

# Desktop assessment of Short Range Endemic Fauna for a Proposed Wind Farm in Scott River – Western Australia.



Report by *Invertebrate Solutions Pty Ltd*  
for SynergyRED Pty Ltd

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Frontispiece: The windfarm at Sandpatch near Albany

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# Executive Summary

SynergyRED Pty Ltd (SynergyRED) are proposing to develop and construct an onshore wind farm in the Scott River Region (the Project). The subject site is approximately 15 km northeast of the town of Augusta within the South West region of Western Australia. SynergyRED proposes to construct up to 20 wind turbines (total maximum capacity of up to 100MW across the site). The indicative locations have been selected to maximise energy production whilst minimising impacts on the surrounding environment.

Turbine foundations vary in size dependent upon the imposed loading, ground conditions, construction methodology and drainage requirements of the subject site. It is anticipated that each turbine will require approximately 600 - 800m<sup>3</sup> of buried reinforced concrete foundation. This will be confirmed through the detailed design phase as turbine manufacturers have individual foundation requirements that must be adhered to (considering geotechnical conditions and the turbine model).

The wind turbine sites are planned to be in existing farmland areas, and excavations up to five metres below ground level are anticipated for the turbine bases and associated temporary dewatering. Invertebrate Solutions Pty Ltd (Invertebrate Solutions) has been engaged by SynergyRED to undertake a desktop assessment for Short Range Endemic (SRE) invertebrates for the Project.

The Desktop Study Area contains seven Confirmed SRE species, five Likely, and one Possible SRE species, however, the majority of these taxa are known to occur only within the LNR, where moist habitat isolates that foster the presence of SRE taxa are prevalent. The Development Envelope occurs mainly on cleared or highly modified landscapes, does not contain substantial freshwater streams and the native vegetation it does contain is widespread in the landscape and does not form habitat isolates, thus limiting the likely presence of such taxa. All Confirmed or Likely SRE species, or any conservation significant invertebrates are considered to have a Low or Very Low likelihood of occurrence within the Development Envelope.

No further investigation for SRE or conservation significant invertebrates is considered necessary in order to meet 'Technical guidance - Sampling of short range endemic invertebrate fauna' (EPA 2016).

# 1. Introduction

SynergyRED Pty Ltd (SynergyRED) are proposing to develop and construct an onshore wind farm in the Scott River Region (the Project). The subject site is approximately 15 km northeast of the town of Augusta within the South West region of Western Australia. SynergyRED proposes to construct up to 20 wind turbines (total maximum capacity of up to 100MW across the site). The indicative locations have been selected to maximise energy production whilst minimising impacts on the surrounding environment.

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## 1.1 Purpose of this Report

Invertebrate Solutions was engaged to undertake the following scope of works for the proposed Scott River Windfarm, south west Western Australia:

- Undertake a desktop assessment for SRE invertebrates to identify known SRE fauna in the area, as well as habitats in which they are likely to occur.
- Summarise previous SRE fauna surveys for the Development Envelope and other relevant studies from the region as part of the desktop assessment.
- Provide all spatial data in electronic format and data packages in accordance with the Index of Biodiversity Surveys for Assessments (IBSA) (EPA 2018).
- The desktop assessment will be undertaken with regard to Technical Guidance – Sampling of short range endemic invertebrate fauna (EPA 2016).

## 1.2 Background Environmental Information

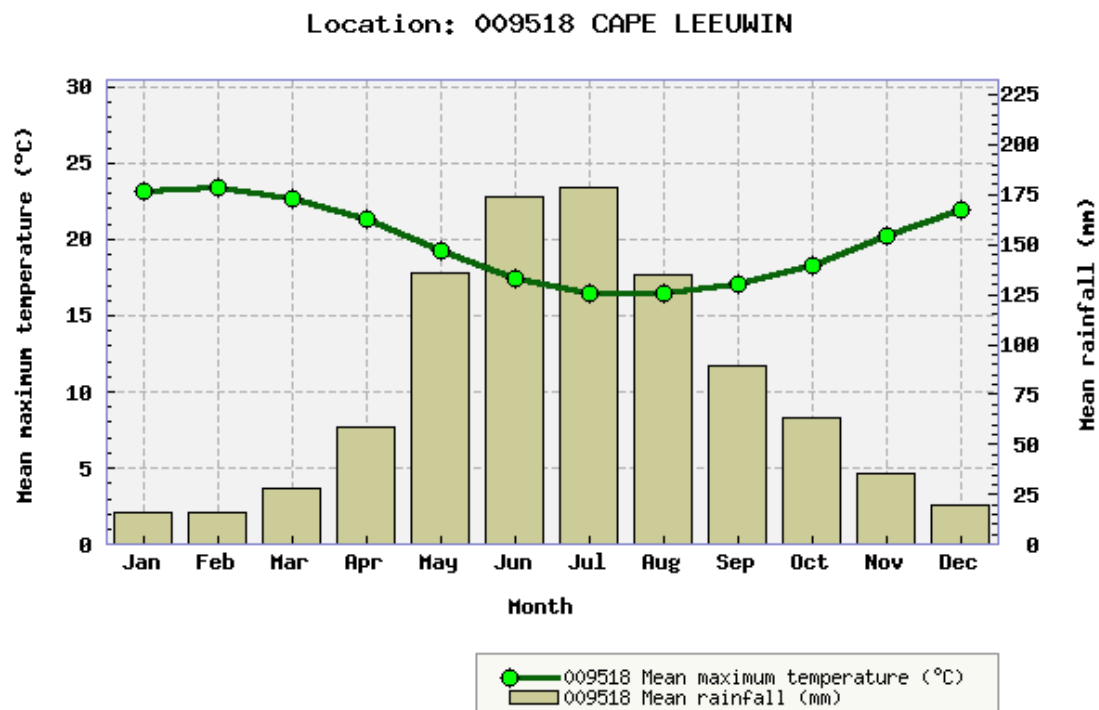
The Project is located approximately 15 km northeast of Augusta, Western Australia (Figure 1).

The Interim Biogeographic Regionalisation of Australia (IBRA) classifies Australia's landscapes into 89 large geographically distinct bioregions based on common climate, geology, landform, native vegetation, and species information (DCCEEW 2022). The Project is located within the Warren bioregion and a very small area in the north within the Southern Jarrah Forest subregion. The



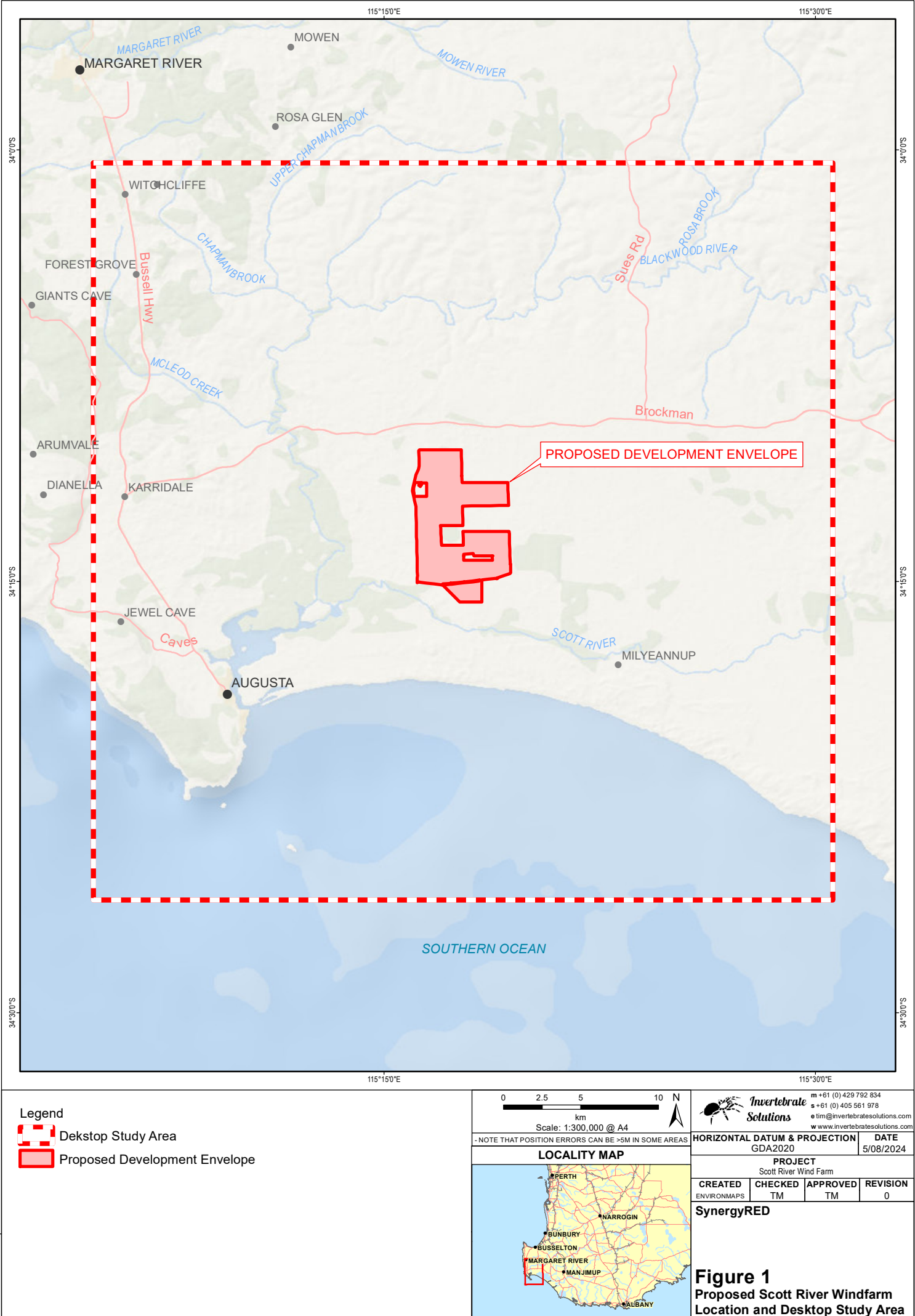
Development Envelope is predominately comprised of dissected undulating country of the Leeuwin Complex and Albany Orogen with loamy soils supporting Karri forest, laterites supporting Jarrah-Marri forest, leached sandy soils in depressions and plains supporting paperbark/sedge swamps, and Holocene marine dunes with *Agonis flexuosa* woodlands. (Environment Australia 2000).

The land tenure for the Development Envelope is private freehold, across various landowners. The localised climate is classified as moderate Mediterranean with an average annual rainfall of 948 mm recorded at the Bureau of Meteorology (BoM) Station 009518 at Cape Leeuwin (BoM 2024), located 40 km south of the Development Envelope. Annual rainfall is seasonal with most rainfall occurring during the winter months, linked to low pressure systems in the Southern Ocean (May to August) (Plate 1).



**Australian Government**

Plate 1 Cape Leeuwin long term climate data (After BOM.gov.au).





### 1.3 Introduction to SRE fauna

SRE invertebrates are species with restricted distributions. The isolation of invertebrates in specific habitats or bioregions leads to endemism at various spatial scales. The vast majority of invertebrates are capable of dispersing substantial distances at some phase of their life cycle. Some groups, however, are susceptible to short-range endemism which describes endemic species with restricted ranges, arbitrarily defined in Western Australia as less than 10,000 km<sup>2</sup> (100 km x 100 km) (Harvey 2002). Taxa that have been more commonly found to contain SRE representatives include:

- Onychophorans (velvet worms);
- Crustaceans (Isopoda);
- Arachnids (mygalomorph spiders, pseudoscorpions, opiliones, scorpions, schizomids);
- Myriapods (millipedes and centipedes);
- Molluscs (land snails); and
- Insects (hemipterans, grasshoppers, butterflies).

SRE invertebrate fauna taxa are generally found in sheltered, relatively mesic environments such as isolated habitats (e.g., boulder piles, isolated hills, dense patches of vegetation, gullies) and can include microhabitats within these environments such as deep leaf litter accumulation, large logs, under bark, cave areas, and springs and permanent water bodies.

Many processes contribute to taxa being susceptible to short range endemism. Generally, these factors are related to the isolation of a species which can include the ability and opportunity to disperse, life history, physiology, habitat requirements, and habitat availability. Taxa that exhibit short range endemism generally exhibit poor dispersal, low growth rates, low fecundity, and reliance on habitat types that are discontinuous (Harvey 2002). Taxa that reside within easily isolated habitats surrounded by physical barriers such as islands, mountains, aquifers, lakes and caves are also more susceptible to becoming SRE species, often including additional taxa not otherwise generally forming SREs.

Taxa that exhibit short range endemism are particularly vulnerable to disturbance, either natural or anthropogenic, as they are reliant upon specialised, often restricted and often moist habitats (Framenau *et al.* 2008). SRE taxa are unable to disperse to *refugia* when their habitats are threatened or destroyed, thus making them a priority for conservation efforts.

The allocation of SRE status can be difficult due to the often incomplete taxonomic framework of many invertebrate groups and the often frequent need for substantial revision to enable accurate identification. SRE status is assigned using the categories described in Table 1, based upon the available information from the Western Australian Museum (WAM) database and discussion with appropriate taxonomic authorities for various invertebrate groups. Insufficient information exists for many invertebrate species due to specimens being juvenile, the wrong sex to allow identification, or damaged, as well as inadequate taxonomic frameworks, precluding the assignment of SRE status.

**Table 1 Short Range Endemic Status of Species**

| SRE Status        | Definition  |
|-------------------|---|
| <b>Confirmed</b>  | A confirmed SRE species. A known distribution of < 10,000 km <sup>2</sup> (after Harvey 2002). Taxonomy of the group is well known. The group is well represented in collections, or via comprehensive sampling.  |
| <b>Likely</b>     | Likely to be an SRE species based upon knowledge of the family/genus, where other closely related species show evidence of short range endemism. Where habitats containing the specimens show discontinuity within the landscape.   |
| <b>Possible</b>   | Based upon existing knowledge of the genus / family there is a possibility that the species may have a restricted range. Where habitats containing the specimens may show discontinuity within the landscape.<br>Possible SRE species may be assigned one of the subcategories below: <ul style="list-style-type: none"> <li>A. Data deficient, i.e., new species; lack of distribution, taxonomic or collecting knowledge; juvenile specimens; wrong sex for identification</li> <li>B. Habitat indicators</li> <li>C. Morphology indicators</li> <li>D. Molecular evidence</li> <li>E. Research and expertise of WAM staff/taxonomic specialists</li> </ul> |
| <b>Widespread</b> | Not an SRE, a wide ranging distribution of > 10,000 km <sup>2</sup>   |

## 1.4 Conservation Legislation and Guidance Statements

Terrestrial SRE species are protected under state legislation via the *Biodiversity Conservation Act 2016* (BC Act) which came into effect on 1<sup>st</sup> January 2019, replacing the *Wildlife Conservation Act 1950* (WC Act). The BC Act is aligned with the federal *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The assessment of SRE fauna for environmental impact assessment (EIA) is undertaken in Western Australia with regard to Technical Guidance – Sampling of short range endemic invertebrate fauna (EPA 2016).

