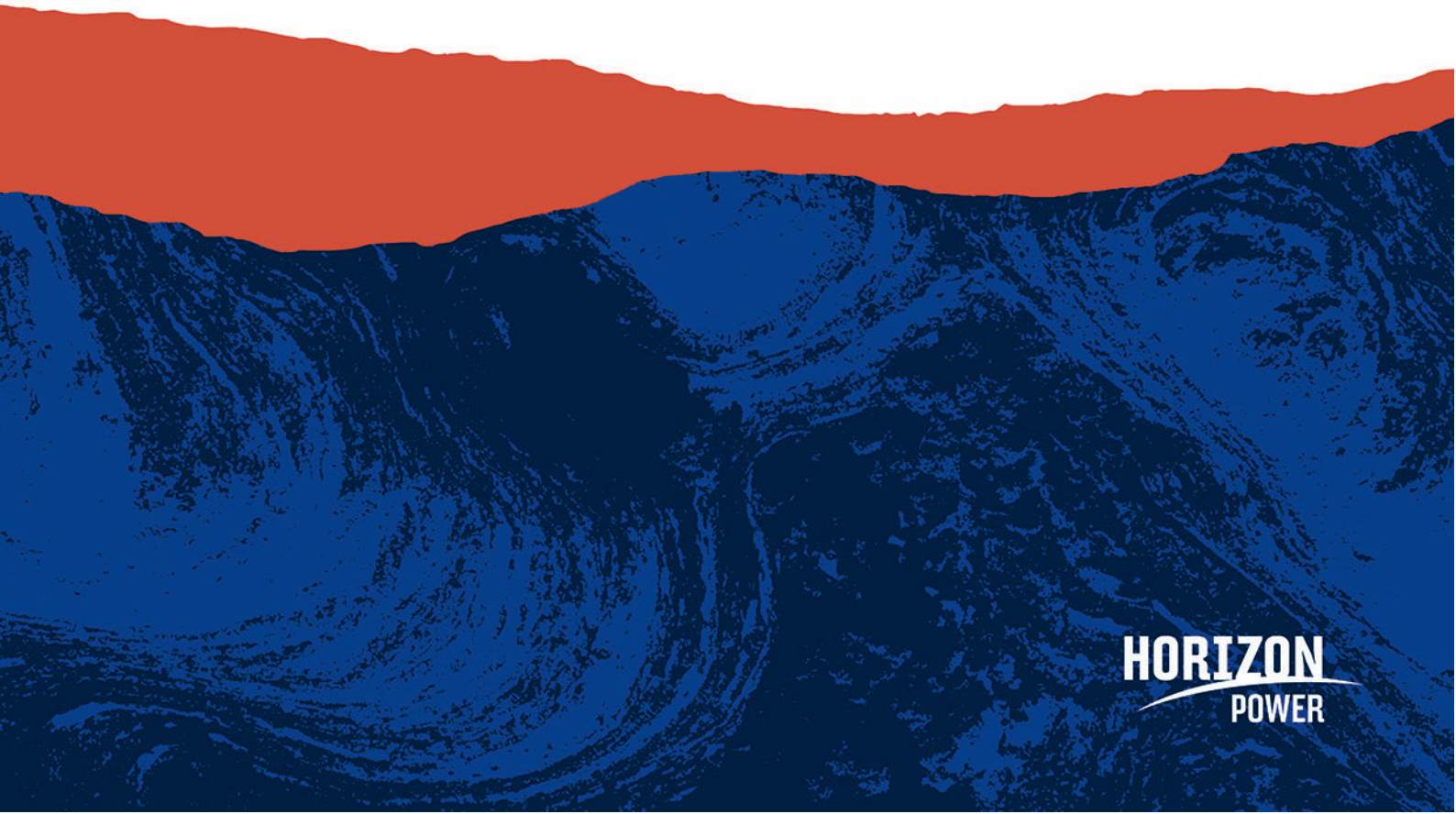
# Native Vegetation Clearing Permit Referral

## Supporting Document

January 2022



# 1 Contents

# 1. Introduction

Horizon Power is a State Government owned energy utility, responsible for power generation, retail supply and network electrical infrastructure in the North-West Interconnected System (NWIS) which services areas in the Pilbara. Horizon Power operates under and is bound by its duties and obligations under the *Energy Operators (Powers) Act 1979* (EOPA). Horizon Power, is responsible for determining any future network developments in its service area that may be required to accommodate increased capacity and/or future demands on the supply system.

The Maitland Strategic Industrial Area (Maitland SIA) is a 2,500 hectare area of land located south of Karratha township. The Maitland SIA has been designated by the State Government to promote and facilitate the processing of Western Australia's (WA) natural resources in the Pilbara region. Horizon Power is currently undertaking a feasibility assessment for a potential network expansion between the Maitland SIA and the existing Horizon Power substation on Stovehill Road, Karratha. As part of the feasibility assessment, Horizon Power intends on undertaking a geotechnical investigation as authorised under Sections 28 and 49 of the EOPA.

It is noted that the geotechnical investigations do not represent preparatory or preliminary works associated with the development of transmission infrastructure. Rather, these activities are wholly distinct from any potential future development proposal and are a precursor to any Horizon Power decision to proceed with detailed design and the associated regulatory processes.

To support native vegetation clearing approvals, GHD completed flora and fauna surveys in April 2020 of the proposed geotechnical investigation corridor. Due to engineering constraints identified at the mid-point of the line, Horizon Power has revised the design and subsequent alignment. Additional environmental surveys will be undertaken on the new alignment in March to June 2022 consistent with Environmental Protection Authority recommended survey timing.

Should Horizon Power wish to progress a potential network connection between Maitland SIA and the substation, then the relevant approvals under the *Environmental Protection Act 1986* will sought.

# 2. Purpose

Horizon Power considers that geotechnical investigations meet the DWER Guideline: Native Vegetation Clearing Referrals Criterion for being a 'low impact activity' and are suitable for a DWER determination of 'no permit required', as permitted under the revised *Environmental Protection Act 1986* (EP Act). This document provides an assessment of the clearing activity against each Criterion, to support DWER's review and consideration.

This document includes:

- An overview of the works required and a description of the proposed clearing activity to be undertaken;

- An assessment of the clearing against the DWER criterion for low impact activities; and
- Avoidance and mitigation measures applied to eliminate, reduce, or otherwise mitigate the need for and scale of the proposed clearing of native vegetation

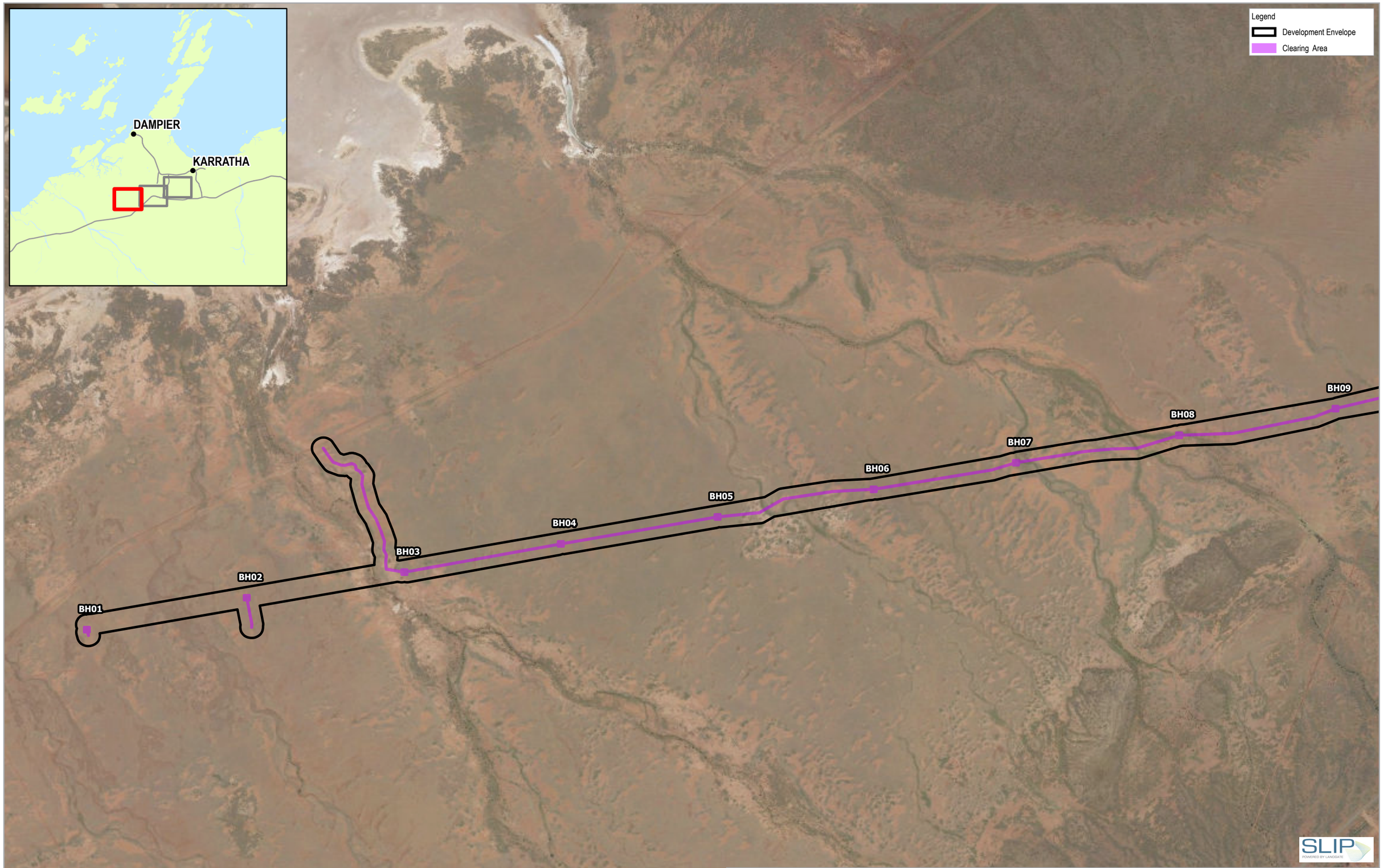
# 3. Background

## 3.1. Geotechnical Corridor

As part of a feasibility assessment for a potential network connection, Horizon Power must undertake geotechnical works along the proposed alignment to inform the engineering design of any proposed new network infrastructure including the size and type of pole/tower structures, route selection, span length, potential engineering and construction constraints, and the overall disturbance footprint. Based on the findings of the geotechnical investigations, Horizon Power may be required to alter the proposed alignment. This information is a precursor to undertaking stakeholder engagement that will further influence the type and location of any proposed infrastructure.

The geotechnical investigation will consist of 26 test sites. Two test pits will be required on either side of the rail line and at least one borehole. The test pits will be excavated using a backhoe and will be approximately 1 m by 5 m and advanced to a depth of approximately 2 m. An area of approximately 2 m x 4 m adjacent to each pit will be required to temporarily stockpile the excavated soil. The remainder 24 test sites will involve the installation of vertical bore holes using a truck mounted drill rig. The drill rig will require an accompanying support vehicle. Due to potential impacts to native vegetation from vehicle and machinery movements, the clearing impact is based on an estimated disturbance footprint of 25 m by 25 m.

Where possible the access points have been located on sparse vegetation or existing disturbed areas. Some areas, namely the area west of rail line is relatively undeveloped and driving of machinery and support vehicles over native vegetation for access is required. Approximately 7.5 km of incidental temporary clearing due to vehicle access tracks (50% of a 3 m wide track) has been included as part of the clearing calculations. No mechanical clearing will be undertaken in these areas.

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0 0.1 0.2 0.3 0.4

Kilometres

Horizontal Datum: WGS 1984
Grid: GCS WGS 1984

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GHD

**Horizon Power**
**Solar Farm and Pluto LNG Plant to the NWIS Connection Studies**

## Horizon Power Maitland to Karratha Transmission Line

Project No. **12555576**
Revision No. **3**
Date **20/01/2022**



# FIGURE 1

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Print date: 20 Jan 2022 - 17:26

Data source: Landgate_Subscription_Imagery\WANow: Landgate / SLIP; GHD: Clearing Area, Development Envelope - 20220120. Created by: mczekaj


Paper Size ISO A3

0 0.1 0.2 0.3 0.4

Kilometres

Horizontal Datum: WGS 1984
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Print date: 20 Jan 2022 - 17:26

Data source: Landgate_Subscription_ImageryWANow: Landgate / SLIP; GHD: Clearing Area, Development Envelope - 20220120. Created by: mczekaj

## 3.2. Surveys Undertaken

GHD has undertaken three surveys in the surrounding area of the proposed clearing within the previous two years and can demonstrate a sound understanding of the locally occurring flora, vegetation and fauna of the area under consideration. Though the proposed Geotechnical Corridor (GC) has not been surveyed, the previous surveys were conducted within close proximity and have been relied on to inform this referral. An overview of the surveys and findings is shown in Table 1. The location of the previous surveys in relation to the proposed clearing is shown in Figure 2.

