WA Limestone Jurien Bay

Flora, Vegetation, Fauna and Black Cockatoo Assessment

WA Limestone

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Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with WA Limestone (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

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Executive Summary

WA Limestone commissioned SLR Consulting Australia Pty Ltd to undertake a detailed flora and vegetation, targeted significant flora, basic terrestrial vertebrate fauna, and targeted Black Cockatoo habitat survey for WA Limestone's proposed quarry and access track. The Survey Area covered approximately 30 hectares, including a 0.99 ha proposed pit expansion footprint, and is located approximately 5 km south-east of the Jurien Bay townsite in the Swan Coastal Plain bioregion of Western Australia.

The objective of the survey was to identify key flora, vegetation, fauna and black cockatoo habitat values within the Survey Area as part of the environmental impact assessment process. This report presents the findings of the survey.

Flora and Vegetation

The detailed flora and vegetation survey established a total of eight quadrats and 30 mapping notes within the Survey Area. A total of 129 taxa were recorded from 97 genera across 45 families.

No Threatened flora taxa were recorded within the Survey Area. Two Priority flora taxa – *Acacia lasiocarpa* var. *lasiocarpa* Cockleshelll variant (E.A. Griffin 2039) (P2) and *Beyeria cinerea* subsp. *cinerea* (P3) – were recorded within the Survey Area, and one taxa – *Dampiera tephrea* (P3) – was recorded just outside the Survey Area. *Acacia lasiocarpa* var. *lasiocarpa* Cockleshelll variant (E.A. Griffin 2039) (P2) was relatively widespread throughout the Survey Area, occurring in seven of the eight flora sites across both of the two vegetation types recorded, while *Beyeria cinerea* subsp. *cinerea* (P3) was more restricted, and was recorded in low numbers (< 5) in two sites on the low limestone ridges.

The desktop assessment identified a total of 133 significant flora taxa as potentially occurring within the Survey Area. These taxa were assessed to determine the likelihood of their occurrence within the Survey Area; post survey, none of the significant flora taxa were assessed as having a high likelihood, eight were assessed as having a medium likelihood, and the remaining 123 significant flora taxa were assessed as having have a low likelihood of occurrence.

Two vegetation types (MhMs and BlHh) were described and mapped across two broad landforms: undulating plains and limestone ridges. Of these, MhMs was considered analogous to a Threatened or Priority Ecological Community. Specifically, MhMs corresponds to FCT26a *Melaleuca huegelii - M. systena shrublands of limestone ridge (Swan Coastal Plain Community type 26a – Gibson et al. 1994)*, which is a state-listed TEC. This community also represents the Federally-listed '*Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion*' TEC.

Vegetation condition within the Survey Area ranged from Degraded to Excellent, with the majority assessed as being in Excellent condition. Evidence of disturbance included the presence of weeds and areas previously cleared for access and lime extraction. A total of 10 weed taxa were recorded in the Survey Area, none of which are listed as Declared Pests or Weeds of National Significance.

Vertebrate Fauna

The basic terrestrial vertebrate fauna survey consisted of traversing the Survey Area on foot, undertaking habitat assessments and recording opportunistic observations. Fauna habitat mapping was based on a combination of fauna habitat assessment data, vegetation mapping, and aerial imagery. Three fauna habitats were mapped within the Survey Area. Of

these habitats, Proteaceae Shrubland is widespread and abundant both within the Survey Area and at a regional scale, while Melaleuca Shrubland on Limestone Ridge occurs in relatively isolated pockets. The third habitat, Regrowth, occurs in previously cleared areas within the Survey Area.

A total of 16 native fauna taxa from 11 families were recorded, comprising 16 bird species. One significant taxon was recorded during the fauna survey, Carnaby's Cockatoo (*Zanda latirostris*), listed as Endangered. One introduced fauna taxon was recorded during the survey, Rabbit (*Oryctolagus cuniculus*).

Although not recorded during the field survey, one significant fauna taxon was assessed as having a medium likelihood of occurring within the Survey Area, the Western Brush Wallaby (*Notamacropus irma*), listed as Priority 4. A further 70 significant fauna taxa were assessed as having have a low likelihood of occurring within the Survey Area.

According to the 2022 Department of Agriculture, Water and Environment Foraging Habitat Scoring Tool, the Survey Area contains 28.59 ha of High-quality foraging habitat for Carnaby's Cockatoo. According to the 2023 Department of Climate Change, Energy, the Environment and Water scoring system for the assessment of foraging value of vegetation, the Survey Area contains 25.11 ha of Moderate to High, 0.92 ha of Low to Moderate, and 2.56 ha of Low foraging habitat for Carnaby's Cockatoo.

The basic fauna survey was undertaken in September which falls within the primary survey periods for amphibians (autumn/winter breeders), birds (most bush birds), and mammals but outside the primary survey periods for reptiles, amphibians (summer breeders), and birds (migratory birds).

Table of Contents

Basis of Report i
Executive Summary ii
Acronyms and Abbreviations viii
1.0 Introduction 1
1.1 The Project 1
1.2 Objective and Scope 1
2.0 Background 2
2.1 Statutory and Regulatory Framework 2
2.2 Existing Environment 3
2.2.1 Climate 3
2.2.2 Interim Biogeographic Regionalisation of Australia 4
2.2.3 Soil Landscape Mapping 4
2.2.4 Hydrography 4
2.2.5 Pre-European Vegetation 5
2.2.6 Conservation Areas and Environmentally Sensitive Areas 6
2.2.7 Indigenous Land Rights 6
3.0 Methods 7
3.1 Desktop Assessment 7
3.1.1 Literature Review 7
3.1.2 Database Searches 7
3.1.3 Likelihood of Occurrence 8
3.2 Field Survey 9
3.2.1 Survey Timing, Field Personnel and Licences 9
3.2.2 Weather Conditions 9
3.3 Flora and Vegetation 9
3.3.1 Establishment of Flora Sites 9
3.3.2 Opportunistic Flora 10
3.3.3 Targeted Searching 10
3.3.4 Vegetation Type and Condition Mapping 11
3.3.5 Taxonomy and Nomenclature 11
3.3.6 Statistical Analyses 11
3.4 Fauna 12
3.4.1 Habitat Assessment and Mapping 12
3.4.2 Opportunistic Observations 13

3.4.3 Black Cockatoo Habitat Assessment 13
3.4.4 Identification and Taxonomy 14
3.5 Limitations 14
4.0 Results 16
4.1 Flora and Vegetation 16
4.1.1 Desktop Assessment 16
4.1.2 Floristic Composition 17
4.1.3 Significant Flora 17
4.1.4 Introduced Flora 17
4.1.5 Unconfirmed Flora 18
4.1.6 Vegetation Types 18
4.1.7 Vegetation Condition 21
4.1.8 Multivariate Analysis 21
4.1.9 Floristic Community Type (FCT) Analysis 21
4.1.10 Significant Ecological Communities 23
4.1.11 Species Accumulation Curve 24
4.2 Fauna 25
4.2.1 Desktop Assessment 25
4.2.2 Fauna Habitats 26
4.2.3 Fauna Inventory 29
4.2.4 Significant Fauna 29
4.2.5 Black Cockatoo Habitat Assessment 30
5.0 Discussion 31
5.1 Flora and Vegetation 31
5.1.1 Floristic Composition 31
5.1.2 Vegetation Types and Condition 31
5.1.3 Significant Vegetation 32
5.1.4 Significant Flora 32
5.1.5 Introduced Flora 36
5.1.6 Survey Adequacy 36
5.1.7 Regional Representation 36
5.2 Fauna 36
5.2.1 Fauna Habitats 36
5.2.2 Significant Fauna 36
5.2.3 Black Cockatoo Habitat Assessment 37
6.0 Conclusion 38

6.1 Flora and Vegetation 38
6.2 Fauna 38
7.0 References 40

Tables in Text

Table 1: Soil landscape subsystems within the Survey Area 4
Table 2: Hydrographic features in the vicinity of the Survey Area 4
Table 3: Geomorphic Wetland features in the vicinity of the Survey Area 5
Table 4: Vegetation System Associations within the Survey Area 5
Table 5: Representation of System Associations within the Survey Area at a state, regional, and local level 5
Table 6: Database search details 7
Table 7: Likelihood of occurrence criteria 8
Table 8: Field personnel 9
Table 9: Field survey weather conditions 9
Table 10: Limitations and constraints associated with the survey 14
Table 11: Significant Ecological Communities in the vicinity of the Survey Area 16
Table 12: Threatened and Priority flora recorded within or adjacent to the Survey Area 17
Table 13: Introduced flora taxa recorded within the Survey Area 18
Table 14: Vegetation types recorded within the Survey Area 19
Table 15: Summary of vegetation condition within the Survey Area 21
Table 16: Floristic community analysis of flora sites within the Survey Area 23
Table 17: Flora species richness estimators 25
Table 18: Fauna habitats recorded within the Survey Area 27
Table 19: Fauna diversity by evidence 29
Table 20: DAWE Foraging Habitat Scoring Tool results for Carnaby's Cockatoo 30
Table 21: DCCEEW scoring system results for Carnaby's Cockatoo 30

Figures in Text

Figure 1: Climate summary of Jurien Bay Weather Station 3
Figure 2: Flora species accumulation curve 25

Maps

Map 1: Survey Area....A-1
Map 2: Soil Landscape Mapping....A-2
Map 3: Hydrography and Geomorphic Wetlands....A-3
Map 4: Conservation Areas and ESAs....A-4
Map 5: Survey Effort....A-5
Map 6: Significant Flora and Ecological Community Database Search Results....A-6
Map 7: Vegetation Types and Significant Flora Records....A-7
Map 8: Vegetation Condition and Introduced Flora Records....A-8
Map 9: Patches of Honeymyrtle shrublands on limestone ridges of the Swan Coastal Plain Bioregion TEC....A-9
Map 10: Significant Fauna Database Search Results....A-10
Map 11: Black Cockatoo Database Search Results....A-11
Map 12: Fauna Habitat and Significant Fauna Records....A-12
Map 13: Black Cockatoo Foraging Habitat (DCCEEW)....A-13

Appendices

Appendix A Maps
Appendix B Literature Review Summary
Appendix C Flora Desktop Assessment Results and Likelihood of Occurrence
Appendix D Flora Recorded During the Survey
Appendix E Threatened and Priority Flora Report Forms
Appendix F Flora Site Sheets
Appendix G Flora Statistical Analysis
Appendix H Fauna Desktop Assessment Results
Appendix I Fauna Site Sheets
Appendix J Significant Fauna Likelihood of Occurrence

Acronyms and Abbreviations

°C	Degree Celsius
ALA	Atlas of Living Australia
BAM Act	*Biosecurity and Agriculture Management Act 2007*
BC Act	*Biodiversity Conservation Act 2016*
BoM	Bureau of Meteorology
CISS	Centre for Invasive Species Solutions
CR	Critically Endangered
DAWE	Department of Agriculture, Water and Environment
DBCA	Department of Biodiversity, Conservation and Attractions
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DEE	Department of the Environment and Energy
DEWHA	Department of the Environment, Water, Heritage and the Arts
Desktop Study Area	The area that was studied during the desktop assessment encompassing the Survey Area and surrounds
DoE	Department of the Environment
DP	Declared Pest
DPIRD	Department of Primary Industries and Regional Development
DPLH	Department of Planning, Lands and Heritage
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities
DWER	Department of Water and Environmental Regulation
EIA	Environmental Impact Assessment
EN	Endangered
EP Act	*Environmental Protection Act 1986*
EPA	Environmental Protection Authority
EPBC Act	*Environment Protection Biodiversity and Conservation Act 1999*
ESA	Environmentally Sensitive Area
FCT	Floristic Community Type
GIS	Geographic Information System
GPS	Global Positioning System
ha	Hectare
HSL	Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion
IBRA	Interim Biogeographic Regionalisation for Australia
IBSA	Index of Biodiversity Surveys for Assessments
ILUA	Indigenous Land Use Agreement

km	Kilometres
Lat	Latitude
Long	Longitude
m	Metres
MA	Marine
MI	Migratory
mm	Millimetres
mths	Months
MNES	Matters of National Environmental Significance
NVIS	National Vegetation Information System
OS	Other Specially Protected Fauna
P	Priority
PEC	Priority Ecological Community
PMST	Protected Matters Search Tool
SCP	Swan Coastal Plain
Sp.	Species
Spp.	More than one species
SLR	SLR Consulting Australia
Survey Area	The area that was surveyed
T	Threatened
TEC	Threatened Ecological Community
TPFL	Threatened and Priority Flora Database
TPFRF	Threatened and Priority Flora Report Form
VU	Vulnerable
WA	Western Australia
WAH	Western Australian Herbarium
WAM	Western Australian Museum
WoNS	Weeds of National Significance

1.0 Introduction

1.1 The Project

WA Limestone commissioned SLR Consulting Australia Pty Ltd (SLR) to undertake a detailed flora and vegetation, basic terrestrial vertebrate fauna, and black cockatoo survey for the proposed Jurien Bay WA Limestone Quarry and access track (the Project). The survey was undertaken within a defined area (the Survey Area) that covers approximately 30 hectares (ha) and is located approximately 5 km south east of Jurien Bay, in the Swan Coastal Plain bioregion of Western Australia (**Map 1**). The Survey Area includes a 0.99 ha proposed pit expansion area which extends largely north-east from the existing limestone pit. All maps are provided in **Appendix A**.

1.2 Objective and Scope

The objective of the survey was to identify key flora, vegetation, and fauna values within the Survey Area as part of the environmental impact assessment process for the Project.

The following scope of work was completed:

- A desktop assessment including relevant database searches and a literature review to compile and summarise existing flora, fauna, black cockatoo, habitat, vegetation, or other environmental features relating to the Survey Area.
- A detailed flora and vegetation survey using quadrats/relevés to identify and describe the vegetation and flora occurring within the Survey Area.
- A targeted searching for significant flora within the Survey Area.
- A basic terrestrial vertebrate fauna survey using habitat assessments and opportunistic observations.
- A black cockatoo-specific habitat assessment.
- A combined technical flora, vegetation, fauna, and black cockatoo report.
- A geospatial data package prepared in accordance with IBSA data standard requirements.

2.0 Background

2.1 Statutory and Regulatory Framework

Western Australian flora, vegetation, fauna, and ecological communities are governed by the following legislative measures:

- *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth) (EPBC Act) (Commonwealth of Australia, 1999).
- *Biodiversity Conservation Act 2016* (WA) (BC Act) (Government of Western Australia, 2016).
- *Environmental Protection Act 1986* (WA) (EP Act) (Government of Western Australia, 1986).
- *Biosecurity and Agriculture Management Act 2007* (WA) (BAM Act) (Government of Western Australia, 2007).

In addition to these legislative measures, the following non-legislative lists are considered on a case-by-case basis:

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

The EIA process is supported by guidance documents published by the Environmental Protection Authority (EPA), DBCA and the Department of Climate Change, Energy, the Environment and Water (DCCEEW).

Western Australia

- *Environmental Factor Guideline – Flora and Vegetation* (EPA, 2016a).
- *Environmental Factor Guideline – Terrestrial Fauna* (EPA, 2016b).
- *Technical Guidance – Flora and vegetation surveys for environmental impact assessment* (EPA, 2016c).
- *Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment* (EPA, 2020).

Commonwealth

- *Matters of National Environmental Significance – Significant Impact Guidelines 1.1* (DoE, 2013).
- *EPBC Referral Guidance – Banksia Woodlands of the Swan Coastal Plain ecological community* (DEE, 2019).
- *Referral guideline for 3 WA threatened black cockatoo species* (DAWE, 2022).
- *Survey guidelines for Australia's threatened bats* (DEWHA, 2010a).
- *Survey guidelines for Australia’s threatened birds* (DEWHA, 2010b).
- *Survey guidelines for Australia’s threatened frogs* (DEWHA, 2010c).
- *Survey guidelines for Australia’s threatened mammals* (DSEWPaC, 2011a).

- *Survey guidelines for Australia's threatened reptiles* (DSEWPaC, 2011b).

2.2 Existing Environment

2.2.1 Climate

The closest long-term Bureau of Meteorology (BoM) weather station with a complete dataset is Jurien Bay Weather Station (Station 009131), located approximately 14 km northeast of the Survey Area.

Climate statistics were calculated using data from the most current climate normal, which is defined as a 30-year interval where possible. A climate normal is a period long enough to include year-to-year variations while avoiding the influence of longer-term changes in climate (BoM, 2007).

The long-term (1991 to 2020) mean minimum temperature for Jurien Bay Weather Station ranges from 9.4˚C (July) to 18.1˚C (February) and the long-term mean maximum temperature ranges from 19.8˚C (July) to 30.8˚C (February) (**Figure 1**) (BoM, 2025).

The Jurien Bay Weather Station recorded 425.0 mm of rainfall in the 12 months prior to the survey (September 2024 to August 2025), which is 78.4 mm below the long-term (1991 to 2020) average of 503.4 mm (BoM, 2025). In the three months prior to the survey (June 2025 to August 2025), 314.6 mm of rainfall was recorded, which is 29.7 mm above the long-term average of 284.9 mm for the same period (BoM, 2025).