At the State level, the BC Act provides a list of threatened species that have special protection as species listed under Part 2 of BC Act. This notice is updated periodically by the Department of Biodiversity, Conservation and Attractions (DBCA) (formerly the Department of Parks and Wildlife (DPaW) and the current list (October 2022) includes numerous threatened SRE species from the Wheatbelt, South Coast, Murchison and Pilbara regions. Included in the list are crustaceans, arachnids and myriapods that are considered to be “rare or likely to become extinct, as critically endangered fauna, or are declared to be fauna that is in need of special protection” (DBCA 2022).

In addition to the specially protected fauna, DBCA also maintains a list of Priority fauna that are considered to be of conservation significance but do not meet the criteria for formal listing under the BC Act. Priority is not a listing category under the BC Act, however, all fauna and flora are protected in WA following the provisions in Part 10 of the BC Act. The protection applies even when a species is not listed as threatened or specially protected, and regardless of land tenure (DBCA 2022). Species that may possibly be threatened but do not meet the criteria for formal listing under the BC Act because of data deficiencies, are added to the Priority Fauna List under Priorities 1, 2 or 3, in order of prioritisation for evaluation of conservation status so that consideration can be given to

potential listing as threatened DBCA (2022). Species that are adequately known, meet criteria for near threatened, or are rare but not threatened, or that have been recently removed from the threatened species list or conservation dependent or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. The Priority fauna list is irregularly updated by DBCA. The South West region contains thirteen conservation significant spiders, burrowing crayfish, and crickets, along with various aquatic snails.

The BC Act provides the ability for the state government of WA to formally list Threatened Ecological Communities (TECs), and Priority Ecological Communities (PECs) along with threatening processes.

The federal EPBC Act also protects both species and ecological communities. Sixteen invertebrates are listed in Western Australia under the EPBC Act with five of these species being from the Southwest region of Western Australia.

## 1.5 Report Limitations and Exclusions

This study was limited to the written scope provided to Eco Logical Australia Pty Ltd by Invertebrate Solutions (1<sup>st</sup> March 2024) and in Section 1.1. This study was limited to the extent of information made available to Invertebrate Solutions at the time of undertaking the work. Information not made available to this study, or which subsequently becomes available, may alter the conclusions made herein.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. Invertebrate Solutions has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by Invertebrate Solutions described in this report (this section and throughout this report). Invertebrate Solutions disclaims liability arising from any of the assumptions being incorrect.

Invertebrate Solutions has prepared this report on the basis of information provided by Eco Logical Australia Pty Ltd and others (including Government authorities), which Invertebrate Solutions has not independently verified or checked beyond the agreed scope of work. Invertebrate Solutions does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

Site conditions may change after the date of this report. Invertebrate Solutions does not accept responsibility arising from, or in connection with, any change to the site conditions. Invertebrate Solutions is also not responsible for updating this report if the site conditions change.

## 2. Methods

Invertebrate Solutions undertook the following tasks for the desktop SRE assessment of the Desktop Study area, that contains the Development Envelope:

- SRE desktop assessment based upon WAM Records, database searches, and literature review.

The desktop assessment was undertaken with regard to the Technical Guidance – Sampling of short range endemic invertebrate fauna (EPA 2016).

### 2.1 SRE Desktop Methodology

The Desktop Study area comprises approximately 100,000 ha rectangle bounded by the northwest corner (34.007°S, 115.08°E) and the southeast corner (34.435°S, 115.51°E), centred on the Project.

A search of the WAM databases for Arachnids, Crustacea and Molluscs was undertaken for potential SRE taxa occurring in the Scott River region. The desktop assessment was used to identify any potential SRE species that may occur in the region within the Development Envelope.

The search of the WAM databases for potential SRE taxa occurring in the broader Desktop Study area was centred on the Project. The records held by the WAM are not exhaustive and represent only specimens within the WAM collections that have been registered in the database. The Entomology, Mollusc and Crustacean collections remain largely un-registered. Specimens identified to genus level only have been excluded from the analysis as it is impossible to determine if they represent a SRE taxa.

#### 2.1.1 Likelihood of SRE invertebrate occurrence

The likelihood of SRE invertebrate species occurring in the Development Envelope was assessed using a combination of regional and local botanical and landform information and database searches including:

- Analysis of published and unpublished reports concerning SRE invertebrate from the region.
- Results from the Protected Matters Search Tool (PMST) (from the Federal Government's Department of Climate Change, Energy, and the Environment (DCCEEW) website.
- Records of fauna held by the WAM.
- Vegetation descriptions and mapping within the Biological Surveys and Wetland Mapping for the Beenup Wind Farm Project (Phoenix 2024).

The likelihood that a particular vegetation unit potentially contains or supports SRE species is defined in Table 2.

A list of conservation significant fauna for the Desktop Study Area was compiled from the DBCA Specially Protected Fauna Notice 2024 (DBCA 2024) and DCCEEW's PMST. Based on the analysis of all available information, potential SRE invertebrate species were assigned a level of likelihood to be present within habitats contained in the Study area of either 'Very Low', 'Low', 'Moderate', 'High', or 'Definite' (Table 3).

A full description of the BC Act and DBCA conservation codes are shown in Appendix 1.

**Table 2 SRE habitat suitability definitions**

| SRE habitat<br>Likelihood of<br>occurrence | Definition  |
|--|---|
| <b>High</b>                                | The habitat has a High likelihood of containing SRE species as it has at least three microhabitat factors that support the presence of SRE species such as: SE facing slopes, moisture, rocky areas, habitat isolates, deep leaf litter, mountainous areas, deep gullies or gorges, riparian vegetation, or habitats known to contain SRE species.  |
| <b>Moderate</b>                            | The habitat has a Moderate likelihood of containing SRE species as it has at least two microhabitat factors that support the presence of SRE species such as: SE facing slopes, moisture, rocky areas, habitat isolates, deep leaf litter, mountainous areas, deep gullies or gorges, riparian vegetation or habitats known to contain SRE species. |
| <b>Low</b>                                 | The habitat has a Low likelihood of containing SRE species as it has only a single microhabitat factor that support the presence of SRE species such as: SE facing slopes, moisture, rocky areas, habitat isolates, deep leaf litter, mountainous areas, deep gullies or gorges, riparian vegetation or habitats known to contain SRE species.      |
| <b>Nil</b>                                 | No potential habitat exists for SRE species within the vegetation type / condition area. This includes areas that are totally cleared, completely degraded or urbanised. This also includes areas that are dominated by weeds or exotic vegetation species.   |

**Table 3 SRE and Conservation significant species likelihood of occurrence definitions**

| Short Range Endemic<br>and Conservation<br>significant invertebrate<br>Likelihood of occurrence | Definition  |
|---|---|
| <b>Definite</b>   | The species is confirmed to occur within the Project Area.  |
| <b>High</b>   | Habitat for the species is known to occur within the Project Area and known records of the species are within 20 km.  |
| <b>Moderate</b>   | Habitat for the species is known to occur within the Project Area and known records of the species are within 50 km.  |
| <b>Low</b>  | The species has been recorded from within 50 km, however, no habitat is present for the species within the Project Area.  |
| <b>Very low</b>   | No habitat exists for the species within the Project Area and no records of the species are within 50 km or the distribution of the species is known well enough to exclude its presence within the Project Area. |

## 2.2 Short Range Endemic Status

Taxonomic groups known to contain SRE representatives were examined in more detail to determine if SRE status is to be assigned. SRE status will be assigned after comparison with the morphology of other close relatives in the group and current knowledge on their distribution and ecology, where known.

## 3. Results

### 3.1 Terrestrial Invertebrates of South West Western Australia

Terrestrial invertebrate species in the south west region of WA that are of conservation interest to government and researchers are predominately arachnids and crustaceans that have been assigned a conservation significance by DBCA. Some conservation significant invertebrates are also considered to be SRE species and some invertebrates are SRE species but have no formal conservation significance. SRE species more commonly encountered in the south west region include mygalomorph spiders, slaters, and millipedes (Bamford 2008, Bennelongia 2013).

The Margaret River region is known to contain several conservation significant and SRE mygalomorph spiders, both from the bassian genus *Bertmaini*. *Bertmaini opimus* occurs throughout the south west corner of WA, whilst *B. tingle* occurs in a more restricted distribution near Walpole (Rix et al. 2015).

Several conservation significant Katydids, commonly known as tree crickets occur in the south west region including *Kawaniphila pachomai* (Priority 1), known from the Perth hills south to near Busselton, and *Pachysaga strobila*, known from remnant bushland near Vasse.

Three crayfish with both Federal and state conservation listings are known from the south west region, including two species of the burrowing crayfish *Engaewa* (*E. reducta* and *E. pseudoreducta*), and the Margaret River Hairy Crayfish (*Cherax tenuimanus*).

### 3.2 SRE Habitat in Development Envelope

Habitat for SRE invertebrates was assessed using broad groupings associated with the vegetation types and descriptions contained in Phoenix Environmental (2024) to provide a likelihood of each habitat potentially containing SRE taxa (Table 2). Individual vegetation types from Phoenix Environmental (2024) were grouped according to SRE functional habitats, and to increase clarity for SRE habitat mapping where vegetation units are functionally the same for invertebrate usage with only minor differences in plant assemblages (Table 2, Table 3).

The Development Envelope comprises five potential SRE habitats, cleared land and plantation or modified landscapes (Phoenix Environmental 2024). The cleared and plantation/highly modified landscapes comprise 79.97 % of the total area thus the area of potential SRE invertebrate habitat is minimal within the Development Envelope.

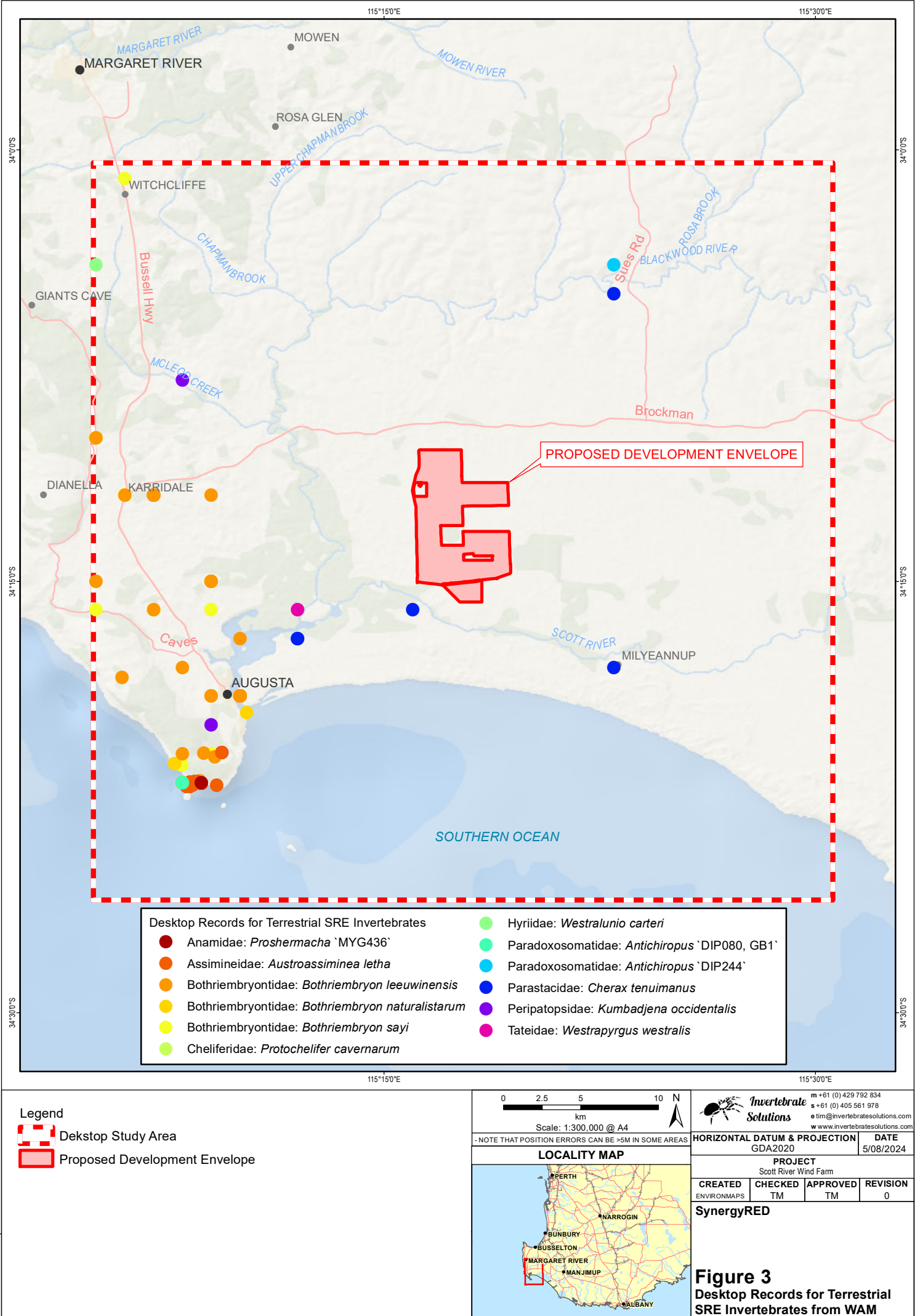
The potential SRE habitats present within the Development Envelope are all continuous in the landscape and do not form habitat isolates present over evolutionary timescales in the regional landscape, and are therefore considered to be Low in their suitability for supporting SRE invertebrates (EPA 2016, Harvey 2002).



**Table 4 SRE invertebrates habitat types, suitability, (Vegetation descriptions after Phoenix Environmental 2024).**

| SRE Habitat                              | Description   | Phoenix Vegetation Codes             | SRE habitat suitability |
|--|---|--------------------------------------|-------------------------|
| Shrublands over sedgeland                | Myrtaceae-dominated shrublands over sedgeland   | AsLs, TiLs, PeeLs                    | Low                     |
| Mixed shrublands over tall sedgeland     | Mixed (Proteaceae/ Fabaceae/ Myrtaceae-dominated) shrublands over tall sedgeland            | XpAs, XpMdLm, ClcVj                  | Low                     |
| Paperbark woodland swamps over sedgeland | <i>Melaleuca</i> spp. woodland swamps over rushlands/sedgeland                              | MrCh, MrTjLs, and XpMdLm             | Low                     |
| Jarrah woodlands over shrublands         | <i>Eucalyptus marginata</i> woodlands and forests over mixed shrublands over tall sedgeland | EmmAffMtAsDb, EmmXpMtDb, and EmmTpAs | Low                     |
| Jarrah-Marri woodlands over shrublands   | <i>Corymbia calophylla</i> woodlands and forests over mixed shrublands over tall sedgeland  | CcTpCeOh, CcTlXpAp, and EmmTpGoMtPu  | Low                     |
| Modified landscapes                      | Plantations and 'Peppermint over pastures'  | Egg, Psp and Aff                     | Nil                     |
| Cleared / Degraded                       | <i>Cleared or degraded land</i>   |                                      | Nil                     |





### 3.3 Terrestrial Invertebrates within the Desktop Study Area

SRE species that are likely to occur or have known habitat within the Desktop Study Area are shown in Table 5 and Figure 3 along with their conservation code under the BC Act and/or the EPBC Act and their likelihood of occurrence within the Development envelope based on the SRE habitats present.