***Table 1 Previous surveys undertaken in project vicinity***

| Survey | Findings | Distance to proposed geotechnical works |
|---|---|---|
| Flora and Vegetation Survey – Woodside Solar PV, Power Plant and Transmission Corridor<br>Vicky Long & Associates for GHD 2019 | **Southern Survey Results**<br>– No Threatened Ecological Communities (TECs) were recorded in the survey area<br>– The area was too dry to allow for the identification of either of the two potential Priority Ecological Communities (PECs), Priority 1 and Priority 3<br>• Roebourne Plains coastal grasslands with gilgai microrelief on deep cracking clays (P1)<br>• Horseflat land system of the Roebourne plains (P3)<br>– The substrate inspected indicated that the P1 PEC is less likely to be present<br>– 106 plant species were recorded during survey<br>– No species of conservation significance were recorded<br>– Five weed species, one of which is a Declared Pest under the *Biosecurity and Agriculture Management Act 2007* and Weed of National Significance, were recorded during the survey. | The southern part of the survey area overlaps by approximately 50 m into of the western end of the GC |
| Fauna Survey – Woodside Solar PV, Power Plant and Transmission Corridor<br>GHD 2020 | – Nine main fauna habitats were recorded of moderate to high value<br>– Two fauna habitats were recorded in the vicinity of the proposed clearing area<br>• Tussock grasslands on cracking clays, deemed of moderate value<br>• Minor drainage, deemed of high value<br>– Recorded six species of conservation significance, but not in the area adjacent to the GC.<br>Identified 11 further species that were likely to occur in the survey area. | The southern part of the survey area overlaps by approximately 50 m into of the western end of the GC |
| Flora and Vegetation Survey – Horizon Power Burrup Expansion<br>GHD 2020 | – Nineteen vegetation types were identified<br>– No TECs were identified in the survey area<br>– Two PECs were identified<br>– The PEC in the vicinity of the GC is the Horseflat land system of the Roebourne Plains (P3). Approximately 173 ha of the PEC was recorded in the survey area, ranging from Degraded to Excellent condition. | The previous surveyed area is approximately 400 m south of GC on the western side and follows adjacent on the eastern side. |

| Survey | Findings | Distance to proposed geotechnical works |
|---|---|---|
| | – No Threatened flora species were recorded within the survey area<br>– Four Priority species were recorded:<br>• Rhynchosia bungarensis (P4)<br>• Terminalia supranitifolia (P3)<br>• Vigna Triodiophila (P3)<br>• *Oldenlandia* sp. Hamersley Station (A.A. Mitchell PRP 1479). The species has since been renamed to *Dolichocarpa* sp. Hamersley Station (A.A. Mitchell PRP 1479).<br>– Of the four Priority species, one was recorded approximately 400 m south of the GC, *Oldenlandia* sp. Hamersley Station | |


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0 0.3 0.6 0.9 1.2

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 50

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GHD

**Horizon Power**
**Solar Farm and Pluto LNG Plant to the NWIS Connection Studies**

# Previous and New Path of the Transmission Line and Previous Survey Areas

Project No. **12555576**
Revision No. **2**
Date **20/01/2022**

**FIGURE 2**

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Print date: 20 Jan 2022 - 17:25

Data source: Landgate_Subscription_Imagery\WANow: Landgate / SLIP; GHD: Proposed BH Clearing Area - 20111105, Development Envelope - 20220120, Survey Areas from the GHD 2019 Fauna Survey for Woodside, Previous Transmission Line, Survey Areas from the GHD 2020 Flora and Vegetation Survey for Horizon Power, Survey Areas from the GHD 2020 Flora Survey for Woodside. Created by: mczekaj

## 3.3. Proposed clearing activity

The proposed geotechnical activities will result in a maximum temporary disturbance footprint of 3 ha of native vegetation . The 3 ha accounts for 1.96% of the GC. The proposed clearing /disturbance is comprised of:

1) 1.16 ha (59% of total proposed clearing) of temporary disturbance by vehicle and machinery tracks within the GC. Vegetation will not be mechanically cleared. Vegetation will be driven over to access the test sites. Please note this calculation is based on 50% disturbance of 3 m wide access tracks (2.32 ha envelope).
2) 1.63 ha (41% of total proposed clearing) of clearing for geotechnical test pits and boreholes. This is comprised of 26 geotechnical tests sites sized 25 m x 25 m, each one within a 100 m wide GC to allow for flexibility when placing the tests in the field. Locations shall be selected to reduce vegetation impacts with preference for sparse areas. Information from heritage surveys or heritage monitors will also inform final locations.

0.21 ha has been included as contingency to allow for changes based on site conditions/ findings.

## 3.4. Suitability for referral process

The DWER *Guideline: Native vegetation clearing referrals* (GoWA 2021d) outlines nine suitability aspects for clearing activities to be deemed appropriate for a clearing referral. Table 2 Clearing referral suitabilityassesses the proposed clearing activity against the GoWA 2021d criteria.

*Table 2 Clearing referral suitability*

| Aspect | Assessment | Suitability |
|---|---|---|
| Land that is subject to reserve a conservation covenant under the *Soil and Land Conservation Act 1945* (SLC Act) | Land not subject to a conservation covenant | Suitable |
| Land that is subject to an environmental protection covenant under Part VB of the EP Act | Land not subject to an environmental protection covenant | Suitable |
| Clearing timeframe | The proposed geotechnical works will be undertaken in January to March 2022. No significant timeframe constraint noted. It is expected that each test site will be completed within 2 to 3 days, with the program as a whole taking approximately 2 weeks | Suitable |
| Will contravene the requirements of a soil conservation notice issued under Part V of the SLC Act | Will not contravene the requirements of a soil conservation notice issued under Part V of the SLC Act | Suitable |
| Will or is likely to have a significant impact on matters of national environmental significance (MNES) | The Department of Agriculture, Water and Environment (DAWE) Protected Matters Search Tool (PMST) (DAWE 2021) considered the following MNES within a 5 km radius that could be impacted by the geotechnical works (Attachment A).<br><br>**World Heritage Properties:**<br>None<br>**National Heritage Places:**<br>None<br>**Wetlands of International Importance (Ramsar):**<br>None<br>**Great Barrier Reef Marine Park:**<br>None<br>**Commonwealth Marine Area:**<br>None<br>**Listed Threatened Ecological Communities:** | Suitable |

<table>
<tr><th>Aspect</th><th>Assessment</th><th>Suitability</th></tr>
<tr><td></td><td>None<br><u>Listed Threatened Species</u>:<br>The identified listed threatened species are shown in the table below.
<table>
<tr><th>Scientific name</th><th>Common name</th><th>Status</th></tr>
<tr><td colspan="3">Birds</td></tr>
<tr><td>Calidris canutus</td><td>Red Knot</td><td>Endangered</td></tr>
<tr><td>Calidris ferruginea</td><td>Curlew Sandpiper</td><td>Critically Endangered</td></tr>
<tr><td>Charadrius leschenaultia</td><td>Greater Sand Plover</td><td>Vulnerable</td></tr>
<tr><td>Falco hypoleucos</td><td>Grey Falcon</td><td>Vulnerable</td></tr>
<tr><td>Limosa lapponica menzbieri</td><td>Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit</td><td>Critically Endangered</td></tr>
<tr><td>Numenius madagascariensis</td><td>Eastern Curlew, Far Eastern Curlew</td><td>Critically Endangered</td></tr>
<tr><td>Pezoporus occidentalis</td><td>Night Parrot</td><td>Endangered</td></tr>
<tr><td>Rostratula australis</td><td>Australian Painted Snipe</td><td>Endangered</td></tr>
<tr><td>Sternula nereis nereis</td><td>Australian Fairy Tern</td><td>Vulnerable</td></tr>
<tr><td colspan="3">Mammals</td></tr>
<tr><td>Dasyurus hallucatus</td><td>Northern Quoll</td><td>Endangered</td></tr>
<tr><td>Macroderma gigas</td><td>Ghost Bat</td><td>Vulnerable</td></tr>
<tr><td>Rhinonicteris aurantia (Pilbara form)</td><td>Pilbara Leaf-nosed Bat</td><td>Vulnerable</td></tr>
<tr><td colspan="3">Reptiles</td></tr>
</table></td><td></td></tr>
</table>

<table>
<tr><th>Aspect</th><th>Assessment</th><th>Suitability</th></tr>
<tr><td></td><td>
<table>
<tr><td>Liasis olivaceus barroni</td><td>Olive Python</td><td>Vulnerable</td></tr>
<tr><td colspan="3"><u>Listed Migratory Species:</u><br>The identified listed migratory species are shown in the table below.</td></tr>
<tr><td>Scientific name</td><td>Common name</td><td>Status</td></tr>
<tr><td colspan="3">Migratory marine birds</td></tr>
<tr><td>Apus pacificus</td><td>Fork-tailed Swift</td><td></td></tr>
<tr><td>Sterna dougallii</td><td>Roseate Tern</td><td></td></tr>
<tr><td colspan="3">Migratory terrestrial species</td></tr>
<tr><td>Hirundo rustica</td><td>Barn Swallow</td><td></td></tr>
<tr><td>Motacilla cinerea</td><td>Grey Wagtail</td><td></td></tr>
<tr><td>Motacilla flava</td><td>Yellow Wagtail</td><td></td></tr>
<tr><td colspan="3">Migratory wetlands species</td></tr>
<tr><td>Actitis hypoleucos</td><td>Common Sandpiper</td><td></td></tr>
<tr><td>Calidris acuminata</td><td>Sharp-tailed Sandpiper</td><td></td></tr>
<tr><td>Calidris canutus</td><td>Red Knot</td><td>Endangered</td></tr>
<tr><td>Calidris ferruginea</td><td>Curlew Sandpiper</td><td>Critically Endangered</td></tr>
<tr><td>Calidris melanotos</td><td>Pectoral Sandpiper</td><td></td></tr>
<tr><td>Charadrius leschenaulrii</td><td>Greater Sand Plover</td><td>Vulnerable</td></tr>
</table>
</td><td></td></tr>
</table>

<table>
<tr><th>Aspect</th><th>Assessment</th><th>Suitability</th></tr>
<tr><td></td><td>
<table>
<tr><td>Charadrius veredus</td><td>Oriental Plover</td><td></td></tr>
<tr><td>Glareola maldivarum</td><td>Oriental Pratincole)</td><td></td></tr>
<tr><td>Limosa lapponica</td><td>Bar-tailed Godwit</td><td></td></tr>
<tr><td>Numenius madagascariensis</td><td>Eastern Curlew</td><td>Critically Endangered</td></tr>
<tr><td>Tringa nebularia</td><td>Common Greenshank</td><td></td></tr>
</table>
1.16 ha of disturbance is attributed to vehicle movements accessing the test sites. The sampling will be conducted in a systematic manner from one location to the next thus minimising the number of movements. Driving over vegetation will result in a temporary (or nil) disturbance only, with rapid regeneration expected. The tracks (tyre tread impacts) are linear in nature which will support natural recolonization from seed and root spread should vegetation death occur. Impact to species identified as MNES from habitat loss in these areas is considered negligible.<br><br>The geotechnical test sites account for 1.62 ha of temporary clearing. Rehabilitation activities will commence at each test site immediately after completion (detailed in Section 1.6). Vehicle access and test sites will avoid rock piles which are favoured by Northern Quoll and Olive python. An abundance of alternative habitat is present surrounding the proposed works. In addition, no clearing will be undertaken in riparian or riverine environments, therefore no significant impact is expected to migratory bird species. Based on the small volume of temporary clearing and adopted management measures to be implemented, the proposed clearing will not have a significant impact on MNES.</td><td></td></tr>
<tr><td>Includes marine native vegetation clearing activities</td><td>The geotechnical works are not in a marine environment.</td><td>Suitable</td></tr>
<tr><td>May impact on protected or otherwise significant flora or fauna</td><td>Flora<br>A review of the Department of Biodiversity, Conservation and Attractions (DBCA) threatened and priority flora database (TPFL)/WA herbarium database provided to Horizon Power, did not identify any threatened or priority species within the proposed geotechnical corridor. NatureMap database (DBCA 2007) identified 412 flora species within 5 km of the proposed works.<br>Three were of conservation significance:<br>– Oldenlandia sp Hamersley Station (Priority 3)</td><td>Suitable</td></tr>
</table>

| Aspect | Assessment | Suitability |
|---|---|---|
| | – *Terminalia supranitifolia* (Priority 3) small tree 830 m north of corridor located in rock piles<br>– *Rhynchosia bungarensis* (Priority 4) 830 m north of corridor located in rock piles<br>The PMST did not identify any protected or otherwise significant flora within 5 km of the proposed clearing area (DAWE 2021).<br>Horizon Power will select access routes and test pits locations that do not impact upon rock piles. Field personal will be provided with field identification sheets of the priority species to aid in the avoidance of priority species.<br>**Fauna**<br>NatureMap (DBCA 2007) identified 230 fauna species within 5 km of the proposed line<br>– Twenty species protected under international agreement<br>– Five 'rare or likely to become extinct' species<br>– Three Priority 4 species<br>The PMST identified thirteen listed threatened species and sixteen listed migratory species within a 5 km radius of proposed clearing activity (DAWE 2021).<br>As detailed in Table 4, significant fauna and flora species may occur in the DE. The clearing for the proposed geotechnical works is 1.63 ha with an additional 1.16 ha of potential incidental vehicle impacts. An abundance of alternative habitat is present surrounding the proposed works. The proposed clearing is small on a regional and local scale and temporary; therefore the potential impacts to significant flora and fauna are considered to be low to negligible. | |
| Will be within a highly cleared landscape or an area containing limited or restricted native vegetation types | The proposed clearing is not within an extensively cleared landscape and will require up to 3 ha of temporary clearing which is well below the 10 ha threshold for a permit. The two identified vegetation associations (587 and 157) have over 99% of their extent remaining in the Pilbara Bioregion and over 98% of their extent remaining in the City of Karratha (GoWA 2021b), expanded in Table 3. | Suitable |
| Is on land previously reserved as an environmental offset under the conditions of another approval under the EP Act | A review of the DWER Offsets Register indicates that the land is not reserved as an environmental offset under the conditions of an approval under the EP Act (GoWA 2021a). | Suitable |

## 3.5. Avoidance and mitigation measures

The following avoidance and mitigation measures outline measures to avoid or reduce the impact to native vegetation during the geotechnical investigations.

### 3.5.1. Design measures

- The geotechnical locations and access tracks have been designed to avoid vegetation clearing where possible;
- The geotechnical pit works will be undertaken within a larger area, allowing for the choice of area that is least vegetated and avoidance of rocky outcrops, rock piles and riparian vegetation once crews are in the field;
- Sparsely vegetated test locations will be utilised where possible;
- No clearing in waterways is proposed; and
- The design has been altered to align with existing tracks to minimise the clearing of native vegetation.