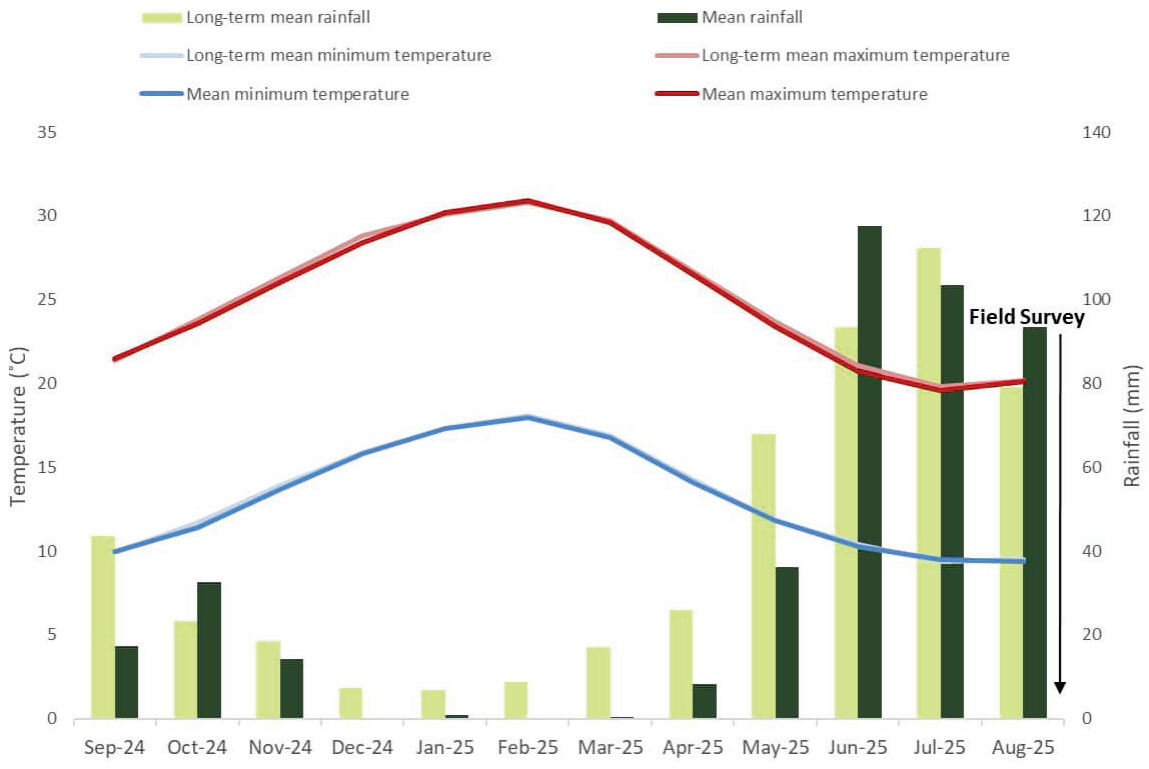


Figure 1: Climate summary of Jurien Bay Weather Station

2.2.2 Interim Biogeographic Regionalisation of Australia

The Interim Biogeographic Regionalisation of Australia (IBRA) divides Australia into 89 bioregions based on major biological, geographical, and geological attributes. These bioregions are subdivided into 419 subregions as part of a refinement of the IBRA framework (DEE, 2016). The Survey Area occurs within the Swan Coastal Plain bioregion and the Swan Coastal Plain 2 (SWA2) subregion.

The Swan Coastal Plain 2 subregion is made up of "*low lying coastal plain, mainly covered with woodlands. It is dominated by Banksia or Tuart on sandy soils, Casuarina obesa on outwash plains, and paperbark in swampy areas*" (DBCA, 2003).

2.2.3 Soil Landscape Mapping

Soil landscape mapping of Western Australia consists of a compilation of various surveys at different scales varying between 1:20,000 and 1:3,000,000 (DPIRD, 2022). The mapping comprises a nested hierarchy of levels, with each level a subdivision of the preceding level. Soil landscape mapping provides an indication of potential vegetation types and fauna habitats within the Survey Area and has been described below to the highest level of detail available for the Survey Area.

The Survey Area occurs across four soil landscape subsystems, described below (**Table 1**; **Map 2**).

Table 1: Soil landscape subsystems within the Survey Area

Subsystem		Description	Area (ha) and percentage of Survey Area
Name	Code		
Spearwood 1 subsystem	211Sp_1	Deep yellow sands	0.81 (2.7%)
Spearwood 2 subsystem	211Sp_2	Limestone outcrop; shallow soils (pockets of deeper sands)	19.48 (64.9%)
Spearwood 3 subsystem	211Sp_3	Complex of deep yellow sands and shallow sands, no limestone outcrop	1.40 (4.6%)
Spearwood 4 subsystem	211Sp_4	Limestone outcrop	8.35 (27.8%)

2.2.4 Hydrography

Hydrographic features that occur in the vicinity of the Survey Area are described in **Table 2** and shown in **Map 3** (DWER, 2018).

Table 2: Hydrographic features in the vicinity of the Survey Area

Hydrographic feature	Description
Hill River	Watercourse – major, non-perennial

Geomorphic wetland features that occur in the vicinity of the Survey Area are described in **Table 3** and shown in **Map 3** (DBCA, 2017).

Table 3: Geomorphic Wetland features in the vicinity of the Survey Area

Hydrographic feature	Description
Hill River	Permanently inundated freshwater river (salinity 2.7 at 16.3 degrees, water depth 40cm and pH 8.2 at 16.3 degrees). Primary Vegetation consists of Juncus / Lepidosperma / Baumea sedgeland. Only wetland on interface of Bassendean and Spearwood systems, P2 flora, waterbird breeding. Managed for conservation by the Department of Environment and Conservation.
Paluslope	Seasonally waterlogged paluslope. Primary vegetation consists of Melaleuca closed scrub / heath. Breeding sites for 4 species of native waterbirds. Managed for conservation by the Department of Environment and Conservation.

2.2.5 Pre-European Vegetation

The major source of data for pre-European vegetation mapping in Western Australia is the published and unpublished mapping of J. S. Beard at 1:250,000 scale. These vegetation types were later refined by Shepherd, Beeston, and Hopkins (2002), resulting in 819 Vegetation Association-level units, and a subsequent reclassification resulted in the creation of over 2,175 finer-scale System Associations (Beard *et al.*, 2013). One System Association is mapped within the Survey Area (**Table 4**). Representation of this System Association at a state, regional, and local level is shown in **Table 5** (Government of Western Australia, 2019).

Table 4: Vegetation System Associations within the Survey Area

System Association	Description	Area (ha) and percentage of Survey Area
Jurien_1029	Mixed heath with scattered tall shrubs Acacia spp., Proteaceae and Myrtaceae.	30 ha (100%)

Table 5: Representation of System Associations within the Survey Area at a state, regional, and local level

System Association	Extent				
	Pre-European (ha)	Current (ha)	Remaining (%)	Managed in DBCA lands (%)*	Within Survey Area (%)*
Representation across Western Australia					
1029	71,035.87	51,221.57	72.11	29.00	0.04
Representation across the Swan Coastal Plain Bioregion					
1029	68,329.04	49,086.11	71.84	27.96	0.04
Representation across the Swan Coastal Plain 2 Subregion					
1029	68,329.04	49,086.11	71.84	27.96	0.04
Representation across the Shire of Gingin					
1029	71,0.35.87	51,221.57	72.11	29.00	0.04

*as a portion of the current extent

2.2.6 Conservation Areas and Environmentally Sensitive Areas

Conservation areas consist of areas protected for the purpose of conservation, including but not limited to National Parks, Nature Reserves, Conservation Parks, and Regional Parks. The Survey Area does not intersect any conservation areas (DBCA, 2023a, 2023b). Environmentally Sensitive Areas (ESAs) are declared by the Department of Water and Environmental Regulation (DWER) to prevent the degradation of important environmental values such as Threatened flora, Threatened Ecological Communities (TECs), or significant wetlands. The Survey Area does not intersect any mapped ESAs (DWER, 2021).

Nearby conservation areas and ESAs are listed below:

- Southern Beekeepers Nature Reserve (R 36053), vested under the Conservation Commission of WA is located 500 m to the east of the Survey Area (Map 4).
- Un-named Nature Reserve (R 33287), vested under the Conservation Commission of WA is located 2.4 km to the northeast of the Survey Area.
- Jurien Bay Marine Park (M8), vested under the Marine Parks and Reserves Authority is located 2.7 km to the west of the Survey Area.
- Un-named Nature Reserve (R 48718), vested under the Conservation Commission of WA is located 3.5 km south of the Survey Area.
- Jurien Conservation Park (R 48717), vested under the Conservation Commission of WA is located 5 km northeast of the Survey Area.
- Boullanger, Whitlock, Favourite, Tern & Osprey Islands Nature Reserve (R 29251), vested under the National Parks and Nature Conservation Authority is located 6.4 km west of the Survey Area.
- Essex Rocks Nature Reserve (R 29257), also an ESA, vested under the Conservation Commission of WA is located 6.5 km west of the Survey Area.
- Drovers Cave National Park (R 31302), also an ESA, vested under the Conservation Commission of WA is located 7.5 km north of the Survey Area.
- Escape Island Nature Reserve (R 44683), vested under the Conservation Commission of WA is located 7.7 km to the west of the Survey Area.
- Hill River Nature Reserve (R 36093), also an ESA, vested under the Conservation Commission of WA is located 8.9 km northeast of the Survey Area.
- Beekeepers Nature Reserve (R 24496), also an ESA, vested under the Conservation Commission of WA is located 9.3 km northwest of the Survey Area.

2.2.7 Indigenous Land Rights

The Survey Area falls within the South West Settlement jurisdiction area (NNTT, 2017) and has four native title determinations over the area (Landgate, 2023a):

- Harris Family (NNTT no. WC1996/041).
- Southern Noongar (NNTT no. WC1996/109).
- Yued (NNTT no. WC1997/071).
- Gnaala Karla Booja (NNTT no. WC1998/058).

There is one Indigenous Land Use Agreements (ILUAs) over the Survey Area (Landgate, 2023b):

- Yued ILUA (NNTT no. WI2015/009).

3.0 Methods

The surveys documented in this report were undertaken in accordance with relevant EPA and DCCEEW guidelines (see **Section 2.1**).

3.1 Desktop Assessment

3.1.1 Literature Review

Background information on the Survey Area and surrounds (the Desktop Study Area) was compiled prior to the field survey. The literature review considered a selection of relevant reports detailing assessments undertaken in the region that were either publicly available from sources such as the Index of Biodiversity Surveys for Assessments (IBSA) website, the EPA Consultation Hub, or internet searches, or provided by the client. These reports are listed below in order of distance from the current Survey Area, summarised in **Appendix B**:

- Cervantes – Jurien Coastal Road: Consultative Environmental Review (Ecologia, 1997), adjacent the Survey Area (Cervantes to Jurien Bay Indian Ocean Drive)
- Level 2 Flora and Vegetation Survey – North Perth Mineral Sands Project (Single Phase) (360 Environmental, 2012a), 23 km southeast of the Survey Area and 19 km southeast of Cervantes
- Level 2 Vertebrate Fauna Survey (Single Phase) – North Perth Mineral Sands Project (360 Environmental, 2012b), 23 km southeast of the Survey Area
- Atlas Project – Detailed Fauna Assessment (Spectrum Ecology & Spatial, 2021), 23 km southeast of the Survey Area
- Warradarge Wind Farm Flora, Vegetation and Fauna Assessment (Biota Environmental Sciences, 2012), 30 km north of the Survey Area, 19 km northeast of the Brand Hwy and Coorow-Green Head Road intersection
- EP3 Study Area – Eneabba Flora and Vegetation Desktop Assessment (Umwelt Environmental, 2021), 46 km northeast of the Survey Area, adjacent the town of Eneabba
- Waddi Wind Farm Project – Cataby Supplementary Flora, vegetation and fauna survey (Ecologia, 2016), 48 km southeast of the Survey Area
- Yandin Wind Farm Flora, Vegetation and Avifauna Assessment (Ecologia, 2017), 50 km southeast of the Survey Area

3.1.2 Database Searches

Database searches were undertaken to compile a list of flora and fauna known to occur in the Desktop Study Area and identify significant flora, fauna, and ecological communities with potential to occur within the Survey Area (**Table 6**).

Table 6: Database search details

Database name	Date received	Search target	Buffer around the Survey Area
Threatened and Priority Ecological Communities database search (28-0725EC) (DBCA, 2025b)	15 July 2025	TECs and PECs	25 km

Database name	Date received	Search target	Buffer around the Survey Area
Threatened and Priority Flora (TPFL) database search (50-0725FL) (DBCA, 2025d)	15 July 2025	Threatened and Priority flora	25 km
Western Australian Herbarium Flora database search (50-0725FL) (DBCA, 2025e)	15 July 2025	Threatened and Priority flora	25 km
Threatened and Priority Fauna including black cockatoo-specific database search (53-0725FA) (DBCA, 2025c)	15 July 2025	Threatened and Priority fauna	50 km
Protected Matters Search Tool (PMST) (DCCEEW, 2025)	22 July 2025	Threatened flora, fauna, and ecological communities	25 km
NatureMap (DBCA, 2025a)	15 July 2025	Flora and fauna	10 km
Atlas of Living Australia (ALA, 2025)	4 August 2025	Flora and fauna	10 km

3.1.3 Likelihood of Occurrence

Significant flora and fauna taxa identified during the desktop assessment were assessed to determine the likelihood of their occurrence within the Survey Area before and after the field survey. The assessment used the likelihood of occurrence criteria presented in **Table 7**.

Birds listed as Marine only under the EPBC Act were not considered significant because the Marine listing does not constitute a matter of national environmental significance (MNES) and includes common terrestrial bird taxa such as the Magpie-lark (*Grallina cyanoleuca*) and Welcome Swallow (*Hirundo neoxena*). Taxa assessed as having a low likelihood of occurrence are not discussed in further detail.

Table 7: Likelihood of occurrence criteria

Rank	Criteria
Recorded	The taxon was recorded within the Survey Area during the current survey.
Previously Recorded	The taxon has been previously recorded within the Survey Area, and, for fauna, the taxon has been recorded within the Survey Area in the last 15 years.
High (Likely to occur)	Suitable habitat is present within the Survey Area, and: • For flora, the taxon has been recorded within 5 km of the Survey Area. • For fauna, the taxon has been recorded within the Desktop Study Area more than once in the last 15 years.
Medium (May occur)	Suitable habitat is marginal or limited in extent within the Survey Area, or suitable habitat is present within the Survey Area, and: • For flora, the taxon has not been recorded within 5 km of the Survey Area, however it has been recorded within 15 km of the Survey Area. • For fauna, the taxon has not been recorded within the Desktop Study Area more than once in the last 15 years.

Rank	Criteria
Low (Unlikely to occur)	Suitable habitat is not present within the Survey Area, or the Survey Area is outside the taxon's known distribution, or the taxon is very infrequently recorded in the locality and only likely to occur as a transient or vagrant, or the taxon is believed to be extinct or locally extinct.

3.1.3.1 Black Cockatoo Desktop Assessment

In addition to the general Desktop Assessment outlined above, a black cockatoo-specific desktop assessment was undertaken prior to the field survey. Modelled distributions and previous records, including known or potential breeding and roosting sites, of the three threatened black cockatoo taxa were reviewed (DAWE, 2022; DBCA, 2024).

3.2 Field Survey

3.2.1 Survey Timing, Field Personnel and Licences

A single spring season field survey was undertaken from 1-3 September 2025. Survey effort is illustrated in **Map 5** with details of field personnel, including their level of experience, role, and flora collection licence number are below in **Table 8.**

Animal ethics approval was obtained under scientific use licence number U336 / 2023 - 2025 and permit number WAEC 23-11-67.

Table 8: Field personnel

Personnel	Experience	Licence	Role
Grant Buller	5 years	FB62000321	Senior Botanist / Field Lead
Poppy Walker	7 years	FB62000305	Associate Ecologist

3.2.2 Weather Conditions

Weather conditions during the fauna survey are presented in **Table 9**. Daily temperature and rainfall data is from the Jurien Bay Weather Station (Station 009131) (BoM, 2025). Weather conditions can impact potential detection of fauna taxa during a survey.

Table 9: Field survey weather conditions

Date	Temperature (°C)		Rainfall (mm)
	Min	Max	
01/09/2025	5.2	23.9	0
02/09/2025	7.0	23.9	0
03/09/2025	7.0	20.3	0

3.3 Flora and Vegetation

3.3.1 Establishment of Flora Sites

Indicative site selection was undertaken prior to the survey based on aerial photography and available literature. The number and locations of flora sites were then adjusted on site to

achieve sites most representative of the vegetation present. Where possible, at least three flora sites were established in each vegetation type within the Survey Area.

Flora sites consisted of 10 x 10 m quadrats, measured out using measuring tapes, and with corners aligned to northwest, northeast, southeast and southwest. As a minimum, the northwest corner of each quadrat was demarcated with an aluminium fence dropper and where possible a fence dropper was also installed in the southeast corner. A comprehensive list of the flora present at the time of sampling was recorded for both quadrat and relevé sites.

Flora site locations were recorded using a GPS-enabled handheld device, with points recorded at each corner of a quadrat, the start and finish point of linear relevés, and the central point of circular relevés. The following information was recorded at each flora site:

- Site code.
- Date and personnel.
- Landform and soil description.
- Relevant site descriptors including, slope, aspect, litter cover, bare ground cover, and fire history.
- Inventory of vascular flora including the approximate average height and percentage foliar cover for each taxon.
- Vegetation description in accordance with the National Vegetation Information System (NVIS) Level 5 ‘association’ whereby the dominant growth form, height, cover, and species (three species) for the three traditional strata (upper, mid, and ground) are described.
- Vegetation condition in accordance with the South-West Botanical Province vegetation condition scale.
- Evidence of disturbance (for example clearing, rubbish, feral animals, weed incursion, and evidence of feral animals and dieback) where present.
- Photograph of the vegetation occurring within the site.

A total of eight flora sites (all quadrats) were established within the Survey Area. An additional 30 mapping notes were completed to aid vegetation mapping. Flora site locations are shown on **Map 5**.

3.3.2 Opportunistic Flora

Flora taxa observed outside flora sites were recorded opportunistically. When significant flora, Declared Pests (DPs), or WoNS were encountered opportunistically, a GPS location and count of the individuals present was recorded.