The PMST results listed no known terrestrial SRE or conservation significant invertebrate fauna within 50 km of the Development Envelope. The full list of species obtained from the PMST search is shown in Appendix 2. The WAM databases searches (WAM 2024a, b, c), filtered for SRE species are shown in Table 5.

Seven Confirmed SRE species, five Likely, and one Possible SRE species are known to occur within the Desktop Study Area (Table 5). The species are summarised below:

- Three land snails from the family Bothriembryontidae (*B. leeuwinensis*, *B. naturalistarum*, and *B. sayi*) – Confirmed SRE species.
- Three crayfish (*Cherax tenuimanus* [DBCA Vulnerable / EPBC Vulnerable], *Engaewa pseudoreducta* [DBCA Vulnerable / EPBC Vulnerable], and *Engaewa reducta* [DBCA Vulnerable / EPBC Vulnerable]) – Confirmed SRE species.
- One velvet worm (*Kumbadjena occidentalis*) – Confirmed SRE species.
- Two aquatic snails (*Austroassiminea lethra* [DBCA Vulnerable], and *Westrapyrgus westralis*) – Likely SRE species.
- Two *Antichiropus* millipedes (*Antichiropus* ‘DIP80/GB1’ and *Antichiropus* ‘DIP244’) – Likely SRE species
- One pseudoscorpion (*Protochelifer cavernarum*) – Likely SRE species.
- One mygalomorph spider (*Proshermacha* ‘MYG434’) – Possible SRE species.

The remaining species identified from desktop resources were found to be widespread (non-SRE species).

An additional single conservation significant invertebrate (widespread, non-SRE species) was identified in the desktop assessment:

- One freshwater mussel – *Westralunio carteri* (DBCA Vulnerable / EPBC Vulnerable)

The aquatic conservation significant invertebrates (*Westralunio carteri* along with *Cherax tenuimanus*, *Engaewa pseudoreducta*, *Engaewa reducta* and *Austroassiminea lethra*), and the Likely aquatic SRE snail *Westrapyrgus westralis* do not have significant suitable habitat within the Development Envelope (Table 5) and are, therefore, considered to have a Very Low Likelihood of occurrence due to their reliance upon substantial permanent freshwater streams or lakes that are not present within the Development Envelope.

The remaining Confirmed, Likely and Possible SRE taxa are considered to have a Low, to Very Low likelihood of occurrence due to an absence of habitat within the Development Envelope and the distances to the nearest known records. Many of the potential SRE taxa that occur in the Desktop Study area are only known from the Cape Leeuwin area, and immediate surrounds and are highly unlikely to occur in the Development Envelope that is predominately cleared or highly modified.



**Table 5 Desktop Survey Results of SRE and Conservation Significant invertebrates recorded from or with potential habitat within the Development envelope.**

| Higher Classification         | Genus and Species                   | SRE status | DBCA / BC Act<br>Conservation<br>Status | EPBC<br>Conservation<br>Status | Likely habitat<br>present in<br>Development<br>envelope | Desktop likelihood<br>of species within the<br>Development<br>envelope |
|-------------------------------|-------------------------------------|------------|---|--------------------------------|---|--|
| <b>Onychophora</b>            |                                     |            |   |                                |   |  |
| <b>Euonychophora</b>          |                                     |            |   |                                |   |  |
| <b>Peripatopsidae</b>         | <i>Kumbadjena occidentalis</i>      | Confirmed  | -                                       | -                              | Not present   | Very Low   |
| <b>Gastropoda:</b>            |                                     |            |   |                                |   |  |
| <b>Assimineidae</b>           | <i>Austroassiminea lethae</i>       | Likely     | Vu                                      | -                              | Not present   | Very Low   |
| <b>Bothriembryontidae</b>     | <i>Bothriembryon leeuwinensis</i>   | Confirmed  | -                                       | -                              | Not present   | Low  |
|                               | <i>Bothriembryon naturalistarum</i> | Confirmed  | -                                       | -                              | Not present   | Low  |
|                               | <i>Bothriembryon sayi</i>           | Confirmed  | -                                       | -                              | Not present   | Low  |
| <b>Hyriidae</b>               | <i>Westralunio carteri</i>          | Widespread | Vu                                      | Vu                             | Not present   | Very Low   |
| <b>Tateidae</b>               | <i>Westrapyrigus westralis</i>      | Likely     | -                                       | -                              | Not present   | Very Low   |
| <b>Crustacea:</b>             |                                     |            |   |                                |   |  |
| <b>Parastacidae</b>           | <i>Cherax tenuimanus</i>            | Confirmed  | CR                                      | CR                             | Not present   | Very Low   |
|                               | <i>Engaewa pseudoreducta</i>        | Confirmed  | CR                                      | CR                             | Not present   | Very Low   |
|                               | <i>Engaewa reducta</i>              | Confirmed  | EN                                      | CR                             | Not present   | Very Low   |
| <b>Arachnida:</b>             |                                     |            |   |                                |   |  |
| <b>Araneae:</b>               |                                     |            |   |                                |   |  |
| <b>Mygalomorphae</b>          |                                     |            |   |                                |   |  |
| <b>Anamidae</b>               | <i>Proshermacha 'MYG436'</i>        | Possible   | -                                       | -                              | Not present   | Low  |
| <b>Pseudoscorpiones</b>       |                                     |            |   |                                |   |  |
| <b>Cheliferidae</b>           | <i>Protochelifer cavernarum</i>     | Likely     | -                                       | -                              | Not present   | Low  |
| <b>Diplopoda: Polydesmida</b> |                                     |            |   |                                |   |  |
| <b>Paradoxosomatidae</b>      | <i>Antichiropus 'DIP80/GB1'</i>     | Likely     | -                                       | -                              | Not present   | Low  |
|                               | <i>Antichiropus 'DIP244'</i>        | Likely     | -                                       | -                              | Not present   | Low  |

## 4. Discussion and Conclusions

The Desktop Study Area contains seven Confirmed SRE species, five Likely, and one Possible SRE species, however the majority of these taxa are known to occur only within the LNR, where moist habitat isolates that foster the presence of SRE taxa are prevalent. The Development Envelope occurs mainly on cleared or highly modified landscapes, does not contain substantial freshwater streams and the native vegetation it does contain is widespread in the landscape and does not form habitat isolates that have been present over evolutionary timescales, thus limiting the likely presence of such taxa. As such all Confirmed or Likely SRE species, or any conservation significant invertebrate are considered to have a Low or Very Low likelihood of occurrence within the Development Envelope.

No further investigation for SRE or conservation significant invertebrates is considered necessary in order to meet 'Technical guidance - Sampling of short range endemic invertebrate fauna' (EPA 2016).



## 5. References

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- Western Australian Museum (WAM). (2024b). Crustacea database search July 2024.
- Western Australian Museum (WAM). (2024c). Mollusc database search July 2024.

# Appendix 1

Conservation Codes from Department of Biodiversity, Conservation and Attractions

# CONSERVATION CATEGORY DEFINITIONS

## For Western Australian Fauna and Flora

Threatened, Extinct and Specially Protected fauna or flora<sup>1</sup> are species<sup>2</sup> which have been adequately searched for and are deemed to be, in the wild, threatened, extinct or in need of special protection, and have been gazetted as such.

Categories of Threatened, Extinct and Specially Protected fauna and flora are:

### **T**     **Threatened species**

Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the *Biodiversity Conservation Act 2016* (BC Act).

**Threatened fauna** is the species of fauna that are listed as critically endangered, endangered or vulnerable threatened species.

**Threatened flora** is the species of flora that are listed as critically endangered, endangered or vulnerable threatened species.

The assessment of the conservation status of threatened species is in accordance with the BC Act listing criteria and the requirements of [Ministerial Guideline Number 1](#) and [Ministerial Guideline Number 2](#) that adopts the use of the International Union for Conservation of Nature (IUCN) [Red List of Threatened Species Categories and Criteria](#)<sup>3</sup>, and is based on the national distribution of the species.

### **CR**     **Critically endangered species**

Threatened species considered to be “*facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines.

Examples of use:

- The western ringtail possum (*Pseudocheirus occidentalis*) is listed as a critically endangered threatened species under the *Biodiversity Conservation Act 2016*.
- Western ringtail possum is listed as critically endangered under the *Biodiversity Conservation Act 2016*.
- Listing reference in a table: column heading: BC Act, row text: CR.

### **EN**     **Endangered species**

Threatened species considered to be “*facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines.

Examples of use:

- *Caladenia hopperiana* is listed as an endangered threatened species under the *Biodiversity Conservation Act 2016*.
- *Caladenia hopperiana* is listed as endangered under the *Biodiversity Conservation Act 2016*.
- Listing reference in a table: column heading: BC Act, row text: EN.

**VU Vulnerable species**

Threatened species considered to be “*facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines.

Examples of use:

- The forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*) is listed as a vulnerable threatened species under the *Biodiversity Conservation Act 2016*.
- Forest red-tailed black cockatoo is listed as vulnerable under the *Biodiversity Conservation Act 2016*.
- Listing reference in a table: column heading: BC Act, row text: VU.

**Extinct species**

Listed by order of the Minister as extinct under section 23(1) of the BC Act as extinct or extinct in the wild.

**EX Extinct species**

Species where “*there is no reasonable doubt that the last member of the species has died*”, and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).

Examples of use:

- *Acacia kingiana* is listed as an extinct species under the *Biodiversity Conservation Act 2016*.
- *Acacia kingiana* is listed as extinct under the *Biodiversity Conservation Act 2016*.
- Listing reference in a table: column heading: BC Act, row text: EX.

**EW Extinct in the wild species**

Species that “*is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form*”, and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).

Currently there are no fauna or flora species listed as extinct in the wild.

**SP Specially protected species**

Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection.

Species that are listed as threatened species (critically endangered, endangered, or vulnerable) or extinct species under the BC Act cannot also be listed as specially protected species.

**MI Migratory species**

Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act).

Migratory species include birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA)<sup>4</sup>, China (CAMBA)<sup>5</sup> or The Republic of Korea (ROKAMBA)<sup>6</sup>, and fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention)<sup>7</sup>, an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.

Examples of use:

- The wedge-tailed shearwater (*Ardenna pacifica*) is listed as a specially protected migratory species under the *Biodiversity Conservation Act 2016*.
- Wedge-tailed shearwater is listed as migratory under the *Biodiversity Conservation Act 2016*.
- Listing reference in a table: column heading: BC Act, row text: MI.

**CD Species of special conservation interest (conservation dependent)**

Species of special conservation need that are dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act).

Currently only fauna are listed as species of special conservation interest.

Examples of use:

- The wambenger, south-western brush-tailed phascogale (*Phascogale tapoatafa wambenger*) is listed as a specially protected species of special conservation interest under the *Biodiversity Conservation Act 2016*.
- Wambenger, south-western brush-tailed phascogale, is listed as conservation dependent under the *Biodiversity Conservation Act 2016*.
- Listing reference in a table: column heading: BC Act, row text: CD.

**OS Species otherwise in need of special protection (other specially protected)**

Species otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).

Currently only fauna are listed as species otherwise in need of special protection.

Examples of use:

- The dugong (*Dugong dugon*) is listed as a specially protected species otherwise in need of special protection under the *Biodiversity Conservation Act 2016*.
- Dugon is listed as other specially protected fauna under the *Biodiversity Conservation Act 2016*.
- Listing reference in a table: column heading: BC Act, row text: OS.

**P Priority species**

Priority is not a listing category under the BC Act. The Priority Flora and Fauna lists are maintained by the department and are published on the department's website.

All fauna and flora are protected in WA following the provisions in Part 10 of the BC Act. The protection applies even when a species is not listed as threatened or specially protected, and regardless of land tenure (State managed land (Crown land), private land, or Commonwealth land).

Species that may possibly be threatened species that do not meet the criteria for listing under the BC Act because of insufficient survey or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of prioritisation for survey and evaluation of conservation status so that consideration can be given to potential listing as threatened.

Species that are adequately known, meet criteria for near threatened, or are rare but not threatened, or that have been recently removed from the threatened species list or conservation dependent or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.

Assessment of priority status is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

**1 Priority 1: Poorly-known species - known from few locations, none on conservation lands**

Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, for example, agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation.

Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements for threatened listing and appear to be under immediate threat from known threatening processes. These species are in urgent need of further survey.

Examples of use:

- *Borya stenophylla* is listed as a Priority 1 species by the Department of Biodiversity, Conservation and Attractions.
- *Borya stenophylla* is listed as Priority 1 on the DBCA Priority Flora List.
- Listing reference in a table: column heading: DBCA, row text: P1.

## 2 Priority 2: Poorly-known species - known from few locations, some on conservation lands

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, for example, national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation.

Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements for threatened listing and appear to be under threat from known threatening processes. These species are in urgent need of further survey.

Examples of use:

- *Caladenia nivalis* is listed as a Priority 2 species by the Department of Biodiversity, Conservation and Attractions.
- *Caladenia nivalis* is listed as Priority 2 on the DBCA Priority Flora List.
- Listing reference in a table: column heading: DBCA, row text: P2.

## 3 Priority 3: Poorly-known species - known from several locations

Species that are known from several locations and the species does not appear to be under imminent threat or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat.

Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. These species need further survey.

Examples of use:

- *Acacia nitidula* is listed as a Priority 3 species by the Department of Biodiversity, Conservation and Attractions.
- *Acacia nitidula* is listed as Priority 3 on the DBCA Priority Flora List.
- Listing reference in a table: column heading: DBCA, row text: P3.

## 4 Priority 4: Rare, Near Threatened and other species in need of monitoring

(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands.

(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as a conservation dependent specially protected species.

(c) Species that have been removed from the list of threatened species or lists of conservation dependent or other specially protected species, during the past five years for reasons other than taxonomy.

(d) Other species in need of monitoring.

Examples of use:

- *Banksia aculeata* is listed as a Priority 4 species by the Department of Biodiversity, Conservation and Attractions.
- *Banksia aculeata* is listed as Priority 4 on the DBCA Priority Flora List.
- Listing reference in a table: column heading: DBCA, row text: P4.

<sup>1</sup> The definition of flora includes algae, fungi, and lichens.

<sup>2</sup> Species includes all taxa (plural of taxon - a classificatory group of any taxonomic rank, e.g. a family, genus, species or any infraspecific category i.e. subspecies or variety, or a distinct population).

<sup>3</sup> Western Australia has assigned species to threat categories using the *IUCN Red List of Threatened Species Categories and Criteria* since 1996 (referencing all criteria).

<sup>4</sup> JAMBA - first included in the WA migratory species list in 1980.

<sup>5</sup> CAMBA - first included in the WA migratory species list in 2010.

<sup>6</sup> ROKAMBA - first included in the WA migratory species list in 2010.

<sup>7</sup> Bonn Convention (Birds) - first included in the WA migratory species list in 2015.