### 3.5.2. Operational measures

- Heritage survey by the Traditional Owner group;
- Heritage monitors present during ground disturbing activities;
- A Weed Management Plan will be developed prior to the works and will be implemented to mitigate the risk of weeds entering the site or spreading;
- Prior to commencing work all vehicles and machinery will be washed down to prevent the spread of weeds into the work area. Vehicle tread will be clean upon entry at the start of each day;
- Pre-existing access tracks and cleared areas will be utilised where possible;
- A preference will be given to degraded, sparse or already cleared vegetation in proximity to access tracks when selecting test locations;
- No mechanical clearing of access tracks is permitted;
- Works will be carried out systematically to facilitate minimal re-run and compaction of access tracks;
- Field crew will be provided with priority/threatened flora and fauna species information sheets to allow onsite identification and active avoidance;
- Areas which contain known significant weeds will be avoided and not cleared. If weeds are encountered during works vehicle treads will be cleaned prior to entering new areas;
- Boreholes will not be left open over night to prevent potential impacts to fauna;
- If a test pit is left open overnight, the walls will be shaped to allow fauna egress; and
- Test pits will be inspected at commencement of the day.

### 3.5.3. Rehabilitation

- Walkover of the 25 m x 25 m area for significant weed species, priority or threatened flora and fauna, or preferential habitat (i.e. rock piles). If identified, location will be moved;
- The area will be demarcated;
- Stripping of topsoil will be undertaken slowly in a one-way direction, to allow fauna to move offsite if present;
- Topsoil will be stored in a designated location on site;
- Test pits will be reinstated with shallow soils at the surface;
- Recontouring and removal of compaction (e.g. ripping or scarification) of the soil will be undertaken if applicable;
- Topsoil respread over surface;
- Boreholes (where developed) will be cut at or below ground surface and capped and the cleared drill pad area will have topsoil reinstated to facilitate natural regrowth. Where vegetation is stripped it will be respread back over disturbed areas on completion of works; and
- Upon the conclusion of drilling each test, the same access track will be used to return to the main road.

# 4 Assessment against DWER Criterion

## *4.1 Criterion 1: The area proposed to be cleared is small relative to the total remaining vegetation*

The proposed temporary clearing area includes 1.63 ha of actual clearing for test sites and 1.16 ha of incidental impact from driving, with a total temporary clearing footprint of up to 3 ha below the 10 ha threshold for requiring a permit. The proposed clearing is located in vegetation associations 589 and 157. These associations are widespread with over 98% remaining for both in the City of Karratha and over 99% in the State, shown in Table 3.

*Table 3 pre-European vegetation association extents (GoWA 2021b)*

| Vegetation association | Scale | Pre-European extent (ha) | Current extent (ha) | % Remaining | % of current extent in all DBCA managed land (proportion of current extent) |
|---|---|---|---|---|---|
| 589 | State: WA | 807,698 | 802,713 | 99.38 | 1.89 |
| | IBRA Bioregion: Pilbara | 728,768 | 724,695 | 99.44 | 2.10 |
| | IBRA Subregion: Roebourne (PIL04) | 675,391 | 671,327 | 99.40 | 2.13 |
| | LGA: City of Karratha | 312,813 | 310,512 | 99.26 | 0.78 |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| 157 | State: WA | 502,728 | 499,311 | 99.32 | 18.12 |
| | IBRA<br>Bioregion: Pilbara | 199,832 | 198,409 | 99.29 | 5.80 |
| | IBRA Subregion: Roebourne (PIL04) | 14,972 | 14,451 | 96.52 | 1.51 |
| | LGA: City of Karratha | 73,039 | 71,600 | 98.03 | 0.31 |

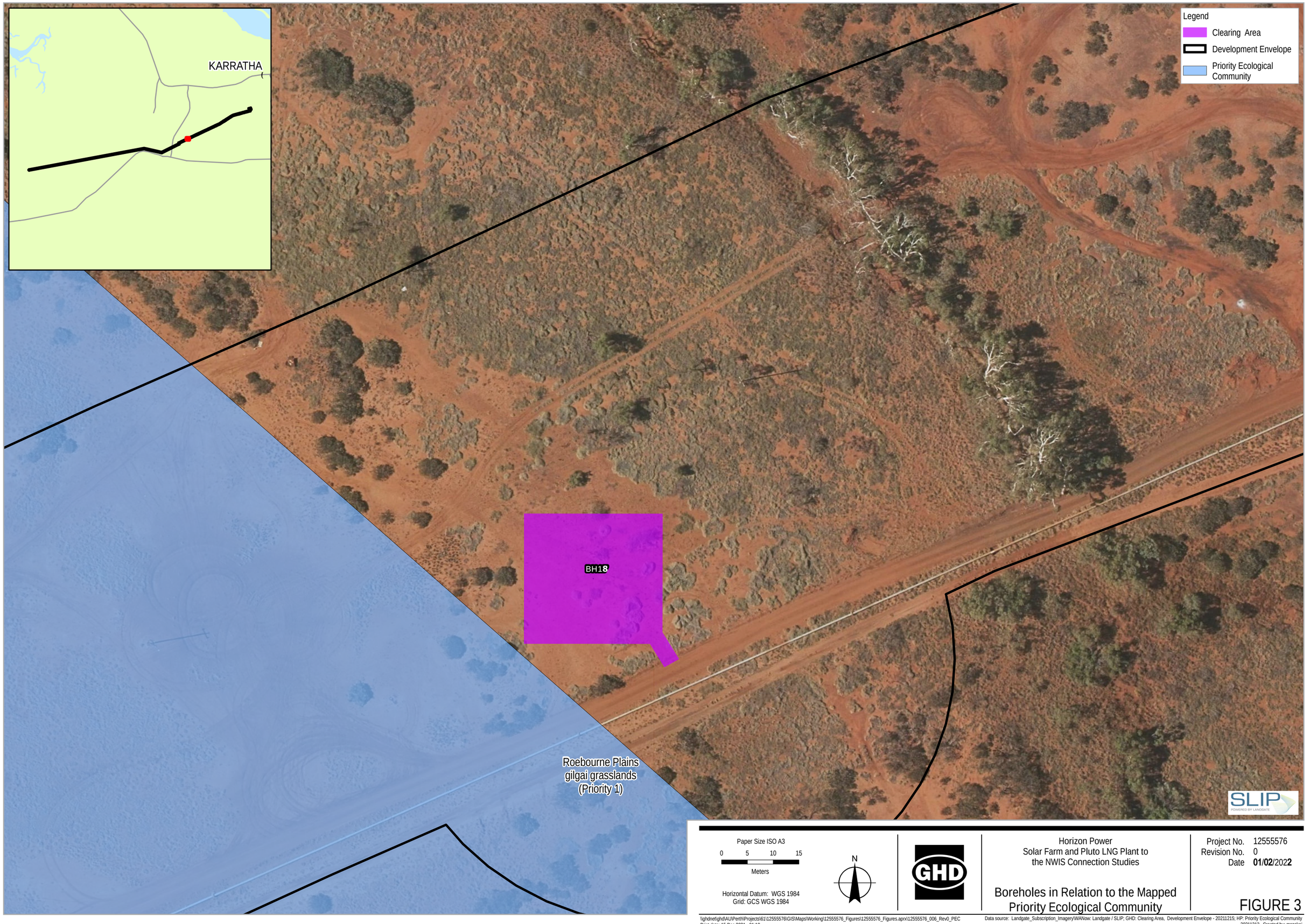
## 4.1 Criterion 2: There are no known or likely significant environmental values within the area

***Table 4 Assessment of the proposed clearing area against the DWER environmental values***

<table>
<tr><th>Environmental value</th><th>Assessment</th></tr>
<tr><td>Vegetation condition</td><td>The GHD flora and vegetation survey (2020b) for the superseded transmission line found that the vegetation condition ranged primarily from Very Good to Degraded with pockets of vegetation classed as Excellent or Completely Degraded/Cleared.<br>It is assumed that vegetation in the GC is in similar condition. Given the small area to be cleared, and the temporary nature of the activity, permanent impact to vegetation condition across the region is considered to be low.</td></tr>
<tr><td>Significant fauna</td><td>The DBCA threatened and priority fauna database provided to Horizon Power did not identify any fauna species within the development envelope. A data point for Dasyurus hallucatus was identified in the vicinity of BH13 however, metadata shows this the identification relates to Mt Regal south of the borehole.<br>Whilst no species are listed in the GC the area EPBC Protected Matters search identified species which may occur in the GC.<br>Preferred fauna habitat such as rock piles and drainage lines will be avoided (driving and test sites). Rehabilitation activities will commence on the completion of each test site.<br>Based on the small spatial and temporal nature of the clearing and abundance surrounding habitat, impacts to these species is not expected.
<table>
<tr><th>Name</th><th>Occurrence</th></tr>
<tr><td>Pilbara Olive Python (Lialis olivaceus barroni)</td><td>Visitor/opportunistic</td></tr>
<tr><td>Peregrine Falcon (Falco peregrinus)</td><td>Regular visitor/resident</td></tr>
<tr><td>Northern Short-tailed Mouse (Leggadina lakedowensis)</td><td>Resident</td></tr>
<tr><td>Lined Soil-crevice Skink (Notoscincus butleri)</td><td>Resident</td></tr>
<tr><td>Bridled Tern (Onychoprion anaethetus)</td><td>Opportunistic</td></tr>
<tr><td>Wood Sandpiper (Tringa glareola)</td><td>Seasonal/opportunistic</td></tr>
<tr><td>Common Greenshank (Tringa nebularia)</td><td>Seasonal/opportunistic</td></tr>
<tr><td>Oriental Pranticole (Charadrius veredus)</td><td>Seasonal/opportunistic</td></tr>
<tr><td>Oriental Plover (Charadrius veredus)</td><td>Seasonal/opportunistic</td></tr>
<tr><td>Common Sandpiper (Actitis hypoleucos)</td><td>Seasonal/opportunistic</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Environmental value</th><th>Assessment</th></tr>
<tr><td>Fauna habitat</td><td>Two habitat types were recorded in surrounding survey work (GHD 2020a), and are likely to occur in the GC:
<table>
<tr><th>Vegetation type</th><th>Description</th></tr>
<tr><td>Tussock grasslands on cracking clays</td><td>The grasslands provide good foraging and breeding opportunities for grassland and cracking clay specialists such as small native ground mammals, ground dwelling birds and reptiles. Migratory species previously recorded in this habitat include the Oriental Plover (Charadrius veredus), Oriental Pratincole (Glareola maldivarum), and Bridled Tern (Onychoprion anaethetus).<br>This habitat type is typically utilised by conservation significant species Northern Short-tailed Mouse and Lined Crevice Skink in the wet season (December to April) and is of moderate value. This habitat type is likely to be present in the GC, given the small scale and temporary nature of the clearing, impacts are expected to be negligible.</td></tr>
<tr><td>Minor Drainage lines</td><td>Not applicable. No test sites are located within minor drainage lines. Driving over minor drainage lines will be avoided where possible.</td></tr>
</table></td></tr>
<tr><td>Significant ecological linkage</td><td>The proposed area is not part of a significant ecological linkage.</td></tr>
<tr><td>Mapped ecological community</td><td>No EPBC listed TECs were identified by the PMST within the vicinity of the proposed clearing area (DAWE 2021). Desktop surveys indicate the line is likely to intersect the Roebourne Plains gilgai grasslands PEC (Priority 1) and Horseflats land system of the Roebourne Plains PEC (Priority 3) (GHD 2020b). The GHD (2020b) survey conducted adjacent to the geotechnical clearing area did not map the Roebourne Plains PEC but did identify, the Horseflats land system PEC.<br><br>The Horseflats PEC extends from Cape Preston to Balla Balla, approximately 170 km. Given the abundance of the PEC, the minimal clearing required for geotechnical works is not considered to be significant. The Roebourne Plains PEC is restricted to the Karratha area. The Threatened Ecological Communities data set was used to position boreholes away from the Roebourne Plains PEC which is shown intersecting the line path (Figure 3).<br><br>No test sites are located within the mapped Roebourne Plains gilgai grasslands PEC.</td></tr>
<tr><td>Significant flora</td><td>The NatureMap search (DBCA 2007) identified the presence/likely presence of three conservation significant species in the wider area.<br>– Oldenlandia sp. Hamersley Station (Priority 3)<br>– Terminalia supranitifolia (Priority 3)<br>– Rhynchosia bungarensis (Priority 4)<br>No flora of conservation significance were recorded during the GHD survey for Woodside (GHD 2019). Two individuals of Oldenlandia sp Hamersley Station species were identified in the previous alignment (GHD 2020b). No other significant flora species were identified.<br>Field personal will be provided with field identification sheets and will undertake a pre-clearance walkover at geotechnical test sites prior to commencing. If the species is identified, then the location will be shifted to avoid the species. Avoidance of rocky piles will greatly reduce the potential to encounter/disturb Rhynchosia bungarensis.</td></tr>
<tr><td>Mapped wetland</td><td>The PMST did not identify any Ramsar Wetlands or Wetlands of National Importance within 5 km of the GC (DAWE 2021).</td></tr>
</table>

| Environmental value | Assessment |
|---|---|
| Mapped watercourse | No mapped watercourses will be crossed during the clearing activities. No clearing in riparian vegetation or waterways is proposed for these works. |
| Water resources | The proposed clearing area is not located within a Public Drinking Water Source Area (GoWA 2021a).<br>The current surface salinity of the GC is very low, with a low risk of future salinisation (GoWA 2021a). Water resources will not be impacted by the proposed works. |
| Land and soil quality | The proposed clearing area has a current low level of soil acidity and a moderate to low risk of Acid Sulphate Soils (GoWA 2021a). The proposed clearing area does not intersect any contaminated sites (GoWA 2021a). Land and soil quality is unlikely to be impacted by the proposed works. |
| Heritage-related values and native title matters | A search of the Aboriginal Heritage Inquiry System identifies no Registered heritage sites within the GC (GoWA 2021c). The proposed GC is adjacent to three Aboriginal heritage sites, all are artefact/scatter type ID 7509 and ID 17092. However, the GC does not intersect the known / mapped boundaries of these sites. Borehole 17 intersects site 7510 which has been assessed as 'Not a Site'.<br>Additionally, approximately 50% of the proposed clearing areas have been part of a past Heritage survey. A heritage survey will be undertaken of the area prior to the commencement of work. No clearing or ground disturbance will occur at Aboriginal heritage sites or areas of significance. Heritage Monitors from the Traditional Owner group will be present during ground disturbing activities. |




Paper Size ISO A3

0 5 10 15

Meters

Horizontal Datum: WGS 1984
Grid: GCS WGS 1984

N

GHD

Horizon Power
Solar Farm and Pluto LNG Plant to
the NWIS Connection Studies

Boreholes in Relation to the Mapped
Priority Ecological Community

Project No. 12555576
Revision No. 0
Date **01/02/**202**2**

FIGURE 3

\\ghdnet\ghd\AU\Perth\Projects\61\12555576\GIS\Maps\Working\12555576_Figures\12555576_Figures.aprx\12555576_006_Rev0_PEC
Print date: 15 Dec 2021 - 01:10

Data source: Landgate_Subscription_Imagery\WANow: Landgate / SLIP; GHD: Clearing Area, Development Envelope - 20211215; HP: Priority Ecological Community - 20211213. Created by: mczekaj

## 4.1 Criterion 3: The state of scientific knowledge of native vegetation within the region is adequate

**Regional**

At a regional level, there is a good scientific knowledge of the native vegetation in the Pilbara. The Pilbara Region Biological Survey (GoWA 2017), active from 2002-2013, was undertaken to provide a better understanding of the biodiversity of the region. Over 800 sample sites were surveyed, to represent the diversity of the area. The results included:

- the collection of more than 80,000 plant vouchers representing about 1,100 species, of which at least 8 are new to science and 25 new to the Pilbara
- the documentation of 103 weeds in the Pilbara of which up to 29 are significant habitat modifying species.

