



intelligent outcomes | respected experience

Lake Mackay Sulphate of Potash Project

Vertebrate Fauna and Flora Risk Assessment

FINAL

Prepared for
Agrimin Limited
by Strategen

April 2018

Lake Mackay Sulphate of Potash Project

Vertebrate Fauna and Flora Risk Assessment

FINAL

Strategen is a trading name of
Strategen Environmental Consultants Pty Ltd
Level 1, 50 Subiaco Square Road Subiaco WA 6008
ACN: 056 190 419

April 2018

Limitations

Scope of services

This report ("the report") has been prepared by Strategen Environmental Consultants Pty Ltd (Strategen) in accordance with the scope of services set out in the contract, or as otherwise agreed, between the Client and Strategen. In some circumstances, a range of factors such as time, budget, access and/or site disturbance constraints may have limited the scope of services. This report is strictly limited to the matters stated in it and is not to be read as extending, by implication, to any other matter in connection with the matters addressed in it.

Reliance on data

In preparing the report, Strategen has relied upon data and other information provided by the Client and other individuals and organisations, most of which are referred to in the report ("the data"). Except as otherwise expressly stated in the report, Strategen has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report ("conclusions") are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. Strategen has also not attempted to determine whether any material matter has been omitted from the data. Strategen will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to Strategen. The making of any assumption does not imply that Strategen has made any enquiry to verify the correctness of that assumption.

The report is based on conditions encountered and information received at the time of preparation of this report or the time that site investigations were carried out. Strategen disclaims responsibility for any changes that may have occurred after this time. This report and any legal issues arising from it are governed by and construed in accordance with the law of Western Australia as at the date of this report.

Environmental conclusions

Within the limitations imposed by the scope of services, the preparation of this report has been undertaken and performed in a professional manner, in accordance with generally accepted environmental consulting practices. No other warranty, whether express or implied, is made.

Client: Agrimin Limited

Report Version	Revision No.	Purpose	Strategen author/reviewer	Submitted to Client	
				Form	Date
Draft Report	Rev A	For client review	L Stevens-R Firth/ R Firth	Electronic (email)	20/02/18
Final Report	Rev B	For client	R Firth	Electronic (email)	07/03/18
Final Report	Rev C	For client	R Firth	Electronic (email)	04/04/18

Filename: AGI17481_01 R003 Rev C Final - 4 April 2018

Table of contents

1. Introduction	1
1.1 The Project	1
1.1.1 Objectives	1
1.2 Background to Protected Fauna and Flora	2
1.2.1 EPBC Act	2
1.2.2 WC Act	5
1.2.3 EP Act	5
1.2.4 DBCA Priority Lists	5
1.2.5 Informal Recognition of Threatened Fauna and Flora	5
2. Previous Fauna and Flora Surveys	6
3. Database Review	10
3.1 Vertebrate Fauna and Flora Database Results	10
3.1.1 Vertebrate Fauna	10
3.1.2 Flora	11
4. Potential Impacts to Threatened Vertebrate Fauna and Flora	13
4.1.1 Vertebrate Fauna	13
4.1.2 Flora	17
5. References	18

List of tables

Table 1: Previous vertebrate fauna and flora surveys undertaken in the proposed infrastructure areas (southern, eastern and western) and in or near the Study Area.	7
Table 2: Conservation significant fauna recorded and potentially occurring in the Study Area	11
Table 3: Conservation significant flora recorded and potentially occurring in the Study Area	12

List of figures

Figure 1: Study area	3
----------------------	---

List of appendices

Appendix 1 Conservation Categories
Appendix 2 Database Searches

1. Introduction

1.1 The Project

Agrimin Ltd (Agrimin) is looking to develop a Sulphate of Potash (SOP) Project at Lake Mackay (locally known as Wilkinkara) which is a seasonally inundated salt lake located in the Great Sandy Desert on the Western Australian (WA) and Northern Territory (NT) border, with most of the lake located in WA. Lake Mackay is the 4th largest salt lake in Australia dominated by an episodically inundated shallow lake bed as well as surrounding freshwater claypans.

The SOP project comprises 12 tenements covering most of Lake Mackay for a combined area of approximately 347,722 ha (Study Area). The nearest major town is Alice Springs which is approximately 540 km south-east and the nearest community is Kiwirrkurra, approximately 65 km south-west of the lake (Figure 1).

Agrimin has executed Land Access and Native Title Agreements with the Kiwirrkurra People and the Company is encouraged by the high level of support that local Aboriginal people are providing to the Project. The SOP project also lies within the Kiwirrkurra Indigenous Protected Area (IPA) where the Kiwirrkurra Rangers undertake work on country to help conserve the biodiversity and cultural values of the land.

Over the last two years several vertebrate fauna and flora assessments have been undertaken in the Study Area, with a focus on three proposed infrastructure areas (Figure 1). The data from these surveys will provide Agrimin with data to support environmental approvals for the SOP project. This survey data will be used to inform this risk assessment. The risk assessment will be undertaken to determine the potential impacts of the proposed project to threatened vertebrate fauna and flora that may occur in and surrounding the SOP project.

Please note that the risk assessment will not discuss potential impacts of the SOP project to Priority listed fauna (though these species will be listed in this document given they are of limited conservation interest but not covered by legislation), but will focus on those listed under the EPBC Act given the significance of their status. In terms of the potential impacts to flora because of the SOP project, Priority flora will be discussed briefly as there are no other species of conservation interest currently known from the Study Area and the immediate surrounds.

1.1.1 Objectives

The objectives of the risk assessment were to:

- summarise previous vertebrate fauna and flora surveys that have been undertaken in the Study Area for Agrimin and those that have been undertaken nearby where relevant
- examine the records of the WA Department of Biodiversity, Conservation and Attractions (DBCA) threatened fauna and flora database and the Commonwealth Department of the Environment and Energy (DEE) EPBC Protected Matters Search Tool
- identify threatened vertebrate fauna and flora that have been recorded in the Study Area and or in the three proposed infrastructure areas or are likely to occur (based on surveys and database results)
- assess and discuss any potential impacts of the proposed project to threatened vertebrate fauna and flora that may occur in and surrounding the Study Area.

1.2 Background to Protected Fauna and Flora

Fauna and flora is protected formally and informally by various legislative and non-legislative measures.

Legislative measures:

- Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)
- Biodiversity Conservation Act 2016 (BC Act)
- Wildlife Conservation Act 1950 (WC Act)
- Environmental Protection Act 1986 (EP Act).

Non-legislative measures:

- WA Department of Biodiversity, Conservation and Attractions (DBCA) Priority lists for flora, ecological communities and fauna
- recognition of locally significant populations by DBCA.

A short description of each is given below. Other definitions, including species conservation categories are provided in Appendix 1.

1.2.1 EPBC Act

The EPBC Act aims to protect matters of national environmental significance, which are detailed in Appendix 1. Under the EPBC Act, the Commonwealth Department of the Environment and Energy (DEE) lists protected species and Threatened Ecological Communities (TECs) by criteria set out in the Act. Species are conservation significant if they are listed as Threatened (i.e. Critically Endangered, Endangered and Vulnerable) or Migratory.

Bird species protected as Migratory under the EPBC Act include those listed under international migratory bird agreements relating to the protection of birds which migrate between Australia and other countries, for which Australia has agreed. This includes the Japan-Australia Migratory Bird Agreement (JAMBA), the China-Australia Migratory Bird Agreement (CAMBA), the Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA) and the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention).

Some marine fauna or terrestrial fauna that use marine habitats are listed as Marine under the EPBC Act. These species are only considered conservation significant when a proposed development occurs in a Commonwealth marine area (i.e. any Commonwealth Waters or Commonwealth Marine Protected Area). Outside of such areas, the EPBC Act does not consider these species to be matters of national environmental significance so are not protected under the Act. As such, species listed as Marine only under the EPBC Act are not considered to be conservation significant in this assessment.

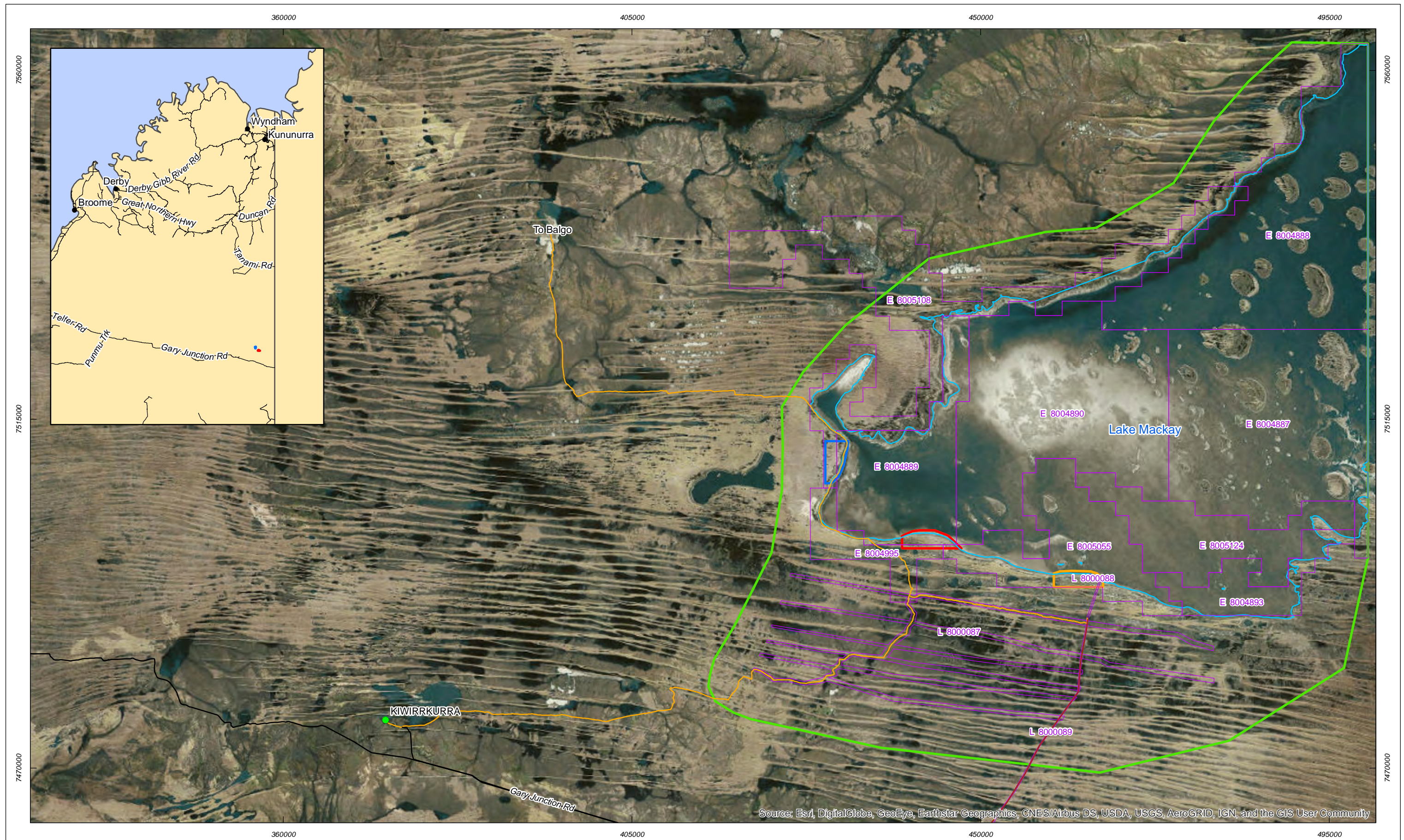


Figure 1: Survey area

Scale 1:450,000 at A3

0 5 10 15 km

Coordinate System: GDA 1994 MGA Zone 52
Note that positional errors may occur in some areas
Date: 22/01/2018
Author: JCrute

Source: Aerial image: ESRI, approx. 2014. Infrastructure areas: Client 11/2017. Survey area: Client 12/2017.
Path: Q:\Consult\2017\AGI\AGI17481\01_GIS_documents\ArcMap_documents\AGI17481_G009_RevF.mxd

Legend

- | | | |
|-----------------|-----------------|---------------------------------------|
| Existing tracks | Mining tenement | Eastern infrastructure area |
| Proposed tracks | Existing roads | Proposed southern infrastructure area |
| Lake Mackay | Study area | Proposed western infrastructure area |

This page is intentionally blank

1.2.2 WC Act

DBCA lists flora and fauna under the provisions of the WC Act as protected and are classified as Schedule 1 to Schedule 7 (flora as Schedule 1 to Schedule 4) according to their need for protection (see Appendix 1). The WC Act makes it an offence to 'take' threatened species without an appropriate licence. There are financial penalties for contravening the WC Act.

