing

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

## 7. Wind erosion management

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

## 8. Fauna management – Pre-clearance surveys

(a) *Immediately prior* to undertaking any clearing authorised under this permit, the permit holder shall engage a *fauna specialist* to undertake clearance surveys within the areas cross-hatched yellow on Figure 1 of Schedule 1 for the Greater Bilby (*Macrotis lagotis),* Northern Quoll (*Dasyurus hallucatus*) and Brush-tailed Mulgara *(Dasycercus blythi*), including the identification and inspection of burrows, and determination of whether burrows and/or dens are being utilised.

(b) Where evidence of recent burrow or den use is identified under condition 8(a) of this permit, the permit holder shall;

  (i) engage a *fauna specialist* to flag the location of the burrow/s and/or den/s showing signs of recent use;

  (ii) not clear within five metres of the flagged burrow/s and/or den/s;

  (iii) engage a *fauna specialist* to monitor with cameras, the flagged burrow/s and/or den/s for a maximum of five days, or until such time that Greater Bilbies, Northern Quoll or Brush-tailed Mulgara have been observed to independently move on from the burrow/s or den/s; and

  (iv) prior to clearing, engage a *fauna specialist* to re-inspect any flagged burrow/s and/or den/s for the presence of Greater Bilbies, Northern Quoll or Brush-tailed Mulgara.

(c) If Greater Bilbies, Northern Quoll or Brush-tailed Mulgara are identified utilising any flagged burrow/s and/or den/s under condition 8(b)(iv) of this permit and cannot be avoided in accordance with *condition* 4 of this permit, the permit holder shall engage a *fauna specialist* to remove and relocate the identified Greater Bilbies, Northern Quoll or Brush-tailed Mulgara to an area of suitable habitat, in accordance with a section 40 authorisation under the *Biodiversity Conservation Act 2016*.

(d) Where active Greater Bilby, Northern Quoll or Brush-tailed Mulgara burrow/s and or den/s are identified under condition 8(a) of this permit, and/or Greater Bilbies, Norther Quoll or Brush-tailed Mulgara are relocated under condition 8(c) of this permit, the permit holder shall include the following in a report submitted to the *CEO* within two months of undertaking any *clearing* authorised under this permit:

(i) The location of any active Greater Bilby, Norther Quoll or Brush-tailed Mulgara burrows and/or dens identified, using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;

(ii) a description of the camera monitoring measures undertaken under condition 8(b)(iii) of this Permit;

(iii) the date and time of Greater Bilbies, Norther Quoll or Brush-tailed Mulgara are recorded as independently moving from a flagged burrow or den;

(iv) the gender of each Greater Bilby captured under condition 8(c) of this Permit;

(v) the location of any Greater Bilbies, Northern Quoll or Brush-tailed Mulgara, as referred to under condition 8(a) of this Permit, captured using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;

(vi) the date, time, vegetation type and weather conditions at each location where Greater Bilbies, Northern Quoll or Brush-tailed Mulgara are captured under condition 8(d)(v) of this permit;

(vii) the location of any Greater Bilbies, Northern Quoll or Brush-tailed Mulgara, identified in accordance with condition 8(a) of this permit, relocated using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;

(viii) the date, time, vegetation type and weather conditions at each location where Greater Bilbies, Northern Quoll or Brush-tailed Mulgara are relocated under condition 8(c) of this permit;

(ix) the name of the *fauna specialist* that relocated fauna under condition 8(c) of this permit; and

(x) a copy of the fauna licence authorising the relocation of fauna under condition 8(c) of this permit.

## PART III - RECORD KEEPING AND REPORTING

### 9. Records that must be kept

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

**Table 1: Records that must be kept**

| No. | Relevant matter | Specifications |
|---|---|---|
| 1. | In relation to the authorised clearing activities generally | (a) the species composition, structure, and density of the cleared area;<br>(b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric |

| No. | Relevant matter | Specifications |
|---|---|---|
| | | Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;<br>(c) the date that the area was cleared;<br>(d) the size of the area cleared (in hectares);<br>(e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 4;<br>(f) actions taken to minimise the risk of the introduction and spread of *weeds* in accordance with condition 5;<br>(g) actions taken to undertake directional clearing and minimise impacts to fauna in accordance with condition 6; and<br>(h) actions taken to minimise impacts of wind erosion in accordance within condition 7. |
| 2. | In relation to fauna management pursuant to *condition* 8 | (a) results of the pre-clearance surveys undertaken in accordance with *condition* 8 of this permit; and<br>(i) a copy of the *fauna specialist's* report. |

**10. Reporting**

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

## DEFINITIONS

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

**Table 2: Definitions**

| Term | Definition |
|---|---|
| *CEO* | Chief Executive Officer of the department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*. |
| *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. |
| *fauna specialist* | means a person who holds a tertiary qualification specialising in environmental science or equivalent, and has a minimum of 2 years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the *CEO* as a suitable fauna specialist for the bioregion, and who holds a valid fauna licence issued under the *Biodiversity Conservation Act 2016*. |
| *fill* | means material used to increase the ground level, or to fill a depression. |
| *department* | means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3. |

| Term | Definition |
|---|---|
| *EP Act* | *Environmental Protection Act 1986* (WA) |
| *immediately prior* | Means the pre-clearance surveys must be undertaken within seven (7) days prior to *clearing* by a qualified *fauna specialist* |
| *mulch* | means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation. |
| *native vegetation* | has the meaning given under section 3(1) and section 51A of the EP Act. |
| *suitable habitat* | means habitat known to support the Greater Bilby (*Macrotis lagotis)* Northern Quoll (*Dasyurus hallucatus*) and Brush-tailed Mulgara *(Dasycercus blythi)* within the known current distribution of the species. |
| *weeds* | means any plant –<br>(a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or<br>(b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or<br>(c) not indigenous to the area concerned. |