The Pilbara Biological Survey Database documents all terrestrial biological surveys in the Pilbara. At the time of writing, there are 789 reports that have been identified (GoWA 2021e).

An inventory and condition survey of the Pilbara Region was undertaken by the WA Department of Agriculture and Food between 1995 and 1999 (van Vreeswyk et al. 2004). The report identified and described the condition of soils, landforms, vegetation, habitat, ecosystems, and Declared plants and animals. It also assessed the impact of pastoralism and made land management recommendations. The large number of surveys in the Pilbara means that the scientific knowledge of the region is well developed. It is highly unlikely that this proposal would have and impacts to the native vegetation that is not already known to science.

**Local**

Karratha is a well-developed area due to the presence of mining and port facilities. There have been several flora and fauna surveys undertaken by GHD in the vicinity of the GC, as detailed in Section 3.2.

In addition to the GHD surveys, the MSIA was subject to a flora and vegetation survey in 1994 (Mattiske 1994). More recently, the City of Karratha Local Biodiversity Strategy Field Survey of 2019 (CoK 2019) surveyed across nine areas for a total of sixty sites. Two of the areas surveyed (24 sites) overlap with the proposed GC. The survey found three PECs and a potential fourth identified. A fifth remnant PEC was recorded but in Degraded condition.

During the field surveys forty-seven introduced species were found, six of which are listed as either Declared Pests on the West Australian Organism List (WAOL) or as Weeds of National Significance (WONS). The widescale nature of the survey means there is good knowledge on the native vegetation in the local area.

As detailed in Section 3.2, flora and fauna surveys were undertaken for the proposed Woodside Hybrid Renewable Power Plant (GHD 2019, GHD 2020a) and a previous alignment for the transmission line from Maitland to Karratha (GHD 2020b). The southern portion of the survey is adjacent to the proposed clearing for Horizon's geotechnical works.

The biodiversity of the local area has been well surveyed, as such the state of the scientific knowledge of native vegetation is adequate, making it unlikely that the proposed clearing would have significant unknown impacts.

**Project Area**

The proximity of the previous GHD flora and vegetation survey (GHD 2020b) to the new proposed alignment suggests the vegetation identified is likely to be representative of the vegetation to be cleared for the geotechnical works. A total of 9.3 ha of the Development Corridor and 0.62 ha (15.7%) of the proposed clearing overlaps with the previous GHD survey (GHD 2020b).

## *4.2 Criterion 4: Conditions will not be required to manage environmental impacts*

Avoidance and mitigation measures have been applied to the project to limit the potential impacts of the proposed clearing. Given the abundance of vegetation surrounding the proposed clearing, and the small scale of clearing, it is considered likely that clearing can be undertaken without any conditions being applied.

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*Public Drinking Water Source Areas (DWER-033).*

*Acid Sulfate Soil Risk Map, Pilbara Coastline (DWER-053)*

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# Attachment A: Desktop Searches

NatureMap
Mapping Western Australia's biodiversity

# NatureMap 5k fauna Species Report

*Created By Guest user on 15/11/2021*

**Kingdom** Animalia
**Current Names Only** Yes
**Core Datasets Only** Yes
**Method** 'By Line'
**Vertices** 20° 45' 58" S,116° 49' 12" E 20° 47' 24" S,116° 45' 36" E 20° 48' 00" S,116° 40' 12" E
**Group By** Conservation Status

| Conservation Status | Species | Records |
|---|---|---|
| Non-conservation taxon | 202 | 1637 |
| Priority 4 | 3 | 16 |
| Protected under international agreement | 20 | 80 |
| Rare or likely to become extinct | 5 | 53 |
| **TOTAL** | **230** | **1786** |

| | Name ID | Species Name | Naturalised | Conservation Code | [1]Endemic To Query Area |
|---|---|---|---|---|---|
| **Rare or likely to become extinct** | | | | | |
| 1. | 24784 | *Calidris ferruginea (Curlew Sandpiper)* | | T | |
| 2. | 24790 | *Calidris tenuirostris (Great Knot)* | | T | |
| 3. | 25575 | *Charadrius leschenaultii (Greater Sand Plover)* | | T | |
| 4. | 24093 | *Dasyurus hallucatus (Northern Quoll)* | | T | |
| 5. | 24798 | *Numenius madagascariensis (Eastern Curlew)* | | T | |
| **Protected under international agreement** | | | | | |
| 6. | 41323 | *Actitis hypoleucos (Common Sandpiper)* | | IA | |
| 7. | 25554 | *Apus pacificus (Fork-tailed Swift, Pacific Swift)* | | IA | |
| 8. | 25736 | *Arenaria interpres (Ruddy Turnstone)* | | IA | |
| 9. | 24779 | *Calidris acuminata (Sharp-tailed Sandpiper)* | | IA | |
| 10. | 25738 | *Calidris canutus (Red Knot, knot)* | | IA | |
| 11. | 24788 | *Calidris ruficollis (Red-necked Stint)* | | IA | |
| 12. | 24789 | *Calidris subminuta (Long-toed Stint)* | | IA | |
| 13. | 47954 | *Gelochelidon nilotica (Gull-billed Tern)* | | IA | |
| 14. | 24481 | *Glareola maldivarum (Oriental Pratincole)* | | IA | |
| 15. | 25630 | *Hirundo rustica (Barn Swallow)* | | IA | |
| 16. | 48587 | *Hydroprogne caspia (Caspian Tern)* | | IA | |
| 17. | 30932 | *Limosa lapponica (Bar-tailed Godwit)* | | IA | |
| 18. | 24799 | *Numenius minutus (Little Curlew, Little Whimbrel)* | | IA | |
| 19. | 25742 | *Numenius phaeopus (Whimbrel)* | | IA | |
| 20. | 48591 | *Pandion cristatus (Osprey, Eastern Osprey)* | | IA | |
| 21. | 24382 | *Pluvialis fulva (Pacific Golden Plover)* | | IA | |
| 22. | 48597 | *Thalasseus bergii (Crested Tern)* | | IA | |
| 23. | 24806 | *Tringa glareola (Wood Sandpiper)* | | IA | |
| 24. | 24808 | *Tringa nebularia (Common Greenshank, greenshank)* | | IA | |
| 25. | 24809 | *Tringa stagnatilis (Marsh Sandpiper, little greenshank)* | | IA | |
| **Priority 4** | | | | | |
| 26. | 24217 | *Leggadina lakedownensis (Northern Short-tailed Mouse, Lakeland Downs Mouse, Kerakenga)* | | P4 | |
| 27. | 25196 | *Notoscincus butleri (lined soil-crevice skink (Dampier))* | | P4 | |
| 28. | 24803 | *Tringa brevipes (Grey-tailed Tattler)* | | P4 | |
| **Non-conservation taxon** | | | | | |
| 29. | 25535 | *Accipiter cirrocephalus (Collared Sparrowhawk)* | | | |
| 30. | 25755 | *Acrocephalus australis (Australian Reed Warbler)* | | | |
| 31. | 30833 | *Amphibolurus longirostris (Long-nosed Dragon)* | | | |
| 32. | | *Aname mellosa* | | | |
| 33. | 24312 | *Anas gracilis (Grey Teal)* | | | |
| 34. | 24316 | *Anas superciliosa (Pacific Black Duck)* | | | |
| 35. | 47414 | *Anhinga novaehollandiae (Australasian Darter)* | | | |
| 36. | 25318 | *Antaresia perthensis (Pygmy Python)* | | | |
| 37. | 25241 | *Antaresia stimsoni subsp. stimsoni (Stimson's Python)* | | | |

| | Name ID | Species Name | Naturalised | Conservation Code | [1]Endemic To Query Area |
|---|---|---|---|---|---|
| 38. | 24285 | *Aquila audax (Wedge-tailed Eagle)* | | | |
| 39. | 25559 | *Ardea intermedia (Intermediate Egret)* | | | |
| 40. | 41324 | *Ardea modesta (great egret, white egret)* | | | |
| 41. | 24341 | *Ardea pacifica (White-necked Heron)* | | | |
| 42. | 24610 | *Ardeotis australis (Australian Bustard)* | | | |
| 43. | 25566 | *Artamus cinereus (Black-faced Woodswallow)* | | | |
| 44. | 25567 | *Artamus leucorynchus (White-breasted Woodswallow)* | | | |
| 45. | 24357 | *Artamus superciliosus (White-browed Woodswallow)* | | | |
| 46. | | *Arthrorhabdus paucispinus* | | | |
| 47. | 25236 | *Aspidites ramsayi (Woma)* | | | |
| 48. | 24318 | *Aythya australis (Hardhead)* | | | |
| 49. | 25715 | *Cacatua roseicapilla (Galah)* | | | |
| 50. | 25716 | *Cacatua sanguinea (Little Corella)* | | | |
| 51. | 42307 | *Cacomantis pallidus (Pallid Cuckoo)* | | | |
| 52. | | *Carenum pulchrum* | | | |
| 53. | | *Carenum subplanatum* | | | |
| 54. | | *Carenum venustum* | | | |
| 55. | | *Catadromus lacordairei* | | | |
| 56. | 25600 | *Centropus phasianinus (Pheasant Coucal)* | | | |
| 57. | 24377 | *Charadrius ruficapillus (Red-capped Plover)* | | | |
| 58. | 24321 | *Chenonetta jubata (Australian Wood Duck, Wood Duck)* | | | |
| 59. | | *Chlaenius australis* | | | |
| 60. | | *Chroicocephalus novaehollandiae* | | | |
| 61. | 24431 | *Chrysococcyx basalis (Horsfield's Bronze Cuckoo)* | | | |
| 62. | 24288 | *Circus approximans (Swamp Harrier)* | | | |
| 63. | 24289 | *Circus assimilis (Spotted Harrier)* | | | |
| 64. | 24774 | *Cladorhynchus leucocephalus (Banded Stilt)* | | | |
| 65. | 25568 | *Coracina novaehollandiae (Black-faced Cuckoo-shrike)* | | | |
| 66. | 24416 | *Corvus bennetti (Little Crow)* | | | |
| 67. | 25593 | *Corvus orru (Torresian Crow)* | | | |
| 68. | 25701 | *Coturnix ypsilophora (Brown Quail)* | | | |
| 69. | 24420 | *Cracticus nigrogularis (Pied Butcherbird)* | | | |
| 70. | 25595 | *Cracticus tibicen (Australian Magpie)* | | | |
| 71. | | *Cryptoerithus halli* | | | |
| 72. | | *Cryptoerithus occultus* | | | |
| 73. | 25458 | *Ctenophorus caudicinctus (Ring-tailed Dragon)* | | | |
| 74. | 24865 | *Ctenophorus caudicinctus subsp. caudicinctus (Ring-tailed Dragon)* | | | |
| 75. | 24882 | *Ctenophorus nuchalis (Central Netted Dragon)* | | | |
| 76. | 24886 | *Ctenophorus reticulatus (Western Netted Dragon)* | | | |
| 77. | 25036 | *Ctenotus duricola* | | | |
| 78. | 25462 | *Ctenotus grandis* | | | |
| 79. | 25043 | *Ctenotus grandis subsp. titan* | | | |
| 80. | 25045 | *Ctenotus helenae* | | | |
| 81. | 25463 | *Ctenotus pantherinus (Leopard Ctenotus)* | | | |
| 82. | 25064 | *Ctenotus pantherinus subsp. ocellifer (Leopard Ctenotus)* | | | |
| 83. | 25073 | *Ctenotus saxatilis (Rock Ctenotus)* | | | |
| 84. | 25074 | *Ctenotus schomburgkii* | | | |
| 85. | 25077 | *Ctenotus serventyi* | | | |
| 86. | 25090 | *Cyclodomorphus melanops subsp. melanops (Slender Blue-tongue)* | | | |
| 87. | 25375 | *Cyclorana maini (Sheep Frog)* | | | |
| 88. | 24322 | *Cygnus atratus (Black Swan)* | | | |
| 89. | 24091 | *Dasykaluta rosamondae (Little Red Kaluta)* | | | |
| 90. | 25001 | *Delma nasuta* | | | |
| 91. | 25002 | *Delma pax* | | | |
| 92. | 25004 | *Delma tincta* | | | |
| 93. | 25297 | *Demansia rufescens (Rufous Whipsnake)* | | | |
| 94. | 24325 | *Dendrocygna eytoni (Plumed Whistling Duck)* | | | |
| 95. | 25607 | *Dicaeum hirundinaceum (Mistletoebird)* | | | |
| 96. | 24926 | *Diplodactylus conspicillatus (Fat-tailed Gecko)* | | | |
| 97. | 41404 | *Diplodactylus galaxias (Northern Pilbara Beak-faced Gecko)* | | | |
| 98. | 24937 | *Diplodactylus mitchelli* | | | |
| 99. | | *Egretta garzetta* | | | |
| 100. | | *Egretta novaehollandiae* | | | |
| 101. | | *Elanus axillaris* | | | |
| 102. | 47937 | *Elseyornis melanops (Black-fronted Dotterel)* | | | |
| 103. | 24631 | *Emblema pictum (Painted Finch)* | | | |
| 104. | | *Eolophus roseicapillus* | | | |
| 105. | 24568 | *Epthianura aurifrons (Orange Chat)* | | | |
| 106. | 24570 | *Epthianura tricolor (Crimson Chat)* | | | |
| 107. | 42404 | *Eremiascincus isolepis* | | | |