1.2.3 EP Act

Significant habitat necessary for the maintenance of fauna indigenous to WA as well as TECs is given special consideration in environmental impact assessments, and areas covered by TECs have special status as Environmentally Sensitive Areas (ESAs) under the EP Act and the Environmental Protection (Clearing of Native Vegetation) Regulations 2004.

1.2.4 DBCA Priority Lists

DBCA lists 'Priority' fauna and flora that have not been assigned statutory protection as 'Scheduled' under the WC Act, but which are under consideration for declaration as 'Scheduled' fauna. In summary, threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority fauna or Priority flora Lists under Priorities 1, 2 or 3 (Appendix 1). These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened flora or fauna. Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4 (Appendix 1). These species require regular monitoring. Assessment of Priority codes 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.

In addition, DBCA maintains a list of Priority Ecological Communities which identifies those communities that need further investigation before possible nomination for TEC status.

Although DBCA Priority species and communities have no formal legal protection, they are under consideration as 'Scheduled' taxa under the WC Act or as ESAs under the EP Act Informal Recognition of fauna and flora.

1.2.5 Informal Recognition of Threatened Fauna and Flora

Certain populations or communities of fauna may be of local significance or interest because of their patterns of distribution and abundance. For example, fauna may be locally significant because they are range extensions to the previously known distribution or are newly discovered species (and have the potential to be of more than local significance). In addition, many species are in decline because of threatening processes (land clearing, grazing, and changed fire regimes) and relict populations of such species assume local importance for DBCA. It is not uncommon for DBCA to make comment on these species of interest.

2. Previous Fauna and Flora Surveys

The Study Area is very remote, with the nearest community being Kiwirrkurra with around 200 people lying approximately 65 km to the south-west of Lake Mackay. The nearest population of note is Alice Springs which is approximately 580 km south-east of the lake. Access to the lake from Kiwirrkurra is primarily limited to one main, unsealed track.

Given Lake Mackay's remoteness, there has been relatively little fauna survey work undertaken in or surrounding the Study Area. Nevertheless, there have been some recent surveys completed and these are associated with this Project (Strategen 2018a and b, 360 environmental 2017a, b and c, Ecologia 2017) and nearby in the Kiwirrkurra Indigenous Protected Area (IPA) as part of the Bush Blitz (2015) programme.

The previous fauna and flora surveys are summarised in Table 1 below.

Table 1: Previous vertebrate fauna and flora surveys undertaken in the proposed infrastructure areas (southern, eastern and western) and in or near the Study Area.

Reference	Survey Type	Survey Date	Proximity to proposed infrastructure areas and Study Area	Methods	Broad Habitats Described	*Conservation Significant Species Recorded
Level 2 Vertebrate and Targeted Fauna Survey (Strategen 2018a)	Level 2 vertebrate fauna baseline survey, second season survey and systematic targeted searches for conservation significant species	10 – 21 November 2017	southern and western and other location adjacent to these	<ul style="list-style-type: none"> • Systematic trapping (pitfall [20 L buckets] with 10-15 m drift fence, Elliott, cage and funnel traps) • Bird surveys • Camera traps • Spotlighting • Habitat assessments • Opportunistic observations • Targeted searches for Night Parrot using SM2s • Targeted searches for Bilby, Great Desert Skink and Brush-tailed Mulgara with Kiwirrkurra Rangers using traditional knowledge and the 2-ha plot method. 	<ul style="list-style-type: none"> • Dune / Swale • Claypan Swale • Lake Margin • Sandplain. 	None were recorded
Detailed Flora and Vegetation Assessments Lake Mackay (Strategen 2018b)	Detailed baseline survey and systematic targeted searches for Priority flora	10 – 15 November 2017	southern and western	<ul style="list-style-type: none"> • The survey included an assessment of 10 (50 x 50 m) quadrats and 12 (3 x 3 m) quadrats from 2 transects (in the vegetation of the lake zone) in the western infrastructure area. • Additionally, a series of targeted searches involving walking transects spaced 50 m apart (in the western infrastructure area) and 50 – 100 m apart in the southern area. Opportunistic collections were also undertaken. 	<ul style="list-style-type: none"> • Salt Lake margin • Sandplain • Dunes. 	Five specimens collected in the western and southern area belong to five unknown and potentially new taxa; <i>Tecticornia aff. calyprata</i> [M. Stone LM01.05], <i>Tecticornia aff. calyprata</i> [M. Stone LM01.06], <i>Tecticornia aff. calyprata</i> [M. Stone LM02.03], <i>Tecticornia aff. calyprata</i> [A. Dalton LM OP.03] and <i>Tecticornia aff. halocnemoides subsp. longispicata</i> [M. Stone LM01.04]. These taxa are therefore potentially conservation significant.

Reference	Survey Type	Survey Date	Proximity to proposed infrastructure areas and Study Area	Methods	Broad Habitats Described	*Conservation Significant Species Recorded
Level 2 Vertebrate Fauna Survey at Lake Mackay for Agrimin (360 Environmental July 2017a)	Level 2 vertebrate fauna baseline survey	10 – 19 May 2017	Southern and eastern and several Islands in the Lake	<ul style="list-style-type: none"> • Systematic trapping (pitfall [20 L buckets] with 10-15 m drift fence, Elliott, cage and funnel traps) • Bird surveys • Bat surveys using SM2 detectors • Camera traps • Spotlighting • Habitat assessments • Opportunistic observations • Searches for evidence of conservation significant species. 	<ul style="list-style-type: none"> • Dune • Swale • Claypan swale • Lake margin. 	None were recorded
Detailed Flora and Vegetation Assessment at Lake Mackay for Agrimin (360 Environmental July 2017b)	Second-phase Detailed flora and vegetation assessment	14 – 23 April 2017	Southern and eastern and several Islands in the Lake	<ul style="list-style-type: none"> • The survey included an assessment of 34 (50 x 50 m) quadrats, 24 (3 x 3m) quadrats from 4 transects and 11 relevés • Additionally, a series of targeted searches and opportunistic collections were undertaken in the Study Area. 	<ul style="list-style-type: none"> • Sandplain • Dunes • Island dunes • Claypan plains • Island swales • Lake margin • Saltpan. 	<ul style="list-style-type: none"> • <i>Tecticornia globulifera</i> (P1) • <i>Goodenia virgata</i> (P2) • <i>Goodenia modesta</i> (P3).
Waterbird Survey at Lake Mackay for Agrimin (360 Environmental July 2017c)	Primarily a waterbird survey (also comprised other birds) that included ground and aerial assessments	14 -17 April 2017	Same Survey Area	<ul style="list-style-type: none"> • Ground survey with binoculars and spotting scope (visual and aural identification of birds) • Aerial survey with helicopter – identification with the unaided eye and binoculars. 	<ul style="list-style-type: none"> • Saline open water of Lake Mackay • Claypans to the south of Lake Mackay. 	<ul style="list-style-type: none"> • Australian Painted Snipe (<i>Rostratula australis</i>) • Common Greenshank (<i>Tringa nebularia</i>) • Red-necked Stint (<i>Calidris ruficollis</i>) • Sharp-tailed Sandpiper (<i>Calidris acuminata</i>).

Reference	Survey Type	Survey Date	Proximity to proposed infrastructure areas and Study Area	Methods	Broad Habitats Described	*Conservation Significant Species Recorded
Level 1 fauna and single phase level 2 flora assessment at Lake Mackay for Agrimin (Ecologia 2017)	Level 1 fauna and Level 2 flora and vegetation assessment (please note that only the fauna component is summarised here)	6-13 September 2016	Similar Survey Area	<ul style="list-style-type: none"> Habitat assessments Transects on foot to search for signs i.e. burrows, scats and footprints Camera traps Bat survey using Song Meter 2 (SM2) acoustic recording device Opportunistic observations A total of 31 (50 m x 50 m) quadrats, six transects of 3 m x 3 m quadrats (36 quadrats) were established to enable the vegetation communities to be defined. 	<ul style="list-style-type: none"> Sandplain Saline Flats Dunefields Samphire Mulga Woodlands Stony Rise. 	<ul style="list-style-type: none"> Rainbow Bee-eater (<i>Merops ornatus</i>) Northern Marsupial Mole (<i>Notoryctes caurinus</i>) (sign - old tunnels evident in cross section of a dune) Four Priority flora taxa were recorded in the study area: <i>Tecticornia globulifera</i> (P1), <i>Goodenia virgata</i> (P2), <i>Thysanotus sp.</i> Desert East of Newman (P2) and <i>Stackhousia clementii</i> (P3).
Kiwirrkurra Indigenous Protected Area Bushblitz Survey (Cowan, M., Bray, R., & Paltridge, R. 2015)	Survey of mammals and reptiles	5-19 September 2015	Some sites in the current Study Area, the remaining around Kiwirrkurra and Nyinmi (about 100 km west of Kiwirrkurra)	<ul style="list-style-type: none"> Pitfall traps (20 L buckets) with 50-60 m drift fence Funnel traps Elliott traps Camera traps Bat survey using Song Meter 2 (SM2) acoustic recording device Timed active foraging Spotlighting Opportunistic observations. 	<ul style="list-style-type: none"> Sandplain Dunes Mulga Woodland Low rocky hills Boulder piles. 	<ul style="list-style-type: none"> Great Desert Skink (<i>Liopholis kintorei</i>) Northern Marsupial Mole (<i>Notoryctes caurinus</i>) tracks Bilby (<i>Macrotis lagotis</i>).

*Conservation significance is based on listing as of submission date on report and includes species listed as Priority, Scheduled under the WC Act and Threatened under the EPBC Act.

3. Database Review

Searches of DBCA's threatened fauna and flora database (150 km search), EPBC Protected Matters Search Tool (60 km search) and NatureMap (3 x 40 km search [40 km is the maximum search that can be undertaken with this database]) radial searches (centred on approximately the middle of the Study Area) were undertaken to identify fauna species of conservation significance potentially occurring in the Study Area (DBCA 2017a, DBCA 2017b, DEE 2017). Please note that, originally, an 80 km radial search request of the threatened fauna database was submitted to DBCA, however, a 150 km buffer was applied to select a greater number of records that adequately demonstrate the potential species composition in the Survey Area, but more importantly species of conservation significance. Due to the limitations of the NatureMap search capability, three 40 km searches were undertaken and compiled to adequately demonstrate the potential for species of conservation significance to occur in the Study Area.

Collectively, these sources were used to compile a list of conservation significant species that have been previously recorded near or in the Study Area (Appendix 2) [noting that the appendix will include all fauna not just conservation significant species]. This list invariably includes some species that do not occur in the Study Area as some fauna have a limited or patchy distribution or a high level of habitat specificity for habitats which are not located in the Study Area. These fauna were examined and then excluded from the list, where relevant.

It is important to note that the EPBC PMST is not entirely based on point records but also on broader information (e.g. bioclimatic distribution models), whereas the DBCA threatened fauna database and NatureMap are solely based on point records. Consequently, the results of the EPBC PMST are in some cases less accurate, particularly at a local scale. As a result, the EPBC PMST can include species that do not occur in the Study Area because, for example, there is no habitat available or they are now known to be locally extinct.

3.1 Vertebrate Fauna and Flora Database Results

The results of the vertebrate fauna and flora database searches are outlined below, including their conservation status and whether they have been recorded in the Study Area and their likelihood of occurrence.

The Likelihood of each species occurring is based on the following criteria:

- Recorded: Recorded during one of the field surveys
- Likely: Suitable habitat is present in the Study Area and the Study Area is in the species' known distribution
- Possible: Limited or no suitable habitat is present in Study Area, but is nearby. The species has good dispersal abilities and is known from the general area
- Unlikely: No suitable habitat is present in Study Area but is nearby, the species has poor dispersal abilities but is known from the general area or suitable habitat is present, however, the Study Area is outside of the species' known distribution.

3.1.1 Vertebrate Fauna

A total of 25 conservation significant species (including Priority species) were present in the database searches (Appendix 2). These comprised one reptile species, 19 bird species and five mammal species.

The DBCA threatened fauna database, NatureMap and the EPBC Protected Matters Search Tool (PMST) returned a small number of species known to be historical records of species now extinct in the local area e.g. Red-tailed Phascogale (*Phascogale calura*) (locally called Kenngoor) and the Central Hare-wallaby (*Lagorchestes asomatus*) (locally called Kuluwarri). Also, there were database errors including the Grey Wagtail (*Motacilla cinerea*) which is a rare visitor and has just two confirmed records (Johnstone & Storr 1998a). These species have been omitted from any further discussion.