**END OF CONDITIONS**

**Mathew Gannaway**
**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).

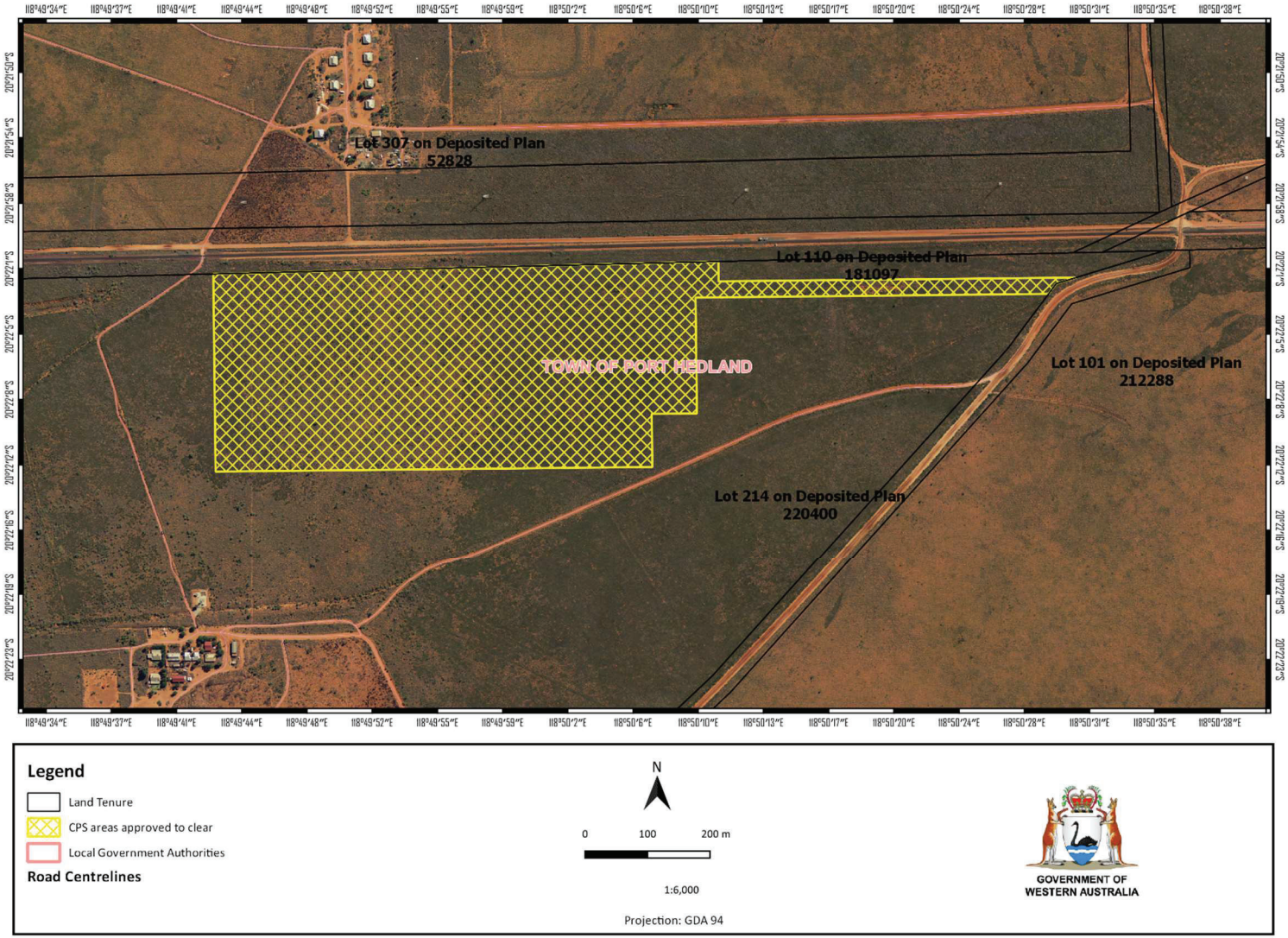


**Figure 1: Map of the boundary of the area within which clearing may occur**

Government of Western Australia
Department of Water and Environmental Regulation

# Clearing Permit Decision Report

## 1 Application details and outcome

### 1.1. Permit application details

| | |
|---|---|
| **Permit number:** | CPS 9581/1 |
| **Permit type:** | Purpose permit |
| **Applicant name:** | Junja Solar Farm Pty Ltd |
| **Application received:** | 1 February 2022 |
| **Application area:** | 27.29 hectares of native vegetation |
| **Purpose of clearing:** | Solar farm |
| **Method of clearing:** | Mechanical clearing |
| **Property:** | Lot 268 on Deposited Plan 218421 |
| **Location (LGA area/s):** | Town of Port Hedland |
| **Localities (suburb/s):** | Pippingarra |

### 1.2. Description of clearing activities

The vegetation proposed to be cleared is contained within a single contiguous area (see Figure 1, Section 1.5). The applicant proposes to construct a solar farm approximately 26 kilometres east of Port Hedland, WA.

### 1.3. Decision on application

| | |
|---|---|
| **Decision:** | Granted |
| **Decision date:** | 13 June 2022 |
| **Decision area:** | 27.29 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 Biodiversity survey report (see Appendix D), the clearing principles set out in Schedule 5 of the EP Act (see Appendix C), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3).

The assessment identified that the proposed clearing will result in:

- the loss of native vegetation that is suitable habitat for Greater Bilby (*Macrotis lagotis),* Northern Quoll (*Dasyurus hallucatus*) and Brush-tailed Mulgara *(Dasycercus blythi);*

- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values; and
- potential land degradation in the form of wind erosion.

The Delegated Officer determined that whilst suitable habitat for conservation significant fauna will be cleared, it is not considered to be significant habitat in the context of the native vegetation remaining within the local area. The greatest potential impact may be to individuals that may be present at the time of clearing.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing is unlikely to lead to appreciable land degradation or have long-term adverse impacts on habitat for conservation significant fauna and adjacent vegetation. Impacts from the proposed clearing can be minimised and managed to unlikely lead to an unacceptable risk to the abovementioned environmental values. The applicant has suitably demonstrated avoidance and minimisation measures.