| | Name ID | Species Name | Naturalised | Conservation Code | [1]Endemic To Query Area |
|---|---|---|---|---|---|
| 108. | 41409 | *Eremiascincus musivus (Mosaic Desert Skink)* | | | |
| 109. | 24837 | *Eremiornis carteri (Spinifex-bird)* | | | |
| 110. | 24379 | *Erythrogonys cinctus (Red-kneed Dotterel)* | | | |
| 111. | 47938 | *Esacus magnirostris (Beach Stone-curlew, Beach Thick-knee)* | | | |
| 112. | | *Ethmostigmus curtipes* | | | |
| 113. | 25621 | *Falco berigora (Brown Falcon)* | | | |
| 114. | 25622 | *Falco cenchroides (Australian Kestrel, Nankeen Kestrel)* | | | |
| 115. | 25623 | *Falco longipennis (Australian Hobby)* | | | |
| 116. | 24041 | *Felis catus (Cat)* | Y | | |
| 117. | 25727 | *Fulica atra (Eurasian Coot)* | | | |
| 118. | 25301 | *Furina ornata (Moon Snake)* | | | |
| 119. | 25730 | *Gallirallus philippensis (Buff-banded Rail)* | | | |
| 120. | 42314 | *Gavicalis virescens (Singing Honeyeater)* | | | |
| 121. | 24958 | *Gehyra punctata* | | | |
| 122. | 24959 | *Gehyra variegata* | | | |
| 123. | 24401 | *Geopelia cuneata (Diamond Dove)* | | | |
| 124. | 24402 | *Geopelia humeralis (Bar-shouldered Dove)* | | | |
| 125. | 25585 | *Geopelia striata (Zebra Dove)* | | | |
| 126. | 24404 | *Geophaps plumifera (Spinifex Pigeon)* | | | |
| 127. | | *Geoscaptus laevissimus* | | | |
| 128. | 25530 | *Gerygone fusca (Western Gerygone)* | | | |
| 129. | 24443 | *Grallina cyanoleuca (Magpie-lark)* | | | |
| 130. | 25627 | *Haematopus fuliginosus (Sooty Oystercatcher)* | | | |
| 131. | 24487 | *Haematopus longirostris (Pied Oystercatcher)* | | | |
| 132. | | *Halacaridae sp.* | | | |
| 133. | 24293 | *Haliaeetus leucogaster (White-bellied Sea-Eagle)* | | | |
| 134. | 25541 | *Haliastur indus (Brahminy Kite)* | | | |
| 135. | 24295 | *Haliastur sphenurus (Whistling Kite)* | | | |
| 136. | 24961 | *Heteronotia binoei (Bynoe's Gecko)* | | | |
| 137. | 47965 | *Hieraaetus morphnoides (Little Eagle)* | | | |
| 138. | 25734 | *Himantopus himantopus (Black-winged Stilt)* | | | |
| 139. | 24491 | *Hirundo neoxena (Welcome Swallow)* | | | |
| 140. | | *Hogna crispipes* | | | |
| 141. | | *Isopedella tindalei* | | | |
| 142. | 24367 | *Lalage tricolor (White-winged Triller)* | | | |
| 143. | | *Lampona ampeinna* | | | |
| 144. | | *Lampona cylindrata* | | | |
| 145. | | *Lamponina scutata* | | | |
| 146. | 30928 | *Lerista clara* | | | |
| 147. | 25155 | *Lerista muelleri* | | | |
| 148. | 30925 | *Lerista verhmens* | | | |
| 149. | 25661 | *Lichmera indistincta (Brown Honeyeater)* | | | |
| 150. | 30933 | *Lucasium stenodactylum* | | | |
| 151. | | *Lychas sp. 2* | | | |
| 152. | 25489 | *Macropus robustus (Euro, Biggada)* | | | |
| 153. | 24135 | *Macropus robustus subsp. erubescens (Euro, Biggada)* | | | |
| 154. | 24326 | *Malacorhynchus membranaceus (Pink-eared Duck)* | | | |
| 155. | 25651 | *Malurus lamberti (Variegated Fairy-wren)* | | | |
| 156. | 25652 | *Malurus leucopterus (White-winged Fairy-wren)* | | | |
| 157. | 24583 | *Manorina flavigula (Yellow-throated Miner)* | | | |
| 158. | | *Megacephala greyana* | | | |
| 159. | 24736 | *Melopsittacus undulatus (Budgerigar)* | | | |
| 160. | 25184 | *Menetia greyii* | | | |
| 161. | 24598 | *Merops ornatus (Rainbow Bee-eater)* | | | |
| 162. | | *Mesocyclops brooksi* | | | |
| 163. | 25542 | *Milvus migrans (Black Kite)* | | | |
| 164. | 25545 | *Mirafra javanica (Horsfield's Bushlark, Singing Bushlark)* | | | |
| 165. | 25495 | *Morethia ruficauda* | | | |
| 166. | 25193 | *Morethia ruficauda subsp. exquisita* | | | |
| 167. | 25685 | *Neochmia ruficauda (Star Finch)* | | | |
| 168. | | *Nephila edulis* | | | |
| 169. | 24095 | *Ningaui timealeyi (Pilbara Ningaui)* | | | |
| 170. | 24224 | *Notomys alexis (Spinifex Hopping-mouse)* | | | |
| 171. | 25197 | *Notoscincus ornatus subsp. ornatus* | | | |
| 172. | 24742 | *Nymphicus hollandicus (Cockatiel)* | | | |
| 173. | 24407 | *Ocyphaps lophotes (Crested Pigeon)* | | | |
| 174. | | *Omoedus orbiculatus* | | | |
| 175. | | *Orthomorpha coarctata* | | | |
| 176. | | *Ostracoda (unident.)* | | | |
| 177. | | *Oxyopes variabilis* | | | |

| | Name ID | Species Name | Naturalised | Conservation Code | [1]Endemic To Query Area |
|---|---|---|---|---|---|
| 178. | 25680 | *Pachycephala rufiventris (Rufous Whistler)* | | | |
| 179. | 24648 | *Pelecanus conspicillatus (Australian Pelican)* | | | |
| 180. | 48060 | *Petrochelidon ariel (Fairy Martin)* | | | |
| 181. | 48061 | *Petrochelidon nigricans (Tree Martin)* | | | |
| 182. | 24667 | *Phalacrocorax sulcirostris (Little Black Cormorant)* | | | |
| 183. | 25699 | *Phalacrocorax varius (Pied Cormorant)* | | | |
| 184. | | *Phreodrilid with dissimilar ventral chaetae* | | | |
| 185. | | *Phreodrilid with similar ventral chaetae* | | | |
| 186. | | *Pilbarascutigera incola* | | | |
| 187. | 25703 | *Podargus strigoides (Tawny Frogmouth)* | | | |
| 188. | 25510 | *Pogona minor (Dwarf Bearded Dragon)* | | | |
| 189. | 24907 | *Pogona minor subsp. minor (Dwarf Bearded Dragon)* | | | |
| 190. | 24681 | *Poliocephalus poliocephalus (Hoary-headed Grebe)* | | | |
| 191. | | *Protonibea diacanthus* | | | |
| 192. | 25261 | *Pseudechis australis (Mulga Snake)* | | | |
| 193. | 24234 | *Pseudomys delicatulus (Delicate Mouse)* | | | |
| 194. | 24237 | *Pseudomys hermannsburgensis (Sandy Inland Mouse)* | | | |
| 195. | 42416 | *Pseudonaja mengdeni (Western Brown Snake)* | | | |
| 196. | 25263 | *Pseudonaja modesta (Ringed Brown Snake)* | | | |
| 197. | 42344 | *Purnella albifrons (White-fronted Honeyeater)* | | | |
| 198. | 24245 | *Rattus rattus (Black Rat)* | Y | | |
| 199. | 24776 | *Recurvirostra novaehollandiae (Red-necked Avocet)* | | | |
| 200. | 25614 | *Rhipidura leucophrys (Willie Wagtail)* | | | |
| 201. | | *Scolopendra laeta* | | | |
| 202. | | *Scolopendra morsitans* | | | |
| 203. | | *Simaetha tenuior* | | | |
| 204. | 24116 | *Sminthopsis macroura (Stripe-faced Dunnart)* | | | |
| 205. | 48594 | *Sternula nereis (Fairy Tern)* | | | |
| 206. | 24329 | *Stictonetta naevosa (Freckled Duck)* | | | |
| 207. | 25589 | *Streptopelia chinensis (Spotted Turtle-Dove)* | Y | | |
| 208. | 24924 | *Strophurus ciliaris subsp. aberrans* | | | |
| 209. | 24927 | *Strophurus elderi* | | | |
| 210. | | *Supunna picta* | | | |
| 211. | 25269 | *Suta fasciata (Rosen's Snake)* | | | |
| 212. | 25307 | *Suta punctata (Spotted Snake)* | | | |
| 213. | 25705 | *Tachybaptus novaehollandiae (Australasian Grebe, Black-throated Grebe)* | | | |
| 214. | 24207 | *Tachyglossus aculeatus (Short-beaked Echidna)* | | | |
| 215. | 30870 | *Taeniopygia guttata (Zebra Finch)* | | | |
| 216. | 24845 | *Threskiornis spinicollis (Straw-necked Ibis)* | | | |
| 217. | 42351 | *Todiramphus pyrrhopygius (Red-backed Kingfisher)* | | | |
| 218. | 25549 | *Todiramphus sanctus (Sacred Kingfisher)* | | | |
| 219. | 48141 | *Tribonyx ventralis (Black-tailed Native-hen)* | | | |
| 220. | | *Trichocyclus nigropunctatus* | | | |
| 221. | 24851 | *Turnix velox (Little Button-quail)* | | | |
| 222. | 30814 | *Tympanocryptis cephalus (Pebble Dragon)* | | | |
| 223. | 24386 | *Vanellus tricolor (Banded Lapwing)* | | | |
| 224. | 25210 | *Varanus brevicauda (Short-tailed Pygmy Monitor)* | | | |
| 225. | | *Wesmaldra nixaut* | | | |
| 226. | | *Wydundra kennedy* | | | |
| 227. | | *Wydundra nixaut* | | | Y |
| 228. | | *Zenodorus orbiculatus* | | | |
| 229. | 24857 | *Zosterops luteus (Yellow White-eye)* | | | |
| 230. | 24248 | *Zyzomys argurus (Common Rock-rat)* | | | |

**Conservation Codes**
T - Rare or likely to become extinct
X - Presumed extinct
IA - Protected under international agreement
S - Other specially protected fauna
1 - Priority 1
2 - Priority 2
3 - Priority 3
4 - Priority 4
5 - Priority 5

[1] For NatureMap's purposes, species flagged as endemic are those whose records are wholely contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasource, only records from that datasource are used to determine if a species is restricted to the query area.

NatureMap
Mapping Western Australia's biodiversity

# NatureMap 5k Flora Species Report

*Created By Guest user on 15/11/2021*

**Kingdom** Plantae
**Current Names Only** Yes
**Core Datasets Only** Yes
**Method** 'By Line'
**Vertices** 20° 45' 58" S,116° 49' 12" E 20° 47' 24" S,116° 45' 36" E 20° 48' 00" S,116° 40' 12" E
**Group By** Conservation Status

| Conservation Status | Species | Records |
|---|---|---|
| Non-conservation taxon | 409 | 1082 |
| Priority 3 | 2 | 3 |
| Priority 4 | 1 | 1 |
| **TOTAL** | **412** | **1086** |

| | Name ID | Species Name | Naturalised | Conservation Code | [1]Endemic To Query Area |
|---|---|---|---|---|---|
| **Priority 3** | | | | | |
| 1. | 19640 | *Oldenlandia sp. Hamersley Station (A.A. Mitchell PRP 1479)* | | P3 | |
| 2. | 5313 | *Terminalia supranitifolia* | | P3 | |
| **Priority 4** | | | | | |
| 3. | 20862 | *Rhynchosia bungarensis* | | P4 | |
| **Non-conservation taxon** | | | | | |
| 4. | 4886 | *Abutilon amplum* | | | |
| 5. | 4891 | *Abutilon fraseri (Lantern Bush)* | | | |
| 6. | 18120 | *Abutilon fraseri subsp. fraseri* | | | |
| 7. | 4895 | *Abutilon lepidum* | | | |
| 8. | 4899 | *Abutilon malvifolium (Bastard Marshmallow)* | | | |
| 9. | 4902 | *Abutilon oxycarpum (Flannel Weed)* | | | |
| 10. | 43020 | *Abutilon oxycarpum subsp. Prostrate (A.A. Mitchell PRP 1266)* | | | |
| 11. | 3209 | *Acacia ampliceps* | | | |
| 12. | 44586 | *Acacia ampliceps x sclerosperma subsp. sclerosperma* | | | |
| 13. | 3214 | *Acacia ancistrocarpa (Fitzroy Wattle)* | | | |
| 14. | 3223 | *Acacia arida* | | | |
| 15. | 3241 | *Acacia bivenosa* | | | |
| 16. | 44588 | *Acacia bivenosa x sclerosperma subsp. sclerosperma* | | | |
| 17. | 17013 | *Acacia colei var. colei* | | | |
| 18. | 13500 | *Acacia coriacea subsp. coriacea* | | | |
| 19. | 13502 | *Acacia coriacea subsp. pendens* | | | |
| 20. | 16174 | *Acacia elachantha* | | | |
| 21. | 12673 | *Acacia glaucocaesia* | | | |
| 22. | 3356 | *Acacia gregorii (Gregory's Wattle)* | | | |
| 23. | 3377 | *Acacia inaequilatera (Baderi)* | | | |
| 24. | 3434 | *Acacia maitlandii (Maitland's Wattle)* | | | |
| 25. | 3506 | *Acacia pyrifolia (Ranji Bush, Kandji)* | | | |
| 26. | 29015 | *Acacia pyrifolia var. pyrifolia* | | | |
| 27. | 13078 | *Acacia sclerosperma subsp. sclerosperma* | | | |
| 28. | 29135 | *Acacia sericophylla* | | | |
| 29. | 3551 | *Acacia sphaerostachya* | | | |
| 30. | 19456 | *Acacia stellaticeps* | | | |
| 31. | 13070 | *Acacia synchronicia* | | | |
| 32. | 3573 | *Acacia tenuissima* | | | |
| 33. | 3579 | *Acacia trachycarpa (Minni Ritchi, Balgali)* | | | |
| 34. | 3606 | *Acacia xiphophylla* | | | |
| 35. | 17422 | *Adriana tomentosa var. tomentosa* | | | |
| 36. | 2646 | *Aerva javanica (Kapok Bush)* | Y | | |
| 37. | 3680 | *Aeschynomene indica (Budda Pea)* | | | |
| 38. | 4739 | *Alectryon oleifolius* | | | |
| 39. | 2652 | *Alternanthera nodiflora (Common Joyweed)* | | | |
| 40. | 17147 | *Alysicarpus muelleri* | | | |