In addition, many fauna species are not distributed evenly across the landscape, being more abundant in some places than others where they can be more readily detectable (Currie 2007). Furthermore, some small, common, ground-dwelling reptile and mammal species tend to be habitat specific, and many bird species can occur as regular migrants, occasional visitors or vagrants. Therefore, these species have been omitted from any further discussion.

With these species removed, a total of 21 conservation significant species (including Priority species) were identified as potentially occurring in the Study Area. The likelihood of these species occurring in the Study Area is outlined below in Table 2. Please note that the risk assessment will not discuss potential impacts of the SOP project to fauna considered Unlikely or Possible (except for the Night Parrot given its conservation status) to occur in the Study Area and Priority listed fauna, but will focus on those listed under the EPBC Act (see Strategen 2018a for Likelihood assessment).

Table 2: Conservation significant fauna recorded and potentially occurring in the Study Area

Species	Conservation Status (EPBC ACT, WC ACT & Priority Listing)	Likelihood of Occurrence
Great Desert Skink (<i>Liopholis kintorei</i>) (locally called Tjakura)	Vu, S3	Likely
Fork-tailed Swift (<i>Apus pacificus</i>)	MiMa, S5	Recorded
Cattle Egret (<i>Ardea ibis</i>)	MiMa, S5	Unlikely
Eastern Great Egret (<i>Ardea modesta</i>)	MiMa, S5	Unlikely
Grey Falcon (<i>Falco hypoleucos</i>)	Vu, S3	Unlikely
Oriental Plover (<i>Charadrius veredus</i>)	MiMa, S5	Likely
Australian Painted Snipe (<i>Rostratula australis</i>)	En, S2	Recorded
Common Sandpiper (<i>Actitis hypoleucos</i>)	MiMa, S5	Likely
Sharp-tailed Sandpiper (<i>Calidris acuminata</i>)	MiMa, S5	Recorded
Pectoral Sandpiper (<i>Calidris melanotos</i>)	MiMa, S5	Likely
Common Greenshank (<i>Tringa nebularia</i>)	MiMa, S5	Recorded
Red-necked Stint (<i>Calidris ruficollis</i>)	MiMa, S5	Recorded
Oriental Pratincole (<i>Glareola maldivarum</i>)	MiMa, S5	Likely
Night Parrot (<i>Pezoporus occidentalis</i>)	En, S1	Possible
Princess Parrot (<i>Polytelis alexandrae</i>)	Vu	Likely
Rainbow Bee-eater (<i>Merops ornatus</i>)	Ma, S5	Recorded
Barn Swallow (<i>Hirundo rustica</i>)	Ma, S5	Unlikely
Striated Grasswren (<i>Amytornis striatus striatus</i>)	P4	Possible
Brush-tailed Mulgara (<i>Dasycercus blythi</i>)	P4	Recorded
Bilby (<i>Macrotis lagotis</i>) (locally called Ninu)	Vu, S3	Likely
Northern Marsupial Mole (<i>Notoryctes caurinus</i>) (locally called Kararratul)	P4	Recorded

En = Listed as Endangered under the EBPC Act, Vu = Listed as Vulnerable under the EBPC Act, Mi = Listed as Migratory under the EBPC Act, Ma = Listed as Marine under the EBPC Act, S = Scheduled (1 - 7) under the WC Act, P = Listed as Priority (1 - 4) by DBCA.

3.1.2 Flora

A total of 13 conservation significant species were identified as potentially occurring in the Study Area based on DBCA database searches (DBCA 2017c; DBCA 2017d), NatureMap (DBCA 2017c), the DEE Protected Matters Search Tool (DEE 2017) and records from previous botanical studies. All but one of these 13 species are Priority flora (Table 3).

Table 3: Conservation significant flora recorded and potentially occurring in the Study Area

Species	Conservation Status (EPBC ACT, WC ACT & Priority Listing)	Likelihood of Occurrence
<i>*Eleocharis papillosa</i> (Dwarf Desert Spike-rush)	Vu	Possible
<i>Maireana</i> sp. Patience	P1	Unlikely
<i>Mitrasacme katjarranka</i>	P1	Unlikely
<i>Philothea eremicola</i>	P1	Unlikely
<i>Tecticornia globulifera</i>	P1	Recorded
<i>Eremophila jamesiorum</i>	P2	Unlikely
<i>Goodenia virgate</i>	P2	Recorded
<i>Thysanotus</i> sp. Desert East of Newman	P2	Possible
<i>Dampiera atriplicina</i>	P3	Possible
<i>Eragrostis lanicaulis</i>	P3	Unlikely
<i>Goodenia modesta</i>	P3	Recorded
<i>Korthalsella leucothrix</i>	P3	Unlikely
<i>Stackhousia clementii</i>	P3	Recorded

*Please note this species was not present in the DEE Protected Matters Search Tool for the radial search area undertaken, but there is a record from about 30 km east of the lake (WA edge) in the NT.

En = Listed as Endangered under the EBPC Act, Vu = Listed as Vulnerable under the EBPC Act, Mi = Listed as Migratory under the EBPC Act, Ma = Listed as Marine under the EBPC Act, S = Scheduled (1 - 4) under the WC Act, P = Listed as Priority (1 – 4) by DBCA.

4. Potential Impacts to Threatened Vertebrate Fauna and Flora

The following potential impacts associated with the SOP project to threatened vertebrate fauna and flora that occur or potentially occur in the Study Area are discussed. The ecology of species considered in this section is not discussed in this document, but can be found in the relevant reports listed in Table 1 above in section 2.

4.1.1 Vertebrate Fauna

Great Desert Skink

Great Desert Skinks occupy a variety of habitat types within the western deserts region. They generally occur on hummock grass sandplains and some adjacent dune field swales. Sandplain vegetated by spinifex (*Triodia* spp.) and scattered shrubs is the habitat type most widely used, the extent of which ranges in size from a few hundred hectares to tens of thousands of hectares. They are characterised by a dominant cover of spinifex grasses, usually *Triodia basedowii*, but also *T. pungens* and *T. schinzii* (all of which were recorded in the Survey Area). Growing among the spinifex hummocks are scattered shrubs and occasional trees including *Acacia*, *Eremophila*, *Grevillea*, *Hakea*, and occasionally *Eucalyptus* (McAlpin 2001).

The DBCA threatened fauna database returned 33 records of the Great Desert Skink in the search area (as per the database search parameters defined in section 3), all from the vicinity of Kiwirrkurra. Except for three records, they are all from 2014 and 2016. A Bushblitz Survey undertaken near Kiwirrkurra and Lake Mackay in 2015 also recorded the Great Desert Skink (Bushblitz 2015). According to the Recovery Plan for the Great Desert Skink, the upper limit population estimation for the Kiwirrkurra community and surrounds including Lake Mackay area is thought to be <500 individuals.

Although no Great Desert Skinks have been recorded in the three proposed infrastructure areas or greater Study Area, the areas are within its known distribution and there is suitable habitat present. The Great Desert Skink is therefore considered Likely to occur. Their habitat is also widespread and common in the greater Study Area and, importantly, it is also more broadly represented around the lake and across the region. However, potential impacts to the Great Desert Skink, particularly if proposed infrastructure were to disturb burrows (of which up to 10 individuals may occupy a burrow system) because of the SOP project are considered moderate.

Further targeted surveys are recommended once a preferred infrastructure site has been chosen.

Fork-tailed Swift

The Fork-tailed Swift is a summer migrant to Australia usually during the months of October-April. The Fork-tailed Swift is an aerial species which forages high above the tree canopy and is independent of terrestrial habitats. It occurs in flocks of up to 2,000 birds and is often seen accompanying Tree Martins (*Petrochelidon nigricans*) and Masked Wood swallows (*Artamus personatus*) (Johnstone & Storr 1998a).

The DBCA threatened fauna database did not return any records of the Fork-tailed Swift. The species was recorded during the May fauna 2017 survey (observed flying overhead on Island 3), however, it was not recorded during the November fauna 2017 survey (360 Environmental 2017a, Strategen 2018a). While the species will not be reliant on the habitats of the proposed infrastructure areas or greater Study Area, it is likely to visit them as part of its larger foraging home range.

Therefore, potential impacts to the Fork-tailed Swift because of the SOP project are considered very low to insignificant.

Waterbirds

The following waterbirds are listed under the EPBC Act because they are migratory and or endangered and have been either recorded or are considered likely to occur in the Study Area:

- Australian Painted Snipe (*Rostratula australis*)
- Sharp-tailed Sandpiper (*Calidris acuminata*)
- Common Greenshank (*Tringa nebularia*)
- Red-necked Stint (*Calidris ruficollis*)
- Oriental Plover (*Charadrius veredus*)
- Common Sandpiper (*Actitis hypoleucos*)
- Pectoral Sandpiper (*Calidris melanotos*)
- Oriental Pratincole (*Glareola maldivarum*).

These migratory shorebird species are mostly present in Australia during the non-breeding period, from as early as August to as late as April/May each year. During the waterbird survey in April 2017 very few species of waterbirds were present on the lake or on the lake margins and their densities were low (360 Environmental 2017c). This is likely the result of relatively low levels of water in the lake at the time of the survey (114 days post a large rainfall event), which in turn resulted in high levels of salinity that were about 3-5 times greater than sea water and too high for common waterbird food items found in saline lakes such as brine shrimp (360 Environmental 2017c).

Individual lakes are also known to vary in their suitability as habitat over time, for example, the abundance and diversity of waterbirds falls quickly with increasing salinity in hypersaline lakes (Kingsford-Smith *et al.* 2010). Arid-zone wetlands are always drying or flooding which stimulates movements of waterbirds in response to resource abundance and depletion (Kingsford-Smith *et al.* 2010).

However, the numbers of species and densities were much greater in the claypans that surround the lake, particularly at the southern end, but this was primarily because this was where survey effort at claypans was the greatest and it is where two potential infrastructure options are located (Figure 1). There are no claypans present in the proposed western infrastructure option area and limited lake margin habitat (Strategen 2018a).

Consequently, it is important to note that these migratory bird species are likely to only visit the lake and its claypans when episodically significant rainfall events occur and fill these waterbodies, including the lake. They will, therefore, likely utilise parts of the Study Area sporadically and are unlikely to depend exclusively on habitat present in and surrounding the proposed infrastructure areas. This habitat is also widespread and common in the greater Study Area and, importantly, it is also more broadly represented around the lake and across the region. Therefore, potential impacts to waterbirds because of the SOP project are considered low.

Further waterbird surveys within a few weeks of a large rainfall event are recommended to further understand the composition, abundance and distribution of waterbirds at the lake, including claypans.

Night Parrot

DBCA's threatened fauna database has no records of the Night Parrot in the search area (as per the database search parameters defined in section 3) and there is very limited ecological information available for this species such as its preferred habitat (only very broad information). However, with increasing conservation focus being given to this species, more information is likely to become available, e.g. the discovery of Night Parrot nests in large Spinifex hummocks in Queensland (Murphy *et al.* 2017) which is a common and widespread habitat type throughout much of south-east Queensland and WA, including the Lake Mackay area.

No Night Parrot calls were recorded during the November 2017 targeted fauna survey (Strategen 2018a). It is important to note, however, that conditions during at least some of the sample period were very windy and the likelihood of detecting Night Parrots in such conditions is considered practically zero. A more sophisticated recogniser system is currently being developed that will include a wider range of calls, including the Western Australian Night Parrot calls. Until the Lake Mackay acoustic data can be analysed using this new method, the results should be treated cautiously and in this sense, are considered preliminary (Murphy 2017).

Furthermore, preliminary analyses based on acoustic data from Queensland show that Night Parrot calling behaviour varies significantly in relation to precedent rainfall (Murphy and Leseberg 2017). Specifically, when rainfall exceeds one standard deviation from the long-term mean, calling rates increase and more calling occurs through the night and calls are detected over a wider area away from the roosting area (Murphy and Leseberg 2017). During dry times, calling is mostly limited to the core roosting areas and occurs mostly in the first hour after sunset and before sunrise.

Evidently, rainfall affects the detectability of Night Parrots. During dry times, when birds call less over a much smaller area and consequently detection rates are low. Birds can typically only be detected at the roost site, and sample sites must be selected that provide comprehensive spatial coverage. In contrast, sampling during post-wet periods can have greater spatial separation because birds call over a wider area (Murphy and Leseberg 2017).

Based on rainfall data collected at Walungurru Airport conditions during the Night Parrot survey are at the dry end of the spectrum. While there has been some recent rain, totals have not exceeded the one-standard deviation threshold that is known to increase detectability in Queensland. Rainfall did exceed this threshold in December 2016 (360 Environmental 2017a and c), but the increase in detectability is likely to have only lasted until mid-2017. It should be noted that SM2 acoustic units deployed close to the Survey Area in May 2017 (though this was limited), i.e. within the potential increased detectability period, and no Night Parrot calls were identified. However, habitat selection may not have been optimal for Night Parrots at that time (Strategen 2018a).