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 one directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity; and
- undertake pre-clearance fauna surveys to ensure no direct impacts occur to Greater Bilby, Norther Quoll and Brush-tailed Mulgara.

## 1.5. Site map

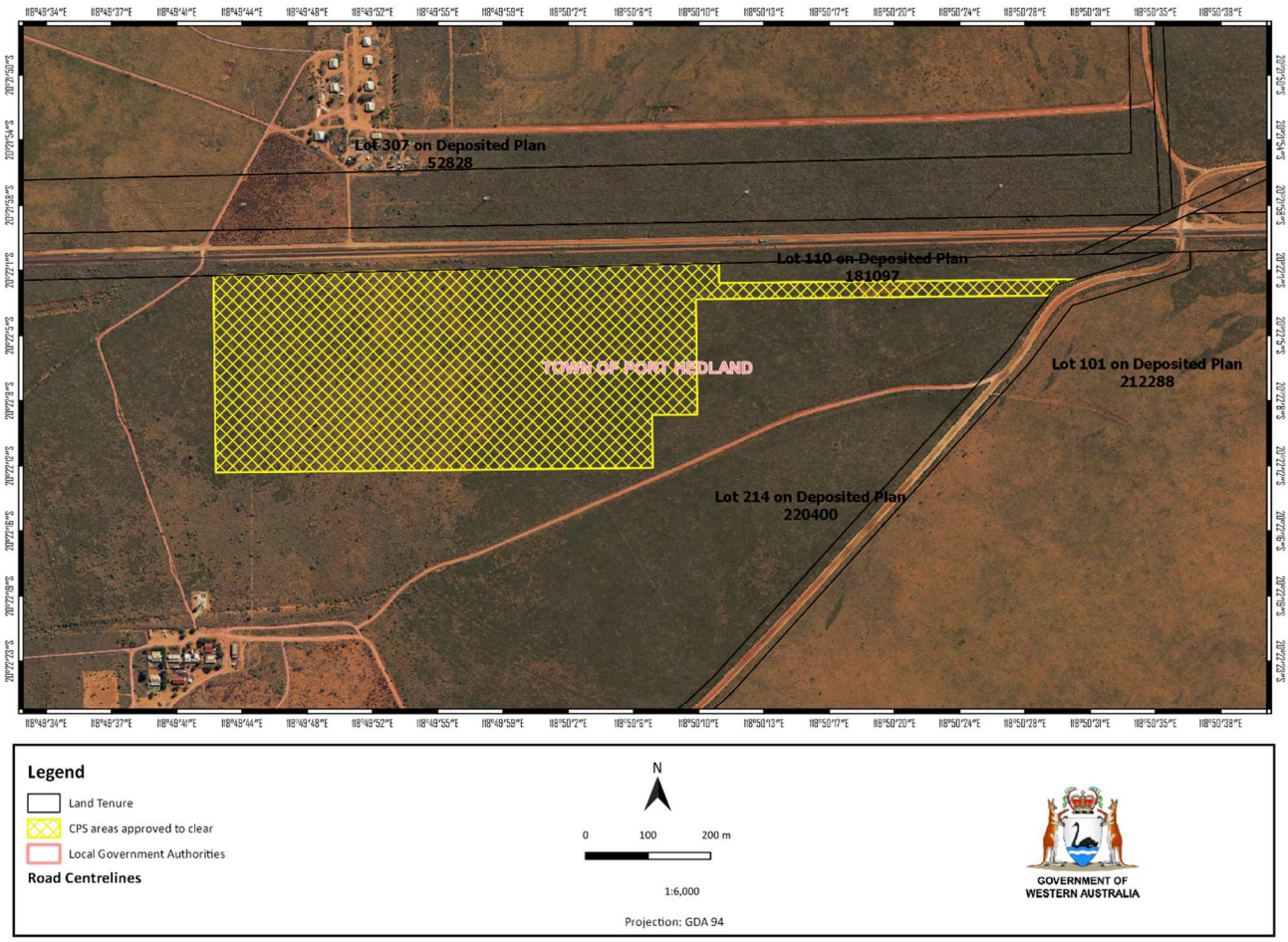


Figure 1 Map of the application area

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 1.4), 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)
- *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, 2016a)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2016b)

## 3 Detailed assessment of application

### 3.1. Avoidance and mitigation measures

The applicant has advised that the location was chosen for the following reasons:

- Proximity to the Horizon Powerline.
- Proximity to Jinparinya Aboriginal community for security reasons.
- Minimal impact to *Owenia reticulata* trees. Any *Owenia reticulata* trees in the clearing area will be removed prior to clearing and replanted around the Jinparinya community (Junja Solar Farm Pty Ltd, 2022).

The development is within a bushfire prone area so fire mitigation measures are in place. While vegetation growth under the solar panels will be encouraged it will be kept to no higher than 100mm (Junja Solar Farm Pty Ltd, 2022).

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 BB) 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 (fauna, priority flora and adjacent flora and vegetation) and land resources. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

#### *3.2.1. Biological values (flora ) - Clearing Principles (a, c and d)*

Assessment

A reconnaissance flora and vegetation field survey was undertaken on 06 October 2020. The survey was undertaken as a dry season survey and plants were dry, defoliated, dormant or dead. Most annual species were senesced, and some were unidentifiable (Vicki Long & Associates, 2021). Whilst the survey was undertaken outside of the preferred survey timing for the region (EPA, 2016a), the Delegated Officer considered it was appropriate to determine impacts to flora and vegetation.

The flora and vegetation survey identified that two thirds of the survey area is occupied by low heath of *Acacia stellaticeps* in good (Trudgen, 1991) condition. *A. stellaticeps* at this site, has inhibited the establishment and growth of other species and has resulted in a low species diversity. The application area has experienced a history of

frequent fires which has promoted the growth of *A. stellaticeps.* The flora and vegetation field survey also identified a second vegetation type that is more species diverse and is less well represented in the wider area and consists of scattered to open *Owenia reticulata* trees over tall and low Acacia shrubland with *Dolichandrone occidentalis* in excellent (Trudgen, 1991) condition (Vicki Long and Associates, 2021).