| | Name ID | Species Name | Naturalised | Conservation Code | [1]Endemic To Query Area |
|---|---|---|---|---|---|
| 41. | 20018 | *Amaranthus undulatus* | | | |
| 42. | 5278 | *Ammannia multiflora* | | | |
| 43. | 207 | *Aristida contorta (Bunched Kerosene Grass)* | | | |
| 44. | 229 | *Astrebla pectinata (Barley Mitchell Grass)* | | | |
| 45. | 2450 | *Atriplex amnicola (Swamp Saltbush)* | | | |
| 46. | 2451 | *Atriplex bunburyana (Silver Saltbush)* | | | |
| 47. | 2453 | *Atriplex codonocarpa (Flat-topped Saltbush)* | | | |
| 48. | 2466 | *Atriplex lindleyi* | | | |
| 49. | 2476 | *Atriplex semilunaris (Annual Saltbush)* | | | |
| 50. | 2769 | *Boerhavia burbidgeana* | | | |
| 51. | 2770 | *Boerhavia coccinea (Tar Vine, Wituka)* | | | |
| 52. | 2772 | *Boerhavia gardneri* | | | |
| 53. | 2773 | *Boerhavia paludosa* | | | |
| 54. | 2774 | *Boerhavia repleta* | | | |
| 55. | 2775 | *Boerhavia schomburgkiana* | | | |
| 56. | | *Boerhavia sp.* | | | |
| 57. | 6606 | *Bonamia media* | | | |
| 58. | 6608 | *Bonamia pannosa* | | | |
| 59. | 44782 | *Bonamia pilbarensis* | | | |
| 60. | 12716 | *Brachychiton acuminatus* | | | |
| 61. | 750 | *Bulbostylis barbata* | | | |
| 62. | 752 | *Bulbostylis turbinata* | | | |
| 63. | 11055 | *Cajanus cinereus* | | | |
| 64. | 10972 | *Cajanus marmoratus* | | | |
| 65. | 2864 | *Calandrinia ptychosperma* | | | |
| 66. | 7905 | *Calotis multicaulis (Many-stemmed Burr-daisy)* | | | |
| 67. | 3749 | *Canavalia rosea (Wild Jack Bean)* | | | |
| 68. | 2981 | *Capparis spinosa* | | | |
| 69. | 48291 | *Capparis spinosa subsp. nummularia* | | | |
| 70. | 6567 | *Carissa lanceolata (Conkerberry, Marnuwiji)* | | | |
| 71. | 2949 | *Cassytha capillaris* | | | |
| 72. | 2950 | *Cassytha filiformis (Love Vine, Jirawan)* | | | |
| 73. | 258 | *Cenchrus ciliaris (Buffel Grass)* | Y | | |
| 74. | 259 | *Cenchrus echinatus (Burrgrass)* | Y | | |
| 75. | 29721 | *Cenchrus setiger (Birdwood Grass)* | Y | | |
| 76. | 19762 | *Centipeda minima subsp. macrocephala* | | | |
| 77. | 39680 | *Ceriops australis* | | | |
| 78. | 266 | *Chloris barbata (Purpletop Chloris)* | Y | | |
| 79. | 33516 | *Chrysocephalum gilesii* | | | |
| 80. | 273 | *Chrysopogon fallax (Golden Beard Grass)* | | | |
| 81. | 2985 | *Cleome oxalidea* | | | |
| 82. | 2988 | *Cleome viscosa (Tickweed, Tjinduwadhu)* | | | |
| 83. | 6732 | *Clerodendrum tomentosum* | | | |
| 84. | 13689 | *Clerodendrum tomentosum var. lanceolatum* | | | |
| 85. | 1165 | *Commelina ensifolia (Wandering Jew, Buargu)* | | | |
| 86. | 2776 | *Commicarpus australis (Perennial Tar Vine)* | | | |
| 87. | 17339 | *Corchorus incanus* | | | |
| 88. | 4862 | *Corchorus parviflorus* | | | |
| 89. | 4865 | *Corchorus tridens* | | | |
| 90. | 13467 | *Corchorus trilocularis* | | | |
| 91. | 4867 | *Corchorus walcottii (Woolly Corchorus)* | | | |
| 92. | 17093 | *Corymbia hamersleyana* | | | |
| 93. | 17092 | *Corymbia opaca* | | | |
| 94. | 19565 | *Cressa australis* | | | |
| 95. | 19378 | *Crotalaria dissitiflora subsp. benthamiana* | | | |
| 96. | 20179 | *Crotalaria medicaginea var. neglecta* | | | |
| 97. | 11231 | *Crotalaria novae-hollandiae subsp. novae-hollandiae* | | | |
| 98. | 7371 | *Cucumis melo (Ulcardo Melon)* | | | |
| 99. | 41721 | *Cucumis variabilis* | | | |
| 100. | 17118 | *Cullen leucanthum* | | | |
| 101. | 17120 | *Cullen pogonocarpum* | | | |
| 102. | 13733 | *Cuscuta victoriana* | | | |
| 103. | 279 | *Cymbopogon ambiguus (Scentgrass)* | | | |
| 104. | 280 | *Cymbopogon bombycinus (Silky Oilgrass)* | | | |
| 105. | 6584 | *Cynanchum floribundum (Dumara Bush, Tjipa)* | | | |
| 106. | 48280 | *Cynanchum viminale subsp. australe* | | | |
| 107. | 46555 | *Cynodon prostratus* | | | |
| 108. | 12801 | *Cyperus blakeanus* | | | |
| 109. | 777 | *Cyperus bulbosus (Bush Onion, Tjanmata)* | | | |
| 110. | 798 | *Cyperus iria* | | | |

| | Name ID | Species Name | Naturalised | Conservation Code | [1]Endemic To Query Area |
|---|---|---|---|---|---|
| 111. | 814 | *Cyperus squarrosus* | | | |
| 112. | 818 | *Cyperus vaginatus (Stiffleaf Sedge)* | | | |
| 113. | 290 | *Dactyloctenium radulans (Button Grass)* | | | |
| 114. | 6963 | *Datura metel (Downy Thornapple)* | Y | | |
| 115. | 7317 | *Dentella asperata* | | | |
| 116. | 3852 | *Desmodium campylocaulon* | | | |
| 117. | 3853 | *Desmodium filiforme* | | | |
| 118. | 3856 | *Desmodium muelleri* | | | |
| 119. | 13741 | *Dichanthium sericeum subsp. humilius* | | | |
| 120. | 3612 | *Dichrostachys spicata (Pied Piper Bush)* | | | |
| 121. | 7166 | *Dicliptera armata* | | | |
| 122. | 313 | *Digitaria ctenantha (Comb Finger Grass)* | | | |
| 123. | 4745 | *Diplopeltis eriocarpa (Hairy Pepperflower)* | | | |
| 124. | 4759 | *Dodonaea coriacea* | | | |
| 125. | 2504 | *Dysphania plantaginella* | | | |
| 126. | 2506 | *Dysphania rhadinostachya* | | | |
| 127. | 11890 | *Dysphania rhadinostachya subsp. rhadinostachya* | | | |
| 128. | 32348 | *Eccremidium arcuatum* | | | |
| 129. | 6682 | *Ehretia saligna (False Cedar)* | | | |
| 130. | 2511 | *Enchylaena tomentosa (Barrier Saltbush)* | | | |
| 131. | 12064 | *Enchylaena tomentosa var. tomentosa (Barrier Saltbush)* | | | |
| 132. | 357 | *Enneapogon caerulescens (Limestone Grass)* | | | |
| 133. | 368 | *Enteropogon ramosus (Windmill Grass, Curly Windmill Grass)* | | | |
| 134. | 380 | *Eragrostis eriopoda (Woollybutt Grass, Wangurnu)* | | | |
| 135. | 16731 | *Eragrostis exigua* | | | |
| 136. | 381 | *Eragrostis falcata (Sickle Lovegrass)* | | | |
| 137. | 399 | *Eragrostis xerophila (Knotty-butt Neverfail)* | | | |
| 138. | 7234 | *Eremophila longifolia (Berrigan, Tulypurpa)* | | | |
| 139. | 16363 | *Eremophila maculata subsp. brevifolia (Native Fuchsia)* | | | |
| 140. | 400 | *Eriachne aristidea* | | | |
| 141. | 403 | *Eriachne benthamii (Swamp Wanderrie)* | | | |
| 142. | 414 | *Eriachne obtusa (Northern Wandarrie Grass)* | | | |
| 143. | 16485 | *Eriachne pulchella subsp. dominii* | | | |
| 144. | 16486 | *Eriachne pulchella subsp. pulchella* | | | |
| 145. | 4335 | *Erodium cygnorum (Blue Heronsbill)* | | | |
| 146. | 3871 | *Erythrina vespertilio (Yulbah)* | | | |
| 147. | 14548 | *Eucalyptus victrix* | | | |
| 148. | 4617 | *Euphorbia australis (Namana)* | | | |
| 149. | 35307 | *Euphorbia australis var. australis* | | | |
| 150. | 4619 | *Euphorbia biconvexa* | | | |
| 151. | 4620 | *Euphorbia boophthona (Gascoyne Spurge)* | | | |
| 152. | 9048 | *Euphorbia careyi* | | | |
| 153. | 4623 | *Euphorbia coghlanii (Namana)* | | | |
| 154. | 4626 | *Euphorbia drummondii (Caustic Weed, Piwi)* | | | |
| 155. | 4635 | *Euphorbia myrtoides* | | | |
| 156. | 12097 | *Euphorbia tannensis subsp. eremophila (Desert Spurge)* | | | |
| 157. | 42879 | *Euphorbia trigonosperma* | | | |
| 158. | 42876 | *Euphorbia vaccaria var. vaccaria* | | | |
| 159. | 6617 | *Evolvulus alsinoides (Tropical Speedwell)* | | | |
| 160. | 11200 | *Evolvulus alsinoides var. villosicalyx* | | | |
| 161. | 25811 | *Ficus aculeata* | | | |
| 162. | 19648 | *Ficus brachypoda* | | | |
| 163. | 1753 | *Ficus platypoda (Native Fig, Makartu)* | | | |
| 164. | 12096 | *Ficus virens var. virens* | | | |
| 165. | 851 | *Fimbristylis dichotoma (Eight Day Grass)* | | | |
| 166. | 878 | *Fimbristylis rara* | | | |
| 167. | 35558 | *Flaveria trinervia (Speedy Weed)* | Y | | |
| 168. | 4654 | *Flueggea virosa* | | | |
| 169. | 5188 | *Frankenia ambita* | | | |
| 170. | 5209 | *Frankenia pauciflora (Seaheath)* | | | |
| 171. | 3938 | *Glycine canescens (Silky Glycine)* | | | |
| 172. | 2674 | *Gomphrena affinis* | | | |
| 173. | 18361 | *Gomphrena affinis subsp. pilbarensis* | | | |
| 174. | 2680 | *Gomphrena cunninghamii* | | | |
| 175. | 11131 | *Gomphrena sordida* | | | |
| 176. | 31074 | *Gomphrena sp. Martins Well (K.F. Kenneally 6116)* | | | Y |
| 177. | 7509 | *Goodenia forrestii* | | | |
| 178. | 7521 | *Goodenia lamprosperma* | | | |
| 179. | 7526 | *Goodenia microptera* | | | |
| 180. | 12552 | *Goodenia muelleriana* | | | |