3.3.3 Targeted Searching

Prior to the survey a list of significant flora taxa with the potential to occur within the Survey Area was compiled (see **Section 3.1.3**). Field personnel familiarised themselves with photographs, reference samples, and descriptions of these taxa before conducting the survey.

Targeted searching was undertaken within habitat suitable for significant flora. Potential habitat within the proposed footprint was prioritised over areas outside the proposed footprint.

When Threatened or Priority flora were encountered in the field a GPS location was taken and a count of individuals was recorded, followed by a search in the local vicinity to determine if any other individuals were present nearby and delineate population boundaries where relevant and possible. Specimens of potential significant flora that could not be identified in the field were collected for identification and lodgement at the Western Australian Herbarium (WAH).

3.3.4 Vegetation Type and Condition Mapping

Vegetation type and condition mapping was initially conducted in the field with boundaries delineated over aerial photography at a scale of 1:1,000. Vegetation types were refined based on taxonomic identification of flora collections and mapping notes taken during the field survey. Further validation of vegetation types was undertaken using multivariate analysis of data collected from the quadrats. Vegetation condition mapping was refined based on site data and mapping notes. Polygons were digitised using GIS software.

Where significant vegetation was encountered, personnel mapped the extent of this vegetation through the use of mapping notes and GPS track logs.

3.3.5 Taxonomy and Nomenclature

Where field identification of plant taxa was not possible, specimens were collected for identification using WAH resources. Identification of flora collections was completed by experienced taxonomist Frank Obbens.

FloraBase (DBCA, 2026a) was used to determine the conservation status and known distribution of each taxon. The control status of introduced flora was sourced from the WoNS list and declared plants list (DPIRD, 2025; CISS, 2026).

Any significant flora taxa, including potential Threatened and Priority taxa, range extensions, and potential new taxa, were submitted to the WAH for verification and lodgement. Where relevant, Threatened and Priority Flora Report Forms (TPFRFs) were submitted to DBCA.

3.3.6 Statistical Analyses

3.3.6.1 Vegetation Type Validation

Multivariate analysis to validate vegetation types was undertaken using PRIMER version 7. A comparison of the similarity of floristic composition between flora sites based on species presence or absence was undertaken using the Bray-Curtis similarity index. Vegetation types were defined based on approximately 50-64% similarity and distinguished visually in a dendrogram cluster analysis. The analysis was undertaken on a data matrix comprising 53 vascular flora taxa and eight flora sites. Singletons (flora taxa recorded at only one site) were excluded from the analysis as they can result in bias due to the Bray-Curtis coefficient and grouping properties. Unidentified or partially identified flora taxa were removed based on their ambiguity; exceptions were made for taxa that could not be identified but were confirmed to be the same across multiple sites. Introduced taxa were also excluded as their presence is typically associated with a disturbance rather than representative of a vegetation type.

3.3.6.2 Floristic Community Type Analysis

Multivariate analysis for Floristic Community Type (FCT) analysis was undertaken using PRIMER version 7. A comparison of the similarity of floristic composition between quadrat data from the field survey and quadrat data compiled between 1990 and 1996 (Keighery *et al.*, 2012) based on species presence or absence was undertaken using the Bray-Curtis

similarity index. The Keighery et al. (2012) dataset combines a total of 1098 sites across the Swan Coastal Plain (SCP) and is a publicly available standardised regional vegetation dataset. Where possible, quadrats established within the Survey Area were matched with analogous FCTs as presented in the Keighery et al. (2012) dataset to aid in determining the vegetation type and the significance of the vegetation. Unidentified or partially identified flora taxa were removed based on their ambiguity.

3.3.6.3 Threatened Ecological Community (TEC) Assessment

Further validation of the FCT analysis was undertaken with an assessment against key diagnostic criteria in the Approved Conservation Advice for the '*Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion*' (DCEEW, 2023). Additional contextual information such as the presence of indicator species, soil types, landform position, and knowledge of regional occurrences was used as part of the assessment process.

3.3.6.4 Species Accumulation Curve

A species accumulation curve was plotted using PRIMER version 7 to determine the adequacy of the survey. The treatments comprised Sobs (Mao Tao), which effectively smooths the curve of observed species by simulating an infinite number of randomisations of the sample order, and richness estimators Chao 1, Chao 2, Jacknife 1, Jacknife 2, Bootstrap, and Michaelis-Menton to predict the theoretical maximum number of species that could potentially be recorded. The species accumulation curve was calculated using systematic sampling data from flora sites and does not include opportunistic flora records. All identified flora taxa, including annual and perennial, within each flora site was used to generate the species accumulation curve. Unknown flora taxa that could not be identified to a species level were excluded unless it was unlikely to be confused with another species.

3.4 Fauna

3.4.1 Habitat Assessment and Mapping

Habitat assessments were undertaken in representative areas of fauna habitat within the Survey Area to record habitat values. Where possible, at least one habitat assessment was recorded within each habitat type. Habitat assessment locations are shown in **Map 5**.

The following information was collected at each habitat assessment locations using a GPS-enabled handheld device:

- Site photo.
- Landform.
- Soil type and colour.
- Rock types, surface stone cover, and size classes.
- Key habitat and microhabitat features including leaf litter, logs, burrows, rocky outcrops, rock crevices, hollows, and water sources.
- Habitat quality, fire history, and evidence of disturbance.
- General description of vegetation structure.

Fauna habitat mapping was based on a combination of field observations, habitat assessment data, aerial imagery, and vegetation type mapping. Polygons were digitised using GIS software.

3.4.2 Opportunistic Observations

Opportunistic observations of fauna were recorded throughout the Survey Area, including primary evidence (direct sightings, calls, remains) and secondary evidence (tracks, scats, diggings).

3.4.3 Black Cockatoo Habitat Assessment

A black cockatoo habitat assessment was undertaken to assess breeding, night roosting, and foraging habitat values for Carnaby's Cockatoo (*Zanda latirostris*). Foraging habitat values were not calculated for Baudin's Cockatoo (*Zanda baudinii*), or Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) as the Survey Area lies outside their current known range.

3.4.3.1 Breeding Habitat

Black cockatoo breeding habitat constitutes any habitat that contains potential, suitable, or known nesting trees (DAWE, 2022). Potential, suitable, and known nesting trees were assessed in accordance with DAWE (2022) and given a ranking of 1 to 5 based on the black cockatoo nesting tree ranking system developed by Bamford Consulting Ecologists:

- Known nesting tree:
  - Tree with active nest observed. Adult or immature bird seen entering or emerging from hollow.
  - Tree contains at least one large, suitable[1] hollow with visible with chew marks around entrance.
- Suitable nesting tree:
  - Tree contains at least one large, suitable hollow that is for nesting by black cockatoos but no chew marks are present, or a potential suitable hollow is present as suggested by the structure of the tree, such as large broken branches.
- Potential nesting tree:
  - Tree contains at least one large hollow or a potential large hollow is present as suggested by the structure of the tree, however the hollow is not the preferred angle for black cockatoos.
  - Tree is of a suitable diameter as breast height (DBH)[2] to develop a nest hollow, however tree lacks large hollows or broken branches that might have large hollows.

[1] Suitability of a hollow is contingent on its physical dimensions and orientation. Suitable hollows are usually oriented upwards, above 3 m high, and have an estimated opening diameter of greater than 100 mm (Saunders, Mawson and Dawson, 2014).

[2] Suitable DBH to develop a nest hollow is greater than 500 mm for most tree species. Trees with a DBH of 300 – 500 mm were also recorded due to their potential to develop hollows in future. DBH was measured approximately 1.3 m above the ground, except in instances where trees had swelling or forking at breast height, in which case the diameter measurement was taken just above the swelling or forking. In instances where trees had multiple stems at breast height, the stem with the largest diameter was recorded.

3.4.3.2 Night Roosting Habitat

Potential black cockatoo roosting habitat consists of tall trees, particularly when they occur near water sources (for Carnaby's Cockatoo and Baudin's Cockatoo) or on the edges of large forests (for Forest Red-tailed Black Cockatoo) (DAWE, 2022). Areas containing tall trees suitable for black cockatoo roosting were identified and recorded. If observed, evidence of black cockatoo roosting, which typically consists of large amounts of scat with occasional feathers at the base of trees, was recorded.

3.4.3.3 Foraging Habitat

Foraging habitat was assessed based on the presence and coverage of known foraging plants for black cockatoos as outlined in the *Referral guideline for 3 WA threatened black cockatoo species* (DAWE, 2022) or other available literature. Foraging habitat was mapped and classified using the Foraging Habitat Scoring Tool (DAWE, 2022) and Habitat Scoring System (DCCEEW, 2023). For the purposes of referral to the Minister for the Environment, the Foraging Habitat Scoring Tool is to be applied once to the entire impact area of a proposed action, even if there is more than one type of foraging habitat (DAWE, 2022).

If observed, evidence of black cockatoo foraging, including direct observations of foraging and chewed foraging material (e.g. nuts or cones) was recorded.

3.4.4 Identification and Taxonomy

Terrestrial vertebrate fauna taxa were identified in the field and released on site. Where there was doubt on a species name (through subsequent name changes or taxonomic reviews), an effort was made to determine the current scientific name for each taxon. Taxonomy and nomenclature in this report follows the Checklist of the Terrestrial Vertebrate Fauna of Western Australia (WAM, 2025) where relevant.

3.5 Limitations

Limitations and constraints of the flora, vegetation, and fauna survey are detailed below in **Table 10**.

Table 10: Limitations and constraints associated with the survey

Variable	Degree of limitation	Potential constraints on survey outcomes
Availability of data and information	None	Sufficient data and information, including regional and local contextual information, was available to complete the scope of the survey.
Competency and experience of the survey team	None	The survey was undertaken by a team with extensive experience undertaking similar scopes within the bioregion. • Grant Buller, Senior Botanist – 5 years' experience • Poppy Walker, Associate Zoologist – 7 years' experience
The proportion of flora and fauna identified, recorded, or collected	None	Of the 129 flora taxa recorded, 15 specimens (11.6%), could not be identified to species level because they were either sterile at the time of the survey or collection material was insufficient. The unidentified flora specimens were not analogous to significant flora taxa. Of the 17 fauna taxa recorded, one taxa, could not be identified to species level due to call similarity.

Variable	Degree of limitation	Potential constraints on survey outcomes
Scope of the survey	None	The scope of the survey was limited to vascular plants and terrestrial vertebrate fauna. No further exclusions were made within these groups.
Adequacy of the survey intensity and proportion of survey achieved	None	A minimum of three quadrats were installed within each vegetation type. Additional survey effort may yield additional flora and fauna taxa, however, sufficient time and effort was allocated to the survey given the size and complexity of the Survey Area and the expected level of survey intensity.
Access problems	None	The Survey Area was sufficiently accessed by vehicle and on foot.
Timing, weather, and season	None	The recommended primary survey period for flora and vegetation within the South-west Botanical Province occurs from September to November. The flora and vegetation survey/s (1 – 3 September 2026) was undertaken within the recommended primary survey period. The recommended primary survey periods for the Southern broad climatic regions are: • Amphibians – May-August (autumn-winter breeders), November-December (summer breeders). • Birds – September-December (most bush birds), November-March (migratory birds). • Mammals – September-December. • Reptiles – October-December (primary survey), February-March (secondary survey). The fauna survey (1 – 3 September 2026) was undertaken within the recommended primary survey period for mammals, birds and amphibians.
Disturbance that may have affected the results of survey	None	Areas of disturbance associated with clearing for tracks and previous mining were present within the Survey Area but were not a limitation on the results of the survey.
Problems with data and analysis, including sampling biases	None	Species accumulation curves provide an indication of survey adequacy at each sampling location but do not necessarily reflect survey adequacy across the entire Survey Area, however, this is not considered a limitation on the survey outcomes. Survey effort for significant flora and fauna taxa was concentrated in preferred habitats. This may introduce a bias where the use of non-preferred habitat is underrepresented, however, this is not considered a limitation on the survey outcomes.

4.0 Results

4.1 Flora and Vegetation

4.1.1 Desktop Assessment

The database searches and literature review identified 133 significant flora taxa occurring within the Desktop Study Area, comprising:

- 14 Threatened taxa
- Four Priority 1 taxa
- 36 Priority 2 taxa
- 54 Priority 3 taxa
- 25 Priority 4 taxa

Key findings of the literature review are summarised in **Appendix B,** and database search results are summarised in **Appendix C** and presented in **Map 6**.

A total of four significant ecological communities were identified within the Desktop Study Area (**Table 11**). Significant ecological communities identified by database searches are presented in **Map 6**.

Table 11: Significant Ecological Communities in the vicinity of the Survey Area

Community Name	State Listed	Federally Listed	Approx. Distance from Survey Area (km)
Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain	Priority 3	Critically Endangered	8 km south-southeast
Banksia Woodlands of the Swan Coastal Plain ecological community	Priority 3	Endangered (part of)	9 km east
Subtropical and Temperate Coastal Saltmarsh	Priority 3	Vulnerable	16 km northwest
Stromatolite community of stratified hypersaline coastal lake (Lake Thetis)	BCA Critically Endangered	-	18 km south

4.1.1.1 Significant Flora Potentially Occurring Within the Survey Area

The pre-survey likelihood of occurrence identified that of the 133 significant flora taxa identified by the desktop assessment:

- Eight taxa were considered to have a high likelihood of occurrence.
- 42 taxa were considered to have a medium likelihood of occurrence.
- The remaining 83 taxa were considered to have a low likelihood of occurrence or unknown based on information availability.

Following the survey, the likelihood of occurrence assessment identified that:

- Two taxa were recorded within the Survey Area.
- No taxa were considered to have a high likelihood of occurrence.

- Eight taxa were considered to have a medium likelihood of occurrence.

The remaining 123 significant flora taxa were assessed as having a low likelihood of occurrence within the Survey Area.

The complete results of the pre-survey and post-survey significant flora likelihood of occurrence assessment are provided in **Appendix C**.

4.1.2 Floristic Composition

The field survey recorded a total of 129 taxa from 94 genera across 45 families (**Appendix D**). The most abundant genus was *Acacia* (5 taxa) and *Hakea* (4 taxa), while the most diverse families were Fabaceae (15 taxa), Proteaceae (12 taxa), and Asteraceae (10 taxa).

4.1.3 Significant Flora

4.1.3.1 Threatened and Priority Flora Recorded Within the Survey Area

Two Priority flora taxa were recorded within the Survey Area and one Priority species was recorded just outside the Survey Area (**Table 12**, **Map 7**). Threatened and Priority Flora Report Forms have been submitted to DBCA and are provided in **Appendix E**. No Threatened flora taxa were recorded.

Table 12: Threatened and Priority flora recorded within or adjacent to the Survey Area

Taxon (status)	Quadrat or Opportunistic	Location and estimated number of individuals/cover	Habitat/landform
Acacia lasiocarpa var. *lasiocarpa* Cockleshell variant (E.A. Griffin 2039)	JBQ01 JBQ02 JBQ03 JBQ04 JBQ05 JBQ06 JBQ08	JBQ01 – 1% JBQ02 – 1% JBQ03 – 2% JBQ04 – 2% JBQ05 – 1% JBQ06 – 0.5% JBQ08 – 1%	*Banksia leptophylla* var. *cygnorum*, *Hibbertia hypericoides* low shrubland on undulating plains
Beyeria cinerea subsp. *cinerea* (P3)	JBQ01 and JBQ08	JBQ01 – 0.5% JBQ08 – 0.1%	*Melaleuca huegelii-M. systena* shrublands of limestone ridges
Dampiera tephrea (P3)	Opportunistic	Opportunistic - 35	*Banksia leptophylla* var. *cygnorum*, *Hibbertia hypericoides* low shrubland on undulating plains

4.1.4 Introduced Flora

A total of 10 introduced taxa were recorded within the Survey Area, representing 7.6 % of the total taxa recorded (**Table 13**). None are listed as Declared Pests under the BAM Act or are listed as a WoNS.

Table 13: Introduced flora taxa recorded within the Survey Area

Taxon	Common name	Status under BAM Act	WoNS
Amaranthus ?viridis	Green Amaranth	Permitted – s11	No
Avellinia festucoides	-	Permitted – s11	No
Brassica tourneforti	Mediterranean Turnip	Permitted – s11	No
Ehrharta calycina	Perennial Veldt Grass	Permitted – s11	No
Ficinia marginata	Coarse Club Rush	Permitted – s11	No
Hypochaeris radicata	Flat Weed	Permitted – s11	No
Lysimachia arvensis	Pimpernel	Permitted – s11	No
Raphanus raphanistrum	Wild Radish	Permitted – s11	No
Sonchus oleraceus	Common Sowthistle	Permitted – s11	No
Ursinia anthemoides	Ursinia	Permitted – s11	No

4.1.5 Unconfirmed Flora

Fifteen specimens (11.5% of the taxa recorded) could not be identified to species level because the taxa were sterile at the time of the survey (**Appendix D**). Of these specimens, two were identified to family level, seven were identified to genus level, and six were tentatively identified to species level. Six unconfirmed flora taxa may represent duplicates of taxa that were confirmed within the Survey Area.

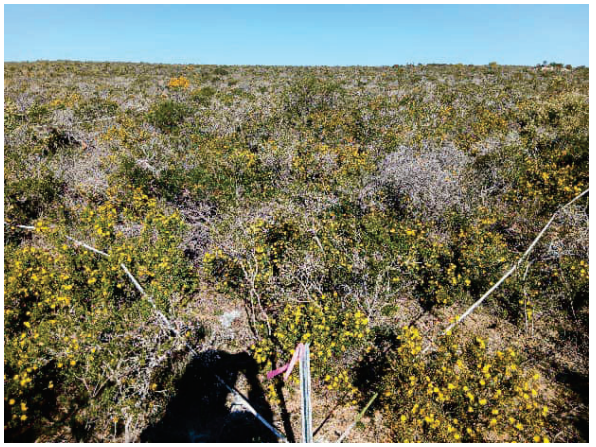
None of the unconfirmed flora taxa were analogous to significant flora taxa identified by the desktop assessment.