Given suitable habitat in the proposed infrastructure areas and greater Study Area, together with several Night Parrot records in the region (including one recently confirmed record 240 km NW of Lake Mackay [Murphy and Leseberg 2017]) suggests that Night Parrots are considered Possible to occur. Based on the Likelihood criteria in section 3.1 a species such as the Night Parrot would usually be considered Likely to occur, however, based on the limited ecological information available on the species habitat use and preference we have given it a Likelihood of Possible.

Potential impacts to the Night Parrot, particularly if proposed infrastructure were to disturb roost areas because of the SOP project are considered moderate.

Further targeted surveys are recommended (and are currently being planned) to get a better understanding of their presence or absence at a more suitable period i.e. after the wettest period which would be April, unless a large rainfall even occurs at some other time.

Princess Parrot

The species inhabits shrublands and savanna woodlands in swales between sand dunes, with occupied sites typically consisting of *Triodia* spp. and a variety of shrubs and scattered emergent trees. The Princess Parrot feeds on the seeds of grasses, including spinifex, and nests have been found in Desert Oak (*Allocasuarina decaisneana*) (Higgins 1999), a tree species recorded in the proposed western infrastructure area.

The Princess Parrot is said to breed from September to January, however, dependent young have been recorded in July (Carter 1993), and it is possible that breeding may occur at any time of the year following rainfall (Garnett *et al.* 2011). The Princess Parrot nests in hollows or holes in Eucalyptus trees (including *E. camaldulensis*) close to watercourses, or occasionally in *A. decaisneana* trees away from water (Forshaw & Cooper 2002). The nest consists of a pile of decaying wood dust, upon which it lays a clutch of three to six white eggs (Forshaw & Cooper 2002).

The movements of the Princess Parrot are poorly known. It is said to be highly nomadic or irruptive (Carter 1993), and it may possibly be both (Higgins 1999). The available evidence suggests that it may be dispersive, but any assessment of the movement patterns is purely speculative due to a lack of information (Higgins 1999). The core range is believed to be in the Great Sandy Desert (Higgins 1999), but the movement of birds within the core range, and movements associated with records outside of the core range, are not known (Higgins 1999). It has been speculated that movements are governed by seasonal changes in conditions, and by the availability of food (Garnett *et al.* 2010). It has also been speculated that movements are governed by the occurrence of ephemeral water, and the flowering of Acacia shrubs (Garnett *et al.* 2010).

Although the Princess Parrot was not recorded in the Study Area, the DBCA threatened fauna database returned a single record of the Princess Parrot from Kiwirrkurra in 2012. Because of its known distribution and the presence of suitable habitat in the Study Area, the Princess Parrot is considered Likely to occur.

Given this species is highly mobile and most likely nomadic or irruptive because of resources during good seasons (because of large rainfall events) the potential impacts to the Princess Parrot because of the SOP project are considered low.

Rainbow Bee-eater

This species is one of the most common and widespread birds in Australia with a distribution that covers the majority of Australia (Barrett *et al.* 2003). The Rainbow Bee-eater is also a common and widespread species in WA, except the drier interior of the State and the far south-west. It occurs in lightly wooded, often sandy country, preferring areas near water. It feeds on airborne insects and nests throughout its range in WA in burrows excavated in sandy ground or banks, often at the margins of roads and tracks (Johnstone & Storr 1998). In WA, this bird can occur as a 'resident, breeding visitor, postnuptial nomad, passage migrant and winter visitor' (Johnstone & Storr 1998).

There is a single record in the DBCA threatened fauna database, but it was not recorded during the May and November 2017 surveys (see Table 2). It was, however, recorded during the Ecologia survey (Ecologia 2017). The Survey Area provides suitable foraging habitat, as such, it is considered as Likely to occur.

Given this species is highly mobile and common and widespread, the potential impacts to the Rainbow Bee-eater because of the SOP project are considered low.

Bilby

The three proposed infrastructure areas and Study Area contain suitable habitat in terms of sandy areas in which Bilbies can construct burrows (Strategen 2018a). This suitable habitat is most likely the Swale and Claypan Swale habitat where the sand is sufficiently compact in which to construct burrows. Although Dune habitat may be suitable in places, it is likely too soft in most areas to allow Bilbies to construct their burrows.

The DBCA threatened fauna database returned 70 records for the Bilby from Kiwirrkurra from 2000 to 2016. Except for four camera trap records, all were secondary signs. During the May and November 2017 surveys (see Table 2), no Bilbies were captured in traps, none were recorded on camera traps and no signs, such as scats, were observed. In addition, no Bilbies were recorded in the Level 1 survey undertaken by Ecologia (Ecologia 2017). A Bushblitz Survey undertaken near Kiwirrkurra and Lake Mackay in 2015, however, did return Bilby records. During this survey, Bilbies were recorded on camera traps and through signs such as burrows (Cowan *et al.* 2015).

Although no signs of the Bilby were recorded in this survey, recent local records, together with the presence of suitable habitat in the proposed infrastructure areas and greater Study Area means that the Bilby is considered as Likely to occur.

Potential impacts to the Bilby, particularly if proposed infrastructure were to disturb areas with burrows because of the SOP project are considered moderate.

Further targeted surveys are recommended to get a better understanding of their presence or absence in the proposed infrastructure areas and Study Area.

4.1.2 Flora

Dwarf Desert Spike-rush

The only record of the Dwarf Desert Spike-rush comes from the north-eastern edge of Lake Mackay in the NT, about 30 km from WA border. This species seems to prefer fresh water swamps (with fringing vegetation) and semi saline lakes – habitats that are present around the lake. However, Fresh water swamps are much more limited from extensive observations while traversing between sites across the lake (in a Helicopter), particularly the southern section (see Table 1). This species had not been recorded during the flora and vegetation surveys that have been undertaken for the SOP project (see Table 1).

Given the presence of some suitable habitat this species is considered as Possible to occur, particularly in the Study Area. Therefore, potential impacts to the Dwarf Desert Spike-rush because of the SOP project are considered low.

Any future flora and vegetation surveys should target swamps and vegetated claypans that occur in the proposed infrastructure areas and the greater Study Area.

Priority Flora

A number of flora surveys and targeted surveys have addressed Priority flora species (Table 1) that potentially occur in the Study Area.

A total of 13 conservation significant species were identified as potentially occurring in the Study Area, of these, 12 are Priority flora (Table 3). A total of three Priority species are considered as potentially occurring in the Study Area due to the presence of preferred soil type/habitat occurring within the Study Area. A total of six Priority species are considered unlikely to occur, due to a lack of preferred soil type/habitat occurring within the Study Area.

Any potential impacts to these species associated with the SOP project are likely to be minimal given their status and the presence of suitable habitat in the greater Study Area.

Any future targeted flora surveys undertaken would likely further document their abundance and distribution within the greater Study Area.

5. References

- Carter, M. (1993). Alexandra's or Princess Parrot – status and normal range. *Wingspan* 12, 32-35.
- Cowan, M., Bray, R., and Paltridge, R. (2015). Kiwirrkurra Indigenous Protected Area Bushblitz Survey.
- Currie, D. J. (2007). Disentangling the roles of environment and space in ecology. *Journal of Biogeography* 34, 2009-2011.
- Ecologia (2017). Level 1 fauna and single-phase level 2 flora assessment at Lake Mackay for Agrimin.
- Department of Biodiversity, Conservation and Attractions [DBCA]. (2017a). Threatened and Priority Fauna Information (custom search).
- Department of Biodiversity, Conservation and Attractions [DBCA]. (2017b). NatureMap: Mapping Western Australia's Biodiversity. Retrieved June 2017, from <http://naturemap.dec.wa.gov.au/>.
- Department of Biodiversity, Conservation and Attractions [DBCA]. (2017c). Request for Rare Flora Information (custom search).
- Department of Biodiversity, Conservation and Attractions [DBCA]. (2017d). Threatened and Priority Ecological Communities Information (custom search).
- Department of the Environment and Energy [DEE] (2017). Protected Matters Search Tool, Accessed from <<http://www.environment.gov.au/epbc/pmst/index.html>> Commonwealth of Australia.
- Forshaw, J.M. & W.T. Cooper (2002). *Australian Parrots*, 3rd edition. Robina, Queensland: Alexander Editions.
- Garnett, S. T., Szabo, J.K., & Dutson, G. (2011). The Action Plan for Australian Birds 2010. Collingwood, Victoria: CSIRO Publishing and Birds Australia.
- Higgins, P. J. (ed.) (1999). Handbook of Australian, New Zealand and Antarctic Birds. Volume Four - Parrots to Dollarbird. Melbourne: Oxford University Press.
- Johnstone, R. E. & Storr, G. M. (2004). Handbook of Western Australian Birds. Volume II - Passerines (Blue-winged Pitta to Goldfinch). Western Australian Museum.
- Kingsford-Smith, R. T., Rosier, D. A. & J. L. Porter (2010). Australian waterbirds - time and space travellers in dynamic desert landscapes. *Marine and Freshwater Research* 61, 875-884.
- McAlpin, S. (2001). A recovery plan for the Great Desert Skink (*Egernia kintorei*) 2001-2011. Arid Lands Environment Centre, Alice Springs.
- Murphy, S. A. (2017). 2017 Lake Mackay Night Parrot Surveys, Acoustic data analyses, Preliminary report. Prepared by Adaptive NRM for Strategen.
- Murphy, S., & Leseberg, N. (2017). Night Parrot Survey Advice for the Lake Mackay Area November 2017: Technical Report to Strategen Environmental by Adaptive NRM.
- Murphy, S.A., Silcock, J., Murphy, R., Reid, J., and Austin, J.J. (2017). Movements and habitat use of the night parrot *Pezoporus occidentalis* in south-western Queensland. *Austral Ecology*. doi:10.1111/aec.12508 42, 858-868.
- Strategen Environmental (2018a). Level 2 Vertebrate and Targeted Fauna Survey at Lake Mackay for Agrimin.
- Strategen Environmental (2018b). Detailed Flora and Vegetation Assessment at Lake Mackay for Agrimin.
- 360 Environmental (July 2017a). Level 2 Vertebrate Fauna Survey at Lake Mackay for Agrimin.

360 Environmental (July 2017b). Detailed Flora and Vegetation Assessment at Lake Mackay for Agrimin.

360 Environmental (July 2017c). Waterbird Survey at Lake Mackay for Agrimin.

Appendix 1

Conservation Categories

Western Australian Threatened Fauna and Flora Categories Wildlife Conservation Act 1950 (WA)

Category	Code	Description
Schedule 1	S1	Species that are extant and considered to be facing an extremely high risk of becoming extinct or rare in the wild, as critically endangered, and therefore in need of special protection.
Schedule 2	S2	Species that are extant and considered to be facing a very high risk of becoming extinct or rare in the wild, as critically endangered, and therefore in need of special protection.
Schedule 3	S3	Species that are extant and considered to be facing a high risk of becoming extinct or rare in the wild, as critically endangered, and therefore in need of special protection.
Schedule 4	S4	Fauna and Flora presumed to be extinct.
Schedule 5	S5	Migratory birds protected under an international agreement.
Schedule 6	S6	Fauna that is of special conservation need as conservation dependent fauna.
Schedule 7	S7	Other specially protected fauna.

DBCA Fauna and Flora Priority Codes

Category	Code	Description
Priority 1	P1: Poorly-known species	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, e.g. 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 and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.
Priority 2	P2: Poorly-known species	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, e.g. 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 and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.
Priority 3	P3: Poorly-known species	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. Such species are in need of further survey.
Priority 4	P4: Poorly-known species	<p>(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.</p> <p>(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 Conservation Dependent.</p> <p>(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.</p>

Categories of Threatened Fauna Species under the EPBC Act

Conservation Code	Description
Ex	<p>Extinct</p> <p>Taxa which at a particular time if, at the time, there is no reasonable doubt that the last member of the species has died.</p>
ExW	<p>Extinct in the Wild</p> <p>Taxa which is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.</p>
CE	<p>Critically Endangered</p> <p>Taxa which at a particular time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.</p>
En	<p>Endangered</p> <p>Taxa which is not critically endangered and it is facing a very high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.</p>
Vu	<p>Vulnerable</p> <p>Taxa which is not critically endangered or endangered and is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.</p>

Source: Environment Protection and Biodiversity Conservation Act 1999.