Species diversity is relatively low within the application area and a total of 53 taxa was recorded during the flora and vegetation survey (Vicki Long and Associates, 2021). The low species diversity is likely due to the dry conditions and below average rainfall in the six months preceding the survey, as well as the dense *Acacia stellaticeps* heath which covers two-thirds of the survey area (Vicki Long and Associates, 2021).

Available databases indicated that no records of Threatened flora species occur within the local (20 km radius) area. One Priority 1 (P1) and three Priority 3 flora (P3) species have been recorded within the local area.

Of the four Priority flora species identified within the local area, the P1 *Tephrosia rosea* subsp. Port Hedland and two P3 species, *Heliotropium muticum* and *Rothia indica* subsp. *australis* are considered to have potential to occur within the application area based on habitat preference (Vicki Long and Associates, 2021). A limitation of the survey included its timing as it was conducted during a dry period. Rainfall had not been received for 5 months prior to the survey and hot weather was experienced in August and September. Prior to May, low rainfall was received in January, March and April (Vicki Long and Associates, 2021). Pindan sands which occurs within the application area, usually produces many ephemerals and annuals following sufficient rain and it is expected more flora species would be present following a season of adequate rainfall, up to a further 25 per cent (Vicki Long and Associates, 2021).

No priority listed flora were recorded within the application area during the flora survey (Vicki Long and Associates, 2021). However, the flora and vegetation survey stated that *Heliotropium muticum* and *Rothia indica* subsp. *australis* may be present within the application area following rainfall (Vicki Long and Associates, 2021). A population of 50-100 dead plants of P3 *Heliotropium muticum* were recorded on the edge of an existing track adjacent to the application area but will not be impacted upon by the proposed clearing (Vicki Long and Associates, 2021). The proposed clearing is unlikely to significantly impact the occurrence or conservation status of these two priority 3 species given that both species are known from numerous records (28 and 21 respectively) over a large range in the region. The local area is highly vegetated and suitable habitat is likely to be located within close proximity to the application area.

The P1 species, *Tephrosia rosea* var Port Hedland is a perennial species that is easily identifiable and was not recorded during the survey. Given this, it is not considered likely for the proposed clearing to impact on *Tephrosia rosea* var Port Hedland.

Conclusion

Based on the above assessment, the proposed clearing is unlikely to significantly impact on priority flora. However, the proposed clearing may introduce and spread weeds into the surrounding vegetation which may impact on habitat quality. Weed management practices will help reduce this risk,

Conditions

To address the above impacts, weed management measures will be required as a condition on the clearing permit.

### *3.2.2. Biological values (fauna) - Clearing Principle (b)*

Assessment

The fauna field survey was carried out on the 07 September 2020 and 13 May 2021 by Zoologist Greg Harewood. The survey area does not contain wetlands, watercourses, rock outcrops, caves or fallen hollow logs. Leaf litter is generally absent or very sparse and trees contain no hollows. Overall fauna habitat quality was considered to be Poor (Harewood, 2021).

The fauna survey identified seven conservation significant fauna species that are or may utilise the application area, though, no evidence of their presence for six out of the seven were identified during the field survey (Harewood, 2021).

Occasional foraging habitat for the following species is considered likely, however no significant impact to these species is considered likely due to their large home range, largely aerial species and similar habitat located in the surrounding vegetated landscape:

- Barn Swallow (*Hirundo rustica*) – S5 (BC Act), Migratory (EPBC Act)
- Peregrine Falcon (*Falco peregrinus*) – S7 (BC Act)

• Grey Falcon (*Falco hypoleucos*) – S3 (BC Act), Vulnerable (EPBC Act)
• Fork-tailed Swift (*Apus pacificus*) – S5 (BC Act), Migratory (EPBC Act)

Northern Quoll

The application area occurs within the known range of the Northern Quoll (*Dasyurus hallucatus*) (S2 BC Act, Endangered EPBC Act). This species does not have highly specific habitat requirements and can occur in many different habitats across their known range. They are opportunistic foragers that feed on a broad range of items including invertebrates (beetles, grasshoppers etc), vertebrates (birds, small mammals, reptiles), vegetative materials (fruit, nectar) and carrion and human refuse (Department of Environment, 2022; Hill and Ward, 2010).

According to the Recovery Plan, critical habitat for Northern Quoll includes current locations of known occurrences of this species where there is shelter from predators such as rocky outcrops, tree hollows, hollow logs, termite mounds, goanna burrows and or human structures such as sheds and dwellings (Hill and Ward, 2010). This species has a large home range with an average of 35 $ha^2$ but can be much larger in non-rocky habitats (Department of Environment, 2022).

According to available databases, the closest record of this species is 5 km south of the application area and within rocky outcrop habitat. According to aerial imagery, the Jinparinya Aboriginal community occurs approximately 230 metres south of the application area that may provide suitable denning sites for this species. In addition, rocky outcrop habitat also occurs approximately 7 km east of the application area, that is likely to contain suitable denning habitat.

During the Level 1 fauna habitat survey, a Northern Quoll scat was identified within the application area. No other evidence of this species was observed on site. According to the fauna habitat assessment, it was considered unlikely that this species permanently resides within the application area given there is a total lack of refuge habitat (i.e. caves, rock outcrops, hollow logs/trees or large burrows) (Harewood, 2021). Given this, and that it is considered for similar habitat in better condition to occur in the surrounded vegetated landscape, the proposed clearing is not likely to significantly impact on critical habitat for this species.

Department of Biodiversity, Conservation and Attractions (DBCA) advised that whilst limited survey has been conducted to determine the likely impact on local populations, the habitat is unlikely to be critical for northern quoll breeding. However, it is likely to form an important dispersal linkage through the landscape. Approximately 10 kilometres to the south of the site there are a large number of northern quoll records. This site is adjacent to the King Edward River, at is nearest point King Edward River is approximately 2 kilometres from the proposed clearing site (DBCA, 2022).