# Appendix 2

Protected Matters Search Tool Results



Australian Government

Department of Climate Change, Energy,  
the Environment and Water

# 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-Jun-2024

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

# 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](#).

|  |      |
|--|------|
| <a href="#">World Heritage Properties:</a>                   | None |
| <a href="#">National Heritage Places:</a>                    | None |
| <a href="#">Wetlands of International Importance (Ramsar</a> | 1    |
| <a href="#">Great Barrier Reef Marine Park:</a>              | None |
| <a href="#">Commonwealth Marine Area:</a>                    | 2    |
| <a href="#">Listed Threatened Ecological Communities:</a>    | 11   |
| <a href="#">Listed Threatened Species:</a>                   | 104  |
| <a href="#">Listed Migratory Species:</a>                    | 56   |

## 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 environment anywhere.

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 <https://www.dcceew.gov.au/parks-heritage/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.

|   |      |
|---|------|
| <a href="#">Commonwealth Lands:</a>                                 | 14   |
| <a href="#">Commonwealth Heritage Places:</a>                       | 1    |
| <a href="#">Listed Marine Species:</a>                              | 81   |
| <a href="#">Whales and Other Cetaceans:</a>                         | 32   |
| <a href="#">Critical Habitats:</a>                                  | None |
| <a href="#">Commonwealth Reserves Terrestrial:</a>                  | None |
| <a href="#">Australian Marine Parks:</a>                            | 4    |
| <a href="#">Habitat Critical to the Survival of Marine Turtles:</a> | None |

## Extra Information

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

|   |      |
|---|------|
| <a href="#">State and Territory Reserves:</a>           | 63   |
| <a href="#">Regional Forest Agreements:</a>             | 1    |
| <a href="#">Nationally Important Wetlands:</a>          | 3    |
| <a href="#">EPBC Act Referrals:</a>                     | 46   |
| <a href="#">Key Ecological Features (Marine):</a>       | 3    |
| <a href="#">Biologically Important Areas:</a>           | 16   |
| <a href="#">Bioregional Assessments:</a>                | None |
| <a href="#">Geological and Bioregional Assessments:</a> | None |

# Details

## Matters of National Environmental Significance

| Wetlands of International Importance (Ramsar Wetlands) |                            | [ Resource Information ] |
|--|----------------------------|--------------------------|
| Ramsar Site Name                                       | Proximity                  | Buffer Status            |
| <a href="#">Vasse-wonnerup system</a>                  | Within 10km of Ramsar site | In buffer area only      |

| Commonwealth Marine Area   |  | [ Resource Information ] |
|--|--|--------------------------|
| Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area. |  |                          |
| Feature Name   |  | Buffer Status            |
| Commonwealth Marine Areas (EPBC Act)   |  | In buffer area only      |
| Commonwealth Marine Areas (EPBC Act)   |  | In buffer area only      |

Listed Threatened Ecological Communities

[ Resource Information ]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, 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.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

| Community Name   | Threatened Category   | Presence Text                         | Buffer Status       |
|--|-----------------------|---------------------------------------|---------------------|
| <a href="#">Aquatic Root Mat Community 1 in Caves of the Leeuwin Naturaliste Ridge</a> | Endangered            | Community known to occur within area  | In buffer area only |
| <a href="#">Aquatic Root Mat Community 2 in Caves of the Leeuwin Naturaliste Ridge</a> | Endangered            | Community known to occur within area  | In buffer area only |
| <a href="#">Aquatic Root Mat Community 3 in Caves of the Leeuwin Naturaliste Ridge</a> | Endangered            | Community known to occur within area  | In buffer area only |
| <a href="#">Aquatic Root Mat Community 4 in Caves of the Leeuwin Naturaliste Ridge</a> | Endangered            | Community known to occur within area  | In buffer area only |
| <a href="#">Banksia Woodlands of the Swan Coastal Plain ecological community</a>       | Endangered            | Community likely to occur within area | In buffer area only |
| <a href="#">Clay Pans of the Swan Coastal Plain</a>                                    | Critically Endangered | Community likely to occur within area | In buffer area only |
| <a href="#">Empodisma peatlands of southwestern Australia</a>                          | Endangered            | Community likely to occur within area | In feature area     |

| Community Name   | Threatened Category   | Presence Text                         | Buffer Status       |
|--|-----------------------|---------------------------------------|---------------------|
| <a href="#">Scott River Ironstone Association</a>  | Endangered            | Community likely to occur within area | In feature area     |
| <a href="#">Shrublands on southern Swan Coastal Plain ironstones</a>   | Endangered            | Community likely to occur within area | In buffer area only |
| <a href="#">Subtropical and Temperate Coastal Saltmarsh</a>  | Vulnerable            | Community likely to occur within area | In buffer area only |
| <a href="#">Tuart (<i>Eucalyptus gomphocephala</i>) Woodlands and Forests of the Swan Coastal Plain ecological community</a> | Critically Endangered | Community likely to occur within area | In buffer area only |

Listed Threatened Species

[ [Resource Information](#) ]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.  
Number is the current name ID.

| Scientific Name  | Threatened Category   | Presence Text  | Buffer Status       |
|--|-----------------------|--|---------------------|
| BIRD   |                       |  |                     |
| <a href="#">Anous tenuirostris melanops</a><br>Australian Lesser Noddy [26000] | Vulnerable            | Species or species habitat may occur within area       | In buffer area only |
| <a href="#">Ardenna grisea</a><br>Sooty Shearwater [82651]                     | Vulnerable            | Species or species habitat may occur within area       | In buffer area only |
| <a href="#">Botaurus poiciloptilus</a><br>Australasian Bittern [1001]          | Endangered            | Species or species habitat known to occur within area  | In feature area     |
| <a href="#">Calidris acuminata</a><br>Sharp-tailed Sandpiper [874]             | Vulnerable            | Species or species habitat known to occur within area  | In feature area     |
| <a href="#">Calidris canutus</a><br>Red Knot, Knot [855]                       | Vulnerable            | Species or species habitat may occur within area       | In feature area     |
| <a href="#">Calidris ferruginea</a><br>Curlew Sandpiper [856]                  | Critically Endangered | Species or species habitat likely to occur within area | In feature area     |
| <a href="#">Calidris tenuirostris</a><br>Great Knot [862]                      | Vulnerable            | Species or species habitat known to occur within area  | In buffer area only |

| Scientific Name   | Threatened Category | Presence Text  | Buffer Status       |
|---|---------------------|--|---------------------|
| <a href="#">Calyptorhynchus banksii naso</a><br>Forest Red-tailed Black-Cockatoo, Karrak [67034]                      | Vulnerable          | Species or species habitat known to occur within area              | In feature area     |
| <a href="#">Charadrius leschenaultii</a><br>Greater Sand Plover, Large Sand Plover [877]                              | Vulnerable          | Species or species habitat likely to occur within area             | In feature area     |
| <a href="#">Diomedea amsterdamensis</a><br>Amsterdam Albatross [64405]  | Endangered          | Species or species habitat likely to occur within area             | In buffer area only |
| <a href="#">Diomedea dabbenena</a><br>Tristan Albatross [66471]   | Endangered          | Species or species habitat likely to occur within area             | In buffer area only |
| <a href="#">Diomedea epomophora</a><br>Southern Royal Albatross [89221]   | Vulnerable          | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Diomedea exulans</a><br>Wandering Albatross [89223]   | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area | In buffer area only |
| <a href="#">Diomedea sanfordi</a><br>Northern Royal Albatross [64456]   | Endangered          | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Falco hypoleucos</a><br>Grey Falcon [929]   | Vulnerable          | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Halobaena caerulea</a><br>Blue Petrel [1059]  | Vulnerable          | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Limosa lapponica menzbieri</a><br>Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432] | Endangered          | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Macronectes giganteus</a><br>Southern Giant-Petrel, Southern Giant Petrel [1060]                          | Endangered          | Species or species habitat may occur within area                   | In buffer area only |



| Scientific Name   | Threatened Category   | Presence Text  | Buffer Status       |
|---|-----------------------|--|---------------------|
| <a href="#">Macronectes halli</a><br>Northern Giant Petrel [1061]   | Vulnerable            | Foraging, feeding or related behaviour likely to occur within area | In buffer area only |
| <a href="#">Numenius madagascariensis</a><br>Eastern Curlew, Far Eastern Curlew [847]   | Critically Endangered | Species or species habitat likely to occur within area             | In feature area     |
| <a href="#">Pachyptila turtur subantarctica</a><br>Fairy Prion (southern) [64445]   | Vulnerable            | Species or species habitat known to occur within area              | In buffer area only |
| <a href="#">Phaethon rubricauda westralis</a><br>Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824] | Endangered            | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Phoebetria fusca</a><br>Sooty Albatross [1075]  | Vulnerable            | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Pterodroma mollis</a><br>Soft-plumaged Petrel [1036]  | Vulnerable            | Foraging, feeding or related behaviour known to occur within area  | In buffer area only |
| <a href="#">Sternula nereis nereis</a><br>Australian Fairy Tern [82950]   | Vulnerable            | Foraging, feeding or related behaviour known to occur within area  | In feature area     |
| <a href="#">Thalassarche carteri</a><br>Indian Yellow-nosed Albatross [64464]   | Vulnerable            | Species or species habitat likely to occur within area             | In buffer area only |
| <a href="#">Thalassarche cauta</a><br>Shy Albatross [89224]   | Endangered            | Foraging, feeding or related behaviour likely to occur within area | In buffer area only |
| <a href="#">Thalassarche impavida</a><br>Campbell Albatross, Campbell Black-browed Albatross [64459]                              | Vulnerable            | Species or species habitat may occur within area                   | In buffer area only |

| Scientific Name   | Threatened Category   | Presence Text  | Buffer Status       |
|---|-----------------------|--|---------------------|
| <a href="#">Thalassarche melanophris</a><br>Black-browed Albatross [66472]  | Vulnerable            | Foraging, feeding or related behaviour likely to occur within area | In buffer area only |
| <a href="#">Thalassarche steadi</a><br>White-capped Albatross [64462]   | Vulnerable            | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Tringa nebularia</a><br>Common Greenshank, Greenshank [832]   | Endangered            | Species or species habitat likely to occur within area             | In feature area     |
| <a href="#">Zanda baudinii listed as Calyptorhynchus baudinii</a><br>Baudin's Cockatoo, Baudin's Black-Cockatoo, Long-billed Black-cockatoo [87736] | Endangered            | Breeding known to occur within area                                | In feature area     |
| <a href="#">Zanda latirostris listed as Calyptorhynchus latirostris</a><br>Carnaby's Black Cockatoo, Short-billed Black-cockatoo [87737]            | Endangered            | Species or species habitat known to occur within area              | In feature area     |
| CRUSTACEAN  |                       |  |                     |
| <a href="#">Cherax tenuimanus</a><br>Hairy Marron, Margaret River Hairy Marron, Margaret River Marron [78931]                                       | Critically Endangered | Species or species habitat known to occur within area              | In buffer area only |
| <a href="#">Engaewa pseudoreducta</a><br>Margaret River Burrowing Crayfish [82674]  | Critically Endangered | Species or species habitat known to occur within area              | In feature area     |
| <a href="#">Engaewa reducta</a><br>Dunsborough Burrowing Crayfish [82675]   | Critically Endangered | Species or species habitat known to occur within area              | In feature area     |
| FISH  |                       |  |                     |
| <a href="#">Galaxiella nigrostriata</a><br>Blackstriped Dwarf Galaxias, Black-stripe Minnow [88677]   | Endangered            | Species or species habitat known to occur within area              | In feature area     |
| <a href="#">Nannatherina balstoni</a><br>Balston's Pygmy Perch [66698]  | Vulnerable            | Species or species habitat known to occur within area              | In feature area     |
| <a href="#">Nannoperca pygmaea</a><br>Little Pygmy Perch [88315]  | Endangered            | Species or species habitat known to occur within area              | In buffer area only |

| Scientific Name  | Threatened Category       | Presence Text   | Buffer Status       |
|--|---------------------------|---|---------------------|
| <a href="#">Thunnus maccoyii</a><br>Southern Bluefin Tuna [69402]                                | Conservation<br>Dependent | Species or species<br>habitat known to<br>occur within area                 | In buffer area only |
| FROG   |                           |   |                     |
| <a href="#">Anstisia alba listed as Geocrinia alba</a><br>White-bellied Frog, Creek Frog [92544] | Critically Endangered     | Species or species<br>habitat known to<br>occur within area                 | In buffer area only |
| <a href="#">Anstisia vitellina listed as Geocrinia vitellina</a><br>Orange-bellied Frog [92547]  | Vulnerable                | Species or species<br>habitat likely to occur<br>within area                | In buffer area only |
| MAMMAL   |                           |   |                     |
| <a href="#">Balaenoptera borealis</a><br>Sei Whale [34]  | Vulnerable                | Foraging, feeding or<br>related behaviour<br>likely to occur within<br>area | In buffer area only |
| <a href="#">Balaenoptera musculus</a><br>Blue Whale [36]   | Endangered                | Species or species<br>habitat likely to occur<br>within area                | In buffer area only |
| <a href="#">Balaenoptera physalus</a><br>Fin Whale [37]  | Vulnerable                | Foraging, feeding or<br>related behaviour<br>likely to occur within<br>area | In buffer area only |
| <a href="#">Bettongia penicillata ogilbyi</a><br>Woylie [66844]                                  | Endangered                | Species or species<br>habitat known to<br>occur within area                 | In buffer area only |
| <a href="#">Dasyurus geoffroii</a><br>Chuditch, Western Quoll [330]                              | Vulnerable                | Species or species<br>habitat known to<br>occur within area                 | In feature area     |
| <a href="#">Eubalaena australis</a><br>Southern Right Whale [40]                                 | Endangered                | Breeding known to<br>occur within area                                      | In buffer area only |
| <a href="#">Myrmecobius fasciatus</a><br>Numbat [294]  | Endangered                | Species or species<br>habitat known to<br>occur within area                 | In feature area     |
| <a href="#">Neophoca cinerea</a><br>Australian Sea-lion, Australian Sea Lion<br>[22]             | Endangered                | Species or species<br>habitat may occur<br>within area                      | In buffer area only |

| Scientific Name  | Threatened Category   | Presence Text   | Buffer Status       |
|--|-----------------------|---|---------------------|
| <a href="#">Pseudocheirus occidentalis</a><br>Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911] | Critically Endangered | Foraging, feeding or related behaviour known to occur within area | In feature area     |
| <a href="#">Setonix brachyurus</a><br>Quokka [229]   | Vulnerable            | Species or species habitat known to occur within area             | In feature area     |
| OTHER  |                       |   |                     |
| <a href="#">Westralunio carteri</a><br>Carter's Freshwater Mussel, Freshwater Mussel [86266]                           | Vulnerable            | Species or species habitat known to occur within area             | In feature area     |
| PLANT  |                       |   |                     |
| <a href="#">Banksia mimica</a><br>Summer Honeypot [82765]  | Endangered            | Species or species habitat known to occur within area             | In feature area     |
| <a href="#">Banksia nivea subsp. uliginosa</a><br>Swamp Honeypot [82766]   | Endangered            | Species or species habitat known to occur within area             | In feature area     |
| <a href="#">Banksia squarrosa subsp. argillacea</a><br>Whicher Range Dryandra [82769]                                  | Vulnerable            | Species or species habitat known to occur within area             | In feature area     |
| <a href="#">Boronia exilis</a><br>Scott River Boronia [64844]  | Endangered            | Species or species habitat known to occur within area             | In feature area     |
| <a href="#">Brachyscias verecundus</a><br>Ironstone Brachyscias [81321]  | Critically Endangered | Species or species habitat likely to occur within area            | In buffer area only |
| <a href="#">Caladenia busselliana</a><br>Bussell's Spider-orchid [24369]   | Endangered            | Species or species habitat known to occur within area             | In buffer area only |
| <a href="#">Caladenia excelsa</a><br>Giant Spider-orchid [56717]   | Endangered            | Species or species habitat likely to occur within area            | In buffer area only |
| <a href="#">Caladenia harringtoniae</a><br>Harrington's Spider-orchid, Pink Spider-orchid [56786]                      | Vulnerable            | Species or species habitat known to occur within area             | In buffer area only |