Appendix 2

Database Searches

NatureMap Species Report

Created By Guest user on 19/06/2017

Kingdom Animalia
Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 128° 38' 59" E, 22° 39' 38" S
Buffer 40km
Group By Family

Family	Species	Records
Accipitridae	1	1
Agamidae	5	8
Araneidae	1	1
Camelidae	1	1
Canidae	2	2
Caprimulgidae	1	1
Columbidae	3	3
Corvidae	1	1
Cracticidae	1	1
Dasyuridae	1	6
Diplodactylidae	2	3
Estrilidae	1	1
Falconidae	2	2
Felidae	1	1
Gekkonidae	2	3
Lamponidae	1	1
Lycosidae	1	1
Meliphagidae	4	5
Motacillidae	2	2
Muridae	4	5
Nephilidae	1	1
Notoryctidae	1	1
Otididae	1	17
Pachycephalidae	1	1
Pardalotidae	1	1
Psittacidae	2	2
Pygopodidae	1	1
Scincidae	9	15
Scolopendridae	3	4
Varanidae	1	1
Zodariidae	1	2
TOTAL	59	95

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
Accipitridae				
1.	25540 <i>Elanus caeruleus</i> (Black-shouldered Kite)			
Agamidae				
2.	30833 <i>Amphibolurus longirostris</i> (Long-nosed Dragon)			
3.	25459 <i>Ctenophorus isolepis</i> (Crested Dragon, Military Dragon)			
4.	24882 <i>Ctenophorus nuchalis</i> (Central Netted Dragon)			
5.	24904 <i>Moloch horridus</i> (Thorny Devil)			
6.	30955 <i>Tympanocryptis centralis</i> (Central Earless Dragon)			
Araneidae				
7.	<i>Backobourkia collina</i>			
Camelidae				
8.	24254 <i>Camelus dromedarius</i> (Dromedary, Camel)	Y		
Canidae				
9.	24039 <i>Canis lupus subsp. dingo</i> (Dingo)	Y		
10.	24040 <i>Vulpes vulpes</i> (Red Fox)	Y		
Caprimulgidae				
11.	24368 <i>Eurostopodus argus</i> (Spotted Nightjar)			
Columbidae				
12.	24401 <i>Geopelia cuneata</i> (Diamond Dove)			
13.	25585 <i>Geopelia striata</i> (Zebra Dove)			
14.	24407 <i>Ocyphaps lophotes</i> (Crested Pigeon)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
Corvidae				
15.	25593 <i>Corvus orru</i> (Torresian Crow)			
Cracticidae				
16.	24420 <i>Cracticus nigrogularis</i> (Pied Butcherbird)			
Dasyuridae				
17.	30903 <i>Dasyercus blythi</i> (Brush-tailed Mulgara, Ampurta)		P4	
Diplodactylidae				
18.	30933 <i>Lucasium stenodactylum</i>			
19.	24927 <i>Strophurus elderi</i>			
Estrilidae				
20.	30870 <i>Taeniopygia guttata</i> (Zebra Finch)			
Falconidae				
21.	25621 <i>Falco berigora</i> (Brown Falcon)			
22.	25622 <i>Falco cenchroides</i> (Australian Kestrel, Nankeen Kestrel)			
Felidae				
23.	24041 <i>Felis catus</i> (Cat)	Y		
Gekkonidae				
24.	24959 <i>Gehyra variegata</i>			
25.	24961 <i>Heteronotia binoei</i> (Bynoe's Gecko)			
Lamponidae				
26.	<i>Asadipus auld</i>			
Lycosidae				
27.	<i>Hoggicosa alfi</i>			
Meliphagidae				
28.	24559 <i>Acanthagenys rufogularis</i> (Spiny-cheeked Honeyeater)			
29.	24568 <i>Epthianura aurifrons</i> (Orange Chat)			
30.	24570 <i>Epthianura tricolor</i> (Crimson Chat)			
31.	25665 <i>Melithreptus gularis</i> (Black-chinned Honeyeater)			
Motacillidae				
32.	25670 <i>Anthus australis</i> (Australian Pipit)			
33.	24599 <i>Anthus australis subsp. australis</i> (Australian Pipit)			
Muridae				
34.	24223 <i>Mus musculus</i> (House Mouse)	Y		
35.	24224 <i>Notomys alexis</i> (Spinifex Hopping-mouse)			
36.	24235 <i>Pseudomys desertor</i> (Desert Mouse)			
37.	24237 <i>Pseudomys hermannsburgensis</i> (Sandy Inland Mouse)			
Nephilidae				
38.	<i>Nephila edulis</i>			
Notoryctidae				
39.	24147 <i>Notoryctes caurinus</i> (Northern Marsupial Mole, Kakarratul)		P4	
Otididae				
40.	24610 <i>Ardeotis australis</i> (Australian Bustard)			
Pachycephalidae				
41.	24618 <i>Oreoica gutturalis</i> (Crested Bellbird)			
Pardalotidae				
42.	25682 <i>Pardalotus striatus</i> (Striated Pardalote)			
Psittacidae				
43.	25715 <i>Cacatua roseicapilla</i> (Galah)			
44.	24736 <i>Melopsittacus undulatus</i> (Budgerigar)			
Pygopodidae				
45.	25005 <i>Lialis burtonis</i>			
Scincidae				
46.	25045 <i>Ctenotus helenae</i>			
47.	25052 <i>Ctenotus leonhardii</i>			
48.	25057 <i>Ctenotus nasutus</i>			
49.	25066 <i>Ctenotus quattuordecimlineatus</i>			
50.	25073 <i>Ctenotus saxatilis</i> (Rock Ctenotus)			
51.	25125 <i>Lerista bipes</i>			
52.	41412 <i>Liopholis kintorei</i> (Great Desert Skink, Tjakura)		T	
53.	25184 <i>Menetia greyii</i>			

	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
54.	25202	<i>Tiliqua multifasciata</i> (Central Blue-tongue)			
Scolopendridae					
55.		<i>Cormocephalus aurantiipes</i>			
56.		<i>Ethmostigmus rubripes</i>			
57.		<i>Scolopendra morsitans</i>			
Varanidae					
58.	25218	<i>Varanus gouldii</i> (Bungarra or Sand Monitor)			
Zodariidae					
59.		<i>Minasteron perfoliatum</i>			

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

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

NatureMap Species Report

Created By Guest user on 19/06/2017

Kingdom Animalia
Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 128° 27' 19" E, 22° 36' 21" S
Buffer 40km
Group By Family

Family	Species	Records
Accipitridae	1	1
Agamidae	7	18
Araneidae	1	1
Camelidae	1	1
Canidae	2	2
Caprimulgidae	1	1
Carphodactylidae	1	4
Columbidae	3	3
Corvidae	1	1
Cractidae	1	1
Dasyuridae	4	11
Diplodactylidae	4	11
Elapidae	1	2
Estrilidae	1	1
Falconidae	2	2
Felidae	1	1
Gekkonidae	4	12
Lamponidae	2	3
Lycosidae	1	1
Meliphagidae	4	5
Motacillidae	2	2
Muridae	4	11
Nephilidae	1	1
Notoryctidae	1	1
Otididae	1	17
Pachycephalidae	1	1
Pardalotidae	1	1
Psittacidae	2	2
Pygopodidae	3	3
Scincidae	17	51
Scolopendridae	4	8
Varanidae	3	3
Zodariidae	2	4
TOTAL	85	187

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
Accipitridae				
1.	25540 <i>Elanus caeruleus</i> (Black-shouldered Kite)			
Agamidae				
2.	30833 <i>Amphibolurus longirostris</i> (Long-nosed Dragon)			
3.	25459 <i>Ctenophorus isolepis</i> (Crested Dragon, Military Dragon)			
4.	24876 <i>Ctenophorus isolepis</i> subsp. <i>isolepis</i> (Crested Dragon, Military Dragon)			
5.	24882 <i>Ctenophorus nuchalis</i> (Central Netted Dragon)			
6.	42401 <i>Diporiphora paraconvergens</i> (Grey-striped Western Desert Dragon)			
7.	24904 <i>Moloch horridus</i> (Thorny Devil)			
8.	30955 <i>Tympanocryptis centralis</i> (Central Earless Dragon)			
Araneidae				
9.	<i>Backobourkia collina</i>			
Camelidae				
10.	24254 <i>Camelus dromedarius</i> (Dromedary, Camel)	Y		
Canidae				
11.	24039 <i>Canis lupus</i> subsp. <i>dingo</i> (Dingo)	Y		
12.	24040 <i>Vulpes vulpes</i> (Red Fox)	Y		
Caprimulgidae				
13.	24368 <i>Eurostopodus argus</i> (Spotted Nightjar)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
Carphodactylidae				
14.	24966 <i>Nephrurus laevisissimus</i>			
Columbidae				
15.	24401 <i>Geopelia cuneata</i> (Diamond Dove)			
16.	25585 <i>Geopelia striata</i> (Zebra Dove)			
17.	24407 <i>Ocyphaps lophotes</i> (Crested Pigeon)			
Corvidae				
18.	25593 <i>Corvus orru</i> (Torresian Crow)			
Cracticidae				
19.	24420 <i>Cracticus nigrogularis</i> (Pied Butcherbird)			
Dasyuridae				
20.	30903 <i>Dasycercus blythi</i> (Brush-tailed Mulgara, Ampurta)		P4	
21.	24094 <i>Ningai ridei</i> (Wongai Ningai)			
22.	24116 <i>Sminthopsis macroura</i> (Stripe-faced Dunnart)			
23.	24120 <i>Sminthopsis youngsoni</i> (Lesser Hairy-footed Dunnart)			
Diplodactylidae				
24.	30933 <i>Lucasium stenodactylum</i>			
25.	24982 <i>Rhynchoedura ornata</i> (Western Beaked Gecko)			
26.	24924 <i>Strophurus ciliaris</i> subsp. <i>aberrans</i>			
27.	24927 <i>Strophurus elderi</i>			
Elapidae				
28.	25305 <i>Simoselaps anomalus</i> (Desert Banded Snake)			
Estrilidae				
29.	30870 <i>Taeniopygia guttata</i> (Zebra Finch)			
Falconidae				
30.	25621 <i>Falco berigora</i> (Brown Falcon)			
31.	25622 <i>Falco cenchroides</i> (Australian Kestrel, Nankeen Kestrel)			
Felidae				
32.	24041 <i>Felis catus</i> (Cat)	Y		
Gekkonidae				
33.	24956 <i>Gehyra pilbara</i>			
34.	24957 <i>Gehyra purpurascens</i>			
35.	24959 <i>Gehyra variegata</i>			
36.	24961 <i>Heteronotia binoei</i> (Bynoe's Gecko)			
Lamponidae				
37.	<i>Asadipus auld</i>			
38.	<i>Lamponina scutata</i>			
Lycosidae				
39.	<i>Hoggicosa alfi</i>			
Meliphagidae				
40.	24559 <i>Acanthagenys rufogularis</i> (Spiny-cheeked Honeyeater)			
41.	24568 <i>Epthianura aurifrons</i> (Orange Chat)			
42.	24570 <i>Epthianura tricolor</i> (Crimson Chat)			
43.	25665 <i>Melithreptus gularis</i> (Black-chinned Honeyeater)			
Motacillidae				
44.	25670 <i>Anthus australis</i> (Australian Pipit)			
45.	24599 <i>Anthus australis</i> subsp. <i>australis</i> (Australian Pipit)			
Muridae				
46.	24223 <i>Mus musculus</i> (House Mouse)	Y		
47.	24224 <i>Notomys alexis</i> (Spinifex Hopping-mouse)			
48.	24235 <i>Pseudomys desertor</i> (Desert Mouse)			
49.	24237 <i>Pseudomys hermannsburgensis</i> (Sandy Inland Mouse)			
Nephilidae				
50.	<i>Nephila edulis</i>			
Notoryctidae				
51.	24147 <i>Notoryctes caurinus</i> (Northern Marsupial Mole, Kakarratul)		P4	
Otididae				
52.	24610 <i>Ardeotis australis</i> (Australian Bustard)			
Pachycephalidae				
53.	24618 <i>Oreoica gutturalis</i> (Crested Bellbird)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
Pardalotidae				
54.	25682 <i>Pardalotus striatus</i> (Striated Pardalote)			
Psittacidae				
55.	25715 <i>Cacatua roseicapilla</i> (Galah)			
56.	24736 <i>Melopsittacus undulatus</i> (Budgerigar)			
Pygopodidae				
57.	30830 <i>Delma desmosa</i>			
58.	25001 <i>Delma nasuta</i>			
59.	25005 <i>Lialis burtonis</i>			
Scincidae				
60.	30893 <i>Cryptoblepharus buehneri</i>			
61.	25461 <i>Ctenotus brooksi</i>			
62.	25045 <i>Ctenotus helenae</i>			
63.	25050 <i>Ctenotus leae</i>			
64.	25052 <i>Ctenotus leonhardii</i>			
65.	25057 <i>Ctenotus nasutus</i>			
66.	25064 <i>Ctenotus pantherinus</i> subsp. <i>ocellifer</i> (Leopard Ctenotus)			
67.	25066 <i>Ctenotus quattuordecimlineatus</i>			
68.	25073 <i>Ctenotus saxatilis</i> (Rock Ctenotus)			
69.	43381 <i>Eremiascincus pallidus</i> (Western Narrow-banded Skink, Narrow-banded Sand Swimmer)			
70.	25125 <i>Lerista bipes</i>			
71.	25142 <i>Lerista ips</i>			
72.	25178 <i>Lerista vermicularis</i>			
73.	41412 <i>Liopholis kintorei</i> (Great Desert Skink, Tjakura)		T	
74.	25184 <i>Menetia greyii</i>			
75.	25194 <i>Morethia ruficauda</i> subsp. <i>ruficauda</i>			
76.	25202 <i>Tiliqua multifasciata</i> (Central Blue-tongue)			
Scolopendridae				
77.	<i>Cormocephalus aurantiipes</i>			
78.	<i>Ethmostigmus rubripes</i>			
79.	<i>Scolopendra laeta</i>			
80.	<i>Scolopendra morsitans</i>			
Varanidae				
81.	25210 <i>Varanus brevicauda</i> (Short-tailed Pygmy Monitor)			
82.	25215 <i>Varanus gilleni</i> (Pygmy Mulga Monitor)			
83.	25218 <i>Varanus gouldii</i> (Bungarra or Sand Monitor)			
Zodariidae				
84.	<i>Cavasteron crassicalcar</i>			
85.	<i>Minasteron perfoliatum</i>			