Bilby

The application area falls within the know range of the Greater Bilby (*Macrotis lagotis)* S3 (BC Act), Vulnerable (EPBC Act)). In the northern part of its range, bilbies persist in areas of habitat that have higher levels of plant and therefore food production and are known to have home ranges of 1 to 3 $km^2$. Preferred habitat includes closed coastal tussock grasslands and *Acacia bivenosa* shrublands, Acacia dominated woodland, shrubland and thickets on pindan sandplain, comprising species such *as A. eriopoda, A. monticola, A. stellaticeps* and *A. tumida*. Bilbies are omnivores that primarily dig for food such as invertebrates, larvae, termites, ants, grasshoppers, spiders and beetles, and other items such as seeds, bulbs, and fungi (Commonwealth of Australia, 2019). The Draft Recovery Plan for this species states that possible habitat that is critical for survival includes any suitable habitat within the known range of the species (Commonwealth of Australia, 2019).

According to available databases, the closest known records of this species are within 37 km of the application area. Habitat for the Bilby is likely to occur with the application area, however no evidence in the form of scats, burrows or tracks were observed during the reconnaissance fauna survey (Harewood, 2021). Given this, and that it is considered for similar habitat in better condition to occur in the surrounded vegetated landscape, the proposed clearing is not likely to significantly impact on critical habitat for this species.

DBCA advised that Bilbies are a highly mobile species that are known to move up to 5km between burrows on consecutive nights and have an average home range of between 110 to 300 ha around their burrow network. Movement patterns and denning burrow locations change in response to rainfall and food availability. Bilbies are nomadic and often sparsely distributed across large areas. Therefore, a single survey may not detect bilby presence via primary or secondary signs. The application area is within the known range of bilbies, and therefore the site is likely to support bilbies (DBCA, 2022).

The direct removal of food plants such as spinifex grasslands and Acacia shrublands that are found within the proposed area will alter and subsequently decrease the quantity and quality of food plants available. Loss of

vegetation cover may also increase the predation risk to the species. Foraging and traversing areas devoid of vegetation could result in individuals spending more time in the open and being more exposed to natural and introduced predators. This is true for many of the conservation significant species identified as likely to occur in the area (DBCA, 2022).

Brush-tailed Mulgara

The Brush- tailed Mulgara (*Dasycercus blythi*.) (Priority 4) is likely to occur with the application area however no evidence in the form of scats, burrows or tracks were observed during the reconnaissance fauna survey (Harewood, 2021). It is considered for similar habitat in better condition as the application area to occur in the surrounded vegetated landscape. Given this, it is not considered for the proposed clearing to significantly impact on critical habitat for this species.

DBCA advised that the fauna survey undertaken does not appear adequate to identify the bilby, brush-tailed mulgara or northern quoll and therefore these species may be present within the application area (DBCA, 2022). DBCA noted that targeted surveys should always be considered in the first instance where survey inadequacy is identified. However, given the proposed area is relatively small and does not appear to form critical habitat for conservation significant species (as identified in the habitat assessment and flora surveys), pre-clearance fauna surveys and relocation prior to and during ground disturbing activities will suffice (DBCA, 2022).

Given the possible presence of some conservation significant ground dwelling fauna it is recommended that immediately prior to any clearing, vegetation to be inspected by a licensed “fauna specialist” (in particular to identify brush-tailed mulgara, northern quoll and bilby burrows) so that the appropriate management measures can be employed.

Conclusion
Based on the above assessment, the proposed clearing may impact on suitable habitat for brush-tailed mulgara, northern quoll and bilby. The habitat is not deemed to be significant for the survival of the species, however individuals may be present at the time of clearing. Pre-clearing surveys will mitigate any potential impacts to individuals that may be present at the time of clearing.

The applicant may have notification responsibilities under the EPBC Act for impacts to northern quoll and bilby and their habitats, as set out in the EPBC Act. The applicant has been advised to contact the federal Department of Water, Agriculture and the Environment (DAWE) to discuss EPBC Act referral requirements. A section 40 authorisation under the BC Act will be required for the take of bilbies and northern quoll, should dens or burrows be located.

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

- Slow progressive directional clearing
- Preclearance surveys for the brush-tailed mulgara, northern quoll and bilby

### *3.2.3. Biological values (surface water and land degradation) - Clearing Principle (g)*

Assessment

As referred to in Appendix B, one soil type ‘Uaroo Land System’ has been mapped within the application area. The mapped soil type has a high to extreme susceptibility to water and wind erosion.

The desktop assessment and aerial imagery indicate that no wetlands or watercourses are present within the application area and therefore the proposed clearing is not likely to result in appreciable land degradation in the form or wind erosion.

The application area has the potential to cause appreciable land degradation in the form of wind erosion if the area remains bare for an extended period of time. Management practices will help mitigate this risk.

As part of Development Approval (DA), the applicant needs to develop a surface water management plan and a dust management plan which will ensure impacts from wind erosion will be managed.

The applicant has advised that vegetation growth under the solar panels will be encouraged however will be kept to no higher than 100mm.

Conclusion
Based on the above assessment, the proposed clearing may result in appreciable land degradation in the form of wind erosion if soils are left bare for an extended period of time.

Conditions
To address the above impacts, a wind erosion management condition will be required on the clearing permit.

## 3.3. Relevant planning instruments and other matters

The applicant wishes to develop a 10 MW solar farm, over a 27.29 hectare area of land including an easement, at Jinparinya, Port Hedland.

A DA has been developed by NGH on behalf of Pilbara Solar in consultation with adjacent landowners, the Town of Port Hedland (ToPH) and Horizon Power.

The abovementioned DA was granted on 14 February 2022 by the Regional Joint Development Assessment Panel under the Town of Port Hedland Local Planning Scheme No. 7 for the proposed solar farm (renewable energy facility) within Lot 268, Great Northern Highway, Pippingarra (Development Assessment Panels, 2022).