| Scientific Name   | Threatened Category   | Presence Text  | Buffer Status       |
|---|-----------------------|--|---------------------|
| <a href="#">Caladenia hoffmanii</a><br>Hoffman's Spider-orchid [56719]                                    | Endangered            | Species or species habitat likely to occur within area | In feature area     |
| <a href="#">Caladenia huegelii</a><br>King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid [7309] | Endangered            | Species or species habitat may occur within area       | In buffer area only |
| <a href="#">Caladenia lodgeana</a><br>Lodge's Spider-orchid [68664]                                       | Critically Endangered | Species or species habitat known to occur within area  | In buffer area only |
| <a href="#">Caladenia procera</a><br>Carbunup King Spider Orchid [68679]                                  | Critically Endangered | Species or species habitat known to occur within area  | In buffer area only |
| <a href="#">Caladenia viridescens</a><br>Dunsborough Spider-orchid [56776]                                | Endangered            | Species or species habitat may occur within area       | In buffer area only |
| <a href="#">Calectasia cyanea</a><br>Blue Tinsel Lily [7669]  | Critically Endangered | Species or species habitat may occur within area       | In buffer area only |
| <a href="#">Chamelaucium sp. S coastal plain (R.D.Royce 4872)</a><br>Royce's Waxflower [87814]            | Vulnerable            | Species or species habitat known to occur within area  | In buffer area only |
| <a href="#">Darwinia ferricola</a><br>Scott River Darwinia [56706]  | Endangered            | Species or species habitat known to occur within area  | In feature area     |
| <a href="#">Darwinia whicherensis</a><br>Abba Bell [83193]  | Endangered            | Species or species habitat likely to occur within area | In buffer area only |
| <a href="#">Daviesia elongata subsp. elongata</a><br>Long-leaved Daviesia [64883]                         | Vulnerable            | Species or species habitat known to occur within area  | In buffer area only |
| <a href="#">Diuris drummondii</a><br>Tall Donkey Orchid [4365]  | Vulnerable            | Species or species habitat known to occur within area  | In buffer area only |

| Scientific Name   | Threatened Category   | Presence Text  | Buffer Status       |
|---|-----------------------|--|---------------------|
| <a href="#">Diuris micrantha</a><br>Dwarf Bee-orchid [55082]  | Vulnerable            | Species or species habitat likely to occur within area | In buffer area only |
| <a href="#">Drakaea elastica</a><br>Glossy-leafed Hammer Orchid, Glossy-leaved Hammer Orchid, Warty Hammer Orchid [16753] | Endangered            | Species or species habitat known to occur within area  | In buffer area only |
| <a href="#">Drakaea micrantha</a><br>Dwarf Hammer-orchid [56755]  | Vulnerable            | Species or species habitat known to occur within area  | In feature area     |
| <a href="#">Eucalyptus x phylacis</a><br>Meelup Mallee [87817]  | Endangered            | Species or species habitat may occur within area       | In buffer area only |
| <a href="#">Gastrolobium modestum</a><br>Broad-leaved Gastrolobium [78361]  | Vulnerable            | Species or species habitat known to occur within area  | In buffer area only |
| <a href="#">Gastrolobium papilio</a><br>Butterfly-leaved Gastrolobium [78415]   | Endangered            | Species or species habitat may occur within area       | In feature area     |
| <a href="#">Grevillea brachystylis subsp. australis</a><br>[55525]  | Vulnerable            | Species or species habitat likely to occur within area | In feature area     |
| <a href="#">Grevillea brachystylis subsp. grandis</a><br>Large-flowered Short-styled Grevillea [85001]                    | Critically Endangered | Species or species habitat known to occur within area  | In buffer area only |
| <a href="#">Grevillea elongata</a><br>Ironstone Grevillea [64578]   | Vulnerable            | Species or species habitat likely to occur within area | In buffer area only |
| <a href="#">Grevillea maccutcheonii</a><br>McCutcheon's Grevillea [64522]   | Endangered            | Species or species habitat likely to occur within area | In buffer area only |
| <a href="#">Kennedia lateritia</a><br>Augusta Kennedia [45985]  | Endangered            | Species or species habitat likely to occur within area | In buffer area only |



| Scientific Name   | Threatened Category   | Presence Text  | Buffer Status       |
|---|-----------------------|--|---------------------|
| <a href="#">Lambertia echinata subsp. occidentalis</a><br>Western Prickly Honeysuckle [64528]         | Endangered            | Species or species habitat likely to occur within area | In feature area     |
| <a href="#">Lambertia orbifolia</a><br>Roundleaf Honeysuckle [15725]                                  | Endangered            | Species or species habitat known to occur within area  | In feature area     |
| <a href="#">Leptomeria dielsiana</a><br>Diels' Currant Bush [5146]                                    | Vulnerable            | Species or species habitat known to occur within area  | In feature area     |
| <a href="#">Morelotia australiensis listed as Tetraria australiensis</a><br>Southern Tetraria [92784] | Vulnerable            | Species or species habitat known to occur within area  | In buffer area only |
| <a href="#">Petrophile latericola</a><br>Laterite Petrophile [64532]                                  | Endangered            | Species or species habitat likely to occur within area | In buffer area only |
| <a href="#">Reedia spathacea</a><br>Reedia [2995]   | Critically Endangered | Species or species habitat known to occur within area  | In feature area     |
| <a href="#">Synaphea sp. Fairbridge Farm (D.Papenfus 696)</a><br>Selena's Synaphea [82881]            | Critically Endangered | Species or species habitat may occur within area       | In buffer area only |
| <a href="#">Verticordia densiflora var. pedunculata</a><br>Long-stalked Featherflower [55689]         | Endangered            | Species or species habitat known to occur within area  | In buffer area only |
| <a href="#">Verticordia plumosa var. ananeotes</a><br>Tufted Plumed Featherflower [23871]             | Endangered            | Species or species habitat known to occur within area  | In buffer area only |
| <a href="#">Verticordia plumosa var. vassensis</a><br>Vasse Featherflower [55804]                     | Endangered            | Species or species habitat known to occur within area  | In feature area     |
| REPTILE   |                       |  |                     |
| <a href="#">Caretta caretta</a><br>Loggerhead Turtle [1763]   | Endangered            | Species or species habitat known to occur within area  | In buffer area only |

| Scientific Name  | Threatened Category | Presence Text   | Buffer Status       |
|--|---------------------|---|---------------------|
| <a href="#">Chelonia mydas</a><br>Green Turtle [1765]                                    | Vulnerable          | Species or species habitat may occur within area      | In buffer area only |
| <a href="#">Dermochelys coriacea</a><br>Leatherback Turtle, Leathery Turtle, Luth [1768] | Endangered          | Breeding likely to occur within area                  | In buffer area only |
| <a href="#">Natator depressus</a><br>Flatback Turtle [59257]                             | Vulnerable          | Species or species habitat known to occur within area | In buffer area only |

| SHARK  |                        |   |                     |
|--|------------------------|---|---------------------|
| <a href="#">Carcharias taurus (west coast population)</a><br>Grey Nurse Shark (west coast population) [68752]                            | Vulnerable             | Species or species habitat likely to occur within area            | In buffer area only |
| <a href="#">Carcharodon carcharias</a><br>White Shark, Great White Shark [64470]   | Vulnerable             | Foraging, feeding or related behaviour known to occur within area | In buffer area only |
| <a href="#">Centrophorus uyato</a><br>Little Gulper Shark [68446]  | Conservation Dependent | Species or species habitat may occur within area                  | In buffer area only |
| <a href="#">Galeorhinus galeus</a><br>School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]                     | Conservation Dependent | Species or species habitat may occur within area                  | In buffer area only |
| <a href="#">Pristis pristis</a><br>Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756] | Vulnerable             | Species or species habitat may occur within area                  | In buffer area only |
| <a href="#">Rhincodon typus</a><br>Whale Shark [66680]   | Vulnerable             | Species or species habitat may occur within area                  | In buffer area only |
| <a href="#">Sphyrna lewini</a><br>Scalloped Hammerhead [85267]   | Conservation Dependent | Species or species habitat likely to occur within area            | In buffer area only |

| Listed Migratory Species |                     | [ <a href="#">Resource Information</a> ] |               |
|--------------------------|---------------------|--|---------------|
| Scientific Name          | Threatened Category | Presence Text                            | Buffer Status |
| Migratory Marine Birds   |                     |  |               |

| Scientific Name  | Threatened Category | Presence Text  | Buffer Status       |
|--|---------------------|--|---------------------|
| <a href="#">Apus pacificus</a><br>Fork-tailed Swift [678]                                      |                     | Species or species habitat likely to occur within area             | In feature area     |
| <a href="#">Ardenna carneipes</a><br>Flesh-footed Shearwater, Fleshy-footed Shearwater [82404] |                     | Breeding known to occur within area                                | In buffer area only |
| <a href="#">Ardenna grisea</a><br>Sooty Shearwater [82651]                                     | Vulnerable          | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Diomedea amsterdamensis</a><br>Amsterdam Albatross [64405]                         | Endangered          | Species or species habitat likely to occur within area             | In buffer area only |
| <a href="#">Diomedea dabbenena</a><br>Tristan Albatross [66471]                                | Endangered          | Species or species habitat likely to occur within area             | In buffer area only |
| <a href="#">Diomedea epomophora</a><br>Southern Royal Albatross [89221]                        | Vulnerable          | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Diomedea exulans</a><br>Wandering Albatross [89223]                                | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area | In buffer area only |
| <a href="#">Diomedea sanfordi</a><br>Northern Royal Albatross [64456]                          | Endangered          | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Hydroprogne caspia</a><br>Caspian Tern [808]                                       |                     | Foraging, feeding or related behaviour known to occur within area  | In buffer area only |
| <a href="#">Macronectes giganteus</a><br>Southern Giant-Petrel, Southern Giant Petrel [1060]   | Endangered          | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Macronectes halli</a><br>Northern Giant Petrel [1061]                              | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area | In buffer area only |

| Scientific Name  | Threatened Category | Presence Text  | Buffer Status       |
|--|---------------------|--|---------------------|
| <a href="#">Onychoprion anaethetus</a><br>Bridled Tern [82845]                                       |                     | Breeding known to occur within area                                | In buffer area only |
| <a href="#">Phoebetria fusca</a><br>Sooty Albatross [1075]   | Vulnerable          | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Thalassarche carteri</a><br>Indian Yellow-nosed Albatross [64464]                        | Vulnerable          | Species or species habitat likely to occur within area             | In buffer area only |
| <a href="#">Thalassarche cauta</a><br>Shy Albatross [89224]  | Endangered          | Foraging, feeding or related behaviour likely to occur within area | In buffer area only |
| <a href="#">Thalassarche impavida</a><br>Campbell Albatross, Campbell Black-browed Albatross [64459] | Vulnerable          | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Thalassarche melanophris</a><br>Black-browed Albatross [66472]                           | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area | In buffer area only |
| <a href="#">Thalassarche steadi</a><br>White-capped Albatross [64462]                                | Vulnerable          | Species or species habitat may occur within area                   | In buffer area only |
| Migratory Marine Species   |                     |  |                     |
| <a href="#">Balaenoptera borealis</a><br>Sei Whale [34]  | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area | In buffer area only |
| <a href="#">Balaenoptera edeni</a><br>Bryde's Whale [35]   |                     | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Balaenoptera musculus</a><br>Blue Whale [36]   | Endangered          | Species or species habitat likely to occur within area             | In buffer area only |

| Scientific Name   | Threatened Category | Presence Text  | Buffer Status       |
|---|---------------------|--|---------------------|
| <a href="#">Balaenoptera physalus</a><br>Fin Whale [37]   | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area | In buffer area only |
| <a href="#">Caperea marginata</a><br>Pygmy Right Whale [39]                                     |                     | Foraging, feeding or related behaviour likely to occur within area | In buffer area only |
| <a href="#">Carcharhinus longimanus</a><br>Oceanic Whitetip Shark [84108]                       |                     | Species or species habitat likely to occur within area             | In buffer area only |
| <a href="#">Carcharodon carcharias</a><br>White Shark, Great White Shark [64470]                | Vulnerable          | Foraging, feeding or related behaviour known to occur within area  | In buffer area only |
| <a href="#">Caretta caretta</a><br>Loggerhead Turtle [1763]                                     | Endangered          | Species or species habitat known to occur within area              | In buffer area only |
| <a href="#">Chelonia mydas</a><br>Green Turtle [1765]   | Vulnerable          | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Dermochelys coriacea</a><br>Leatherback Turtle, Leathery Turtle, Luth [1768]        | Endangered          | Breeding likely to occur within area                               | In buffer area only |
| <a href="#">Eubalaena australis as Balaena glacialis australis</a><br>Southern Right Whale [40] | Endangered          | Breeding known to occur within area                                | In buffer area only |
| <a href="#">Isurus oxyrinchus</a><br>Shortfin Mako, Mako Shark [79073]                          |                     | Species or species habitat likely to occur within area             | In buffer area only |
| <a href="#">Lagenorhynchus obscurus</a><br>Dusky Dolphin [43]                                   |                     | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Lamna nasus</a><br>Porbeagle, Mackerel Shark [83288]                                |                     | Species or species habitat may occur within area                   | In buffer area only |

| Scientific Name  | Threatened Category | Presence Text   | Buffer Status   |                     |
|--|---------------------|---|---|---------------------|
| <a href="#">Megaptera novaeangliae</a><br>Humpback Whale [38]  |                     | Foraging, feeding or related behaviour known to occur within area | In buffer area only                                   |                     |
| <a href="#">Mobula alfredi as Manta alfredi</a><br>Reef Manta Ray, Coastal Manta Ray [90033]   |                     | Species or species habitat likely to occur within area            | In buffer area only                                   |                     |
| <a href="#">Mobula birostris as Manta birostris</a><br>Giant Manta Ray [90034]   |                     | Species or species habitat likely to occur within area            | In buffer area only                                   |                     |
| <a href="#">Natator depressus</a><br>Flatback Turtle [59257]   |                     | Vulnerable  | Species or species habitat known to occur within area | In buffer area only |
| <a href="#">Orcinus orca</a><br>Killer Whale, Orca [46]  |                     |   | Species or species habitat may occur within area      | In buffer area only |
| <a href="#">Physeter macrocephalus</a><br>Sperm Whale [59]   |                     | Species or species habitat may occur within area                  | In buffer area only                                   |                     |
| <a href="#">Pristis pristis</a><br>Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756] | Vulnerable          | Species or species habitat may occur within area                  | In buffer area only                                   |                     |
| <a href="#">Rhincodon typus</a><br>Whale Shark [66680]   | Vulnerable          | Species or species habitat may occur within area                  | In buffer area only                                   |                     |
| Migratory Terrestrial Species  |                     |   |   |                     |
| <a href="#">Motacilla cinerea</a><br>Grey Wagtail [642]  |                     | Species or species habitat may occur within area                  | In buffer area only                                   |                     |
| Migratory Wetlands Species   |                     |   |   |                     |
| <a href="#">Actitis hypoleucos</a><br>Common Sandpiper [59309]   |                     | Species or species habitat known to occur within area             | In feature area                                       |                     |
| <a href="#">Calidris acuminata</a><br>Sharp-tailed Sandpiper [874]   | Vulnerable          | Species or species habitat known to occur within area             | In feature area                                       |                     |