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

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

NatureMap Species Report

Created By Guest user on 19/06/2017

Kingdom Animalia
Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 128° 49' 31" E, 22° 22' 51" S
Buffer 40km
Group By Family

Family	Species	Records
Accipitridae	1	1
Agamidae	4	4
Araneidae	1	1
Camelidae	1	1
Canidae	2	2
Caprimulgidae	1	1
Columbidae	3	3
Corvidae	1	1
Cracidae	1	1
Diplodactylidae	1	1
Estrilidae	1	1
Falconidae	2	2
Felidae	1	1
Gekkonidae	2	2
Lamprodactylidae	1	1
Lycosidae	1	1
Macropodidae	1	1
Meliphagidae	4	4
Motacillidae	1	1
Muridae	3	3
Nepitidae	1	1
Otididae	1	8
Pachycephalidae	1	1
Pardalidae	1	1
Psittacidae	2	2
Pygopodidae	1	1
Scincidae	6	6
Scolopendridae	2	2
Varanidae	1	1
Zodariidae	1	1
TOTAL	50	57

Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
Accipitridae				
1.	25540 <i>Elanus caeruleus</i> (Black-shouldered Kite)			
Agamidae				
2.	30833 <i>Amphibolurus longirostris</i> (Long-nosed Dragon)			
3.	25459 <i>Ctenophorus isolepis</i> (Crested Dragon, Military Dragon)			
4.	24882 <i>Ctenophorus nuchalis</i> (Central Netted Dragon)			
5.	24904 <i>Moloch horridus</i> (Thorny Devil)			
Araneidae				
6.	<i>Backobourkia collina</i>			
Camelidae				
7.	24254 <i>Camelus dromedarius</i> (Dromedary, Camel)	Y		
Canidae				
8.	24039 <i>Canis lupus subsp. dingo</i> (Dingo)	Y		
9.	24040 <i>Vulpes vulpes</i> (Red Fox)	Y		
Caprimulgidae				
10.	24368 <i>Eurostopodus argus</i> (Spotted Nightjar)			
Columbidae				
11.	24401 <i>Geopelia cuneata</i> (Diamond Dove)			
12.	25585 <i>Geopelia striata</i> (Zebra Dove)			
13.	24407 <i>Ocyphaps lophotes</i> (Crested Pigeon)			
Corvidae				

	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
14.	25593	<i>Corvus orru</i> (Torresian Crow)			
Cracticidae					
15.	24420	<i>Cracticus nigrogularis</i> (Pied Butcherbird)			
Diplodactylidae					
16.	30933	<i>Lucasium stenodactylum</i>			
Estrilidae					
17.	30870	<i>Taeniopygia guttata</i> (Zebra Finch)			
Falconidae					
18.	25621	<i>Falco berigora</i> (Brown Falcon)			
19.	25622	<i>Falco cenchroides</i> (Australian Kestrel, Nankeen Kestrel)			
Felidae					
20.	24041	<i>Felis catus</i> (Cat)	Y		
Gekkonidae					
21.	24959	<i>Gehyra variegata</i>			
22.	24961	<i>Heteronotia binoei</i> (Bynoe's Gecko)			
Lamponidae					
23.		<i>Asadipus auld</i>			
Lycosidae					
24.		<i>Hoggicosa alfi</i>			
Macropodidae					
25.	24121	<i>Lagorchestes asomatus</i> (Central Hare-wallaby)		X	Y
Meliphagidae					
26.	24559	<i>Acanthagenys rufogularis</i> (Spiny-cheeked Honeyeater)			
27.	24568	<i>Epthianura aurifrons</i> (Orange Chat)			
28.	24570	<i>Epthianura tricolor</i> (Crimson Chat)			
29.	25665	<i>Melithreptus gularis</i> (Black-chinned Honeyeater)			
Motacillidae					
30.	25670	<i>Anthus australis</i> (Australian Pipit)			
Muridae					
31.	24223	<i>Mus musculus</i> (House Mouse)	Y		
32.	24224	<i>Notomys alexis</i> (Spinifex Hopping-mouse)			
33.	24235	<i>Pseudomys desertor</i> (Desert Mouse)			
Nephilidae					
34.		<i>Nephila edulis</i>			
Otididae					
35.	24610	<i>Ardeotis australis</i> (Australian Bustard)			
Pachycephalidae					
36.	24618	<i>Oreoica gutturalis</i> (Crested Bellbird)			
Pardalotidae					
37.	25682	<i>Pardalotus striatus</i> (Striated Pardalote)			
Psittacidae					
38.	25715	<i>Cacatua roseicapilla</i> (Galah)			
39.	24736	<i>Melopsittacus undulatus</i> (Budgerigar)			
Pygopodidae					
40.	25005	<i>Lialis burtonis</i>			
Scincidae					
41.	25045	<i>Ctenotus helenae</i>			
42.	25052	<i>Ctenotus leonhardii</i>			
43.	25057	<i>Ctenotus nasutus</i>			
44.	25073	<i>Ctenotus saxatilis</i> (Rock Ctenotus)			
45.	41412	<i>Liopholis kintorei</i> (Great Desert Skink, Tjakura)		T	
46.	25202	<i>Tiliqua multifasciata</i> (Central Blue-tongue)			
Scolopendridae					
47.		<i>Cormocephalus aurantiipes</i>			
48.		<i>Scolopendra morsitans</i>			
Varanidae					
49.	25218	<i>Varanus gouldii</i> (Bungarra or Sand Monitor)			
Zodariidae					
50.		<i>Minasteron perfoliatum</i>			

Name ID Species Name

Naturalised

Conservation Code

¹Endemic To Query
Area

Conservation Codes

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

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

FAMILY	GENUS	SPECIES	COMMON_NAME	CONS		METHOD	LOCALITY	SITE_NAME	GDA_LONG	GDA_LAT	YEAR
				CODE	CLASS						
Charadriidae	Charadrius	veredus	oriental plover	IA	BIRD	Observational	GIBSON DESERT NORTH	Gary J Hwy 45km E of Kiwirrku	128.222800000000	-22.946900000000	2010
Dasyuridae	Dasyercus	blythi	Brush-tailed Mulgara	P4	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	128.032500000000	-22.436200000000	2012
Dasyuridae	Dasyercus	blythi	Brush-tailed Mulgara	P4	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	128.422600000000	-22.691400000000	2012
Dasyuridae	Dasyercus	blythi	Brush-tailed Mulgara	P4	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	128.010100000000	-22.926000000000	2012
Dasyuridae	Dasyercus	blythi	Brush-tailed Mulgara	P4	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Jalopa area	128.000000000000	-22.917400000000	2014
Dasyuridae	Dasyercus	blythi	Brush-tailed Mulgara	P4	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Kintore road, 15km E of Kiwirrkura	127.850700000000	-22.877800000000	2014
Dasyuridae	Dasyercus	blythi	Brush-tailed Mulgara	P4	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Kintore road, 20km E of Kiwirrkura	128.069100000000	-22.436800000000	2016
Dasyuridae	Dasyercus	blythi	Brush-tailed Mulgara	P4	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Near Marruwa	128.071400000000	-22.436800000000	2012
Dasyuridae	Dasyercus	blythi	brush-tailed mulgara	P4	MAMMAL	survey	GIBSON DESERT NORTH	Western Desert, Lake Mackay	128.414500000000	-22.634100000000	2012
Dasyuridae	Dasyercus	blythi	brush-tailed mulgara	P4	MAMMAL	survey	GIBSON DESERT NORTH	Western Desert, Lake Mackay	128.430500000000	-22.706200000000	2012
Dasyuridae	Dasyercus	blythi	brush-tailed mulgara	P4	MAMMAL	survey	GIBSON DESERT NORTH	Western Desert, Lake Mackay	128.430400000000	-22.706700000000	2012
Dasyuridae	Dasyercus	blythi	brush-tailed mulgara	P4	MAMMAL	survey	GIBSON DESERT NORTH	Western Desert, Lake Mackay	128.633600000000	-22.725000000000	2012
Dasyuridae	Dasyercus	blythi	brush-tailed mulgara	P4	MAMMAL	survey	GIBSON DESERT NORTH	Western Desert, Lake Mackay	128.642100000000	-22.725000000000	2012
Dasyuridae	Dasyercus	blythi	brush-tailed mulgara	P4	MAMMAL	survey	GIBSON DESERT NORTH	Western Desert, Lake Mackay	128.673600000000	-22.726800000000	2012
Dasyuridae	Dasyurus	geoffroi	chuditch, western quoll	VU	MAMMAL	Bones	GIBSON DESERT NORTH	near Kiwirrkurra	127.750000000000	-22.816700000000	0
Falconidae	Falco	hypoleucos	grey falcon	VU	BIRD	Observational	GIBSON DESERT NORTH		128.501300000000	-21.498600000000	1980
Falconidae	Falco	hypoleucos	grey falcon	VU	BIRD	Observational	GIBSON DESERT NORTH		128.501300000000	-21.498600000000	1980
Falconidae	Falco	hypoleucos	grey falcon	VU	BIRD	Observational	GIBSON DESERT NORTH		127.501300000000	-22.498600000000	1980
Falconidae	Falco	hypoleucos	grey falcon	VU	BIRD	Observational	NGAANYATJARRA-GILES		128.501300000000	-23.498600000000	1980
Macropodidae	Lagorchestes	asomatus	central hare-wallaby	EX	MAMMAL	Bones	GIBSON DESERT NORTH	Lake Mackay area on the WA/NT border	128.934000000000	-22.262600000000	1935
								Kiwirrkura community and surrounds, vicinity of Lake MacKay, Gisbson Desert (North)			
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Unknown	GIBSON DESERT NORTH		128.612000000000	-22.604900000000	1999
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Caught or trapped	GIBSON DESERT NORTH	Kiwirrkurra NT	128.006700000000	-22.426700000000	2000
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	128.005300000000	-22.426400000000	2000
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	127.910400000000	-22.883600000000	2014
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	127.907100000000	-22.890200000000	2016
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	127.907300000000	-22.891000000000	2016
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	127.913800000000	-22.898900000000	2014
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	127.927700000000	-22.902800000000	2014
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	127.975100000000	-22.909700000000	2014
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	127.973900000000	-22.912300000000	2016
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	127.972700000000	-22.912600000000	2016
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	127.975900000000	-22.913300000000	2016
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	127.975900000000	-22.913300000000	2014
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	127.976500000000	-22.913400000000	2016
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	127.976600000000	-22.913600000000	2014
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	128.006900000000	-22.917400000000	2014
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Caught or trapped	GIBSON DESERT NORTH	Kiwirrkurra NT, 25 km E of Kiwirrkura	128.006900000000	-22.925000000000	2000
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Tjalapa area, north of road, KK-JAL-2	127.910200000000	-22.882300000000	2016
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Tjalapa area, north of road, KK-JAL-2	127.909400000000	-22.884000000000	2016
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Tjalapa area, north of road, KK-JAL-2	127.908900000000	-22.887700000000	2016
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Tjalapa area, north of road, KK-JAL-2	127.907100000000	-22.890200000000	2014
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Tjalapa area, north of road, KK-JAL-2	127.907300000000	-22.891000000000	2014
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Tjalapa area, north of road, KK-JAL-2	127.889000000000	-22.896200000000	2016
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Tjalapa area, north of road, KK-JAL-2	127.904100000000	-22.899800000000	2016
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Tjalapa area, north of road, KK-JAL-2	127.904500000000	-22.890200000000	2016
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Tjalapa area, north of road, KK-JAL-2	128.001800000000	-22.922800000000	2014
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Tjalapa area, north of road, KK-JAL-3	127.909100000000	-22.883400000000	2016
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Tjalapa area, north of road, KK-JAL-3	127.908800000000	-22.883400000000	2016
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Tjalapa area, north of road, KK-JAL-3	127.907700000000	-22.883700000000	2016
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Tjalapa area, north of road, KK-JAL-3	127.907600000000	-22.884100000000	2016

Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Tjalapa area, south of road, KK-JAL-1	127.9116000000	-22.8969000000	2014
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Tjalapa area, south of road, KK-JAL-1	127.9275000000	-22.9031000000	2014
Scincidae	Liopholis	kintorei	great desert skink	VU	REPTILE	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Tjalapa area, south of road, KK-JAL-1	127.9294000000	-22.9044000000	2014
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Remote camera	GIBSON DESERT NORTH	Kiwirrkurra NT	128.0276000000	-22.4412000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	127.9850000000	-22.3508000000	2000
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	127.9972000000	-22.3508000000	2000
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	127.9897000000	-22.3733000000	2012
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	128.3414000000	-22.4206000000	2000
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	128.3142000000	-22.4356000000	2000
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	128.0325000000	-22.4362000000	2012
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	127.5857000000	-22.7983000000	2014
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	127.7611000000	-22.8053000000	2014
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	127.7481000000	-22.8097000000	2000
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	127.8736000000	-22.8100000000	2000
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	127.5968000000	-22.8326000000	2012
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT	127.9172000000	-22.9247000000	2014
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, 1km N Kiwirrkurra	127.7612000000	-22.8057000000	2014
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, 1km N of Kiwirrkura	127.9974000000	-22.4295000000	2012
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, 5km S of Murruwa	127.5500000000	-22.7646000000	2003
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Kintore road S of Jalapa area	127.9920000000	-22.4146000000	2012
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Remote camera	GIBSON DESERT NORTH	Kiwirrkurra NT, Kiwirrkurra- 1 km E	128.0062000000	-22.4379000000	2014
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Kiwirrkurra area	128.0029000000	-22.4381000000	2015
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Kiwirrkurra area	127.6881000000	-22.8357000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Kiwirrkurra area	127.6913000000	-22.8382000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Marrapinti area	127.5565000000	-22.8095000000	2003
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Marruwa	127.7604000000	-22.8043000000	2015
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Murruwa	128.3442000000	-22.4119000000	2000
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Murruwa	127.7889000000	-22.8258000000	2000
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Murruwa	127.7747000000	-22.8606000000	2003
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, N of Marapinti	127.9940000000	-22.4228000000	2012
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Near Marruwa	127.5430000000	-22.7767000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Near Marruwa	127.9563000000	-22.8112000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Near Marruwa	127.9615000000	-22.8128000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Near Tjuntupul	127.5331000000	-22.7761000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Near Tjuntupul	127.5405000000	-22.7771000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Near Tjuntupul	127.5341000000	-22.7775000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Near Tjutalpi	127.5429000000	-22.7765000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Near Tjutalpi	127.5447000000	-22.7791000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, North of Karilwarra	127.9907000000	-22.3755000000	2014
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, North of Karilwarra	127.9872000000	-22.3761000000	2014
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, North of Karilwarra	128.0034000000	-22.4370000000	2014
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, North of Karilwarra	127.5418000000	-22.7721000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, North of Karilwarra	127.5403000000	-22.7767000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, North of Karilwarra	127.5441000000	-22.7789000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, North of Karilwarra	127.5448000000	-22.7792000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, North of Karilwarra	127.5445000000	-22.7794000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, North of Karilwarra	127.5405000000	-22.7808000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, North of Karilwarra	127.5420000000	-22.7833000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, North of Karilwarra	127.5419000000	-22.7846000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, North of Karilwarra	127.5411000000	-22.7892000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, North of Karilwarra	127.7802000000	-22.8085000000	2016

Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, North of Karilwarra	127.782100000000	-22.810900000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, North of Karilwarra	127.778000000000	-22.811600000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, North of Karilwarra	127.775600000000	-22.811600000000	2015
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, North of Karilwarra	127.682400000000	-22.833000000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, North of Karilwarra	127.682800000000	-22.833600000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, North of Karilwarra	127.683600000000	-22.834300000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, North of Karilwarra	127.688000000000	-22.835500000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, North of Karilwarra	127.684400000000	-22.836000000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, North of Karilwarra	127.692500000000	-22.837600000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Remote camera	GIBSON DESERT NORTH	Kiwirrkurra NT, Nyinmi area	127.573400000000	-22.794900000000	2014
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Remote camera	GIBSON DESERT NORTH	Kiwirrkurra NT, On road between Lake Mackay and Marruwa	128.039900000000	-22.270400000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Wala Wala road	127.541300000000	-22.773700000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Wala Wala road	127.541100000000	-22.774300000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Wala Wala road	127.543100000000	-22.776300000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Wala Wala road	127.542300000000	-22.776400000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Wala Wala road	127.545700000000	-22.780300000000	2015
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Wala Wala road	127.543700000000	-22.780900000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Wala Wala road	127.540800000000	-22.786800000000	2015
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Wala Wala road	127.573500000000	-22.795000000000	2015
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, Wala Wala road	127.688100000000	-22.835400000000	2016
Peramelidae	Macrotis	lagotis	bilby, dalgyte, ninu	VU	MAMMAL	Secondary sign	GIBSON DESERT NORTH	Kiwirrkurra NT, west of Nyinmi	127.996500000000	-22.429400000000	2016
Meropidae	Merops	ornatus	rainbow bee-eater	IA	BIRD	Observational	GIBSON DESERT NORTH	Gary Junction Rd 12	128.365300000000	-22.993100000000	2009
Notoryctidae	Notoryctes	caurinus	northern marsupial mole	P4	MAMMAL	survey	GIBSON DESERT NORTH	Western Desert, Lake Mackay	128.642100000000	-22.718800000000	2012
Dasyuridae	Phascogale	calura	red-tailed phascogale	CD	MAMMAL	Subfossil material	GIBSON DESERT NORTH		128.500000000000	-21.999900000000	1958
Dasyuridae	Phascogale	calura	red-tailed phascogale	CD	MAMMAL	Subfossil material	GIBSON DESERT NORTH	Gibson Desert	128.000000000000	-21.999900000000	1958
Dasyuridae	Phascogale	calura	red-tailed phascogale	CD	MAMMAL	Subfossil material	GIBSON DESERT NORTH	Gibson Desert	127.583300000000	-22.916600000000	1958
Dasyuridae	Phascogale	calura	red-tailed phascogale	CD	MAMMAL	Subfossil material	GIBSON DESERT NORTH	Gibson Desert	129.416600000000	-23.249900000000	1958
Psittacidae	Polytelis	alexandrae	Princess Parrot	P4	BIRD	Sighting	GIBSON DESERT NORTH	Kiwirrkurra NT	128.291600000000	-22.445200000000	2012



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.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 27/03/17 18:21:34

[Summary](#)

[Details](#)

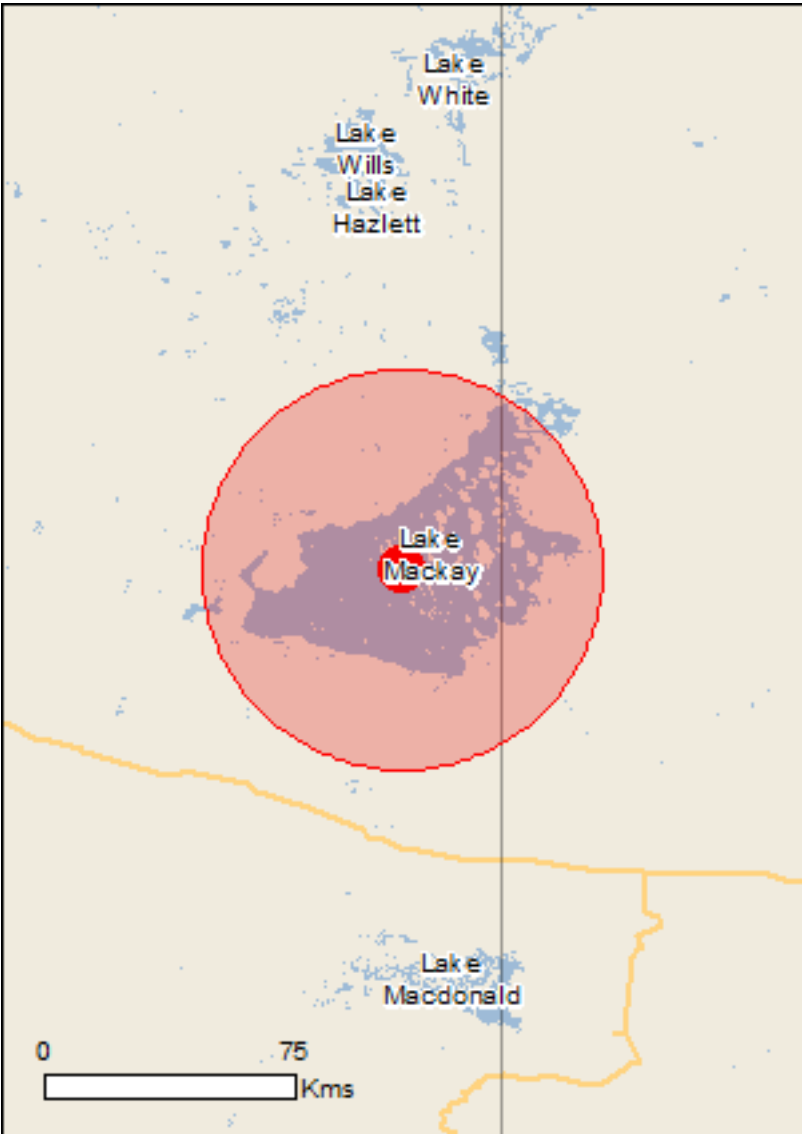
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)



This map may contain data which are
©Commonwealth of Australia
(Geoscience Australia), ©PSMA 2010

[Coordinates](#)

Buffer: 60.0Km



Summary

Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	4
Listed Migratory Species:	6

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 <http://www.environment.gov.au/heritage>

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

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	9
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	None

Extra Information

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

State and Territory Reserves:	2
Regional Forest Agreements:	None
Invasive Species:	7
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Pezoporus occidentalis Night Parrot [59350]	Endangered	Species or species habitat may occur within area
Polytelis alexandrae Princess Parrot, Alexandra's Parrot [758]	Vulnerable	Species or species habitat may occur within area
Mammals		
Macrotis lagotis Greater Bilby [282]	Vulnerable	Species or species habitat known to occur within area
Reptiles		
Liopholis kintorei Great Desert Skink, Tjakura, Warrarna, Mulyamiji [83160]	Vulnerable	Species or species habitat known to occur within area
Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba		
Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat may occur within area
Charadrius veredus		
Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Glareola maldivarum		
Oriental Pratincole [840]		Species or species habitat may occur within area
Hirundo rustica		
Barn Swallow [662]		Species or species habitat may occur within area
Merops ornatus		
Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea		
Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves		[Resource Information]
Name		State
Kiwirrkurra		WA
Southern Tanami		NT
Invasive Species		[Resource Information]
Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.		
Name	Status	Type of Presence

Name	Status	Type of Presence
Mammals		
Camelus dromedarius Dromedary, Camel [7]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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.

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

Where very little information is available for 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 reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

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

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

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

Coordinates

-22.43951 128.73826

Acknowledgements

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

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

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

Please feel free to provide feedback via the [Contact Us](#) page.