4.1.6 Vegetation Types

Two vegetation types were described and mapped across two broad landforms within the Survey Area (**Table 14**; **Map 7**).

Detailed site sheets for each quadrat are provided in **Appendix F**.

Table 14: Vegetation types recorded within the Survey Area

Vegetation type and description*	Local landform	Total area, percentage of Survey Area	Sites	Vegetation condition	Representative photograph
MhMs: *Melaleuca huegelii* and *M. systena* mid shrubland over *Grevillea glabrilimba* low sparse shrubland over *Desmocladus asper* low open rushland and low open mixed herbs.	Limestone ridge/outcropping, loamy sand	0.92 ha, 3.05%	JBQ01 JBQ02 JBQ07 JBQ08	Very Good to Excellent	
BlHh: *Banksia leptophylla* var. *melletica, Melaleuca systena, Calothamnus quadrifidus* subsp. *quadrifidus* low to mid shrubland over *Hibbertia hypericoides* subsp. *hypericoides* low heathland over *Desmocladus asper* low open rushland and mixed forbs.	Undulating plain, loamy sand	25.11 ha, 83.61%	JBQ03 JBQ04 JBQ05 JBQ06	Excellent	

Vegetation type and description*	Local landform	Total area, percentage of Survey Area	Sites	Vegetation condition	Representative photograph
Native regrowth: Previously cleared, native regrowth of BlHh vegetation type	Undulating plain	2.56 ha, 8.54%	Mapping notes	Degraded to Good	

4.1.7 Vegetation Condition

Vegetation condition within the Survey Area ranged from Degraded to Excellent, with the majority (85.57%) being in Excellent condition (**Table 15**; **Map 8**).

Evidence of disturbance was primarily associated with weeds, human access, and previous clearing for tracks and mining. Cleared areas, which comprised 1.44 ha (4.80%), were not assessed for vegetation condition as they were devoid of natural vegetation. The 0.99 ha area proposed for the pit expansion consisted of vegetation in Excellent condition.

Table 15: Summary of vegetation condition within the Survey Area

Vegetation condition	Area (ha)	Percentage of Survey Area
Excellent	25.70	85.57
Very Good	0.33	1.09
Good	2.12	7.05
Degraded	0.45	1.49
Subtotal	**28.59**	**95.20**
Cleared Areas	1.44	4.80
Total	**30.03**	**100**

4.1.8 Multivariate Analysis

Site-by-site floristic composition analysis was conducted using presence/absence to produce vegetation type groupings. Where necessary, site contextual information (soil, landform, outcropping) was used to delineate final vegetation types. A dendrogram cluster output showing the vegetation types is shown in **Appendix G.1**. The following observations were made from the analysis:

- Sites JBQ03, JBQ04, JBQ05 and JBQ06 grouped cohesively within the BlHh vegetation type with an average similarity of 66.74%. As expected, the dominant shrub species recorded within these sites were the main contributors towards the grouping in the analysis: *Banksia leptophylla* var*. melletica, Calothamnus quadrifidus* subsp*. quadrifidus, Melaleuca systena* and *Hibbertia hypericoides* subsp*. hypericoides.*
- Sites JBQ01, JBQ02, JBQ07, and JBQ08 grouped together to form MhMs at a similarity of 59.74%. JBQ02 was grouped separately by the analysis, which may have been due to more influence from the surrounding BlHh vegetation type; JBQ02 was lower down in the landscape compared with the other three sites in MhMs, which were more associated with limestone ridges/outcropping.

Selected inputs and outputs of the floristic analysis are presented in **Appendix G.2**.

4.1.9 Floristic Community Type (FCT) Analysis

Nearest neighbour statistical analysis of the flora site data identified six SCP floristic community types (FCT) from Keighery et al. (2012) as having the highest similarity to the sites established within the Survey Area (**Appendix G.3)**:

- FCT 24 – Northern Spearwood shrublands and woodlands (P3, EN).
- FCT 26a – *Melaleuca huegelii - M. systena* shrublands of limestone ridges (TEC).

- FCT 26b – Woodlands and mallees on limestone.
- FCT 27 – Species poor mallees and shrublands on limestone.
- FCT 28 – Spearwood *Banksia* attenuata or Banksia attenuata-Eucalyptus woodlands.
- FCT 29b – *Acacia* shrublands on taller dunes (P3).

Nearest neighbour similarity from the FCT analysis indicated that four sites – JBQ01, JBQ02, JBQ07 and JBQ08 – had highest similarity to FCT 26a (**Table 16**), one of six FCTs listed as occurring on the Spearwood dune system (Keighery et al. 2012). FCT 26a is the State-listed '*Melaleuca huegelii - M. systena shrublands of limestone ridge' (Swan Coastal Plain Community type 26a – Gibson et al. 1994)*' TEC (Luu and English, 2005), which also represents the Federally-listed '*Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion*' TEC (DCEEW, 2023) (see **Section 4.1.10**).

Other outcomes from the nearest neighbour analysis were:

- Sites JBQ05 and JBQ06 were most analogous to FCT 28 Spearwood *Banksia attenuata* or *Banksia attenuata-Eucalyptus* woodlands, though similarity was relatively low (<25%) (**Table 16**).
- Sites JBQ03 and JBQ04 aligned with four different FCTs at less than 30% similarity (**Table 16**).

The four sites that aligned to FCT 26a are likely to represent this FCT, and thus the TEC. This was further validated by an assessment against the key diagnostic criteria outlined in the Approved Conservation Advice for the Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion (DCEEW, 2023), using key contextual information to inform the assessment (**Appendix G.4**; see also **Section 4.1.10.1**).

Sites JBQ05 and JBQ06 had highest similarity to FCT 28, which is a component of the Banksia woodlands on the Spearwood dunes (Gibson *et al.*, 1994). Whilst the two sites shared some understorey indicator species with FCT 28 (e.g. *Hibbertia hypericoides* subsp. *hypericoides*), they lacked the necessary indicator species such as *Banksia attenuata*, *Eucalyptus marginata* or *Corymbia calophylla* to conclusively classify FCT 28.

JBQ03 and JBQ04 were most analogous to the Keighery et al (2012) sites that represented FCT 26b 'Woodlands and mallees on limestone' and FCT 29b 'Acacia shrublands on taller dunes' (P3), respectively (**Table 16**). However, FCT 29b is more likely to be centred on the Quindalup dune system rather than the Spearwood dune system (Keighery *et al.*, 2012), and is therefore unlikely to represent JBQ04. FCT 24 – the Northern Spearwood shrublands and woodlands (P3, EN) – also shared some similarity with JBQ04, sharing heathland taxa such as *Banksia sessilis* var. *cygnorum* (formerly *Dryandra sessilis*) and *Calothamnus quadrifidus* subsp. *quadrifidus*. However, the distribution for FCT 24 lies significantly further south of the very northern extent of the SCP dataset, and this likely excludes classifying FCT 24 to site JBQ04.

Given the distance between the most northerly distribution of the SCP dataset from the Survey Area (approximately 80 km), this may partly account for the low similarity percentages in the nearest neighbour analysis, particularly for sites JBQ03-06. As a result, these four sites could not be conclusively assigned FCTs. Sites JBQ01, JBQ02, JBQ07 and JBQ08 have been assigned FCT 26a (*Melaleuca huegelii - M. systena* shrublands of limestone ridges) based on the outcome of the FCT analysis (**Table 16**). The full outcome of the FCT analysis and nearest neighbour analysis – including FCTs excluded from the full FCT comparison is shown in **Appendix G.3**.

Selected inputs and outputs of the FCT analysis are presented in **Appendix G.2**.

Table 16: Floristic community analysis of flora sites within the Survey Area

Flora Site	Nearest Neighbour Analysis			FCT Comparison
	Similarity (%)	Site	FCT	
JBQ01	37.33	YAN-24	26a	*Melaleuca huegelii - M. systena* shrublands of limestone ridges
	32.43	SHE-5	26a	
	32.00	NEER-10	24	
JBQ02	23.88	YAN-15	26a	*Melaleuca huegelii - M. systena* shrublands of limestone ridges
	23.33	YAN-13	26a	
	23.19	Guild06	29b	
JBQ03	28.95	WABL-3	26b	Not assigned
	25.64	wilb04	26b	
	25.35	SHE-4	26a	
JBQ04	29.41	Guild02	29b	Not assigned
	28.57	bold12	24	
	26.67	SEAB-6	28	
JBQ05	23.53	YAN-8	28	Not assigned
	21.92	YAN-11	26b	
	21.74	NEER-7	24	
JBQ06	24.49	wilb06	28	Not assigned
	23.76	Hepb01	28	
	22.86	SEAB-6	28	
JBQ07	30.99	YAN-24	26a	*Melaleuca huegelii - M. systena* shrublands of limestone ridges
	28.13	BOLD-4	24	
	28.57	WHILL-4	27	
JBQ08	31.58	SHE-5	26a	*Melaleuca huegelii - M. systena* shrublands of limestone ridges
	31.25	Guild02	29b	
	31.17	YAN-24	26a	

4.1.10 Significant Ecological Communities

State-listed Threatened Ecological Communities (TECs) are considered significant and are protected as ESAs under the EP Act. In Western Australia, there are 69 recognised TECs, many of which are also listed under the federal EPBC Act. Federally listed TECs are considered Matters of National Environmental Significance (MNES).

Priority Ecological Communities (PECs) are ecological communities that do not currently meet the criteria for listing as a TEC under the EP Act and are identified and managed by the DBCA. PECs are listed under priority levels 1, 2 and 3 and are ranked in order of priority for survey and/or definition of the community, and evaluation of conservation status, so that consideration can be given to their eligibility as TECs (DBCA, 2023e).

4.1.10.1 Threatened Ecological Communities

During the field surveys, it was evident that at least two clear vegetation types were present within the Survey Area, one of them being a shrubland dominated by *Melaleuca huegelii* and *M. systena* on exposed low limestone rises (MhMs). This vegetation comprised a mid to tall shrubland of *Melaleuca huegelii*, *Melaleuca systena* and *Banksia sessilis* var. *cygnorum* over low sparse *Grevillea glabrilimba*[3] and *Acacia lasiocarpa* var. *lasiocarpa* Cockleshelll variant (E.A. Griffin 2039) (P2) shrubs over *Desmocladus asper* rushland and mixed forbs of *Daucus glochidiatus*, *Conostylis candicans* subs. *calcicola* and *Lomandra maritima*.

Together, three separate patches of this community comprised 0.92 ha (3.05%) of the Survey Area. An additional area comprising 1.765 ha, was also recorded outside the Survey Area, and formed part of one of the three patches. It was also noted that the community appeared to be present on the northern side of the east-west track, directly to the north of this patch, although this was further outside the Survey Area and was not mapped.

Following the FCT analysis, vegetation type MhMs was considered to be analogous to FCT26a '*Melaleuca huegelii - M. systena shrublands of limestone ridge' (Swan Coastal Plain Community type 26a – Gibson et al. 1994)*'. Given that FCT 26a also represents the Federally-listed 'Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion' TEC (DCEEW, 2023), each of the three separate patches[4] – represented by the four flora sites – were assessed against the key diagnostic criteria listed in the Approved conservation advice for the TEC (DCEEW, 2023) (**Appendix G.4).**

Following the assessment, each of the three patches of vegetation type MhMs was assessed as being representative of the Federal TEC (**Appendix G.4**), totalling an area of 2.68 ha. Mapping of the TEC patches is presented in **Map 9**, and a TEC/PEC Occurrence Report Form (**Appendix E**) has been submitted to DBCA.

4.1.10.2 Other Significant Vegetation

The remaining vegetation type BlHh was considered significant for reasons other than listing as a TEC or PEC. Vegetation type BlHh supported the Priority 2 *Acacia lasiocarpa* var. *lasiocarpa* Cockleshelll variant (E.A. Griffin 2039), where it was found in each of the four quadrats within this vegetation type at percentage covers of between 0.5% and 2%.

4.1.11 Species Accumulation Curve

Analysis of systematic flora data for the Survey Area produced a Sobs curve that is beginning to approach an asymptotic plateau (**Figure 2**). All richness estimators were greater than the Sobs curve, indicating that the observed species richness was lower than predicted by the analysis. The observed species richness for the Survey Area was 91, whereas estimated species richness ranged from 103.9 (Bootstrap) to 133.4 (Jacknife2), which suggests that approximately 68.2 to 87.6% of the theoretical maximum number of flora species was recorded during the field survey (**Table 17**).

[3] *Grevillea glabrilimba* was formerly known as *G. preissii* subsp. *glabrilimba*, which was part of the original *G. preissii* complex, a typical component of the HSL TEC.

[4] One of the patches extended outside the Survey Area, and formed part of Patch 1; this was assessed as one Patch in the assessment.

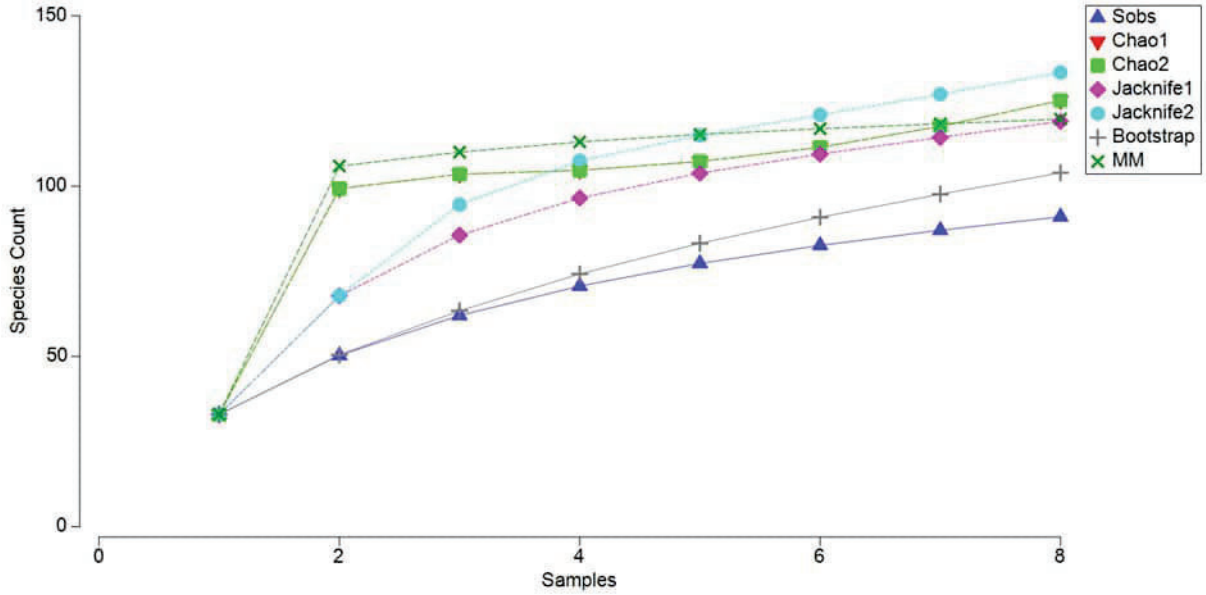


Figure 2: Flora species accumulation curve

Table 17: Flora species richness estimators

Treatment	Estimated species richness	Observed species richness as a proportion of estimated species richness
Chao 1	125.1	72.7%
Chao 2	125.1	72.7%
Jacknife 1	119.0	76.5%
Jacknife 2	133.4	68.2%
Bootstrap	103.9	87.6%
Michaelis-Menton	119.7	76.0%

4.2 Fauna

4.2.1 Desktop Assessment

The database searches and literature review identified 321 terrestrial vertebrate fauna taxa occurring within the Desktop Study Area, comprising:

- 29 mammals, of which seven are significant.
- 215 birds, of which 58 are significant.
- 61 reptiles, of which seven are significant.
- 11 amphibians, of which none are significant.

Key findings of the literature review are summarised in **Appendix B**, a complete list of fauna taxa recorded within the Desktop Study Area is presented in **Appendix H**, and database search results are displayed in **Map 10**.

4.2.1.1 Black Cockatoo Desktop Assessment

The Survey Area occurs within the modelled distribution of the Carnaby's Cockatoo (DAWE, 2022). The DBCA database search results are presented in **Map 11** and summarised below:

- A total of 624 black cockatoo records were identified, comprising 580 Carnaby's Cockatoo records, one Baudin's Cockatoo record, and 43 White-tailed Black Cockatoo (i.e. Baudin's Cockatoo or Carnaby's Cockatoo) records.
- Carnaby's Cockatoo has been recorded 6.9 km north of the Survey Area in 2022, Baudin's Cockatoo has been recorded 8 km northwest of the Survey Area in 1958, and White-tailed Black Cockatoo (i.e. Baudin's Cockatoo or Carnaby's Cockatoo) has been recorded 28.4 km north of the Survey Area in 1980.
- 67 confirmed White-tailed Black Cockatoo (i.e. Baudin's Cockatoo or Carnaby's Cockatoo) breeding sites occur within the Desktop Study Area, the closest of which is 27.5 km north of the Survey Area. All occurred in natural hollows.
- 36 potential White-tailed Black Cockatoo (i.e. Baudin's Cockatoo or Carnaby's Cockatoo) breeding sites occur within the Desktop Study Area, the closest of which is 23.3 km northeast of the Survey Area. All occurred in natural hollows.
- 10 black cockatoo roost sites occur within the Desktop Study Area. Activity has been recorded at all these roost sites since 2010. The nearest roost site is approximately 10.6 km north-northeast of the Survey Area.