| Scientific Name  | Threatened Category   | Presence Text  | Buffer Status       |
|--|-----------------------|--|---------------------|
| <a href="#">Calidris alba</a><br>Sanderling [875]  |                       | Species or species habitat known to occur within area  | In buffer area only |
| <a href="#">Calidris canutus</a><br>Red Knot, Knot [855]                                 | Vulnerable            | Species or species habitat may occur within area       | In feature area     |
| <a href="#">Calidris ferruginea</a><br>Curlew Sandpiper [856]                            | Critically Endangered | Species or species habitat likely to occur within area | In feature area     |
| <a href="#">Calidris melanotos</a><br>Pectoral Sandpiper [858]                           |                       | Species or species habitat likely to occur within area | In feature area     |
| <a href="#">Calidris ruficollis</a><br>Red-necked Stint [860]                            |                       | Species or species habitat known to occur within area  | In buffer area only |
| <a href="#">Calidris tenuirostris</a><br>Great Knot [862]                                | Vulnerable            | Species or species habitat known to occur within area  | In buffer area only |
| <a href="#">Charadrius leschenaultii</a><br>Greater Sand Plover, Large Sand Plover [877] | Vulnerable            | Species or species habitat likely to occur within area | In feature area     |
| <a href="#">Limosa lapponica</a><br>Bar-tailed Godwit [844]                              |                       | Species or species habitat may occur within area       | In buffer area only |
| <a href="#">Numenius madagascariensis</a><br>Eastern Curlew, Far Eastern Curlew [847]    | Critically Endangered | Species or species habitat likely to occur within area | In feature area     |
| <a href="#">Pandion haliaetus</a><br>Osprey [952]  |                       | Breeding known to occur within area                    | In buffer area only |
| <a href="#">Pluvialis fulva</a><br>Pacific Golden Plover [25545]                         |                       | Species or species habitat likely to occur within area | In buffer area only |
| <a href="#">Thalasseus bergii</a><br>Greater Crested Tern [83000]                        |                       | Breeding known to occur within area                    | In buffer area only |

| Scientific Name                     | Threatened Category | Presence Text  | Buffer Status   |
|-------------------------------------|---------------------|--|-----------------|
| <a href="#">Tringa nebularia</a>    |                     |  |                 |
| Common Greenshank, Greenshank [832] | Endangered          | 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 - [52112] | WA    | In buffer area only |
| Commonwealth Land - [52117] | WA    | In buffer area only |
| Commonwealth Land - [51991] | WA    | In buffer area only |
| Commonwealth Land - [51103] | WA    | In buffer area only |
| Commonwealth Land - [52113] | WA    | In buffer area only |
| Commonwealth Land - [51992] | WA    | In buffer area only |
| Commonwealth Land - [51482] | WA    | In buffer area only |
| Commonwealth Land - [50382] | WA    | In buffer area only |
| Commonwealth Land - [51990] | WA    | In buffer area only |
| Commonwealth Land - [51121] | WA    | In buffer area only |
| Commonwealth Land - [50386] | WA    | In buffer area only |
| Commonwealth Land - [51995] | WA    | In buffer area only |
| Commonwealth Land - [50383] | WA    | In buffer area only |
| Commonwealth Land - [51483] | WA    | In buffer area only |

| Commonwealth Heritage Places            | [ <a href="#">Resource Information</a> ] |              |                     |
|---|--|--------------|---------------------|
| Name                                    | State                                    | Status       | Buffer Status       |
| Historic                                |  |              |                     |
| <a href="#">Cape Leeuwin Lighthouse</a> | WA                                       | Listed place | In buffer area only |

| Listed Marine Species   |                       |  | [ Resource Information ] |
|---|-----------------------|--|--------------------------|
| Scientific Name   | Threatened Category   | Presence Text  | Buffer Status            |
| Bird  |                       |  |                          |
| <a href="#">Actitis hypoleucos</a><br>Common Sandpiper [59309]  |                       | Species or species habitat known to occur within area                      | In feature area          |
| <a href="#">Anous tenuirostris melanops</a><br>Australian Lesser Noddy [26000]                                      | Vulnerable            | Species or species habitat may occur within area                           | In buffer area only      |
| <a href="#">Apus pacificus</a><br>Fork-tailed Swift [678]   |                       | Species or species habitat likely to occur within area overfly marine area | In feature area          |
| <a href="#">Ardena carneipes as Puffinus carneipes</a><br>Flesh-footed Shearwater, Fleshy-footed Shearwater [82404] |                       | Breeding known to occur within area  | In buffer area only      |
| <a href="#">Ardena grisea as Puffinus griseus</a><br>Sooty Shearwater [82651]                                       | Vulnerable            | Species or species habitat may occur within area                           | In buffer area only      |
| <a href="#">Bubulcus ibis as Ardea ibis</a><br>Cattle Egret [66521]   |                       | Species or species habitat may occur within area overfly marine area       | In feature area          |
| <a href="#">Calidris acuminata</a><br>Sharp-tailed Sandpiper [874]  | Vulnerable            | Species or species habitat known to occur within area                      | In feature area          |
| <a href="#">Calidris alba</a><br>Sanderling [875]   |                       | Species or species habitat known to occur within area                      | In buffer area only      |
| <a href="#">Calidris canutus</a><br>Red Knot, Knot [855]  | Vulnerable            | Species or species habitat may occur within area overfly marine area       | In feature area          |
| <a href="#">Calidris ferruginea</a><br>Curlew Sandpiper [856]   | Critically Endangered | Species or species habitat likely to occur within area overfly marine area | In feature area          |

| Scientific Name   | Threatened Category | Presence Text  | Buffer Status       |
|---|---------------------|--|---------------------|
| <a href="#">Calidris melanotos</a><br>Pectoral Sandpiper [858]                                  |                     | Species or species habitat likely to occur within area overfly marine area | In feature area     |
| <a href="#">Calidris ruficollis</a><br>Red-necked Stint [860]                                   |                     | Species or species habitat known to occur within area overfly marine area  | In buffer area only |
| <a href="#">Calidris tenuirostris</a><br>Great Knot [862]                                       | Vulnerable          | Species or species habitat known to occur within area overfly marine area  | In buffer area only |
| <a href="#">Charadrius leschenaultii</a><br>Greater Sand Plover, Large Sand Plover [877]        | Vulnerable          | Species or species habitat likely to occur within area                     | In feature area     |
| <a href="#">Charadrius ruficapillus</a><br>Red-capped Plover [881]                              |                     | Species or species habitat known to occur within area overfly marine area  | In buffer area only |
| <a href="#">Chroicocephalus novaehollandiae as Larus novaehollandiae</a><br>Silver Gull [82326] |                     | Breeding known to occur within area  | In buffer area only |
| <a href="#">Diomedea amsterdamensis</a><br>Amsterdam Albatross [64405]                          | Endangered          | Species or species habitat likely to occur within area                     | In buffer area only |
| <a href="#">Diomedea dabbenena</a><br>Tristan Albatross [66471]                                 | Endangered          | Species or species habitat likely to occur within area                     | In buffer area only |
| <a href="#">Diomedea epomophora</a><br>Southern Royal Albatross [89221]                         | Vulnerable          | Species or species habitat may occur within area                           | In buffer area only |
| <a href="#">Diomedea exulans</a><br>Wandering Albatross [89223]                                 | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area         | In buffer area only |

| Scientific Name  | Threatened Category | Presence Text  | Buffer Status       |
|--|---------------------|--|---------------------|
| <a href="#">Diomedea sanfordi</a><br>Northern Royal Albatross [64456]                        | Endangered          | Species or species habitat may occur within area                     | In buffer area only |
| <a href="#">Eudyptula minor</a><br>Little Penguin [1085]                                     |                     | Breeding known to occur within area                                  | In buffer area only |
| <a href="#">Haliaeetus leucogaster</a><br>White-bellied Sea-Eagle [943]                      |                     | Species or species habitat known to occur within area                | In feature area     |
| <a href="#">Halobaena caerulea</a><br>Blue Petrel [1059]                                     | Vulnerable          | Species or species habitat may occur within area                     | In buffer area only |
| <a href="#">Hydroprogne caspia as Sterna caspia</a><br>Caspian Tern [808]                    |                     | Foraging, feeding or related behaviour known to occur within area    | In buffer area only |
| <a href="#">Larus pacificus</a><br>Pacific Gull [811]  |                     | Foraging, feeding or related behaviour known to occur within area    | In buffer area only |
| <a href="#">Limosa lapponica</a><br>Bar-tailed Godwit [844]                                  |                     | Species or species habitat may occur within area                     | In buffer area only |
| <a href="#">Macronectes giganteus</a><br>Southern Giant-Petrel, Southern Giant Petrel [1060] | Endangered          | Species or species habitat may occur within area                     | In buffer area only |
| <a href="#">Macronectes halli</a><br>Northern Giant Petrel [1061]                            | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area   | In buffer area only |
| <a href="#">Merops ornatus</a><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       |
|---|-----------------------|--|---------------------|
| <a href="#">Motacilla cinerea</a><br>Grey Wagtail [642]                               |                       | Species or species habitat may occur within area overfly marine area | In buffer area only |
| <a href="#">Numenius madagascariensis</a><br>Eastern Curlew, Far Eastern Curlew [847] | Critically Endangered | Species or species habitat likely to occur within area               | In feature area     |
| <a href="#">Onychoprion anaethetus as Sterna anaethetus</a><br>Bridled Tern [82845]   |                       | Breeding known to occur within area                                  | In buffer area only |
| <a href="#">Onychoprion fuscatus as Sterna fuscata</a><br>Sooty Tern [90682]          |                       | Breeding known to occur within area                                  | In buffer area only |
| <a href="#">Pachyptila turtur</a><br>Fairy Prion [1066]                               |                       | Species or species habitat known to occur within area                | In buffer area only |
| <a href="#">Pandion haliaetus</a><br>Osprey [952]                                     |                       | Breeding known to occur within area                                  | In buffer area only |
| <a href="#">Pelagodroma marina</a><br>White-faced Storm-Petrel [1016]                 |                       | Breeding known to occur within area                                  | In buffer area only |
| <a href="#">Phoebetria fusca</a><br>Sooty Albatross [1075]                            | Vulnerable            | Species or species habitat may occur within area                     | In buffer area only |
| <a href="#">Pluvialis fulva</a><br>Pacific Golden Plover [25545]                      |                       | Species or species habitat likely to occur within area               | In buffer area only |
| <a href="#">Pterodroma macroptera</a><br>Great-winged Petrel [1035]                   |                       | Foraging, feeding or related behaviour known to occur within area    | In buffer area only |
| <a href="#">Pterodroma mollis</a><br>Soft-plumaged Petrel [1036]                      | Vulnerable            | Foraging, feeding or related behaviour known to occur within area    | In buffer area only |
| <a href="#">Puffinus assimilis</a><br>Little Shearwater [59363]                       |                       | Breeding known to occur within area                                  | In buffer area only |



| Scientific Name   | Threatened Category | Presence Text  | Buffer Status       |
|---|---------------------|--|---------------------|
| <a href="#">Stercorarius antarcticus as Catharacta skua</a><br>Brown Skua [85039]                       |                     | Species or species habitat may occur within area                           | In buffer area only |
| <a href="#">Sternula nereis as Sterna nereis</a><br>Fairy Tern [82949]                                  |                     | Breeding known to occur within area  | In buffer area only |
| <a href="#">Thalassarche carteri</a><br>Indian Yellow-nosed Albatross [64464]                           | Vulnerable          | Species or species habitat likely to occur within area                     | In buffer area only |
| <a href="#">Thalassarche cauta</a><br>Shy Albatross [89224]   | Endangered          | Foraging, feeding or related behaviour likely to occur within area         | In buffer area only |
| <a href="#">Thalassarche impavida</a><br>Campbell Albatross, Campbell Black-browed Albatross [64459]    | Vulnerable          | Species or species habitat may occur within area                           | In buffer area only |
| <a href="#">Thalassarche melanophris</a><br>Black-browed Albatross [66472]                              | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area         | In buffer area only |
| <a href="#">Thalassarche steadi</a><br>White-capped Albatross [64462]                                   | Vulnerable          | Species or species habitat may occur within area                           | In buffer area only |
| <a href="#">Thalasseus bergii as Sterna bergii</a><br>Greater Crested Tern [83000]                      |                     | Breeding known to occur within area  | In buffer area only |
| <a href="#">Thinornis cucullatus as Thinornis rubricollis</a><br>Hooded Plover, Hooded Dotterel [87735] |                     | Species or species habitat known to occur within area overfly marine area  | In buffer area only |
| <a href="#">Tringa nebularia</a><br>Common Greenshank, Greenshank [832]                                 | Endangered          | Species or species habitat likely to occur within area overfly marine area | In feature area     |
| Fish  |                     |  |                     |
| <a href="#">Acentronura australe</a><br>Southern Pygmy Pipehorse [66185]                                |                     | Species or species habitat may occur within area                           | In buffer area only |

| Scientific Name   | Threatened Category | Presence Text                                    | Buffer Status       |
|---|---------------------|--|---------------------|
| <a href="#">Campichthys galei</a><br>Gale's Pipefish [66191]  |                     | Species or species habitat may occur within area | In buffer area only |
| <a href="#">Heraldia nocturna</a><br>Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227] |                     | Species or species habitat may occur within area | In buffer area only |
| <a href="#">Hippocampus angustus</a><br>Western Spiny Seahorse, Narrow-bellied Seahorse [66234]                               |                     | Species or species habitat may occur within area | In buffer area only |
| <a href="#">Hippocampus breviceps</a><br>Short-head Seahorse, Short-snouted Seahorse [66235]                                  |                     | Species or species habitat may occur within area | In buffer area only |
| <a href="#">Hippocampus subelongatus</a><br>West Australian Seahorse [66722]  |                     | Species or species habitat may occur within area | In buffer area only |
| <a href="#">Histiogamphelus cristatus</a><br>Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]           |                     | Species or species habitat may occur within area | In buffer area only |
| <a href="#">Lissocampus caudalis</a><br>Australian Smooth Pipefish, Smooth Pipefish [66249]                                   |                     | Species or species habitat may occur within area | In buffer area only |
| <a href="#">Lissocampus fatiloquus</a><br>Prophet's Pipefish [66250]  |                     | Species or species habitat may occur within area | In buffer area only |
| <a href="#">Lissocampus runa</a><br>Javelin Pipefish [66251]  |                     | Species or species habitat may occur within area | In buffer area only |
| <a href="#">Maroubra perserrata</a><br>Sawtooth Pipefish [66252]  |                     | Species or species habitat may occur within area | In buffer area only |
| <a href="#">Mitotichthys meraculus</a><br>Western Crested Pipefish [66259]  |                     | Species or species habitat may occur within area | In buffer area only |