NatureMap Species Report

Created By Guest user on 27/03/2017

Kingdom Plantae
Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 128° 44' 17" E, 22° 26' 25" S
Buffer 40km
Group By Conservation Status

Conservation Status	Species	Records
Non-conservation taxon	3	3
TOTAL	3	3

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
Non-conservation taxon				
1.	3419 <i>Acacia ligulata</i> (Umbrella Bush, Watarka)			
2.	3430 <i>Acacia lysiphloia</i> (Turpentine Wattle)			
3.	3679 <i>Aenictophyton reconditum</i>			

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

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



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.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 27/03/17 18:21:34

[Summary](#)

[Details](#)

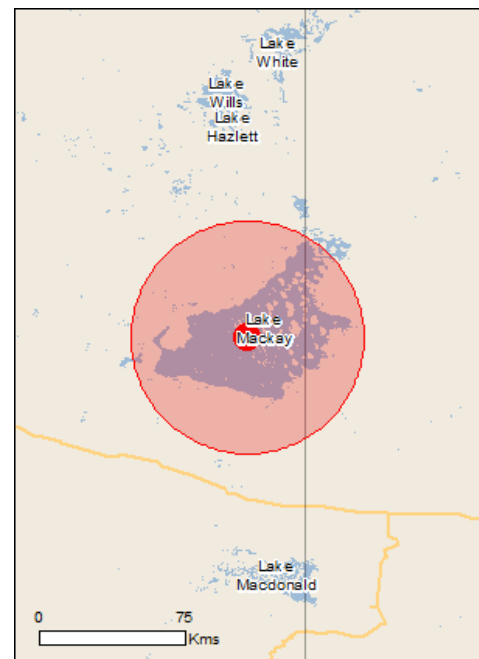
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)



This map may contain data which are
©Commonwealth of Australia
(Geoscience Australia), ©PSMA 2010

[Coordinates](#)

Buffer: 60.0Km



Summary

Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	4
Listed Migratory Species:	6

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 <http://www.environment.gov.au/heritage>

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

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	9
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	None

Extra Information

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

State and Territory Reserves:	2
Regional Forest Agreements:	None
Invasive Species:	7
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence

Birds

[Pezoporus occidentalis](#)

Night Parrot [59350]	Endangered	Species or species habitat may occur within area
----------------------	------------	--

[Polytelis alexandrae](#)

Princess Parrot, Alexandra's Parrot [758]	Vulnerable	Species or species habitat may occur within area
---	------------	--

Mammals

[Macrotis lagotis](#)

Greater Bilby [282]	Vulnerable	Species or species habitat known to occur within area
---------------------	------------	---

Reptiles

[Liopholis kintorei](#)

Great Desert Skink, Tjakura, Warrarna, Mulyamiji [83160]	Vulnerable	Species or species habitat known to occur within area
--	------------	---

Listed Migratory Species		[Resource Information]
--------------------------	--	--------------------------

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
------	------------	------------------

Migratory Marine Birds

[Apus pacificus](#)

Fork-tailed Swift [678]		Species or species habitat likely to occur within area
-------------------------	--	--

Migratory Terrestrial Species

[Hirundo rustica](#)

Barn Swallow [662]		Species or species habitat may occur within area
--------------------	--	--

[Motacilla cinerea](#)

Grey Wagtail [642]		Species or species habitat may occur within area
--------------------	--	--

[Motacilla flava](#)

Yellow Wagtail [644]		Species or species habitat may occur within area
----------------------	--	--

Migratory Wetlands Species

[Charadrius veredus](#)

Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
--	--	--

[Glareola maldivarum](#)

Oriental Pratincole [840]		Species or species habitat may occur within area
---------------------------	--	--

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba		
Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat may occur within area
Charadrius veredus		
Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Glareola maldivarum		
Oriental Pratincole [840]		Species or species habitat may occur within area
Hirundo rustica		
Barn Swallow [662]		Species or species habitat may occur within area
Merops ornatus		
Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea		
Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves		[Resource Information]
Name		State
Kiwirrkurra		WA
Southern Tanami		NT

Invasive Species		[Resource Information]
Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.		

Name	Status	Type of Presence
------	--------	------------------

Name	Status	Type of Presence
Mammals		
Camelus dromedarius Dromedary, Camel [7]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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.

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

Where very little information is available for 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 reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

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

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

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

Coordinates

-22.43951 128.73826

Acknowledgements

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

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

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

Please feel free to provide feedback via the [Contact Us](#) page.

Taxon	Status	DPaWRegion	DPaWDistrict	Distribution	FloweringPeriod
<i>Dampiera atriplicina</i>	3	GOLD,PILB	KALGOORLIE,KARRATHA	Gregory Range, Jupiter Well, Gibson	May-Jul
<i>Eragrostis lanicaulis</i>	3	GOLD,PILB	KALGOORLIE,KARRATHA	Gibson Desert, Karratha	Mar-May/Aug-Oct
<i>Eremophila jamesiorum</i>	2	GOLD	KALGOORLIE	Gibson Desert N.R.	Sep
<i>Goodenia modesta</i>	3	GOLD,KIMB,PILB	KALGOORLIE,KARRATHA,EA	Stansmore Range, Gibson Desert, De	Dec
<i>Goodenia virgata</i>	2	GOLD	KALGOORLIE	Gibson Desert NR, Drovers Hills, The	Jul
<i>Korthalsella leucothrix</i>	3	GOLD,MWST	KALGOORLIE,GERALDTON	Lake Monger, Wanarra Rock, Kent Bc	-
<i>Maireana</i> sp. Patience (C.P. Campbell 1052)	1	PILB	KARRATHA	Gibson Desert	Feb
<i>Mitrasacme katjarranka</i>	1	GOLD,PILB	KALGOORLIE,KARRATHA	Lake Kerrylyn, Gibson Desert	May and July
<i>Philothea eremicola</i>	1	GOLD	KALGOORLIE	Blyth Pool, Gibson Desert	Sep
<i>Thysanotus</i> sp. Desert East of Newman (R.P. Hart 964)	2	GOLD,PILB	KALGOORLIE,KARRATHA	Warburton, Gibson Desert, Collier Range, Rudall River	

Taxon	ConsStatus	PopNumbe	Location	District	Vesting	Purpose1	CountDate	MatureCou	LiveTotal	inFlower
Goodenia virgata	2	1	South-west Lake Mackay, 7	KARRATHA	ALT	ABR	21/10/2000 0:00	0	0	Y

Taxon	Cons	Plant_Desc	Site	Vegetation	Frequency	Locality	Geoco	Precision	Date
Goodenia virgata	2	Erect herb, yellow flowers.	Runon area above saltlake.	With Triodia pungens.	not uncom	SW Lake Mackey; 7	MAN	2	21/10/2000

NatureMap Species Report

Created By Guest user on 27/03/2017

Kingdom Plantae
Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 128° 44' 17" E, 22° 26' 25" S
Buffer 40km
Group By Conservation Status

Conservation Status	Species	Records
Non-conservation taxon	3	3
TOTAL	3	3

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
Non-conservation taxon				
1.	3419 <i>Acacia ligulata</i> (Umbrella Bush, Watarka)			
2.	3430 <i>Acacia lysiphloia</i> (Turpentine Wattle)			
3.	3679 <i>Aenictophyton reconditum</i>			

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

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



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.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 27/03/17 18:21:34

[Summary](#)

[Details](#)

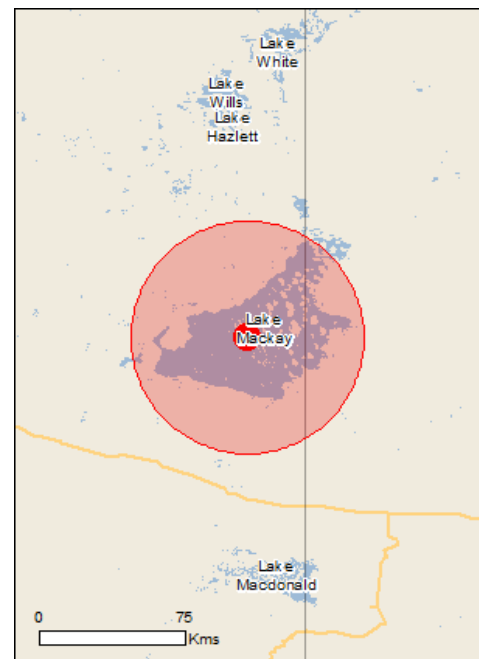
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)



This map may contain data which are
©Commonwealth of Australia
(Geoscience Australia), ©PSMA 2010

[Coordinates](#)

Buffer: 60.0Km



Summary

Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	4
Listed Migratory Species:	6

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 <http://www.environment.gov.au/heritage>

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

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	9
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	None

Extra Information

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

State and Territory Reserves:	2
Regional Forest Agreements:	None
Invasive Species:	7
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence

Birds

[Pezoporus occidentalis](#)

Night Parrot [59350]	Endangered	Species or species habitat may occur within area
----------------------	------------	--

[Polytelis alexandrae](#)

Princess Parrot, Alexandra's Parrot [758]	Vulnerable	Species or species habitat may occur within area
---	------------	--

Mammals

[Macrotis lagotis](#)

Greater Bilby [282]	Vulnerable	Species or species habitat known to occur within area
---------------------	------------	---

Reptiles

[Liopholis kintorei](#)

Great Desert Skink, Tjakura, Warrarna, Mulyamiji [83160]	Vulnerable	Species or species habitat known to occur within area
--	------------	---

Listed Migratory Species		[Resource Information]
--------------------------	--	--------------------------

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
------	------------	------------------

Migratory Marine Birds

[Apus pacificus](#)

Fork-tailed Swift [678]		Species or species habitat likely to occur within area
-------------------------	--	--

Migratory Terrestrial Species

[Hirundo rustica](#)

Barn Swallow [662]		Species or species habitat may occur within area
--------------------	--	--

[Motacilla cinerea](#)

Grey Wagtail [642]		Species or species habitat may occur within area
--------------------	--	--

[Motacilla flava](#)

Yellow Wagtail [644]		Species or species habitat may occur within area
----------------------	--	--

Migratory Wetlands Species

[Charadrius veredus](#)

Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
--	--	--

[Glareola maldivarum](#)

Oriental Pratincole [840]		Species or species habitat may occur within area
---------------------------	--	--

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba		
Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat may occur within area
Charadrius veredus		
Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Glareola maldivarum		
Oriental Pratincole [840]		Species or species habitat may occur within area
Hirundo rustica		
Barn Swallow [662]		Species or species habitat may occur within area
Merops ornatus		
Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea		
Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves		[Resource Information]
Name		State
Kiwirrkurra		WA
Southern Tanami		NT

Invasive Species		[Resource Information]
Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.		

Name	Status	Type of Presence
------	--------	------------------

Name	Status	Type of Presence
Mammals		
Camelus dromedarius Dromedary, Camel [7]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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.

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

Where very little information is available for 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 reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

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

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

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

Coordinates

-22.43951 128.73826

Acknowledgements

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

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

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

Please feel free to provide feedback via the [Contact Us](#) page.

Taxon	Status	DPaWRegion	DPaWDistrict	Distribution	FloweringPeriod
<i>Dampiera atriplicina</i>	3	GOLD,PILB	KALGOORLIE,KARRATHA	Gregory Range, Jupiter Well, Gibson	May-Jul
<i>Eragrostis lanicaulis</i>	3	GOLD,PILB	KALGOORLIE,KARRATHA	Gibson Desert, Karratha	Mar-May/Aug-Oct
<i>Eremophila jamesiorum</i>	2	GOLD	KALGOORLIE	Gibson Desert N.R.	Sep
<i>Goodenia modesta</i>	3	GOLD,KIMB,PILB	KALGOORLIE,KARRATHA,EA	Stansmore Range, Gibson Desert, De	Dec
<i>Goodenia virgata</i>	2	GOLD	KALGOORLIE	Gibson Desert NR, Drovers Hills, The	Jul
<i>Korthalsella leucothrix</i>	3	GOLD,MWST	KALGOORLIE,GERALDTON	Lake Monger, Wanarra Rock, Kent Bc	-
<i>Maireana</i> sp. Patience (C.P. Campbell 1052)	1	PILB	KARRATHA	Gibson Desert	Feb
<i>Mitrasacme katjarranka</i>	1	GOLD,PILB	KALGOORLIE,KARRATHA	Lake Kerrylyn, Gibson Desert	May and July
<i>Philothea eremicola</i>	1	GOLD	KALGOORLIE	Blyth Pool, Gibson Desert	Sep
<i>Thysanotus</i> sp. Desert East of Newman (R.P. Hart 964)	2	GOLD,PILB	KALGOORLIE,KARRATHA	Warburton, Gibson Desert, Collier Range, Rudall River	

Taxon	ConsStatus	PopNumbe	Location	District	Vesting	Purpose1	CountDate	MatureCou	LiveTotal	inFlower
Goodenia virgata	2	1	South-west Lake Mackay, 7	KARRATHA	ALT	ABR	21/10/2000 0:00	0	0	Y

Taxon	Cons	Plant_Desc	Site	Vegetation	Frequency	Locality	Geoco	Precision	Date
Goodenia virgata	2	Erect herb, yellow flowers.	Runon area above saltlake.	With Triodia pungens.	not uncom	SW Lake Mackey; 7	MAN	2	21/10/2000