Key findings of the literature review are summarised in **Appendix B**.

4.2.2 Fauna Habitats

Three fauna habitats (excluding cleared areas) were identified and mapped within the Survey Area. Fauna habitats are presented in **Map 12**, described below in **Table 18**, and site sheets for each habitat assessment are provided in **Appendix I**. Small discrepancies in fauna habitat extents (i.e., not adding up to the exact area extent of the Survey Area) are due to rounding. The 0.99 ha area proposed for the pit expansion was comprised entirely of Proteaceae shrubland fauna habitat.

Table 18: Fauna habitats recorded within the Survey Area

Fauna habitat	Total area, percentage of Survey Area	Sites	Habitat description	Representative photograph
Proteaceae Shrubland	25.11 ha, 84%	HAB-01 HAB-04 HAB-05 HAB-06 HAB-07 HAB-08	Mid heathland of *Banksia* spp., *Melaleuca* spp., *Calothamnus* spp. low to mid shrubland over low heathland over low open rushland and mixed forbs. Leaf litter provides shelter for small reptiles and mammals. Sandy soils allow reptiles and mammals to create burrows and easily forage within the soil. Carnaby's Cockatoos are likely to forage throughout the habitat on a mix of plants but primarily Banksia and Hakea species. Habitat condition was good to very good.	
Melaleuca Shrubland on Limestone Ridge	0.92 ha, 3% (Outside: 1.77 ha)	HAB-02 HAB-03 HAB-09	Mid heathland of *Melaleuca* spp. over *Grevillea* spp. low sparse shrubland over low open rushland and low open mixed herbs. Leaf litter provides shelter for reptiles, and mammals. Limestone outcropping provides additional shelter for reptiles and mammals. Habitat condition was good to very good.	

Fauna habitat	Total area, percentage of Survey Area	Sites	Habitat description	Representative photograph
Regrowth	2.56 ha, 9%	-	Regrowth Proteaceae shrubland on disturbed limestone soils, large rocks and boulders often present. Habitat condition was disturbed.	
Cleared	1.44 ha, 5%	-	Cleared land for existing tracks/roads. Low/negligible fauna habitat value.	
Total	**30.03 ha**			

4.2.3 Fauna Inventory

The fauna survey recorded a total of 16 native fauna taxa from 11 families. One introduced fauna taxon was recorded, Rabbit (**Oryctolagus cuniculus*), from scats. Fauna taxa recorded during the survey are summarised in **Table 19**.

Table 19: Fauna diversity by evidence

Family	Scientific Name	Common Name	Call	Sighting	Scat
Mammals					
Leporidae	**Oryctolagus cuniculus*	Rabbit			1
Birds					
Meliphagidae	*Gavicalis virescens*	Singing Honeyeater		2	
	Lichmera indistincta	Brown Honeyeater	4		
	Phylidonyris niger	White-cheeked Honeyeater		10	
Cacatuidae	*Eolophus roseicapilla*	Galah		4	
	Zanda latirostris	Carnaby's Cockatoo		1	
Corvidae	*Corvus orru*	Torresian Crow		2	
Artamidae	*Gymnorhina tibicen*	Australian Magpie		2	
Acanthizidae	*Gerygone fusca*	Western Gerygone	1		
	Sericornis maculatus	Spotted Scrubwren	1		
	Calamanthus campestris	Rufous Fieldwren		4	
Maluridae	*Malurus sp.*		1		
Accipitridae	*Milvus migrans*	Black Kite		1	
Casuariidae	*Dromaius novaehollandiae*	Emu			1
Falconidae	*Falco cenchroides*	Nankeen Kestrel		1	
Cuculidae	*Chalcites basalis*	Horsfield's Bronze Cuckoo	1		
Zosteropidae	*Zosterops lateralis*	Silvereye		1	

4.2.4 Significant Fauna

4.2.4.1 Recorded Within the Survey Area

One significant fauna taxon was recorded within the Survey Area during the field survey (**Map 12**). A single male Carnaby's Cockatoo was seen perched on an elevated piece of deadwood within the Existing Pit boundary; it then proceeded to fly south through the Survey Area.

4.2.4.2 Potentially Occurring Within the Survey Area

Aside from the Carnaby's Cockatoo, no significant fauna taxa have previously been recorded within the Survey Area and no significant fauna taxa were assessed as having a high likelihood of occurring within the Survey Area.

One significant fauna taxon was assessed as having a medium likelihood of occurring within the Survey Area:

- Western Brush Wallaby (*Notamacropus irma*), listed as P4 by DBCA.

The remaining 70 significant fauna taxa were assessed as having a low likelihood of occurring within the Survey Area.

The complete results of the significant fauna likelihood of occurrence assessment including justification for the assessment outcome for each taxon is provided in **Appendix J**.

4.2.5 Black Cockatoo Habitat Assessment

A single male Carnaby's Cockatoo (*Zanda latirostris*) was seen perched on an elevated piece of deadwood within the Existing Pit boundary; it then proceeded to fly south through the Survey Area (**Map 12**).

4.2.5.1 Black Cockatoo Breeding Habitat

No trees were recorded as potential, suitable, or known nesting trees within he Survey Area.

4.2.5.2 Night Roosting Habitat

No black cockatoo roosting sites were recorded within the Survey Area.

4.2.5.3 Foraging Habitat

No evidence of black cockatoo foraging was observed within the Survey Area.

According to the DAWE (2022) Foraging Habitat Scoring Tool, the Survey Area contains 28.59 ha of High-quality foraging habitat for Carnaby's Cockatoo (**Table 20**).

According to the DCCEEW (2023) scoring system for the assessment of foraging value of vegetation, the Survey Area contains 25.11 ha of Moderate to High, 0.92 ha of Low to Moderate, and 2.56 ha of Low foraging habitat for Carnaby's Cockatoo (**Table 21**).

Foraging habitat is presented in **Map 13**.

Table 20: DAWE Foraging Habitat Scoring Tool results for Carnaby's Cockatoo

Cockatoo Species	Area	Starting habitat score	Foraging potential	Connectivity	Proximity to breeding	Proximity to roosting	Impact from disease	Total score	Quality
Carnaby's Cockatoo	28.59	10	-2	0	-2	0	0	6	High

Table 21: DCCEEW scoring system results for Carnaby's Cockatoo

Habitat	Area (ha)	Foraging value
Proteaceae Shrubland	25.11	Moderate to High (5) – Native kwongan heath and shrubland (>20% projected foliage cover), banksia and eucalypt woodlands with 30-40% projected foliage cover; OR > 60% projected foliage cover but veg. condition reduced due to tree deaths (up to 20%).
Melaleuca Shrubland on Limestone Ridge	0.92	Low to Moderate (3) – Native kwongan heath and shrubland, banksia or eucalypt woodlands with 10-20% projected foliage cover.
Regrowth	2.56	Low (2) – Native kwongan heath and shrubland, banksia and eucalypt woodlands with <10% projected foliage cover; OR Paddocks and/or urban areas with scattered foraging trees such as banksias, marri.
Site context score	**Proximity of the site in relation to other habitat**	
3	Site is within 12km of other foraging resources with site condition of at least 3.	

5.0 Discussion

5.1 Flora and Vegetation

5.1.1 Floristic Composition

Few recent flora and vegetation surveys conducted within the northern SCP are in the available literature with which to sufficiently compare the 2025 spring survey results. However, the overall suite of flora are considered not atypical of the SCP, and largely representative of the local area and Jurien_1029 vegetation association (Beard *et al.*, 2013).

The Jurien_1029 vegetation association is dominated by Proteaceae, Myrtaceae and Acacia shrubs. Myrtaceae shrubs were dominant across the Survey Area, particularly *Melaleuca systena*, *M. huegelii* and *Calothamnus quadrifidus* subsp. *quadrifidus*, whilst twelve Proteaceae genera (e.g. *Banksia*, *Hakea*, *Grevillea*, *Petrophile*), and five *Acacia* shrub species were also recorded.

Located in the north of the SCP, the survey recorded a number of species which are also found on the Geraldton Sandplains north of the SCP (e.g. *Acacia lasiocarpa* var. *lasiocarpa* Cockleshell variant (E.A. Griffin 2039), *Banksia leptophylla* var. *melletica*, *Grevillea glabrilimba*, *Xanthorrhoea* sp. Lesueur (G.J. Keighery 16404).

The remnant vegetation within the Survey Areas is considered to be diverse considering the relatively small size of the Survey Area, with one hundred species recorded from the eight quadrats.

5.1.2 Vegetation Types and Condition

Two natural vegetation types, and one modified vegetation type (native regrowth), were described and mapped across two broad landforms (undulating plains and limestone outcropping/ridges). One of the two natural vegetation types (MhMs) was dominated by *Melaleuca huegelii-M. systena* shrubland and was associated with the low-lying limestone ridges present within and outside the Survey Area. This vegetation type was restricted within the Survey Area, and being potentially representative of the HSL TEC, the boundaries of the separate patches of MhMs were able to be accurately ground-truthed by foot and delineated with the aid of GPS track logs and mapping notes.

Species diversity in MhMs ranged between 27 and 35 species, and contained higher weed cover than the neighbouring BlHh vegetation type. Two of the patches of MhMs were thus recorded in Very Good condition rather than Excellent due to the higher weed cover.

The remaining uncleared areas (vegetation type BlHh) predominantly occurred on the undulating plains, transitioning to vegetation type MhMs where the landform rose into low, exposed limestone rises and ridges. Species diversity within BlHh (approximately 40 taxa) was higher than that recorded for MhMs. BlHh comprised predominantly low to mid heaths dominated by Proteaceae (e.g. *Banksia leptophylla* var. *melletica*, *B. sessilis* var. *cygnorum*, *Hakea trifurcata*), Myrtaceae (e.g. *Melaleuca systena*, *Calothamnus quadrifidus* subsp. *quadrifidus*), *Acacia lasiocarpa* var. *lasiocarpa* Cockleshell variant (E.A. Griffin 2039) (P2), and *Hibbertia hypericoides* subsp. *hypericoides*. The proposed 0.99 ha pit expansion was comprised entirely of this vegetation type.

From the survey and assessment of aerial imagery, both of these vegetation types appeared to be well represented beyond the Survey Area.

5.1.3 Significant Vegetation

5.1.3.1 '*Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion*' (TEC)

The '*Melaleuca huegelii – Melaleuca systena* shrublands on limestone ridges (floristic community type 26a)' is listed under the State BC Act 2016 as a critically endangered TEC, and is a constituent component of the critically-endangered, federally-listed '*Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion*' (HSL) TEC. Records of the HSL TEC occur predominately from Yanchep to Lake Clifton (DBCA, 2023; Luu and English, 2005). Whilst there are no instances of the HSL TEC in the northern SCP region as identified from the DBCA and PMST database searches (see Section 4.1.1), there is a paucity of flora survey data from this area. Accordingly, it is possible that additional occurrences of the HSL TEC remain undocumented due to limited survey effort and mapping coverage.

The SCP dataset used in the FCT analysis is also limited to the southern SCP between Geographe and Lancelin (Gibson *et al.*, 1994; Keighery *et al.*, 2012), with Lancelin located approximately 80km south of the Survey Area. However, the outcome of the FCT analysis, along with the contextual information recorded during the survey (i.e. substrate/soil, landform, dominant species, associated species), necessitated an assessment against the key diagnostic criteria outlined in the Approved Conservation Advice (DCEEW, 2023).

The assessment also took into account other information additional to the key diagnostic criteria outlined in the Approved Conservation Advice. Gaps of 30 metres between areas of TEC are allowable under the definition of a patch (DCEEW, 2023). Patch 3 was made up of two areas of MhMs vegetation less than 30m apart, and was thus defined as one patch. Patch 1, which extended beyond the Survey Area was mapped as one continuous patch **(Map 9)**.

Other information that was not part of the key diagnostic criteria was also taken into account for the assessment. Currently known occurrences of the HSL TEC are primarily associated with two SCP vegetation complexes: Cottesloe Complex-Central and South, and Cottesloe Complex-North. Occurrences have also been recorded on the Herdsman Complex, Karrakatta Complex-Central and South and the Karrakatta Complex-North (DCEEW, 2023). None of these complexes are known to occur in the Jurien Bay area, however the mapping of these complexes does not extend further north of Lancelin.

As outlined in the assessment, each of the three patches met the key diagnostic criteria for HSL TEC status (**Appendix G.4**).

5.1.4 Significant Flora

The database searches identified 133 extant Threatened and Priority Flora species as having the potential to occur within the Survey Areas. Prior to the survey, eight species were considered to have a high likelihood of occurring within the Survey Area, 42 were considered to have a medium likelihood and the remaining 83 were given a low likelihood of occurrence. Two of the three significant flora recorded during this survey - *Beyeria cinerea* subsp. *cinerea* (P3) and *Dampiera tephrea* (P3) – have been recorded in the immediate area.

No Threatened flora species pursuant to the EPBC Act 1999 and/or gazetted as Threatened Flora pursuant to the BC Act 2016 that were identified by the database searches were recorded within the Survey Area. Two Priority species were recorded inside, and one species recorded outside, the Survey Area.

Whilst previous surveys (see Literature review, Appendix B) recorded a number of significant flora, some of these surveys were conducted in areas of different vegetation associations

and habitats to the coastal limestone heaths of the Survey Area. For example, Biota Environmental Sciences (2012) recorded 22 significant flora in their survey, however this survey was conducted 30 kms north-east of the Survey Area in two different bioregions, the Geraldton Sandplains Bioregion and the Lesueur Sandplains. These regions largely consist of soil types and vegetation types that vary from the limestone substrates and low heaths of the Jurien Bay Survey Area, such as lateritic sandplains and Banksia/Eucalyptus woodlands.

360 Environmental (2012a) also recorded significant flora, and whilst still on the SCP, the vegetation association and vegetation structure of low open woodlands varied from the Jurien Bay Survey Area.

Two of the three significant flora species recorded by SLR during the 2025 spring survey were recorded within the Survey Area, however no significant flora species were recorded within the proposed pit expansion area.

Acacia lasiocarpa var. *lasiocarpa* Cockleshell variant (E.A. Griffin 2039) (P2)

The Priority 2 species *Acacia lasiocarpa* var. *lasiocarpa* Cockleshell variant (E.A. Griffin 2039) was common throughout the Survey Area, and was recorded in both vegetation types. This species is a shrub that grows 0.35 to 0.5 m high, flowers in August and occurs on grey-yellow sand with laterite (DBCA, 2026a).The WAH has four specimens lodged, with records dispersed between Jurien Bay and Eneabba; the nearest record is 20 km from the Survey Area.

This species is superficially very similar to the more common *A. lasiocarpa* var. *lasiocarpa* – which is also found in the Jurien Bay area and all along the SCP – and differs in the following characteristics (CSIRO, 2021):

- Branchlets: pubescent-villous hairs c.f. variable in *A. lasiocarpa* var. *lasiocarpa*
- Pinnules (leaflets): 5-8 pairs and 3-5mm long c.f. 4-6 pairs and 2-3mm long in *A. lasiocarpa* var. *lasiocarpa*
- Bracteoles: long-acuminate c.f. acute to short-acuminate in *A. lasiocarpa* var. *lasiocarpa*

The two species are likely to be difficult to differentiate in the field due to these minor differences in characteristics. The two species also overlap in their respective distributions (DBCA, 2026c) suggesting that the two species may potentially co-occur in some areas, making it difficult to differentiate in the field and thereby preventing accurate population counts.

Beyeria cinerea subsp. *cinerea* (P3)

Beyeria cinerea subsp. *cinerea* (P3) is a rather non-descript, low, spreading shrub to 40 cm in the Euphorbiaceae family. It has narrow leaves with small, green/yellow flowers in July and August. There are DBCA records of the species in Cataby, Jurien Bay (including a 2018 record 1100 m north of the Survey Area), Horrocks and Geraldton, as well as further south in Mosman Park. Several of these previous records were also recorded within the same vegetation community (i.e. FCT26a, *Melaleuca huegelii-M. systena* shrublands on limestone ridges) (DBCA, 2026a).

The survey recorded *B. cinerea* subsp. *cinerea* from two locations (both flora sites, JBQ01 and JBQ08) in vegetation type MhMs (**Plate 1**; **Map** 7**)**. Whilst there was no count of individuals during the survey, the low cover of 0.5% and 0.2%, respectively, indicates that only 1-2 plants were present at each site. No additional locations were recorded during the survey, however there is a medium likelihood of its occurrence elsewhere in the Survey Area.

***Dampiera tephrea* (P3)**

Dampiera tephrea (P3) is an ascending to erect perennial herb or shrub, 0.3-0.6 m high, growing in sand or gravelly loam, with blue flowers in July and with grey or yellowish hairs on the abaxial (underside) surface of the leaves (DBCA, 2026b). The WAH has 31 specimens lodged, with records distributed from Port Denison to Gingin (DBCA, 2026b).

There were approximately 35 individuals recorded just outside the Survey Area (**Plate 1**, **Map 7**); whilst the species was not recorded within the Survey Area itself, the entire area was not systematically searched and there is a medium likelihood that the species may occur in the areas that were not traversed. Previous DBCA records also occur in close proximity to the Survey Area.

The remaining species given a low post-survey likelihood of occurrence were assessed as low due to either the absence of suitable habitat or soil types within the Survey Areas, or are species that are easily recognisable and so would have likely been recorded if they had been present during the survey.



Plate 1: ***Beyeria cinerea*** **subsp. *cinerea* (P3) (left), *Dampiera tephrea* (P3) (centre) and *Acacia lasiocarpa* var. *lasiocarpa* Cockleshelll variant (E.A. Griffin 2039) (P2) (right) recorded during the survey.**

5.1.5 Introduced Flora

A total of 10 weed species were recorded across the Survey Area, both in the disturbed regrowth areas and within the intact natural vegetation. None of the ten taxa are listed as Declared Pests by the State Department of Primary Industries and Regional Development or as a WoNS. The remaining weed species recorded have a legal status of Permitted – s11, and do not have an assigned control category. The majority of the ten species are commonly recorded across the SCP.