| Scientific Name   | Threatened Category | Presence Text                                    | Buffer Status       |
|---|---------------------|--|---------------------|
| <a href="#">Nannocampus subosseus</a><br>Bonyhead Pipefish, Bony-headed Pipefish [66264]                                      |                     | Species or species habitat may occur within area | In buffer area only |
| <a href="#">Phycodurus eques</a><br>Leafy Seadragon [66267]   |                     | Species or species habitat may occur within area | In buffer area only |
| <a href="#">Phyllopteryx taeniolatus</a><br>Common Seadragon, Weedy Seadragon [66268]   |                     | Species or species habitat may occur within area | In buffer area only |
| <a href="#">Pugnaso curtirostris</a><br>Pugnose Pipefish, Pug-nosed Pipefish [66269]  |                     | Species or species habitat may occur within area | In buffer area only |
| <a href="#">Solegnathus lettiensis</a><br>Gunther's Pipehorse, Indonesian Pipefish [66273]                                    |                     | Species or species habitat may occur within area | In buffer area only |
| <a href="#">Stigmatopora argus</a><br>Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]                               |                     | Species or species habitat may occur within area | In buffer area only |
| <a href="#">Stigmatopora nigra</a><br>Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]                         |                     | Species or species habitat may occur within area | In buffer area only |
| <a href="#">Urocampus carinirostris</a><br>Hairy Pipefish [66282]   |                     | Species or species habitat may occur within area | In buffer area only |
| <a href="#">Vanacampus margaritifer</a><br>Mother-of-pearl Pipefish [66283]   |                     | Species or species habitat may occur within area | In buffer area only |
| <a href="#">Vanacampus phillipi</a><br>Port Phillip Pipefish [66284]  |                     | Species or species habitat may occur within area | In buffer area only |
| <a href="#">Vanacampus poecilolaemus</a><br>Longsnout Pipefish, Australian Long-snout Pipefish, Long-snouted Pipefish [66285] |                     | Species or species habitat may occur within area | In buffer area only |

| Scientific Name                                  | Threatened Category | Presence Text  | Buffer Status       |
|--|---------------------|--|---------------------|
| <a href="#">Arctocephalus forsteri</a>           |                     |  |                     |
| Long-nosed Fur-seal, New Zealand Fur-seal [20]   |                     | Breeding known to occur within area                                | In buffer area only |
| <a href="#">Neophoca cinerea</a>                 |                     |  |                     |
| Australian Sea-lion, Australian Sea Lion [22]    | Endangered          | Species or species habitat may occur within area                   | In buffer area only |
| Reptile  |                     |  |                     |
| <a href="#">Caretta caretta</a>                  |                     |  |                     |
| Loggerhead Turtle [1763]                         | Endangered          | Species or species habitat known to occur within area              | In buffer area only |
| <a href="#">Chelonia mydas</a>                   |                     |  |                     |
| Green Turtle [1765]                              | Vulnerable          | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Dermochelys coriacea</a>             |                     |  |                     |
| Leatherback Turtle, Leathery Turtle, Luth [1768] | Endangered          | Breeding likely to occur within area                               | In buffer area only |
| <a href="#">Natator depressus</a>                |                     |  |                     |
| Flatback Turtle [59257]                          | Vulnerable          | Species or species habitat known to occur within area              | In buffer area only |
| Whales and Other Cetaceans                       |                     |  |                     |
| [ <a href="#">Resource Information</a> ]         |                     |  |                     |
| Current Scientific Name                          | Status              | Type of Presence   | Buffer Status       |
| Mammal   |                     |  |                     |
| <a href="#">Balaenoptera acutorostrata</a>       |                     |  |                     |
| Minke Whale [33]                                 |                     | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Balaenoptera borealis</a>            |                     |  |                     |
| Sei Whale [34]                                   | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area | In buffer area only |
| <a href="#">Balaenoptera edeni</a>               |                     |  |                     |
| Bryde's Whale [35]                               |                     | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Balaenoptera musculus</a>            |                     |  |                     |
| Blue Whale [36]                                  | Endangered          | Species or species habitat likely to occur within area             | In buffer area only |

| Current Scientific Name   | Status     | Type of Presence   | Buffer Status       |
|---|------------|--|---------------------|
| <a href="#">Balaenoptera physalus</a><br>Fin Whale [37]                               | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In buffer area only |
| <a href="#">Berardius arnuxii</a><br>Arnoux's Beaked Whale [70]                       |            | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Caperea marginata</a><br>Pygmy Right Whale [39]                           |            | Foraging, feeding or related behaviour likely to occur within area | In buffer area only |
| <a href="#">Delphinus delphis</a><br>Common Dolphin, Short-beaked Common Dolphin [60] |            | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Eubalaena australis</a><br>Southern Right Whale [40]                      | Endangered | Breeding known to occur within area                                | In buffer area only |
| <a href="#">Feresa attenuata</a><br>Pygmy Killer Whale [61]                           |            | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Globicephala macrorhynchus</a><br>Short-finned Pilot Whale [62]           |            | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Globicephala melas</a><br>Long-finned Pilot Whale [59282]                 |            | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Grampus griseus</a><br>Risso's Dolphin, Grampus [64]                      |            | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Kogia breviceps</a><br>Pygmy Sperm Whale [57]                             |            | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#">Kogia sima</a><br>Dwarf Sperm Whale [85043]                               |            | Species or species habitat may occur within area                   | In buffer area only |

| Current Scientific Name   | Status | Type of Presence  | Buffer Status       |
|---|--------|---|---------------------|
| <a href="#">Lagenorhynchus obscurus</a><br>Dusky Dolphin [43]   |        | Species or species habitat may occur within area                  | In buffer area only |
| <a href="#">Lissodelphis peronii</a><br>Southern Right Whale Dolphin [44]   |        | Species or species habitat may occur within area                  | In buffer area only |
| <a href="#">Megaptera novaeangliae</a><br>Humpback Whale [38]   |        | Foraging, feeding or related behaviour known to occur within area | In buffer area only |
| <a href="#">Mesoplodon bowdoini</a><br>Andrew's Beaked Whale [73]   |        | Species or species habitat may occur within area                  | In buffer area only |
| <a href="#">Mesoplodon densirostris</a><br>Blainville's Beaked Whale, Dense-beaked Whale [74]                         |        | Species or species habitat may occur within area                  | In buffer area only |
| <a href="#">Mesoplodon layardii</a><br>Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556] |        | Species or species habitat may occur within area                  | In buffer area only |
| <a href="#">Mesoplodon mirus</a><br>True's Beaked Whale [54]  |        | Species or species habitat may occur within area                  | In buffer area only |
| <a href="#">Orcinus orca</a><br>Killer Whale, Orca [46]   |        | Species or species habitat may occur within area                  | In buffer area only |
| <a href="#">Peponocephala electra</a><br>Melon-headed Whale [47]  |        | Species or species habitat may occur within area                  | In buffer area only |
| <a href="#">Physeter macrocephalus</a><br>Sperm Whale [59]  |        | Species or species habitat may occur within area                  | In buffer area only |
| <a href="#">Pseudorca crassidens</a><br>False Killer Whale [48]   |        | Species or species habitat likely to occur within area            | In buffer area only |



| Current Scientific Name   | Status | Type of Presence                                       | Buffer Status       |
|---|--------|--|---------------------|
| <a href="#">Stenella attenuata</a><br>Spotted Dolphin, Pantropical Spotted Dolphin [51]                 |        | Species or species habitat may occur within area       | In buffer area only |
| <a href="#">Stenella coeruleoalba</a><br>Striped Dolphin, Euphrosyne Dolphin [52]                       |        | Species or species habitat may occur within area       | In buffer area only |
| <a href="#">Steno bredanensis</a><br>Rough-toothed Dolphin [30]   |        | Species or species habitat may occur within area       | In buffer area only |
| <a href="#">Tursiops aduncus</a><br>Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418] |        | Species or species habitat likely to occur within area | In buffer area only |
| <a href="#">Tursiops truncatus s. str.</a><br>Bottlenose Dolphin [68417]                                |        | Species or species habitat may occur within area       | In buffer area only |
| <a href="#">Ziphius cavirostris</a><br>Cuvier's Beaked Whale, Goose-beaked Whale [56]                   |        | Species or species habitat may occur within area       | In buffer area only |

| Australian Marine Parks |  | [ <a href="#">Resource Information</a> ]          |                     |
|-------------------------|--|---|---------------------|
| Park Name               |  | Zone & IUCN Categories                            | Buffer Status       |
| South-west Corner       |  | National Park Zone (IUCN II)                      | In buffer area only |
| South-west Corner       |  | National Park Zone (IUCN II)                      | In buffer area only |
| South-west Corner       |  | Special Purpose Zone (Mining Exclusion) (IUCN VI) | In buffer area only |
| South-west Corner       |  | Special Purpose Zone (Mining Exclusion) (IUCN VI) | In buffer area only |

### Extra Information

| State and Territory Reserves |                |       | [ <a href="#">Resource Information</a> ] |
|------------------------------|----------------|-------|--|
| Protected Area Name          | Reserve Type   | State | Buffer Status                            |
| Blackwood River              | National Park  | WA    | In buffer area only                      |
| Bramley                      | National Park  | WA    | In buffer area only                      |
| Chester                      | Nature Reserve | WA    | In buffer area only                      |
| D'Entrecasteaux              | National Park  | WA    | In buffer area only                      |

| Protected Area Name            | Reserve Type          | State | Buffer Status       |
|--------------------------------|-----------------------|-------|---------------------|
| Easter                         | National Park         | WA    | In buffer area only |
| Fish Road                      | Nature Reserve        | WA    | In buffer area only |
| Flinders Bay                   | Nature Reserve        | WA    | In buffer area only |
| Forest Grove                   | National Park         | WA    | In buffer area only |
| Gingilup Swamps                | Nature Reserve        | WA    | In buffer area only |
| Greater Beedelup               | National Park         | WA    | In buffer area only |
| Haag                           | Nature Reserve        | WA    | In buffer area only |
| Hamelin Island                 | Nature Reserve        | WA    | In buffer area only |
| Hilliger                       | National Park         | WA    | In buffer area only |
| Leeuwin-Naturaliste            | National Park         | WA    | In buffer area only |
| Milyeannup                     | National Park         | WA    | In buffer area only |
| Ngari Capes                    | Marine Park           | WA    | In buffer area only |
| NTWA Bushland covenant (0003)  | Conservation Covenant | WA    | In buffer area only |
| NTWA Bushland covenant (0013)  | Conservation Covenant | WA    | In buffer area only |
| NTWA Bushland covenant (0036)  | Conservation Covenant | WA    | In buffer area only |
| NTWA Bushland covenant (0037)  | Conservation Covenant | WA    | In buffer area only |
| NTWA Bushland covenant (0044A) | Conservation Covenant | WA    | In buffer area only |
| NTWA Bushland covenant (0044B) | Conservation Covenant | WA    | In buffer area only |
| NTWA Bushland covenant (0044C) | Conservation Covenant | WA    | In buffer area only |
| NTWA Bushland covenant (0065A) | Conservation Covenant | WA    | In buffer area only |
| NTWA Bushland covenant (0065B) | Conservation Covenant | WA    | In buffer area only |
| NTWA Bushland covenant (0069)  | Conservation Covenant | WA    | In buffer area only |
| NTWA Bushland covenant (0116A) | Conservation Covenant | WA    | In buffer area only |
| NTWA Bushland covenant (0116B) | Conservation Covenant | WA    | In buffer area only |
| NTWA Bushland covenant (0130)  | Conservation Covenant | WA    | In buffer area only |
| NTWA Bushland covenant (0144)  | Conservation Covenant | WA    | In buffer area only |
| NTWA Bushland covenant (0147)  | Conservation Covenant | WA    | In buffer area only |

| Protected Area Name           | Reserve Type                           | State | Buffer Status       |
|-------------------------------|--|-------|---------------------|
| NTWA Bushland covenant (0148) | Conservation Covenant                  | WA    | In buffer area only |
| NTWA Bushland covenant (0149) | Conservation Covenant                  | WA    | In buffer area only |
| NTWA Bushland covenant (0152) | Conservation Covenant                  | WA    | In buffer area only |
| NTWA Bushland covenant (0155) | Conservation Covenant                  | WA    | In buffer area only |
| NTWA Bushland covenant (0164) | Conservation Covenant                  | WA    | In buffer area only |
| NTWA Bushland covenant (0168) | Conservation Covenant                  | WA    | In buffer area only |
| NTWA Bushland covenant (0170) | Conservation Covenant                  | WA    | In buffer area only |
| NTWA Bushland covenant (0185) | Conservation Covenant                  | WA    | In buffer area only |
| NTWA Bushland covenant (0186) | Conservation Covenant                  | WA    | In buffer area only |
| Pagett                        | Nature Reserve                         | WA    | In feature area     |
| Rapids                        | Conservation Park                      | WA    | In buffer area only |
| Scott                         | National Park                          | WA    | In feature area     |
| Seal Island (WA25645)         | Nature Reserve                         | WA    | In buffer area only |
| St Alouarn Island             | Nature Reserve                         | WA    | In buffer area only |
| Stockdill Road                | Nature Reserve                         | WA    | In buffer area only |
| Sussex Location 2561          | NRS Addition - Gazettal<br>in Progress | WA    | In buffer area only |
| Unnamed WA08910               | 5(1)(h) Reserve                        | WA    | In buffer area only |
| Unnamed WA12952               | 5(1)(h) Reserve                        | WA    | In buffer area only |
| Unnamed WA14567               | Nature Reserve                         | WA    | In buffer area only |
| Unnamed WA15185               | Nature Reserve                         | WA    | In buffer area only |
| Unnamed WA26065               | Nature Reserve                         | WA    | In buffer area only |
| Unnamed WA42377               | Nature Reserve                         | WA    | In feature area     |
| Unnamed WA42942               | Nature Reserve                         | WA    | In buffer area only |
| Unnamed WA44676               | 5(1)(h) Reserve                        | WA    | In buffer area only |
| Unnamed WA44705               | 5(1)(g) Reserve                        | WA    | In buffer area only |
| Unnamed WA45533               | Nature Reserve                         | WA    | In buffer area only |

| Protected Area Name | Reserve Type   | State | Buffer Status       |
|---------------------|----------------|-------|---------------------|
| Unnamed WA46400     | National Park  | WA    | In buffer area only |
| Unnamed WA53843     | National Park  | WA    | In buffer area only |
| Walburra            | Nature Reserve | WA    | In buffer area only |
| Whicher             | National Park  | WA    | In buffer area only |
| Wiltshire-Butler    | National Park  | WA    | In buffer area only |
| Yelverton           | National Park  | WA    | In buffer area only |

Regional Forest Agreements
[ Resource Information ]

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

| RFA Name                          | State             | Buffer Status   |
|-----------------------------------|-------------------|-----------------|
| <a href="#">South West WA RFA</a> | Western Australia | In feature area |