| | Name ID | Species Name | Naturalised | Conservation Code | [1]Endemic To Query Area |
|---|---|---|---|---|---|
| 181. | 10982 | *Goodenia stobbsiana* | | | |
| 182. | 4910 | *Gossypium australe (Native Cotton)* | | | |
| 183. | 2079 | *Grevillea pyramidalis (Caustic Bush, Tjungu)* | | | |
| 184. | 19570 | *Grevillea pyramidalis subsp. leucadendron* | | | |
| 185. | 13440 | *Grevillea wickhamii subsp. aprica* | | | |
| 186. | 2177 | *Hakea lorea (Witinti)* | | | |
| 187. | 19137 | *Hakea lorea subsp. lorea* | | | |
| 188. | 6704 | *Heliotropium conocarpum* | | | |
| 189. | 6706 | *Heliotropium cunninghamii* | | | |
| 190. | 6707 | *Heliotropium curassavicum (Smooth Heliotrope)* | | | |
| 191. | 6712 | *Heliotropium heteranthum* | | | |
| 192. | 17307 | *Heliotropium inexplicitum* | | | |
| 193. | 17315 | *Heliotropium tanythrix* | | | |
| 194. | 6718 | *Heliotropium tenuifolium (Mamukata)* | | | |
| 195. | 29317 | *Hibiscus austrinus var. austrinus* | | | |
| 196. | 4923 | *Hibiscus brachysiphonius* | | | |
| 197. | 4925 | *Hibiscus coatesii* | | | |
| 198. | 4942 | *Hibiscus sturtii (Sturt's Hibiscus)* | | | |
| 199. | 5215 | *Hybanthus aurantiacus* | | | |
| 200. | 14587 | *Indigastrum parviflorum* | | | |
| 201. | 3973 | *Indigofera colutea (Sticky Indigo)* | | | |
| 202. | 3980 | *Indigofera linifolia* | | | |
| 203. | 3981 | *Indigofera linnaei (Birdsville Indigo)* | | | |
| 204. | 3982 | *Indigofera monophylla* | | | |
| 205. | 3987 | *Indigofera trita* | | | |
| 206. | 6623 | *Ipomoea coptica* | | | |
| 207. | 6624 | *Ipomoea costata (Rock Morning Glory, Kanti)* | | | |
| 208. | 6631 | *Ipomoea lonchophylla (Cowvine)* | | | |
| 209. | 6633 | *Ipomoea muelleri (Poison Morning Glory, Yumbu)* | | | |
| 210. | 6635 | *Ipomoea pes-caprae* | | | |
| 211. | 6637 | *Ipomoea polymorpha* | | | |
| 212. | 458 | *Iseilema dolichotrichum* | | | |
| 213. | 459 | *Iseilema eremaeum* | | | |
| 214. | 465 | *Iseilema vaginiflorum (Red Flinders Grass)* | | | |
| 215. | 8088 | *Ixiochlamys cuneifolia* | | | |
| 216. | 12059 | *Jasminum didymum subsp. lineare (Desert Jasmine)* | | | |
| 217. | 8095 | *Lactuca saligna (Wild Lettuce, Willow-leaf Lettuce)* | Y | | |
| 218. | 4960 | *Lawrencia viridigrisea* | | | |
| 219. | 3035 | *Lepidium pedicellosum* | | | |
| 220. | 3038 | *Lepidium pholidogynum* | | | |
| 221. | 4060 | *Lotus australis (Austral Trefoil)* | | | |
| 222. | 4061 | *Lotus cruentus (Redflower Lotus)* | | | |
| 223. | 2544 | *Maireana georgei (Satiny Bluebush)* | | | |
| 224. | 2556 | *Maireana planifolia (Low Bluebush)* | | | |
| 225. | 11662 | *Maireana tomentosa subsp. tomentosa* | | | |
| 226. | 4962 | *Malvastrum americanum (Spiked Malvastrum)* | Y | | |
| 227. | 5051 | *Melhania oblongifolia* | | | |
| 228. | 8109 | *Minuria integerrima (Smooth Minuria)* | | | |
| 229. | 8110 | *Minuria leptophylla (Minnie Daisy)* | | | |
| 230. | 6490 | *Muellerolimon salicorniaceum* | | | |
| 231. | 17158 | *Myoporum montanum (Native Myrtle)* | | | |
| 232. | 2573 | *Neobassia astrocarpa* | | | |
| 233. | 3614 | *Neptunia dimorphantha (Sensitive Plant)* | | | |
| 234. | 6971 | *Nicotiana benthamiana (Tjuntiwari)* | | | |
| 235. | 6976 | *Nicotiana occidentalis (Native Tobacco)* | | | |
| 236. | 11331 | *Nicotiana occidentalis subsp. obliqua* | | | |
| 237. | 11856 | *Nicotiana occidentalis subsp. occidentalis* | | | |
| 238. | 38421 | *Notoleptopus decaisnei* | | | |
| 239. | 38422 | *Notoleptopus decaisnei var. decaisnei* | | | |
| 240. | 7338 | *Oldenlandia crouchiana* | | | |
| 241. | 6651 | *Operculina aequisepala* | | | |
| 242. | 503 | *Panicum decompositum (Native Millet, Kaltu-kaltu)* | | | |
| 243. | 504 | *Panicum effusum (Hairy Panic Grass)* | | | |
| 244. | 505 | *Panicum laevinode* | | | |
| 245. | 515 | *Paraneurachne muelleri (Northern Mulga Grass)* | | | |
| 246. | 10975 | *Paspalidium basicladum* | | | |
| 247. | 518 | *Paspalidium clementii (Clements Paspalidium)* | | | |
| 248. | 523 | *Paspalidium rarum (Rare Paspalidium)* | | | |
| 249. | 525 | *Paspalidium tabulatum* | | | |
| 250. | 13494 | *Pentalepis trichodesmoides* | | | |

| | Name ID | Species Name | Naturalised | Conservation Code | [1]Endemic To Query Area |
|---|---|---|---|---|---|
| 251. | 3675 | *Petalostylis labicheoides (Slender Petalostylis)* | | | |
| 252. | 9056 | *Phyllanthus baccatus* | | | |
| 253. | 17626 | *Phyllanthus erwinii* | | | |
| 254. | 4680 | *Phyllanthus maderaspatensis* | | | |
| 255. | 5230 | *Pimelea ammocharis* | | | |
| 256. | 17816 | *Pluchea ferdinandi-muelleri* | | | |
| 257. | 43944 | *Pluchea longiseta* | | | |
| 258. | 8168 | *Pluchea rubelliflora* | | | |
| 259. | 8170 | *Pluchea tetranthera* | | | |
| 260. | 2901 | *Polycarpaea holtzei* | | | |
| 261. | 2903 | *Polycarpaea longiflora* | | | |
| 262. | 41365 | *Polygala glaucifolia* | | | |
| 263. | 4572 | *Polygala isingii* | | | |
| 264. | 6653 | *Polymeria ambigua (Morning Glory)* | | | |
| 265. | 6655 | *Polymeria calycina* | | | |
| 266. | 17513 | *Polymeria lanata* | | | |
| 267. | | *Polymeria sp.* | | | |
| 268. | 2878 | *Portulaca conspicua* | | | |
| 269. | 2879 | *Portulaca cyclophylla* | | | |
| 270. | 43981 | *Portulaca decipiens* | | | |
| 271. | 2884 | *Portulaca oleracea (Purslane, Wakati)* | | | |
| 272. | 8192 | *Pterocaulon sphacelatum (Apple Bush, Fruit Salad Plant)* | | | |
| 273. | 8193 | *Pterocaulon sphaeranthoides* | | | |
| 274. | 2690 | *Ptilotus aervoides* | | | |
| 275. | 2696 | *Ptilotus astrolasius* | | | |
| 276. | 2698 | *Ptilotus auriculifolius* | | | |
| 277. | 2699 | *Ptilotus axillaris (Mat Mulla Mulla)* | | | |
| 278. | 2704 | *Ptilotus calostachyus (Weeping Mulla Mulla)* | | | |
| 279. | 2706 | *Ptilotus carinatus* | | | |
| 280. | 2711 | *Ptilotus clementii (Tassel Top)* | | | |
| 281. | 2717 | *Ptilotus divaricatus (Climbing Mulla Mulla)* | | | |
| 282. | 2721 | *Ptilotus exaltatus (Tall Mulla Mulla)* | | | |
| 283. | 2725 | *Ptilotus fusiformis* | | | |
| 284. | 2728 | *Ptilotus gomphrenoides* | | | |
| 285. | 2731 | *Ptilotus helipteroides (Hairy Mulla Mulla)* | | | |
| 286. | 2745 | *Ptilotus murrayi* | | | |
| 287. | 2746 | *Ptilotus nobilis (Tall Mulla Mulla)* | | | |
| 288. | 2747 | *Ptilotus obovatus (Cotton Bush)* | | | |
| 289. | 2751 | *Ptilotus polystachyus (Prince of Wales Feather)* | | | |
| 290. | 2766 | *Ptilotus villosiflorus* | | | |
| 291. | 2582 | *Rhagodia eremaea (Thorny Saltbush)* | | | |
| 292. | 2584 | *Rhagodia preissii* | | | |
| 293. | 5295 | *Rhizophora stylosa (Spotted-leaved Red Mangrove)* | | | |
| 294. | 13301 | *Rhodanthe floribunda* | | | |
| 295. | 13246 | *Rhodanthe humboldtiana* | | | |
| 296. | 4190 | *Rhynchosia australis (Rhynchosia)* | | | |
| 297. | 4191 | *Rhynchosia minima (Rhynchosia)* | | | |
| 298. | 48900 | *Roepera retivalvis* | | | |
| 299. | 30434 | *Salsola australis* | | | |
| 300. | 2357 | *Santalum lanceolatum (Northern Sandalwood, Yarnguli)* | | | |
| 301. | 7608 | *Scaevola cunninghamii* | | | |
| 302. | 7644 | *Scaevola spinescens (Currant Bush, Maroon)* | | | |
| 303. | 41660 | *Schenkia australis* | | | |
| 304. | 41646 | *Schenkia clementii* | | | |
| 305. | 2604 | *Sclerolaena costata* | | | |
| 306. | 2607 | *Sclerolaena densiflora* | | | |
| 307. | 8877 | *Sclerolaena gardneri* | | | |
| 308. | 2633 | *Sclerolaena uniflora (Two-spined Saltbush)* | | | |
| 309. | 12279 | *Senna artemisioides subsp. helmsii* | | | |
| 310. | 12280 | *Senna artemisioides subsp. oligophylla* | | | |
| 311. | 18443 | *Senna ferraria* | | | |
| 312. | 18346 | *Senna glutinosa* | | | |
| 313. | 12305 | *Senna glutinosa subsp. chatelainiana* | | | |
| 314. | 12307 | *Senna glutinosa subsp. glutinosa* | | | |
| 315. | 12309 | *Senna glutinosa subsp. pruinosa* | | | |
| 316. | 12308 | *Senna glutinosa subsp. x luerssenii* | | | |
| 317. | 18451 | *Senna hamersleyensis* | | | |
| 318. | 12312 | *Senna notabilis* | | | |
| 319. | 18450 | *Senna symonii* | | | |
| 320. | 12319 | *Senna venusta* | | | |

| | Name ID | Species Name | Naturalised | Conservation Code | [1]Endemic To Query Area |
|---|---|---|---|---|---|
| 321. | 4196 | *Sesbania cannabina (Sesbania Pea)* | | | |
| 322. | 606 | *Setaria dielsii (Diels' Pigeon Grass)* | | | |
| 323. | 613 | *Setaria verticillata (Whorled Pigeon Grass)* | Y | | |
| 324. | 31758 | *Sida arsiniata* | | | |
| 325. | 4971 | *Sida cardiophylla* | | | |
| 326. | 4976 | *Sida echinocarpa* | | | |
| 327. | 4977 | *Sida fibulifera (Silver Sida)* | | | |
| 328. | 4988 | *Sida rohlenae* | | | |
| 329. | 33698 | *Sida sp. Pilbara (A.A. Mitchell PRP 1543)* | | | |
| 330. | 16617 | *Sida sp. spiciform panicles (E. Leyland s.n. 14/8/90)* | | | |
| 331. | 4989 | *Sida spinosa (Spiny Sida)* | | | |
| 332. | 6998 | *Solanum cleistogamum* | | | |
| 333. | 7002 | *Solanum diversiflorum* | | | |
| 334. | 7007 | *Solanum esuriale (Quena)* | | | |
| 335. | 7014 | *Solanum horridum* | | | |
| 336. | 7018 | *Solanum lasiophyllum (Flannel Bush, Mindjulu)* | | | |
| 337. | 7029 | *Solanum phlomoides* | | | |
| 338. | 12919 | *Sorghum plumosum var. plumosum* | | | |
| 339. | 622 | *Sorghum timorense* | | | |
| 340. | 625 | *Spinifex longifolius (Beach Spinifex)* | | | |
| 341. | 629 | *Sporobolus australasicus (Fairy Grass)* | | | |
| 342. | 635 | *Sporobolus virginicus (Marine Couch)* | | | |
| 343. | 4731 | *Stackhousia intermedia* | | | |
| 344. | 19555 | *Stackhousia muricata subsp. annual (W.R. Barker 2172)* | | | |
| 345. | 7099 | *Stemodia kingii* | | | |
| 346. | 8234 | *Streptoglossa adscendens* | | | |
| 347. | 8235 | *Streptoglossa bubakii* | | | |
| 348. | 8236 | *Streptoglossa cylindriceps* | | | |
| 349. | 8237 | *Streptoglossa decurrens* | | | |
| 350. | 8238 | *Streptoglossa liatroides* | | | |
| 351. | 8240 | *Streptoglossa odora* | | | |
| 352. | 8241 | *Streptoglossa tenuiflora* | | | |
| 353. | 3182 | *Stylobasium spathulatum (Pebble Bush)* | | | |
| 354. | 2638 | *Suaeda arbusculoides* | | | |
| 355. | 43203 | *Surreya diandra* | | | |
| 356. | 12356 | *Swainsona formosa* | | | |
| 357. | 4231 | *Swainsona kingii* | | | |
| 358. | 4233 | *Swainsona leeana* | | | |
| 359. | 4234 | *Swainsona maccullochiana (Ashburton Pea)* | | | |
| 360. | 4242 | *Swainsona pterostylis* | | | |
| 361. | 7363 | *Synaptantha tillaeacea* | | | |
| 362. | 31616 | *Tecticornia auriculata* | | | |
| 363. | 33236 | *Tecticornia halocnemoides (Shrubby Samphire)* | | | |
| 364. | 33240 | *Tecticornia halocnemoides subsp. longispicata* | | | |
| 365. | 33238 | *Tecticornia halocnemoides subsp. tenuis* | | | |
| 366. | 33317 | *Tecticornia indica* | | | |
| 367. | 33319 | *Tecticornia indica subsp. bidens* | | | |
| 368. | 33318 | *Tecticornia indica subsp. leiostachya (Samphire)* | | | |
| 369. | 33299 | *Tecticornia pergranulata subsp. elongata* | | | |
| 370. | 31618 | *Tecticornia pruinosa* | | | |
| 371. | 4263 | *Tephrosia clementii* | | | |
| 372. | 49016 | *Tephrosia densa* | | | |
| 373. | 19531 | *Tephrosia rosea var. clementii* | | | |
| 374. | 17768 | *Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)* | | | |
| 375. | 15949 | *Tephrosia sp. D Kimberley Flora (R.D. Royce 1848)* | | | |
| 376. | 42442 | *Tephrosia sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)* | | | |
| 377. | 40060 | *Tephrosia sp. clay soils (S. van Leeuwen et al. PBS 0273)* | | | |
| 378. | 4285 | *Tephrosia supina* | | | |
| 379. | 45698 | *Terminalia circumalata* | | | |
| 380. | 5310 | *Terminalia platyphylla (Wild Plum, Durin)* | | | |
| 381. | 673 | *Themeda triandra* | | | |
| 382. | 2644 | *Threlkeldia diffusa (Coast Bonefruit)* | | | |
| 383. | 2942 | *Tinospora smilacina (Snakevine, Oondala)* | | | |
| 384. | 6278 | *Trachymene oleracea* | | | |
| 385. | 19043 | *Trachymene oleracea subsp. oleracea* | | | |
| 386. | 44362 | *Trianthema triquetrum* | | | |
| 387. | 44360 | *Trianthema turgidifolium* | | | |
| 388. | 4375 | *Tribulus cistoides* | | | |
| 389. | 4377 | *Tribulus hirsutus* | | | |
| 390. | 4379 | *Tribulus macrocarpus* | | | |