The Town of Port Hedland has advised DWER that development approval for the proposal has been approved on 21 February 2022 and that the proposed clearing is consistent with the Town's Local Planning Scheme. The Town of Port Hedland supports the proposal however requested for a dust management plan to be submitted in accordance with DWER's 'a guideline for managing the impacts of dust and associated contaminants from land development sites, contaminated site remediation and other related activities' and for the area to be rehabilitated once the area is no longer required for the solar farm (Town of Port Hedland, 2022).

The application area occurs within the proclaimed Pilbara groundwater and surface water areas and are subject to licensing requirements under the *Rights in Water and Irrigation Act 1914* (RIWI Act). If the proponent needs to use groundwater or surface water for construction or any other purposes, they will need to apply for a 5C licence to take water and a 26D licence to construct any new water supply bores. Disturbance to the bed or banks of a water course in association with the taking or diverting of water may require a section 17 permit. There appears to be no minor watercourses within the proposed clearing envelope. It is unlikely that a permit to modify banks will be required (DWER, 2022).

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

## Appendix A. Details of public submissions

| Summary of comments | Consideration of comment |
|---|---|
| A submission was received with concerns regarding the inappropriate timing of the flora survey. It was recommended that the survey be redone after adequate rainfall.<br><br>In addition, the application has not been assessed against the 10 clearing principles, by the applicant and an environmental management plan should be submitted to ensure impact to flora and vegetation is managed. Also, a cumulative impact assessment should be done to consider the impacts with other existing and proposed mining and industrial development within a regional context. | As referred to in Section 3.2.1, although the flora survey was not undertaken at an appropriate time to identify all species likely to occur within the application area, it was considered adequate to assess the risk to threatened and priority flora. One species likely to occur, *Tephrosia rosea* var Port Hedland (P1) is a perennial species that is easily identifiable and therefore it is likely it would have been identified if present.<br><br>The two priority 3 flora annual species that were identified as likely to occur within the application area are known from a number of records across a large range within the region. If present, the proposed clearing is not likely to have a significant impact on the conservation status of these species.<br><br>Cumulative impacts were considered within this assessment including under principle (a), (b), (c), (d) and (e).<br><br>It is not a requirement for applicants to provide an assessment against the ten clearing principles in support of a clearing permit application. The DWER has assessed and determined this application in accordance with sections 51E and 51O of the EP Act, which includes an assessment against the ten clearing principles (See Section 3.2 and Appendix C). |

## Appendix B. Site characteristics

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

### B.1. Site characteristics

| Characteristic | Details |
|---|---|
| Local context | The area proposed to be cleared is part of an expansive tract of native vegetation in the extensive land use zone of Western Australia. It is surrounded by large tracks of native vegetation.<br><br>Aerial imagery indicates the local area (20-kilometre radius from the centre of the area proposed to be cleared) retains approximately 90 per cent of the original native vegetation cover. |
| Ecological linkage | In a local context nearly the entire area within 10km of the project is mapped as continuous native vegetation (Government of Western Australia 2019). The project will not impact local habitat connectivity, linkage, or corridor values |
| Conservation areas | There are no nearby DBCA managed reserves. The nearest is over 75 km away. |
| Vegetation description | Vegetation survey (SW Environmental, 2021) indicate the vegetation within the proposed clearing area consists of two vegetation types:<br>• *Acacia stellaticeps* open heath, sometimes low shrubland over *Triodia schinzii* with *Triodia epactia* hummock grassland, sometimes open hummock grassland in good condition, and<br>• *Owenia reticulata*, *Dolichandrone occidentalis* open low woodland often with *Atalaya hemiglauca* and *Acacia colei* tall shrubs, over *Acacia stellaticeps* open low shrubland over *Triodia schinzii* hummock grassland in excellent condition.<br><br>The full survey descriptions and maps are available in Appendix E.<br><br>This is consistent with the mapped Beard vegetation association:<br>• Beard 647, which is described as "Hummock grassland with scattered shrubs or mallee *Triodia* spp. *Acacia* spp., *Grevillea* spp. *Eucalyptus* spp". (Shepherd et al, 2001).<br><br>The mapped vegetation type retains approximately 98 per cent of the original extent (Government of Western Australia, 2019). |
| Vegetation condition | The Flora and Vegetation survey (SW Environmental, 2021) indicate the vegetation within the proposed clearing area is in Good to Excellent (Trudgen, 1991) condition.<br><br>The full Trudgen (1991) condition rating scale is provided in Appendix D. The full survey descriptions and mapping are available in Appendix E. |
| Soil description | The soil is mapped as the Uaroo Land System described as broad sandy plans, pebbly plains and drainage tracts supporting hard and soft spinifex hummock grassland and acacia shrubs. |
| Land degradation risk | The soils mapped within the application area have a high to extreme risk for soil and water erosion and phosphorus export. |
| Waterbodies | The desktop assessment and aerial imagery indicated that there are no wetlands or watercourses within the application area. The floodplain to the closest watercourse (Petermarer Creek) is 1.1km west of the application area. |

| Characteristic | Details |
|---|---|
| Hydrogeography | The application area occurs within the proclaimed Pilbara groundwater and surface water areas and are subject to licensing requirements under the RIWI Act. |
| Flora | Available databases indicated that there are no Threatened flora species recorded within the local (20 km radius) area of the application. One Priority 1 and three Priority 3 flora species have been recorded within the local area.<br><br>Of the four Priority flora species identified within the local area, the Priority 1 *Tephrosia rosea* subsp. Port Hedland and two P3 species, *Heliotropium muticum* and *Rothia indica* subsp. *australis* are considered to have potential to occur within the application area based on habitat preference. |
| Ecological communities | No TECs or PECs have been previously recorded within the application area. Database search results indicate that the closest recorded TEC/PECs are located approximately 107 km south-west and 131 km northeast of the application area. |
| Fauna | Available databases indicate that 50 conservation significant fauna species occur within the local area (20 km radius) of the application. The majority of these species are marine avian species. Given that the application area is located 10 kilometres inland from the coast, these species are not considered likely to occur within the application area due to lack of suitable habitat. It is considered that 18 out of the 50 recorded fauna species may occur within the application area (SW Environmental, 2021). |