5.1.6 Survey Adequacy

The flora and vegetation survey effort was in accordance with the scope of works, and appropriate for a detailed flora and vegetation survey on the Swan Coastal Plain. It was considered adequate to meet the standards of EPA (EPA, 2016c). At least three flora sites were sampled in each vegetation type to ensure spatial coverage across the Survey Areas was sufficient.

Flora accumulation curves did suggest that additional flora would have been recorded with additional survey effort, however the data collected is considered to provide a good representation of the flora and vegetation within the Survey Area.

5.1.7 Regional Representation

According to the EPA (2000), the threshold level below which species loss appears to accelerate exponentially at an ecosystem level is regarded as being 30% of the pre-clearing extent of the vegetation type. Proposals that would affect a vegetation association with 30% or less of its pre-clearing extent remaining are likely to be formally assessed by the EPA (2006).

The Jurien_1029 vegetation association has 71.84% remaining on the Swan Coastal Plain based on its pre-European extent, which is greater than the threshold level of 30% of the pre-clearing extent set by the EPA for protecting biological diversity.

5.2 Fauna

5.2.1 Fauna Habitats

The three fauna habitats and species identified within the Survey Area are typical of the Swan Coastal Plain 2 bioregion and consistent with habitats and assemblages identified by previous studies in the region (**Appendix B**). All undisturbed habitats identified within the Survey Area extend outside the Survey Area to form larger continuous stretches of habitat.

The Proteaceae Shrubland habitat is widespread and abundant at a regional scale. It provides a dense understorey over a sandy substrate which are important as foraging and shelter resources for all fauna groups. It contains known foraging species for Carnaby's Cockatoo and may provide foraging and refuge to Western Brush Wallabies.

5.2.2 Significant Fauna

5.2.2.1 Recorded within the Survey Area

Carnaby's Cockatoo (*Zanda latirostris*) – EN (BC Act); EN (EPBC Act)

Carnaby's Cockatoo is endemic to southwest Australia, the limits of its range include Cape Arid to the east, Lake Cronin, Hatters Hill and Lake Moore inland, and Kalbarri to the north (DAWE, 2022). Breeding generally occurs in mature Wandoo (*Eucalyptus wandoo*) and

Salmon Gum (*E. salmonophloia*) woodlands and takes place from July to December in areas receiving 350-700 mm rainfall a year, from the Stirling Range to Three Springs as well as around Bunbury (DAWE, 2022; ALA, 2025). Carnaby's Cockatoos feed on seeds, nuts, and flowers of a variety of native and exotic plants, (Shah, 2006). The taxon is sedentary in wetter parts of its range and migratory in drier areas, where birds form flocks and move south and west towards the coast in summer (ALA, 2025).

A single Carnaby's Cockatoo individual was recorded perched within Regrowth habitat and then seen flying south over the Survey Area during the current field survey. All three habitats may be used for foraging by the species, although the Proteaceae Shrubland was found to have the highest foraging value due to a higher density of known foraging plant species. Carnaby's Cockatoos are likely to use the Survey Area for foraging and to be transient within the Survey Area as no suitable breeding or roosting habitat occurs within it.

5.2.2.2 Medium Likelihood of Occurrence within the Survey Area

Western Brush Wallaby (*Notamacropus irma*) - Priority 4 (DBCA).

The Western Brush Wallaby occurs only in the south-west of Western Australia and closely resembles a larger kangaroo (Baker and Gynther, 2023). It has an optimum habitat of open forest or woodland, particularly favouring open and seasonally wet flats with low grasses and open scrubby thickets (Baker and Gynther, 2023). The Western Brush Wallaby was a common species during the early days of settlement, however, ongoing clearing and fragmentation of bushland in the Wheatbelt as well as the dramatic increase in fox numbers within the south-west of Western Australia has led to this species' decline (Baker and Gynther, 2023).

Western Brush Wallaby has been recorded within the Desktop Study Area and may occur within the Survey Area. The Proteaceae Shrubland provides habitat suitable for foraging and dispersal.

5.2.3 Black Cockatoo Habitat Assessment

Direct evidence of breeding was not observed during the black cockatoo assessment, and no potential breeding or suitable roosting trees were recorded within the Survey Area.

Black cockatoo foraging habitat was widespread in extent within the Survey Area. The DAWE (2022) and DCCEEW (2023) scoring systems resulted in different scores; the DAWE methodology assessed all foraging habitat as High-quality whereas the DCCEEW scores ranged from 'Low' to 'Moderate to High'. The DAWE methodology does not include foraging plant abundance in its scoring criteria and therefore tends to overestimate habitat foraging value. The DCCEEW scoring system includes foraging plant abundance in its scoring criteria and therefore tends to provide a better reflection a habitat's foraging value. Similar foraging habitat is abundant throughout the broader region and regional habitat connectivity remains relatively intact. Black cockatoos rely on year-round availability of foraging resources; during the breeding season for successful fledging of chicks, and during the non-breeding season to rebuild condition (DAWE, 2022).

6.0 Conclusion

The results of the flora and fauna survey are summarised below.

6.1 Flora and Vegetation

- No Threatened flora species pursuant to the EPBC Act 1999 and/or gazetted as Threatened/Declared Rare Flora pursuant to the BC Act 2016 were recorded during the survey.
- One Priority species, *Beyeria cinerea* subsp*. cinerea* (P3) was recorded from flora sites JBQ01 and JBQ0808 in vegetation type MhMs, while *Acacia lasiocarpa* var. *lasiocarpa* Cockleshell variant (E.A. Griffin 2039) (P2) was recorded in seven of the eight quadrats across both vegetation types. A third Priority species, *Dampiera tephrea* (P3) was recorded just outside the Survey Area.
- Ten weed species were recorded, none of which are listed as Declared Pests by the State Department of Primary Industries and Regional Development or as WoNS under the BAM Act.
- Vegetation condition was either Very Good or Excellent in vegetation types BlHh and MhMs. Areas associated with previous clearing were in various stages of native regrowth and were in Degraded to Good condition. The 0.99 ha proposed pit expansion was comprised of vegetation type BlHh in Excellent condition.
- Vegetation type MhMs was determined by the FCT analysis to be analogous to FCT26a, the State-listed '*Melaleuca huegelii - M. systena shrublands of limestone ridge' (Swan Coastal Plain Community type 26a – Gibson et al. 1994)*'. FCT26a is also a component of the critically endangered, Federally-listed '*Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion*' TEC. Vegetation type BlHh could not be conclusively assigned an FCT.
- Three patches of MhMs, comprising 2.68 ha, were assessed against the key diagnostic criteria in the Approved Conservation advice for the Federal '*Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion*' TEC. Each patch was considered representative of the TEC.

6.2 Fauna

- Three fauna habitats were mapped within the Survey Area. Of these habitats, Proteaceae Shrubland is widespread and abundant both within the Survey Area and at a regional scale, while Melaleuca Shrubland on Limestone Ridge occurs in relatively isolated pockets. The third habitat, Regrowth, occurs in previously cleared areas within the Survey Area. The proposed pit expansion was comprised of only Proteaceae shrubland habitat.
- A total of 16 native fauna taxa from 11 families were recorded, comprising 16 bird species.
- One significant taxon was recorded during the fauna survey, Carnaby's Cockatoo (EN).
- One introduced fauna taxon was recorded during the survey, Rabbit.
- Although not recorded during the field survey, one significant fauna taxon was assessed as having a medium likelihood of occurring within the Survey Area, the Western Brush Wallaby (P4). A further 70 significant fauna taxa were assessed as having have a low likelihood of occurring within the Survey Area.

- According to the DAWE (2022) Foraging Habitat Scoring Tool, the Survey Area contains 28.59 ha of High-quality foraging habitat for Carnaby's Cockatoo.
- According to the DCCEEW (2023) scoring system for the assessment of foraging value of vegetation, the Survey Area contains 25.11 ha of Moderate to High, 0.92 ha of Low to Moderate, and 2.56 ha of Low foraging habitat for Carnaby's Cockatoo. The 0.99 ha proposed pit expansion consisted entirely of Moderate to High foraging habitat.

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Appendix A Maps

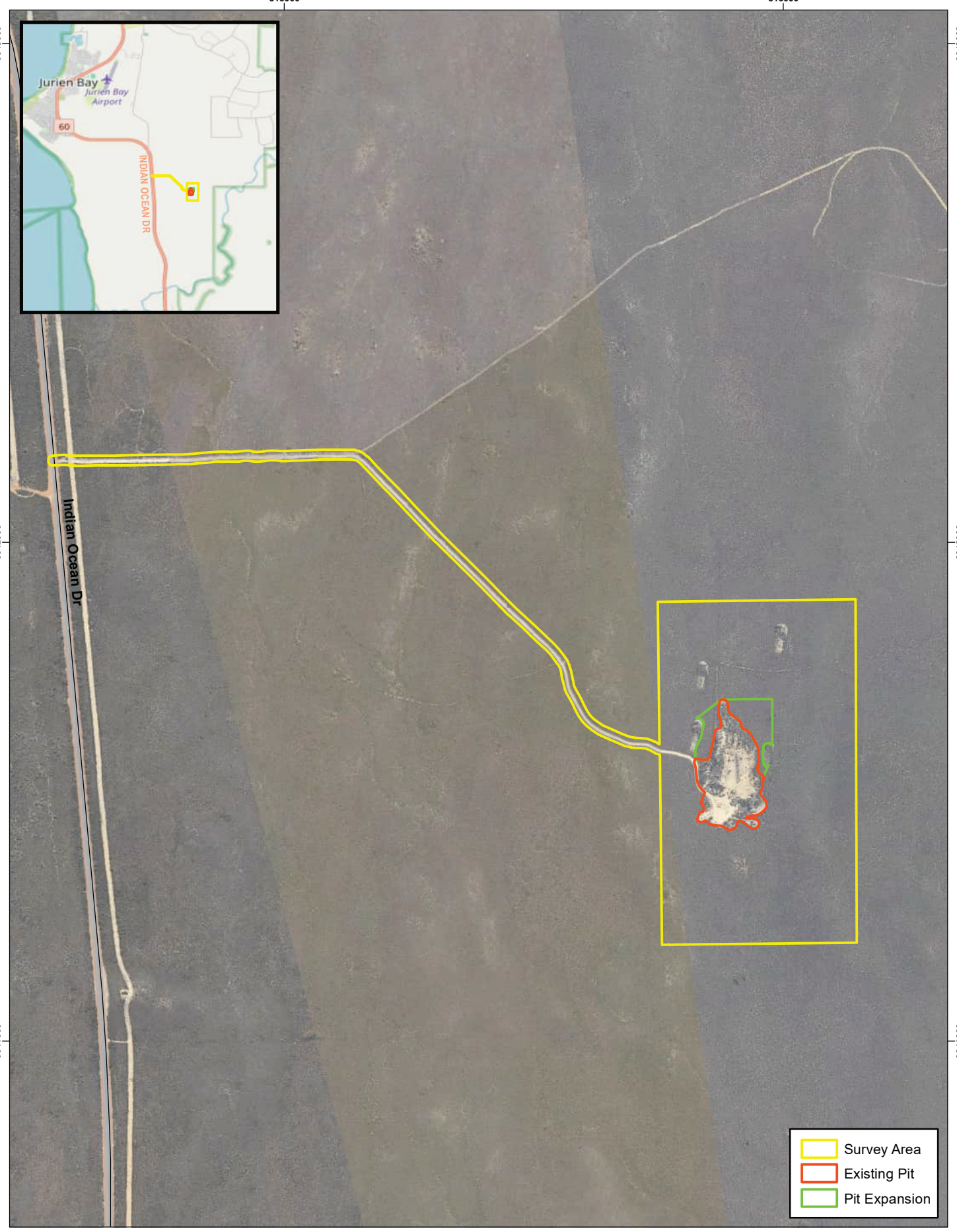
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Flora, Vegetation, Fauna and Black Cockatoo Assessment

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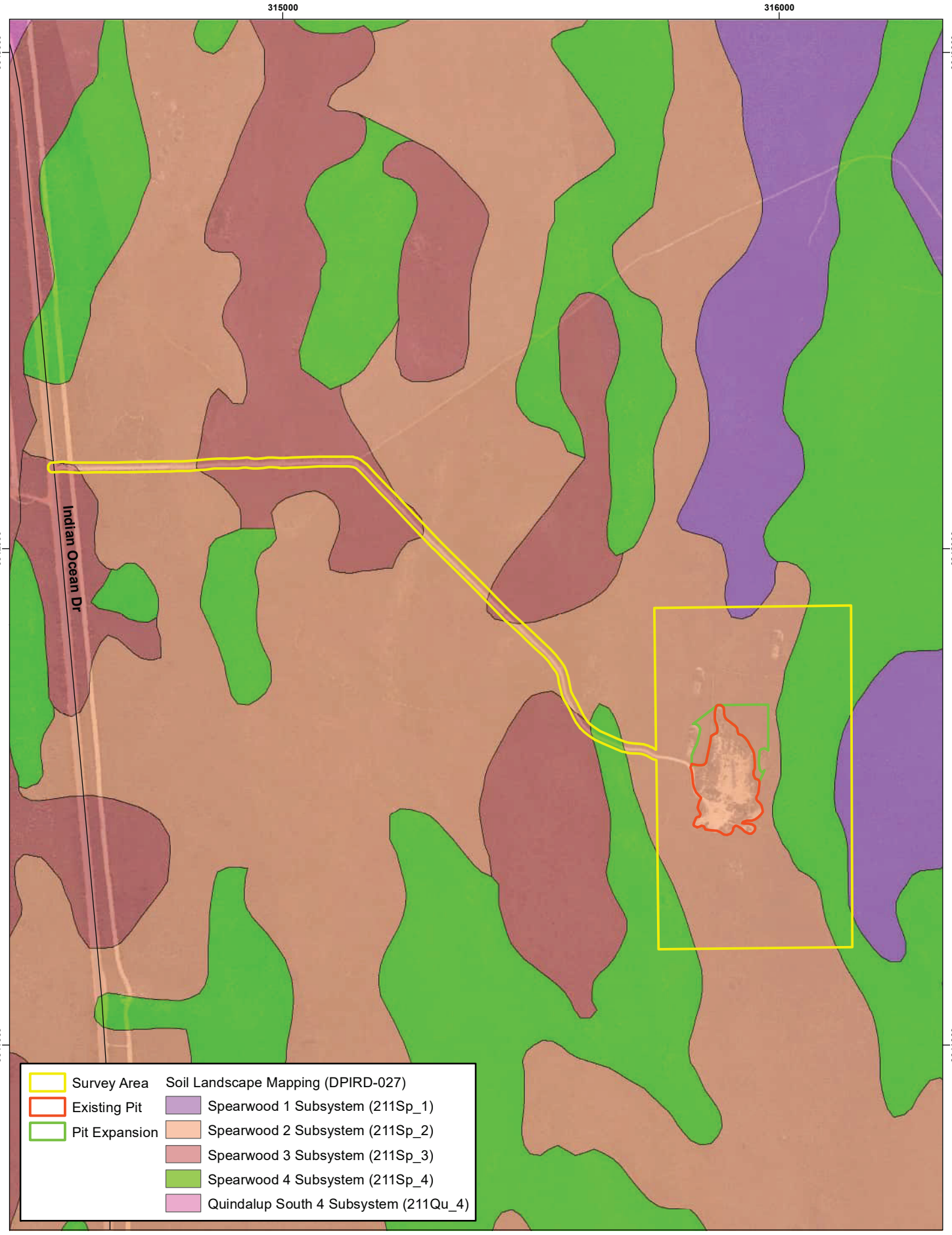
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Survey Area MAP 1