| | Name ID | Species Name | Naturalised | Conservation Code | [1]Endemic To Query Area |
|---|---|---|---|---|---|
| 391. | 4380 | *Tribulus occidentalis (Perennial Caltrop)* | | | |
| 392. | 4381 | *Tribulus platypterus (Cork Hopbush)* | | | |
| 393. | 4383 | *Tribulus terrestris (Caltrop)* | Y | | |
| 394. | 6727 | *Trichodesma zeylanicum (Camel Bush, Kumbalin)* | | | |
| 395. | 11750 | *Trichodesma zeylanicum var. zeylanicum* | | | |
| 396. | 7381 | *Trichosanthes cucumerina* | | | |
| 397. | 48201 | *Trigastrotheca molluginea* | | | |
| 398. | 679 | *Triodia angusta* | | | |
| 399. | 13131 | *Triodia epactia* | | | |
| 400. | 704 | *Triodia wiseana (Limestone Spinifex)* | | | |
| 401. | 4873 | *Triumfetta appendiculata* | | | |
| 402. | 14694 | *Triumfetta clementii* | | | |
| 403. | 14942 | *Triumfetta maconochieana* | | | |
| 404. | 7660 | *Velleia glabrata (Pee the Bed)* | | | |
| 405. | 4323 | *Vigna lanceolata (Maloga Vigna, Wega)* | | | |
| 406. | 31391 | *Vigna sp. Hamersley Clay (A.A. Mitchell PRP 113)* | | | |
| 407. | 5106 | *Waltheria indica* | | | |
| 408. | 728 | *Whiteochloa cymbiformis* | | | |
| 409. | 729 | *Xerochloa barbata (Rice Grass)* | | | |
| 410. | 731 | *Xerochloa laniflora (Rice Grass)* | | | |
| 411. | 732 | *Yakirra australiensis* | | | |
| 412. | 4326 | *Zornia albiflora* | | | |

**Conservation Codes**
T - Rare or likely to become extinct
X - Presumed extinct
IA - Protected under international agreement
S - Other specially protected fauna
1 - Priority 1
2 - Priority 2
3 - Priority 3
4 - Priority 4
5 - Priority 5

[1] For NatureMap's purposes, species flagged as endemic are those whose records are wholely contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasource, only records from that datasource are used to determine if a species is restricted to the query area.

Australian Government
Department of Agriculture, Water and the Environment

# EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 11-Nov-2021

# Summary

## Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

| | |
|---|---|
| World Heritage Properties: | None |
| National Heritage Places: | None |
| Wetlands of International Importance (Ramsar | None |
| Great Barrier Reef Marine Park: | None |
| Commonwealth Marine Area: | None |
| Listed Threatened Ecological Communities: | None |
| Listed Threatened Species: | 13 |
| Listed Migratory Species: | 16 |

## Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

| | |
|---|---|
| Commonwealth Lands: | 1 |
| Commonwealth Heritage Places: | None |
| Listed Marine Species: | 21 |
| Whales and Other Cetaceans: | None |
| Critical Habitats: | None |
| Commonwealth Reserves Terrestrial: | None |
| Australian Marine Parks: | None |
| Habitat Critical to the Survival of Marine Turtles: | None |

## Extra Information

This part of the report provides information that may also be relevant to the area you have

| | |
|---|---|
| State and Territory Reserves: | None |
| Regional Forest Agreements: | None |
| Nationally Important Wetlands: | None |
| EPBC Act Referrals: | 2 |
| Key Ecological Features (Marine): | None |
| Biologically Important Areas: | 2 |
| Bioregional Assessments: | None |
| Geological and Bioregional Assessments: | None |

# Details

## Matters of National Environmental Significance

| Listed Threatened Species | | | [ Resource Information ] |
|---|---|---|---|
| Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.<br>Number is the current name ID. | | | |
| Scientific Name | Threatened Category | Presence Text | Buffer Status |
| BIRD | | | |
| Calidris canutus<br>Red Knot, Knot [855] | Endangered | Species or species habitat known to occur within area | In feature area |
| Calidris ferruginea<br>Curlew Sandpiper [856] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| Charadrius leschenaultii<br>Greater Sand Plover, Large Sand Plover [877] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Falco hypoleucos<br>Grey Falcon [929] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Limosa lapponica menzbieri<br>Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| Numenius madagascariensis<br>Eastern Curlew, Far Eastern Curlew [847] | Critically Endangered | Species or species habitat likely to occur within area | In feature area |
| Pezoporus occidentalis<br>Night Parrot [59350] | Endangered | Species or species habitat may occur within area | In feature area |
| Rostratula australis<br>Australian Painted Snipe [77037] | Endangered | Species or species habitat may occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|---|---|---|---|
| Sternula nereis nereis | | | |
| Australian Fairy Tern [82950] | Vulnerable | Species or species habitat may occur within area | In feature area |
| MAMMAL | | | |
| Dasyurus hallucatus | | | |
| Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331] | Endangered | Species or species habitat known to occur within area | In feature area |
| Macroderma gigas | | | |
| Ghost Bat [174] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Rhinonicteris aurantia (Pilbara form) | | | |
| Pilbara Leaf-nosed Bat [82790] | Vulnerable | Species or species habitat may occur within area | In feature area |
| REPTILE | | | |
| Liasis olivaceus barroni | | | |
| Olive Python (Pilbara subspecies) [66699] | Vulnerable | Species or species habitat likely to occur within area | In feature area |

| Listed Migratory Species | | | [ Resource Information ] |
|---|---|---|---|
| Scientific Name | Threatened Category | Presence Text | Buffer Status |
| Migratory Marine Birds | | | |
| Apus pacificus | | | |
| Fork-tailed Swift [678] | | Species or species habitat likely to occur within area | In feature area |
| Sterna dougallii | | | |
| Roseate Tern [817] | | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| Migratory Terrestrial Species | | | |
| Hirundo rustica | | | |
| Barn Swallow [662] | | Species or species habitat may occur within area | In feature area |
| Motacilla cinerea | | | |
| Grey Wagtail [642] | | Species or species habitat may occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|---|---|---|---|
| [Motacilla flava](#)<br>Yellow Wagtail [644] | | Species or species habitat may occur within area | In feature area |
| **Migratory Wetlands Species** | | | |
| [Actitis hypoleucos](#)<br>Common Sandpiper [59309] | | Species or species habitat known to occur within area | In feature area |
| [Calidris acuminata](#)<br>Sharp-tailed Sandpiper [874] | | Species or species habitat likely to occur within area | In feature area |
| [Calidris canutus](#)<br>Red Knot, Knot [855] | Endangered | Species or species habitat known to occur within area | In feature area |
| [Calidris ferruginea](#)<br>Curlew Sandpiper [856] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| [Calidris melanotos](#)<br>Pectoral Sandpiper [858] | | Species or species habitat may occur within area | In feature area |
| [Charadrius leschenaultii](#)<br>Greater Sand Plover, Large Sand Plover [877] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| [Charadrius veredus](#)<br>Oriental Plover, Oriental Dotterel [882] | | Species or species habitat may occur within area | In feature area |
| [Glareola maldivarum](#)<br>Oriental Pratincole [840] | | Species or species habitat may occur within area | In feature area |
| [Limosa lapponica](#)<br>Bar-tailed Godwit [844] | | Species or species habitat known to occur within area | In feature area |
| [Numenius madagascariensis](#)<br>Eastern Curlew, Far Eastern Curlew [847] | Critically Endangered | Species or species habitat likely to occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|---|---|---|---|
| Tringa nebularia | | | |
| Common Greenshank, Greenshank [832] | | Species or species habitat likely to occur within area | In feature area |

## Other Matters Protected by the EPBC Act

### Commonwealth Lands [ Resource Information ]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

| Commonwealth Land Name | State | Buffer Status |
|---|---|---|
| Unknown | | |
| Commonwealth Land - [51566] | WA | In buffer area only |

### Listed Marine Species [ Resource Information ]

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|---|---|---|---|
| Bird | | | |
| Actitis hypoleucos | | | |
| Common Sandpiper [59309] | | Species or species habitat known to occur within area | In feature area |
| Apus pacificus | | | |
| Fork-tailed Swift [678] | | Species or species habitat likely to occur within area overfly marine area | In feature area |
| Bubulcus ibis as Ardea ibis | | | |
| Cattle Egret [66521] | | Species or species habitat may occur within area overfly marine area | In feature area |
| Calidris acuminata | | | |
| Sharp-tailed Sandpiper [874] | | Species or species habitat likely to occur within area | In feature area |
| Calidris canutus | | | |
| Red Knot, Knot [855] | Endangered | Species or species habitat known to occur within area overfly marine area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|---|---|---|---|
| [Calidris ferruginea](#)<br>Curlew Sandpiper [856] | Critically Endangered | Species or species habitat known to occur within area overfly marine area | In feature area |
| [Calidris melanotos](#)<br>Pectoral Sandpiper [858] | | Species or species habitat may occur within area overfly marine area | In feature area |
| [Chalcites osculans as Chrysococcyx osculans](#)<br>Black-eared Cuckoo [83425] | | Species or species habitat likely to occur within area overfly marine area | In feature area |
| [Charadrius leschenaultii](#)<br>Greater Sand Plover, Large Sand Plover [877] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| [Charadrius veredus](#)<br>Oriental Plover, Oriental Dotterel [882] | | Species or species habitat may occur within area overfly marine area | In feature area |
| [Glareola maldivarum](#)<br>Oriental Pratincole [840] | | Species or species habitat may occur within area overfly marine area | In feature area |
| [Haliaeetus leucogaster](#)<br>White-bellied Sea-Eagle [943] | | Species or species habitat known to occur within area | In feature area |
| [Hirundo rustica](#)<br>Barn Swallow [662] | | Species or species habitat may occur within area overfly marine area | In feature area |
| [Limosa lapponica](#)<br>Bar-tailed Godwit [844] | | Species or species habitat known to occur within area | In feature area |
| [Merops ornatus](#)<br>Rainbow Bee-eater [670] | | Species or species habitat may occur within area overfly marine area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|---|---|---|---|
| Motacilla cinerea<br>Grey Wagtail [642] | | Species or species habitat may occur within area overfly marine area | In feature area |
| Motacilla flava<br>Yellow Wagtail [644] | | Species or species habitat may occur within area overfly marine area | In feature area |
| Numenius madagascariensis<br>Eastern Curlew, Far Eastern Curlew [847] | Critically Endangered | Species or species habitat likely to occur within area | In feature area |
| Rostratula australis as Rostratula benghalensis (sensu lato)<br>Australian Painted Snipe [77037] | Endangered | Species or species habitat may occur within area overfly marine area | In feature area |
| Sterna dougallii<br>Roseate Tern [817] | | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| Tringa nebularia<br>Common Greenshank, Greenshank [832] | | Species or species habitat likely to occur within area overfly marine area | In feature area |

## Extra Information

### EPBC Act Referrals [ Resource Information ]

| Title of referral | Reference | Referral Outcome | Assessment Status | Buffer Status |
|---|---|---|---|---|
| Not controlled action | | | | |
| Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia | 2015/7522 | Not Controlled Action | Completed | In feature area |
| Not controlled action (particular manner) | | | | |
| Algae Farm and Processing Facilities | 2012/6596 | Not Controlled Action (Particular Manner) | Post-Approval | In feature area |

### Biologically Important Areas

| Scientific Name | Behaviour | Presence | Buffer Status |
| --- | --- | --- | --- |
| Seabirds | | | |
| Ardenna pacifica<br>Wedge-tailed Shearwater [84292] | Breeding | Known to occur | In feature area |
| Sterna dougallii<br>Roseate Tern [817] | Breeding | Known to occur | In feature area |

# Caveat

## 1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

## 2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

## 3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

## 4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

# Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.



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# Attachment B: Land Details

| | |
|---|---|
| Lot 4217 on DP 217002<br>Volume: LR3142 Folio: 957 | Crown land |
| Lot 589 on DP 77089 | Crown land with Management Order to Water Corporation |
| Lot 931 on DP 76543 | Crown land |
| Lot 2656 on DP 215106 | Crown land with Management Order to Minister for Water Resources |
| Lot 590 on DP 77089 | Crown land with Management Order to Water Corporation |
| Lot 285 on DP 242018 | Crown land with Management Order to Water Corporation |
| Lot 32 on DP 47815 | Crown land |
| Lot 530 on DP 221145 | Crown land |
| Lot 651 on DP29591 | Crown land |
| Lot 650 on DP 29591 | Crown land |
| Lot 324 on DP 42631 | Crown land |