## 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* | | | | | |
| Pilbara | 17,808,657.04 | 17,731,764.88 | 99.57 | 10.16 | 10.12 |
| Vegetation complex | | | | | |
| Beard vegetation association 647* | 195,859.95 | 191,710.92 | 97.88 | 0 | 0 |

*Government of Western Australia (2019)

## B.3 Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix F.1), and biological 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 (total) | Are surveys adequate to identify? [Y, N, N/A] |
|---|---|---|---|---|---|---|---|
| *Tephrosia rosea* var. Port Hedland (A.S. George 1114) | P1 | Y | Y | Y | 18km | 2 | Y |
| *Heliotropium muticum* | P3 | Y | Y | Y | Adjacent to application | 4 | N |

| 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 (total) | Are surveys adequate to identify? [Y, N, N/A] |
|---|---|---|---|---|---|---|---|
| *Eragrostis crateriformis* | P3 | N | N | N | 6 km | 2 | N/A |
| *Rothia indica* subsp. *australis* | P3 | Y | Y | Y | 14 km | 1 | N |

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

## B.4. 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] |
|---|---|---|---|---|---|---|
| Barn Swallow (*Hirundo rustica*) | S5 | Y | Y | | | Y |
| Peregrine Falcon (*Falco peregrinus*) | S7 | Y | Y | | | Y |
| Grey Falcon (*Falco hypoleucos*) | VU | Y | Y | | | Y |
| Fork-tailed Swift (*Apus pacificus*) | S5 | Y | Y | | | Y |
| Grey Wagtail (*Motacilla cinerea*) | S5 | N | N | | | Y |
| Northern Quoll (*Dasyurus hallucatus*) | S2 | Y | Y | 5km | | Y |
| Bilby (*Macrotis lagotis*) | Vulnerable | Y | Y | 37km | | Y |
| Brush-tailed Mulgara (*Dasycercus blythi*) | P4 | Y | Y | | | Y |

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

## B.5. Land degradation risk table

| Risk categories | Uaroo Land System |
|---|---|
| Wind erosion | Has a high to extreme hazard |
| Water erosion | Has a very high to extreme risk |
| Salinity | Has a moderate risk |
| Subsurface Acidification | Has a very low risk |
| Water logging | Has moderate to very high risk with poor site drainage potential |
| Phosphorus export risk | Has high to extreme hazard |

## Appendix C. Assessment against the clearing principle

| Assessment against the clearing principles | Variance level | Is further consideration required? |
|---|---|---|
| **Environmental value: biological values** | | |
| Principle (a): *"Native vegetation should not be cleared if it comprises a high level of biodiversity."*<br>Assessment:<br>The area proposed to be cleared may contain suitable habitat for priority flora species and habitat for threatened fauna species. | May be at variance | Yes<br>*Refer to Section 3.2.1, above.* |
| Principle (b): *"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."*<br>Assessment:<br>The area proposed to be cleared may contain habitat for conservation significant fauna species, the brush-tailed mulgara, Bilby and the Northern Quoll. | May be at variance | Yes<br>*Refer to Section 3.2.2, above.* |
| Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."*<br>Assessment:<br>The area proposed to be cleared is unlikely to contain habitat for suitable for threatened flora, given the lack of records of threatened flora within a 20 km radius of the proposed clearing. | Not likely to be at variance | No |
| Principle (d): *"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."*<br>Assessment:<br>The area proposed to be cleared does not contain species that indicate a threatened ecological community (TEC). No TECs have been mapped within 20 km of the application area. | Not likely to be at variance | No |
| **Environmental value: significant remnant vegetation and conservation areas** | | |
| Principle (e): *"Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."*<br>Assessment:<br>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. | Not at variance | No |
| Principle (h): *"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."*<br>Assessment:<br>Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of conservation areas. | Not likely to be at variance | No |
| **Environmental value: land and water resources** | | |

| Assessment against the clearing principles | Variance level | Is further consideration required? |
|---|---|---|
| Principle (f): *"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."*<br>Assessment:<br>Given no water courses or wetlands are recorded within the application area, the proposed clearing is unlikely to impact vegetation growing in association with a watercourse or wetland. | Not likely to be at variance | No |
| Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."*<br>Assessment:<br>The mapped soils are susceptible to water and wind erosion. Noting the extent of the application area the proposed clearing may have an appreciable impact on land degradation. | May be at variance | Yes<br>*Refer to Section 3.2.3, above.* |
| Principle (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."*<br>Assessment:<br>Given no water courses or wetlands are recorded within the application area, the proposed clearing is unlikely to impact upon the quality of surface water.<br><br>Groundwater salinity is mapped as 1000-3000 milligrams per litre total dissolved solids and the local area is highly vegetated with 90 per cent vegetation remaining within the local area. The proposed clearing is not likely to impact upon groundwater quality. | Not likely to be at variance | No |
| Principle (j): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."*<br>Assessment:<br>Given, the highly vegetated local area and that no watercourses or wetlands are recorded within one km of the application area, the proposed clearing is unlikely to contribute to waterlogging or exacerbate the incidence or intensity of flooding. | 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:

Trudgen, M.E. (1991) *Vegetation condition scale* in National Trust (WA) 1993 Urban Bushland Policy. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.