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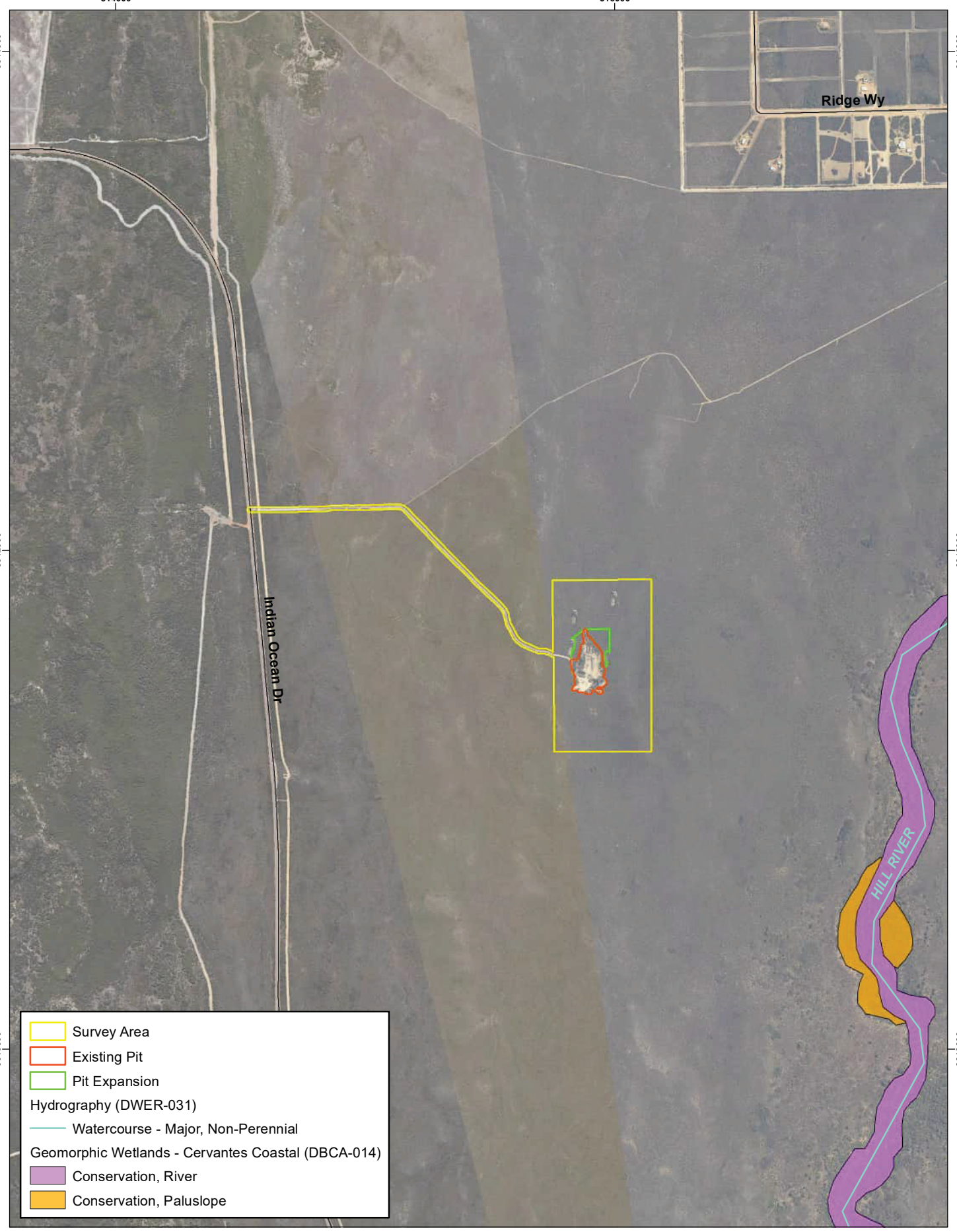
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Soil Landscape Mapping MAP 2

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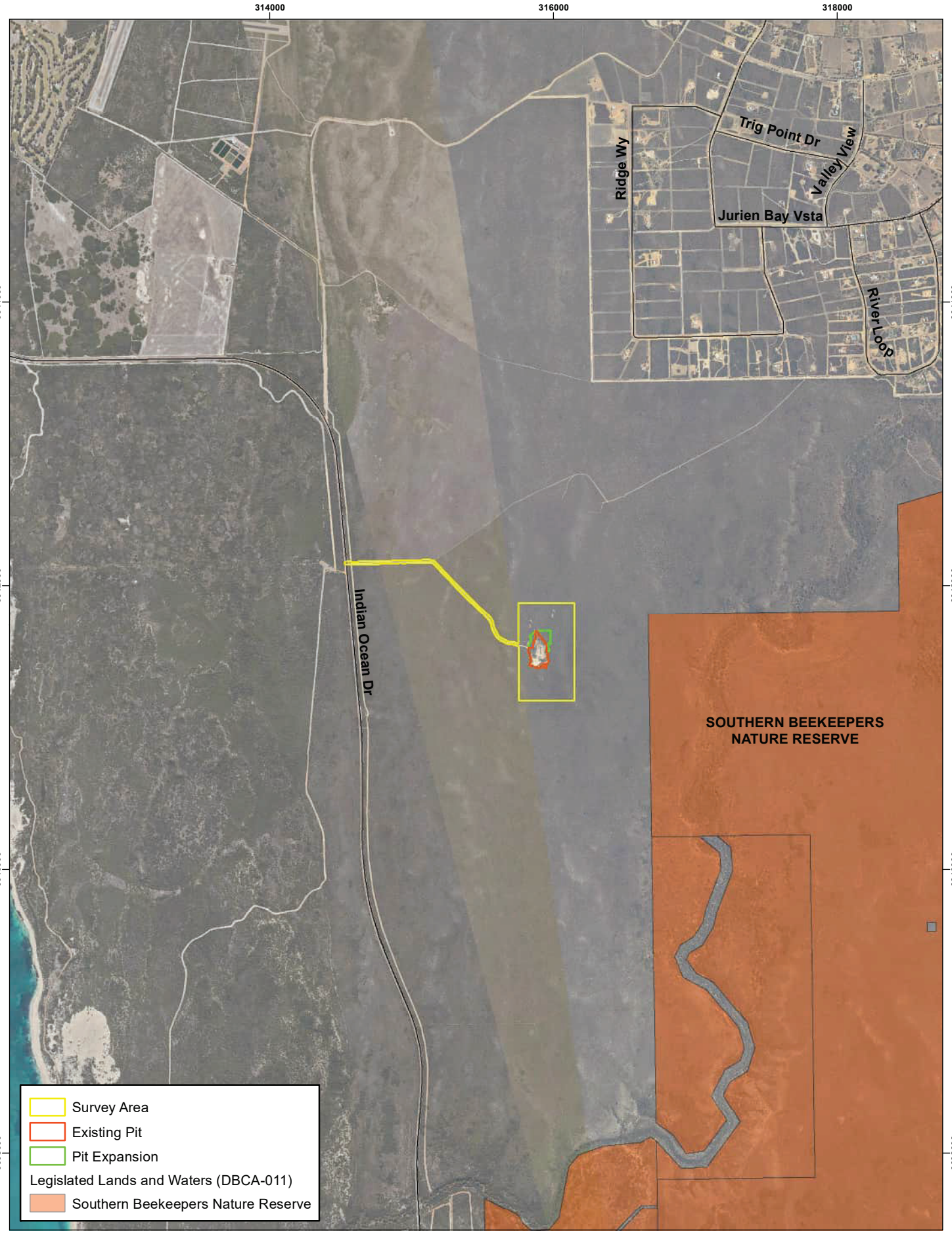
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Hydrography
MAP 3

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Conservation and Environmentally Sensitive Areas MAP 4

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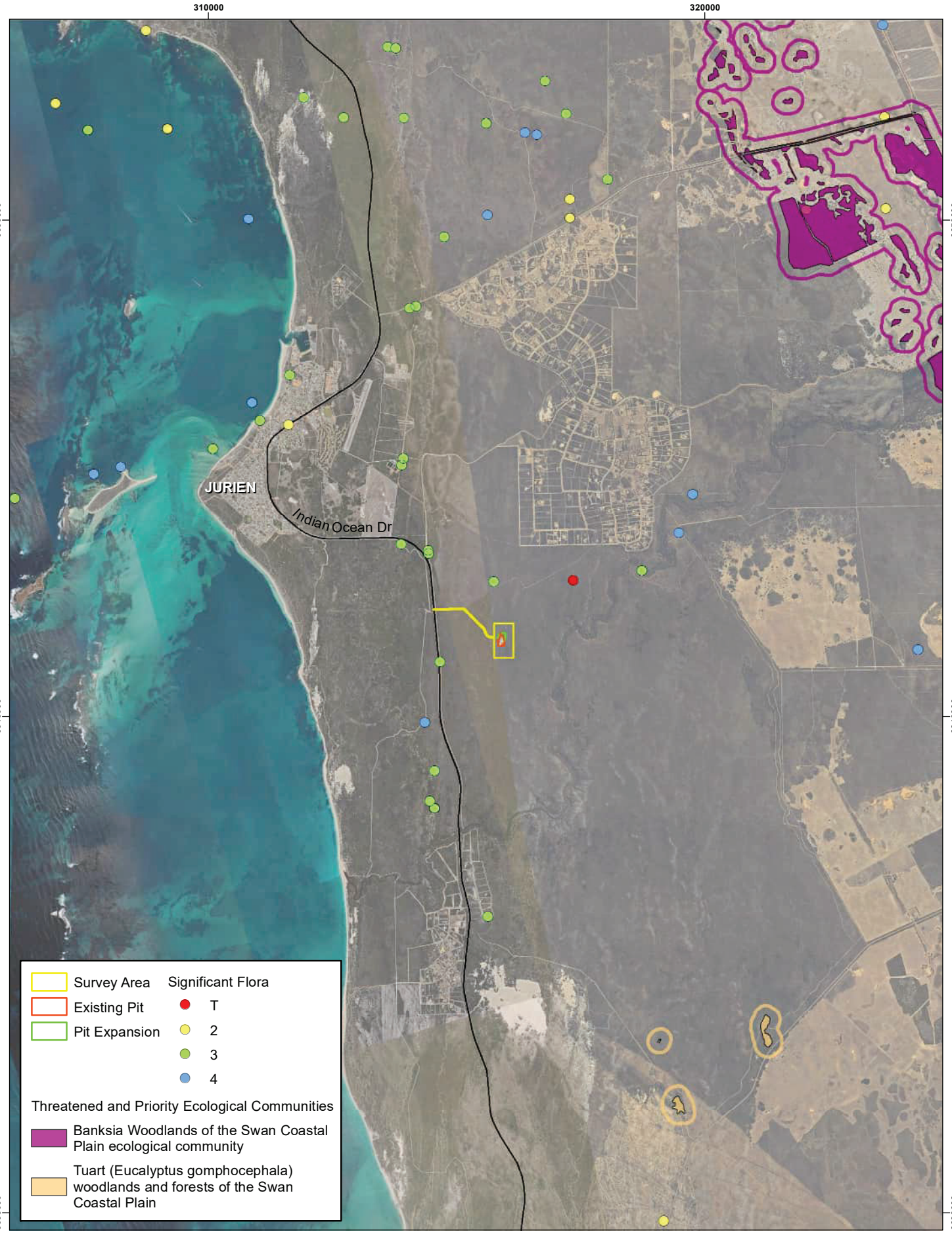
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Survey Effort MAP 5

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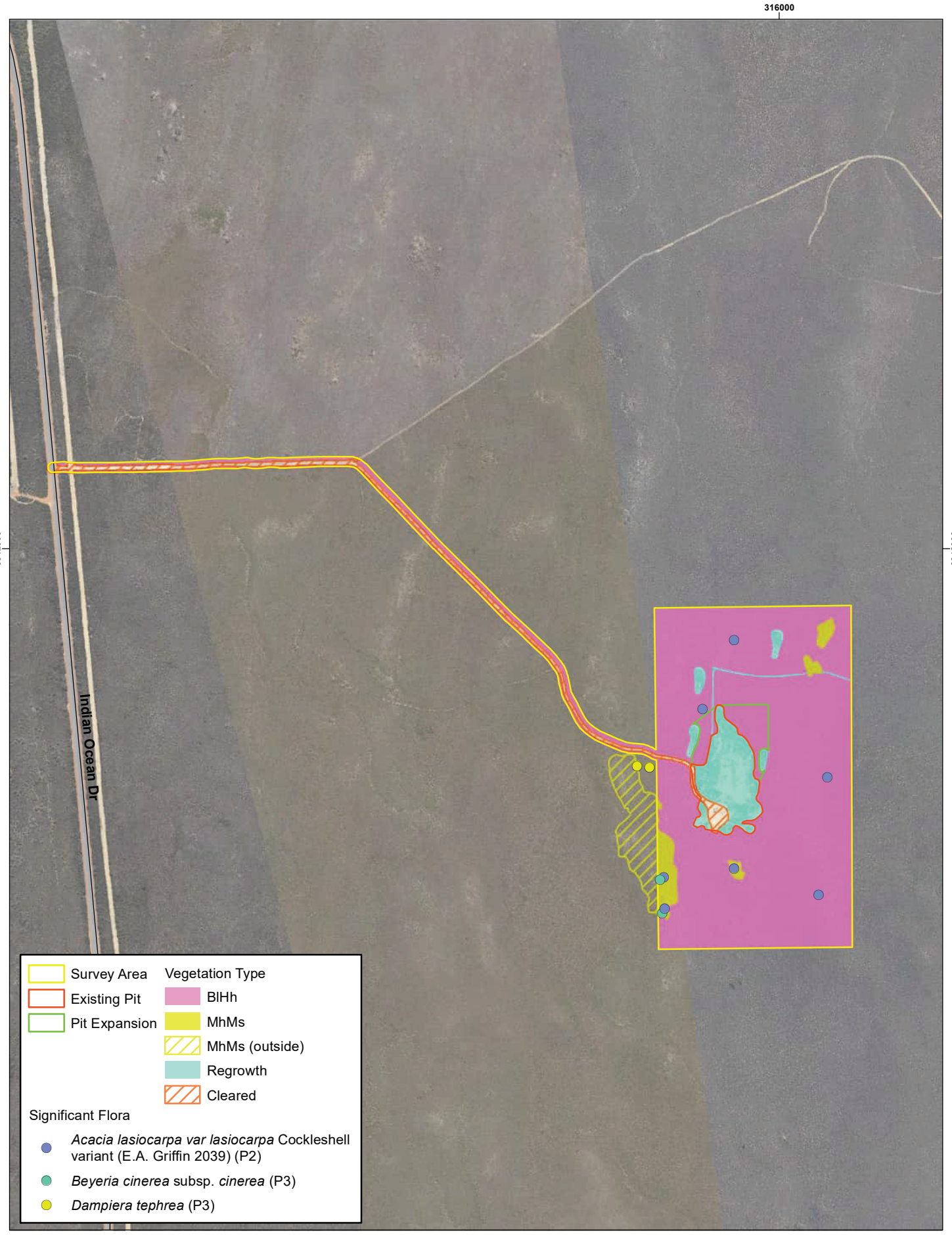
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Significant Flora and Ecological Community Database Search Results MAP 6

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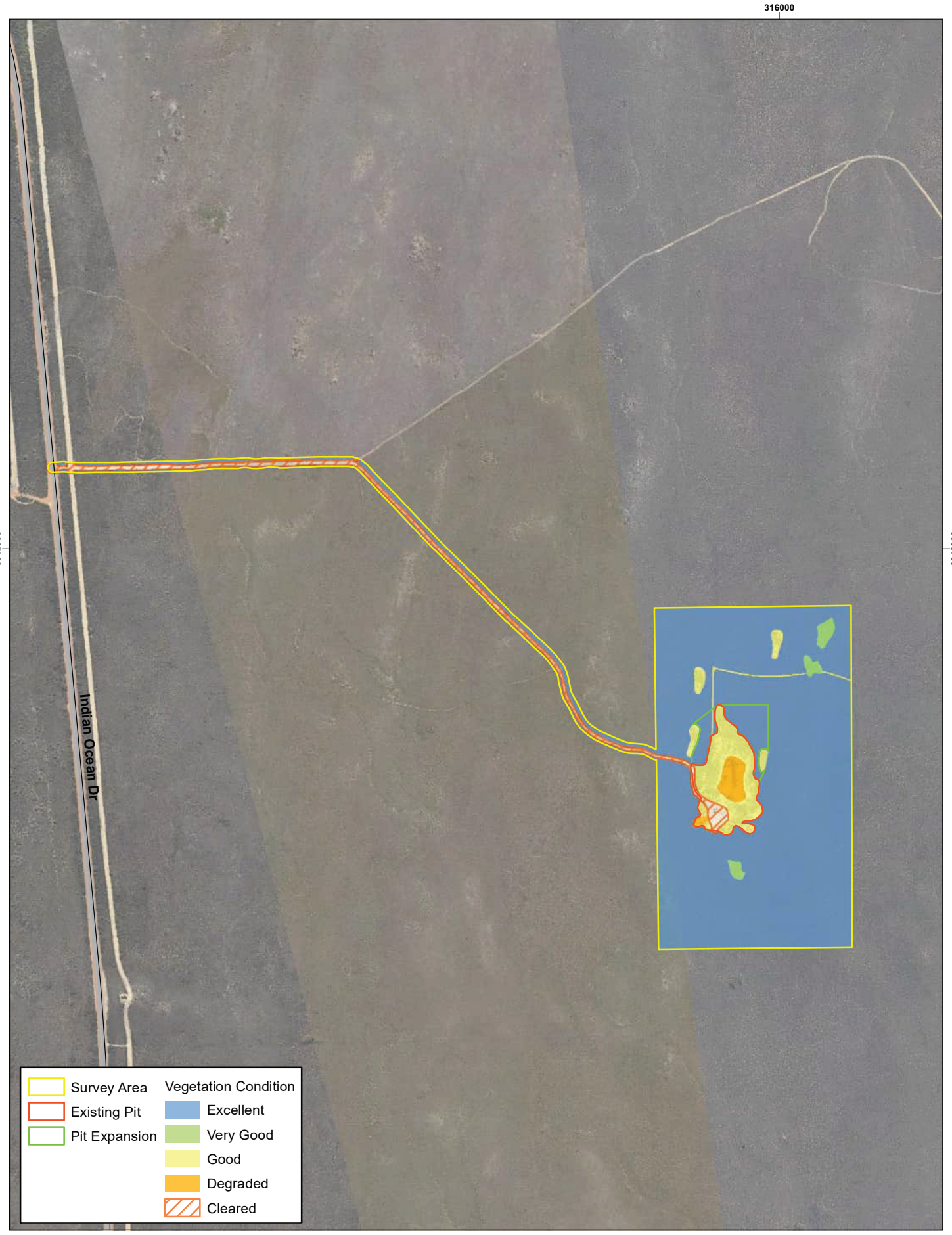
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Vegetation Types and Significant Flora Records MAP 7