Nationally Important Wetlands
[ Resource Information ]

| Wetland Name   | State | Buffer Status       |
|--|-------|---------------------|
| <a href="#">Blackwood River (Lower Reaches) and Tributaries System</a> | WA    | In buffer area only |
| <a href="#">Cape Leeuwin System</a>                                    | WA    | In buffer area only |
| <a href="#">Gingilup-Jasper Wetland System</a>                         | WA    | In buffer area only |

EPBC Act Referrals
[ Resource Information ]

| Title of referral  | Reference  | Referral Outcome | Assessment Status | Buffer Status       |
|--|------------|------------------|-------------------|---------------------|
| <a href="#">Gnarabup Tourism Development: Resort and Beach Village</a> | 2022/09224 |                  | Assessment        | In buffer area only |
| <a href="#">Gravel Extraction Project</a>                              | 2022/09278 |                  | Assessment        | In buffer area only |
| <a href="#">Mara Team Testing Release 37 Dan</a>                       | 2024/09832 |                  | Referral Decision | In buffer area only |
| <a href="#">Mara Team Testing Release 37 Dan 2</a>                     | 2024/09836 |                  | Referral Decision | In buffer area only |
| <a href="#">Mara Team Testing Release 37 Dan 3</a>                     | 2024/09838 |                  | Referral Decision | In buffer area only |

| Controlled action  |           |                   |               |                     |
|--|-----------|-------------------|---------------|---------------------|
| <a href="#">Development Guide Plan for 46 ha Residential Subdivision</a> | 2008/4102 | Controlled Action | Post-Approval | In buffer area only |
| <a href="#">Flat Rock boating facility</a>                               | 2008/4506 | Controlled Action | Post-Approval | In buffer area only |

| Title of referral   | Reference | Referral Outcome      | Assessment Status   | Buffer Status       |
|---|-----------|-----------------------|---------------------|---------------------|
| Controlled action   |           |                       |                     |                     |
| <a href="#">Lot 32 Tom Cullity Drive, Wilyabrup</a>                               | 2020/8866 | Controlled Action     | Post-Approval       | In buffer area only |
| <a href="#">Milyeannup Wind Farm</a>  | 2009/4911 | Controlled Action     | Post-Approval       | In buffer area only |
| <a href="#">Shark Hazard Mitigation Drum Line Program, WA</a>                     | 2014/7174 | Controlled Action     | Completed           | In buffer area only |
| <a href="#">Tutunup South Mineral Sands Project</a>                               | 2007/3441 | Controlled Action     | Post-Approval       | In buffer area only |
| <a href="#">Urban development, multiple lots Northerly Street, Vasse, WA</a>      | 2019/8494 | Controlled Action     | Assessment Approach | In buffer area only |
| <a href="#">Vasse Diversion Drain Upgrade</a>                                     | 2017/7932 | Controlled Action     | Post-Approval       | In buffer area only |
| <a href="#">Vlam Road Gravel Pit, Vlam Road, Karridale, WA</a>                    | 2014/7141 | Controlled Action     | Post-Approval       | In buffer area only |
| <a href="#">Wonnerup South Mineral Sands Project, Yalyalup, WA</a>                | 2014/7135 | Controlled Action     | Post-Approval       | In buffer area only |
| <a href="#">Yalyalup Mineral Sands Project, WA</a>                                | 2017/8094 | Controlled Action     | Post-Approval       | In buffer area only |
| <a href="#">Yarragadee Water Supply Development</a>                               | 2005/2073 | Controlled Action     | Completed           | In buffer area only |
| <a href="#">Yoongarillup Mineral Sands Project, WA</a>                            | 2012/6521 | Controlled Action     | Post-Approval       | In buffer area only |
| Not controlled action   |           |                       |                     |                     |
| <a href="#">Bussell Highway (Bramley Section) SLK Upgrade</a>                     | 2012/6511 | Not Controlled Action | Completed           | In buffer area only |
| <a href="#">Busselton-Margaret River Regional Airport Development Project, WA</a> | 2016/7675 | Not Controlled Action | Completed           | In buffer area only |
| <a href="#">Busselton to Flinders Bay Rails to Trails Project, WA</a>             | 2013/6835 | Not Controlled Action | Completed           | In buffer area only |
| <a href="#">Busselton to Margaret River Transmission Line</a>                     | 2008/3964 | Not Controlled Action | Completed           | In buffer area only |
| <a href="#">Construction of the Margaret River bypass road</a>                    | 2012/6677 | Not Controlled Action | Completed           | In buffer area only |
| <a href="#">CTBT - Cape Leeuwin Hydroacoustic Station Proposal</a>                | 2000/27   | Not Controlled Action | Completed           | In buffer area only |
| <a href="#">Geo-science Investigations</a>  | 2005/2069 | Not Controlled Action | Completed           | In feature area     |
| <a href="#">Gloucester Park Precinct-expansion of ovals and</a>                   | 2017/7985 | Not Controlled Action | Completed           | In buffer area only |



| Title of referral  | Reference | Referral Outcome                          | Assessment Status | Buffer Status       |
|--|-----------|---|-------------------|---------------------|
| Not controlled action  |           |   |                   |                     |
| <a href="#">community facilities, Margaret River, WA</a>   |           |   |                   |                     |
| <a href="#">Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia</a> | 2015/7522 | Not Controlled Action                     | Completed         | In feature area     |
| <a href="#">INDIGO Central Submarine Telecommunications Cable</a>  | 2017/8127 | Not Controlled Action                     | Completed         | In feature area     |
| <a href="#">Installation of stock proof fencing and a stock crossing 8 km from Karridale WA</a>              | 2012/6427 | Not Controlled Action                     | Completed         | In buffer area only |
| <a href="#">Jalbarragup Telecommunications Tower, WA</a>   | 2017/8026 | Not Controlled Action                     | Completed         | In buffer area only |
| <a href="#">Nuttman Road, Busselton Gravel Extraction, WA</a>  | 2017/8086 | Not Controlled Action                     | Completed         | In buffer area only |
| <a href="#">Proposed Expansion of Existing Gracetown Townsite &amp; Upgrade of Existing Associa</a>          | 2010/5358 | Not Controlled Action                     | Completed         | In buffer area only |
| <a href="#">Reinstating of Firebreaks at McLeod Creek, South West WA</a>                                     | 2012/6402 | Not Controlled Action                     | Completed         | In buffer area only |
| <a href="#">Residential &amp; Light Industrial Development, Vasse WA</a>                                     | 2013/6932 | Not Controlled Action                     | Completed         | In buffer area only |
| <a href="#">Residential Development Riverslea Estate Stage 8, Margaret River, WA</a>                         | 2014/7227 | Not Controlled Action                     | Completed         | In buffer area only |
| <a href="#">Residential-Rural Subdivision, Lot 1 Kudardup Rd, Kudardup, WA</a>                               | 2012/6471 | Not Controlled Action                     | Completed         | In buffer area only |
| <a href="#">Vegetation clearing for sand extraction, Lot 268 Leeuwin Road, Augusta</a>                       | 2013/6860 | Not Controlled Action                     | Completed         | In buffer area only |
| <a href="#">West's gravel pit development, Cowaramup, WA</a>   | 2015/7586 | Not Controlled Action                     | Completed         | In buffer area only |
| Not controlled action (particular manner)  |           |   |                   |                     |
| <a href="#">Ambergate North Residential Development</a>  | 2009/4802 | Not Controlled Action (Particular Manner) | Post-Approval     | In buffer area only |
| <a href="#">Clearing of understorey vegetation for fire management purposes</a>                              | 2010/5788 | Not Controlled Action (Particular Manner) | Post-Approval     | In buffer area only |
| <a href="#">INDIGO Marine Cable Route Survey (INDIGO)</a>  | 2017/7996 | Not Controlled Action (Particular Manner) | Post-Approval     | In feature area     |



| Title of referral   | Reference | Referral Outcome                          | Assessment Status | Buffer Status       |
|---|-----------|---|-------------------|---------------------|
| Not controlled action (particular manner)                         |           |   |                   |                     |
| <a href="#">Locations 2629, 2699 &amp; 2991 - Jamisons Road</a>   | 2002/771  | Not Controlled Action (Particular Manner) | Post-Approval     | In buffer area only |
| <a href="#">Waterloo to Busselton 132kV Transmission Line</a>     | 2002/816  | Not Controlled Action (Particular Manner) | Post-Approval     | In buffer area only |
| Referral decision   |           |   |                   |                     |
| <a href="#">Ambergate North Residential Community (4896 lots)</a> | 2008/4617 | Referral Decision                         | Completed         | In buffer area only |
| <a href="#">Construction of 14.5km 132kV transmission line</a>    | 2009/4995 | Referral Decision                         | Completed         | In buffer area only |
| <a href="#">Controlled Burn</a>                                   | 2001/440  | Referral Decision                         | Completed         | In buffer area only |

Key Ecological Features

[ Resource Information ]

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

| Name   | Region     | Buffer Status       |
|--|------------|---------------------|
| <a href="#">Ancient coastline at 90-120m depth</a> | South-west | In buffer area only |
| <a href="#">Cape Mentelle upwelling</a>            | South-west | In buffer area only |
| <a href="#">Western rock lobster</a>               | South-west | In buffer area only |

| Biologically Important Areas   |                               | [ Resource Information ] |                     |
|--|-------------------------------|--------------------------|---------------------|
| Scientific Name  | Behaviour                     | Presence                 | Buffer Status       |
| Seabirds   |                               |                          |                     |
| <a href="#">Ardenna carneipes</a><br>Flesh-footed Shearwater [82404] | Foraging (in high numbers)    | Known to occur           | In buffer area only |
| <a href="#">Eudyptula minor</a><br>Little Penguin [1085]             | Foraging (provisioning young) | Known to occur           | In buffer area only |
| <a href="#">Hydroprogne caspia</a><br>Caspian Tern [808]             | Foraging (provisioning young) | Known to occur           | In buffer area only |
| <a href="#">Larus pacificus</a><br>Pacific Gull [811]                | Foraging (in high numbers)    | Known to occur           | In buffer area only |

| Scientific Name  | Behaviour                     | Presence       | Buffer Status       |
|--|-------------------------------|----------------|---------------------|
| <a href="#">Onychoprion anaethetus</a><br>Bridled Tern [82845]                                   | Foraging (in high numbers)    | Known to occur | In buffer area only |
| <a href="#">Onychoprion fuscata</a><br>Sooty Tern [82847]  | Foraging                      | Known to occur | In buffer area only |
| <a href="#">Pelagodroma marina</a><br>White-faced Storm petrel [1016]                            | Foraging (in high numbers)    | Known to occur | In buffer area only |
| <a href="#">Pterodroma macroptera macroptera</a><br>Great-winged Petrel (macroptera race) [1035] | Foraging (provisioning young) | Known to occur | In buffer area only |
| <a href="#">Pterodroma mollis</a><br>Soft-plumaged Petrel [1036]                                 | Foraging (in high numbers)    | Known to occur | In buffer area only |
| <a href="#">Puffinus assimilis tunneyi</a><br>Little Shearwater [59363]                          | Foraging (in high numbers)    | Known to occur | In buffer area only |
| <a href="#">Sternula nereis</a><br>Fairy Tern [82949]  | Foraging (in high numbers)    | Known to occur | In buffer area only |
| <a href="#">Thalassarche chlororhynchos bassi</a><br>Indian Yellow-nosed Albatross [85249]       | Foraging (in high numbers)    | Known to occur | In buffer area only |
| Sharks   |                               |                |                     |
| <a href="#">Carcharodon carcharias</a><br>White Shark [64470]                                    | Foraging                      | Known to occur | In buffer area only |
| Whales   |                               |                |                     |
| <a href="#">Balaenoptera musculus brevicauda</a><br>Pygmy Blue Whale [81317]                     | Distribution                  | Known to occur | In buffer area only |
| <a href="#">Megaptera novaeangliae</a><br>Humpback Whale [38]                                    | Migration (north)             | Known to occur | In buffer area only |
| <a href="#">Megaptera novaeangliae</a><br>Humpback Whale [38]                                    | Migration (north and south)   | Known to occur | In buffer area only |

# 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](#)
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- [-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.

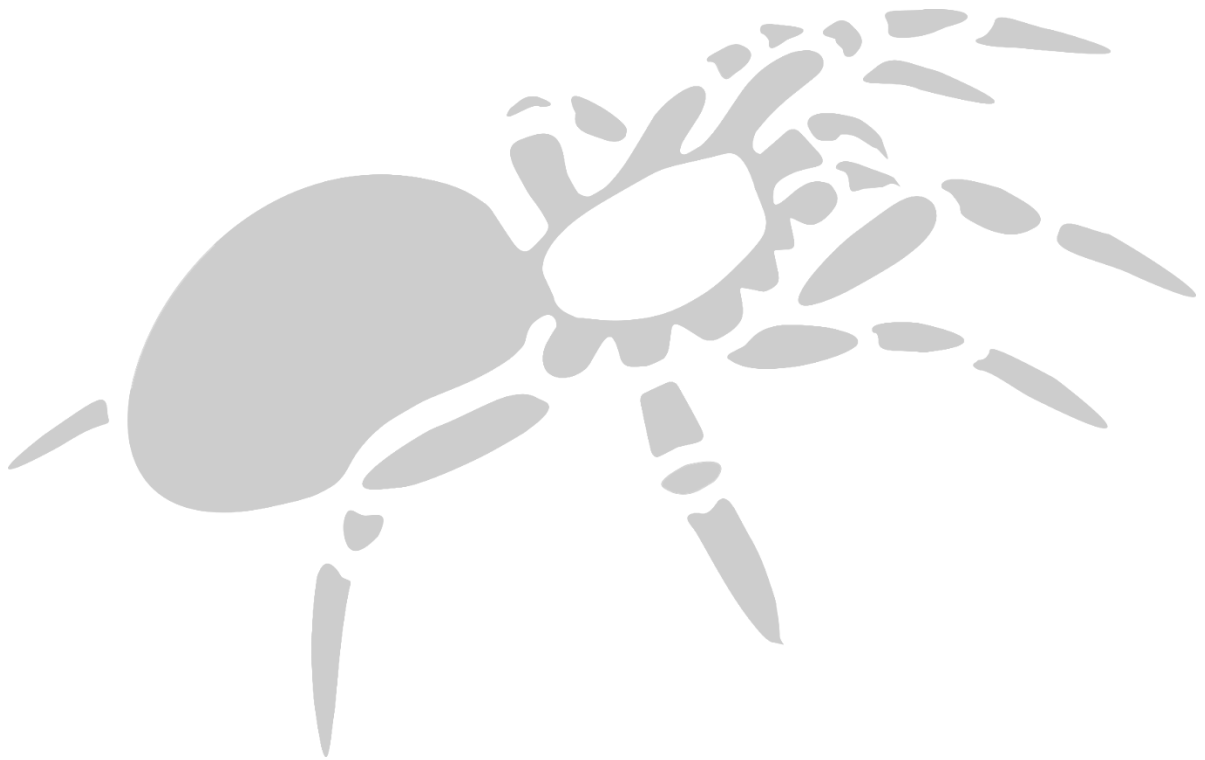
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