**Measuring vegetation condition for the Eremaean and Northern Botanical Provinces (Trudgen, 1991)**

| Condition | Description |
|---|---|
| Excellent | Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement. |
| Very good | Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks. |
| Good | More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds. |
| Poor | Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds. |
| Very poor | Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species. |
| Completely degraded | Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs. |

# Appendix E. Biological survey information excerpts (SW Environmental, 2021)

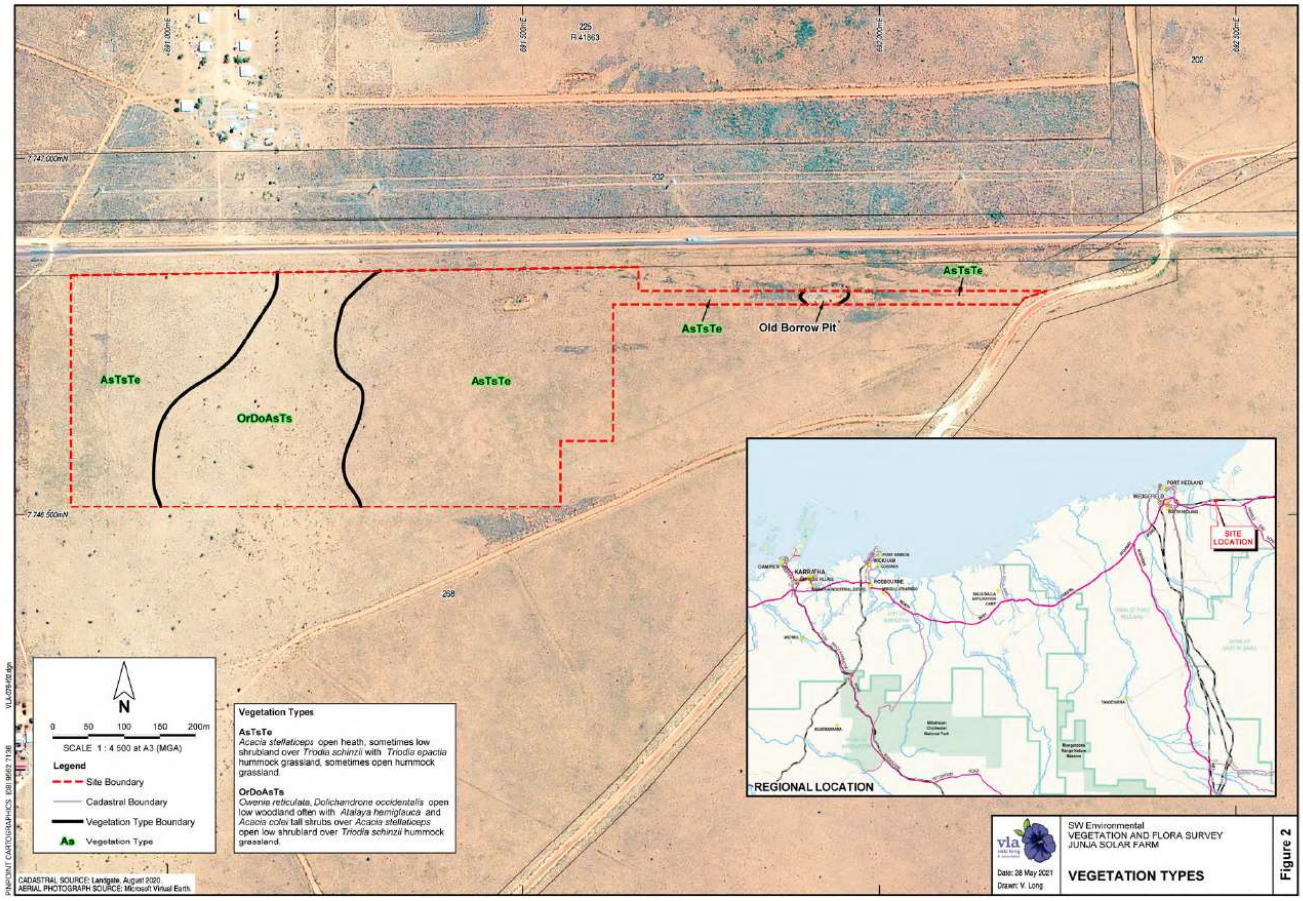

**Table 4-1 Vegetation types present within the survey area (VLA, 2020)**

| Code | Description | Sites | Condition | Photo |
|---|---|---|---|---|
| **AsTsTe** | *Acacia stellaticeps* open heath, sometimes low shrubland over *Triodia schinzii* with *Triodia epactia* hummock grassland, sometimes open hummock grassland. | 1, 1a, 1b, 1c, 1d (burnt) and MN1 | Good |  <br>Plate 1: *Acacia stellaticeps* open heath over open hummock grassland - typical<br>  <br>Plate 2: *Acacia stellaticeps* low shrubland over open hummock grassland.<br>  <br>Plate 3: Recently burnt, now regenerating AsTsTe |
| **OrDoAsTs** | *Owenia reticulata, Dolichandrone occidentalis* open low woodland often with *Atalaya hemiglauca* and *Acacia colei* tall shrubs over *Acacia stellaticeps* open low shrubland over *Triodia schinzii* hummock grassland. | 2, 2a, 3 | Excellent <2% *Cenchrus ciliaris,* *C. setiger* beneath *Owenia* trees. 1 x large *Aerva javanica* plant only beside an old *Owenia* stump |  <br>Plate 4: OrDoAsTs where low trees are more dense |

| Code | Description | Sites | Condition | Photo |
|---|---|---|---|---|
| | | | |  Plate 5: OrDoAsTe where tall trees are less dense |
| **Cleared** | *Existing disturbed areas (roads/rail line)* | N/A | Cleared, Completely Degraded |  Plate 6: Existing disturbed areas (roads/rail line) |

# 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

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

## F.2. References

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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

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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.

Submission (2022) *Public submission in relation to clearing permit application CPS 9581/1,* received 5 March 2022 (DWER Ref: DWERDT577937)

SW Environmental, (2021) Biodiversity Survey Report – Junja Solar Farm, Port Hedland. May 2021. Western Australia. (DWER Ref: DWERDT564699)

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Trudgen, M.E. (1991) *Vegetation condition scale* in National Trust (WA) 1993 Urban Bushland Policy. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.

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