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Vegetation Condition MAP 8

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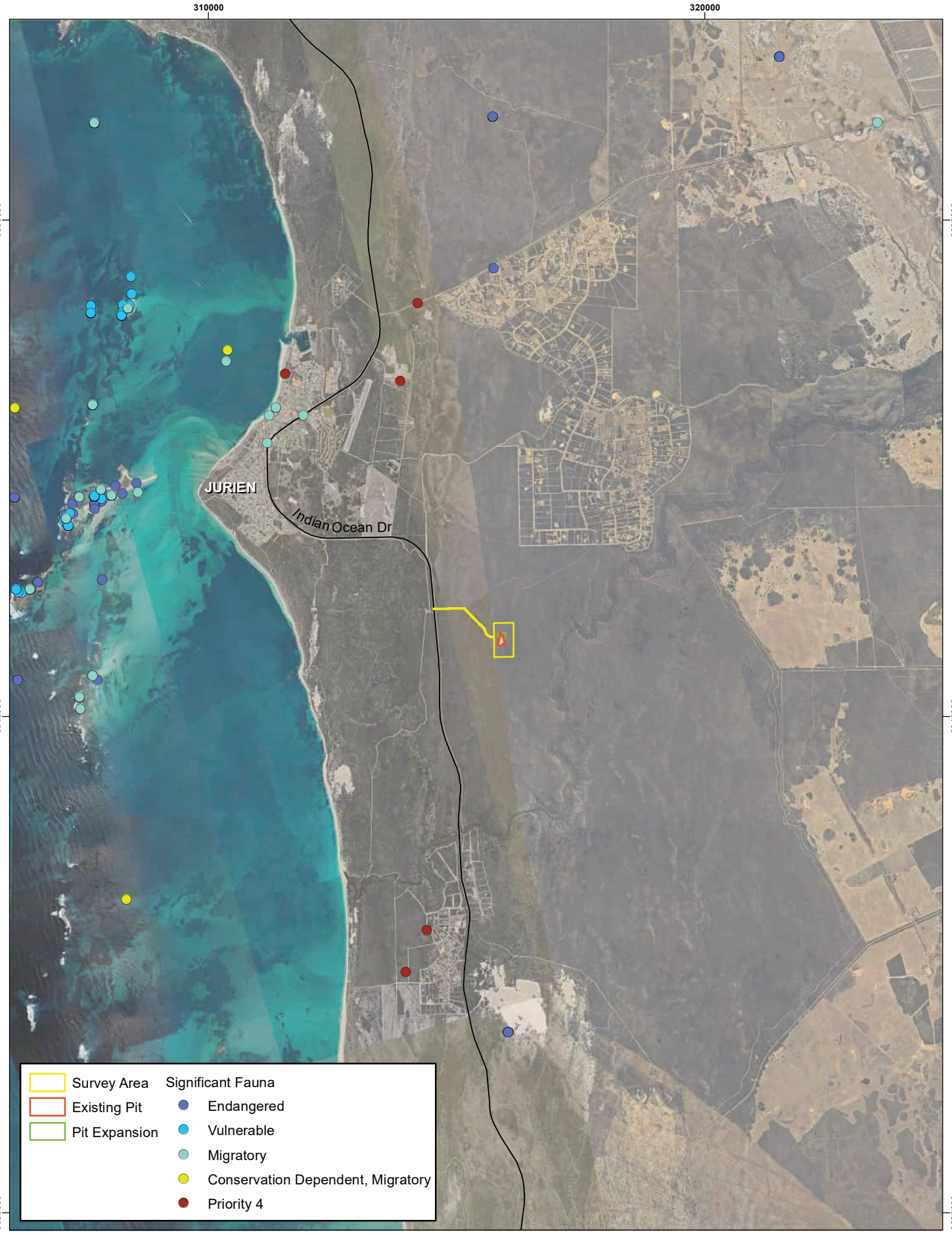
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TEC Patches
MAP 9

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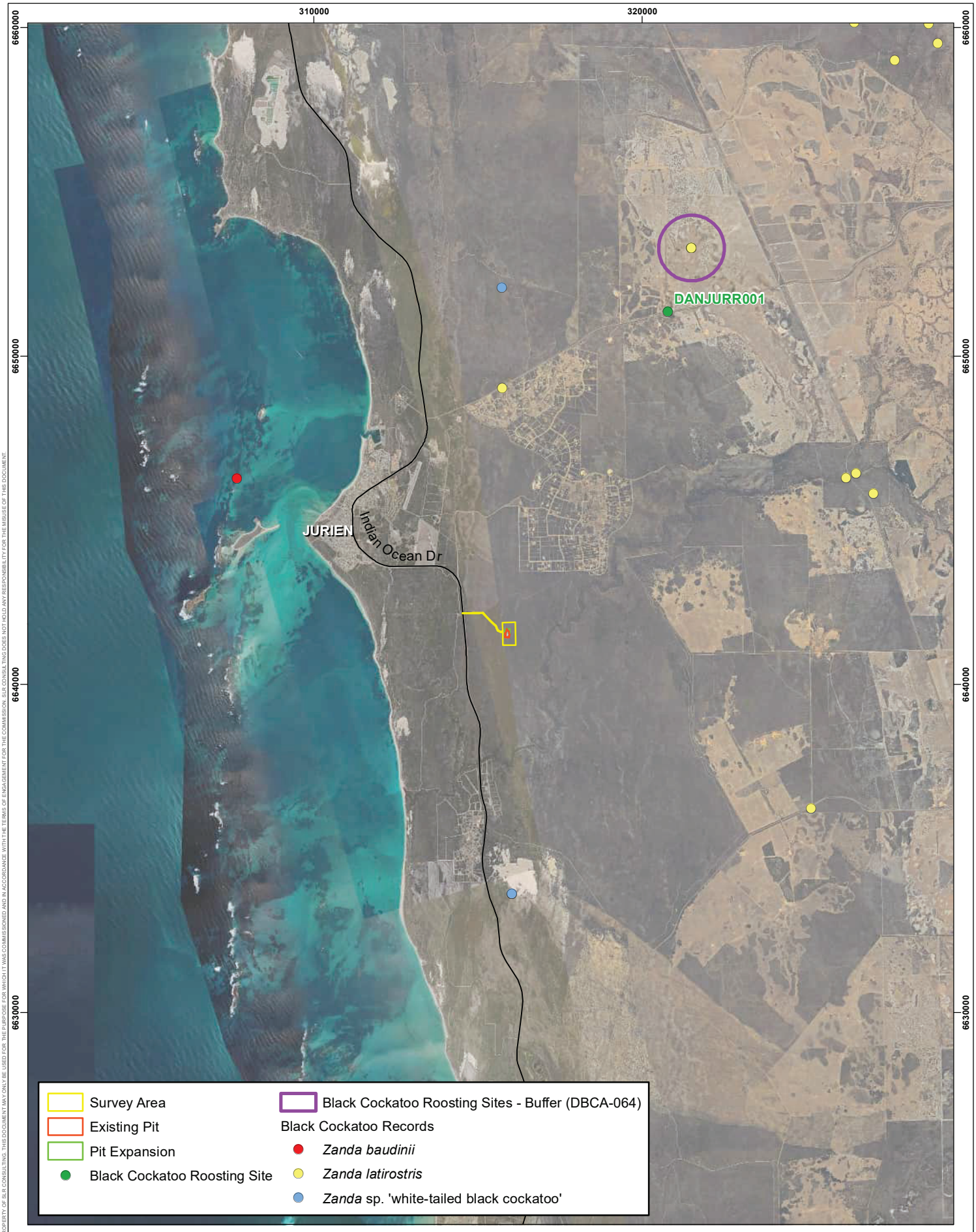
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Reviewed By	: GB

WA Limestone Jurien Bay Flora, Vegetation, Fauna and Black Cockatoo Assessment

Significant Fauna Database Search Results MAP 10

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Coordinate System: GDA 1994 MGA Zone 50

Scale	: 1:150,000 @ A4
Project Number	: 675.073307.00001
Date Drawn	: 4/08/2026
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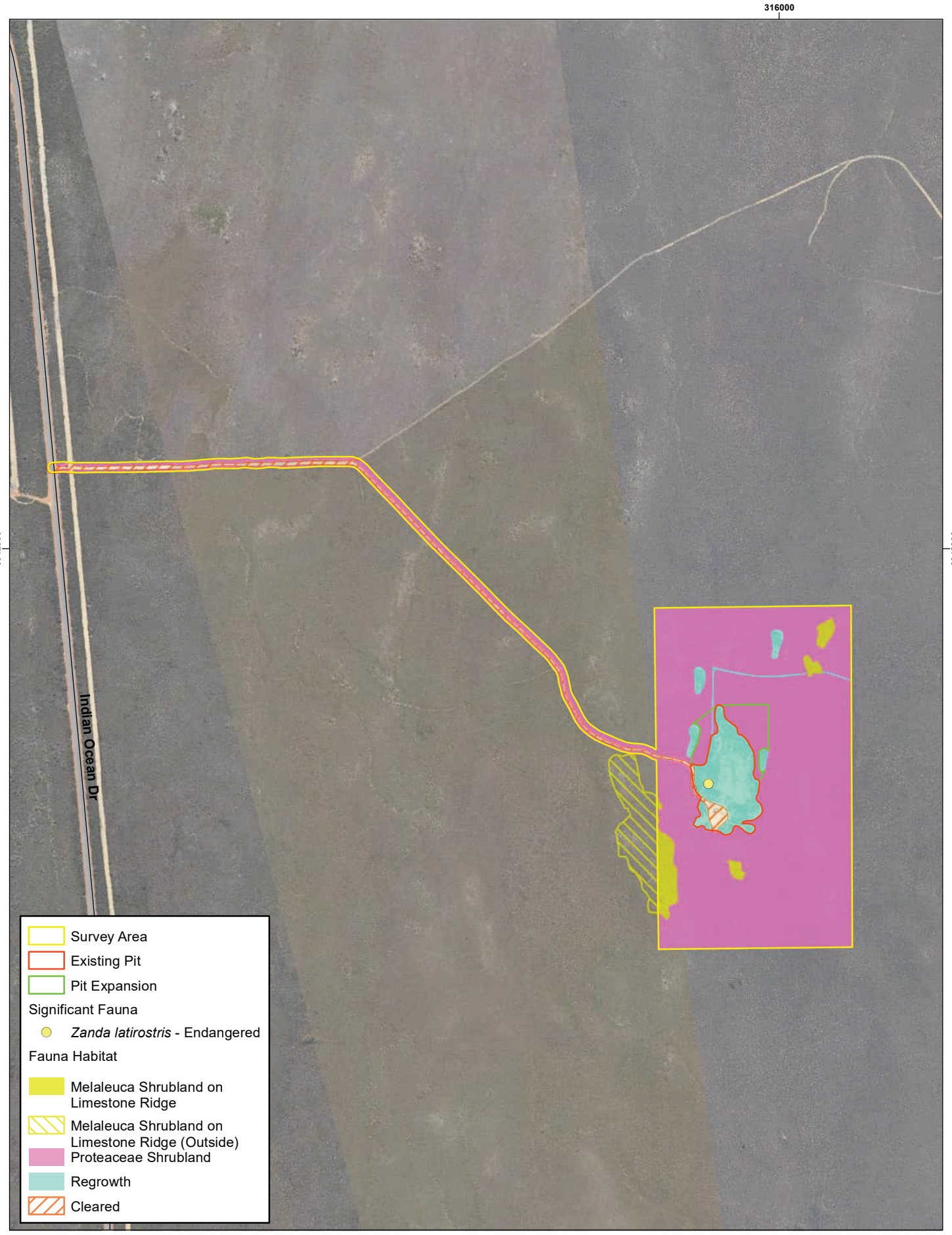
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WA Limestone Jurien Bay Flora, Vegetation, Fauna and Black Cockatoo Assessment

Black Cockatoo Database Search Results MAP 11

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WA Limestone Jurien Bay Flora, Vegetation, Fauna and Black Cockatoo Assessment

Fauna Habitats and Significant Fauna Records MAP 12

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Coordinate System: GDA 1994 MGA Zone 50

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Project Number	: 675.073307.00001
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WA Limestone Jurien Bay Flora, Vegetation, Fauna and Black Cockatoo Assessment

DCCEEW Foraging Values for Carnaby's Cockatoo MAP 13

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Appendix B Literature Review Summary

WA Limestone Jurien Bay

Flora, Vegetation, Fauna and Black Cockatoo Assessment

WA Limestone

SLR Project No.: 675.073307.00001

17 February 2026

Report	Survey Location	Survey Type and Timing	Significant Fauna and Fauna Habitats	Significant Flora and Ecological Communities	Introduced Fauna and Declared Weeds
Cervantes – Jurien Coastal Road: Consultative Environmental Review (Ecologia, 1997)	Adjacent the Survey Area (Cervantes to Jurien Bay Indian Ocean Drive)	Detailed flora and vegetation Detailed vertebrate fauna	• Western Brush Wallaby (*Notamacropus Irma*) – P4 (DBCA)	Nil	• House Mouse (*Mus musculus*) • Rabbit (*Oryctolagus cuniculus*) • Laughing Turtle Dove (*Spilopelia senegalensis*) • Laughing Kookaburra (*Dacelo novaeguineae*)
		September 1996	• Scrub Heath • Hilltop Heath • Low Heath on Coastal flats dominated by Melaleuca scabra • Coastal Heath on Coastal flats dominated by *Melaleuca acerosa* • Coastal Scrub on Dunes • Coastal Scrub Disturbed • Samphire Communities Fringing Playa Lake • Low Scrub Fringing Playa Lake dominated by Melaleuca hamulosa • Thicket Fringing Playa Lake dominated by *Melaleuca cardiophylla* • Disturbed Areas Devoid by Native Species • Scrub Dominated by *Allocasuarina lehmanniana* • Riverine Thicket Fringing the Hil River • Mobile Sand Dunes • Pasture	Nil	
Shire of Dandaragan: Jurien East Road – Cockleshell Road to Brand Highway – Level 1 Flora, Vegetation and Vertebrate Fauna Survey (Maia Environmental Consultancy, 2016)	15 km east of the Survey Area	Reconnaissance fauna survey	• Carnaby's Black Cockatoo (*Zanda latirostris*) – EN (BC Act; EPBC Act)	N/A	Nil
		December 2016	• Banksia Woodlands and Shrublands • Marri Woodland • Wandoo Woodland	N/A	

Report	Survey Location	Survey Type and Timing	Significant Fauna and Fauna Habitats	Significant Flora and Ecological Communities	Introduced Fauna and Declared Weeds
			• Low Heathlands and Shrublands • Creek lines • Winter-wet Depressions		
Atlas Project – Detailed Fauna Assessment (Spectrum Ecology & Spatial, 2021)	23 km southeast of the Survey Area	Basic terrestrial fauna survey Detailed terrestrial fauna survey SRE wet pitfall trapping	• Carnaby's Black Cockatoo (*Zanda latirostris*) – EN (BC Act; EPBC Act) • Common Greenshank (*Tringa nebularia*) – MI (BC Act; EPBC Act) • Black-striped Snake (*Neelaps calonotos*) – P3 (DBCA) • Western Brush Wallaby (*Notamacropus irma*) – P4 (DBCA)	N/A	• European Cattle (*Bos primigenius taurus*) • Red Fox (*Vulpes vulpes*) • House Mouse (*Mus musculus*) • Rabbit (*Oryctolagus cuniculus*)
		January, September, October 2020	• Banksia Woodland • Pasture/Cleared • Heath (Banksia) • Samphire • Melaleuca • Banksia Woodland/Heath (Bankia) • Ephemeral Wetland • Melaleuca/Samphire • Eucalypt Woodland	N/A	
Level 2 Flora and Vegetation Survey – North Perth Mineral Sands Project (Single Phase) (360 Environmental, 2012a)	23 km southeast of the Survey Area and 19 km southeast of Cervantes	Level 2 flora and vegetation survey	N/A	• *Grevillea cooljarloo* (P1) • *Schoenus badius* (P2) • *Angianthus micropodioides* (P3) • *Conospermum scaposum* (P3) • *Desmocladus nodatus* (P3) • *Hensmania stoniella* (P3) • *Isopogon panduratus subsp. palustris* (P3) • *Stylidium aceratum* (P3) • *Stylidium longitubum* (P4)	Nil
		October and November 2011	N/A	Nil	
Level 2 Vertebrate Fauna Survey (Single Phase) –		Level 2 vertebrate fauna survey	• Western Brush Wallaby (*Notamacropus Irma*) – P4 (DBCA)	N/A	• Cat (*Felis catus*)

Report	Survey Location	Survey Type and Timing	Significant Fauna and Fauna Habitats	Significant Flora and Ecological Communities	Introduced Fauna and Declared Weeds
North Perth Mineral Sands Project (360 Environmental, 2012b)	23 km southeast of the Survey Area	November 2011	• Banksia Woodland • Heath • Melaleuca Shrubland • Samphire • Pasture	N/A	• Red Fox (*Vulpes vulpes*) • House Mouse (*Mus musculus*) • Rabbit (*Oryctolagus cuniculus*)
Warradarge Wind Farm Flora, Vegetation and Fauna Assessment (Biota Environmental Sciences, 2012)	30 km north of the Survey Area, 19 km northeast of the Brand Hwy and Coorow-Green Head Road intersection	Detailed flora and vegetation assessment Desktop fauna and Black cockatoo assessment	• N/A	• *Acacia wilsonii* (T) • *Banksia catoglypta* (T) • *Eucalyptus pruiniramis* (T) • *Thelymitra stellata* (T) • *Grevillea stenogyne* (P1) • *Comesperma griffinii* (P2) • *Allocasuarina grevilleoides* (P3) • *Allocasuarina ramosissima* (P3) • *Arnocrinum gracillimum* (P3) • *Austrostipa nunaginensis* (P3) • *Banksia cypholoba* (P3) • *Banksia nobilis subsp. fragrans* (P3) • *Banksia splendida subsp. macrocarpa* (P3) • *Grevillea erinacea* (P3) • *Lepidobolus quadratus* (P3) • *Synaphea endothrix* (P3) • *Calytrix chrysantha* (P4) • *Conostephium magnum* (P4) • *Desmocladus elongatus* (P4) • *Hemiandra* sp. Watheroo (S. Hancocks 4) (P4) • *Hypolaena robusta* (P4) • *Petrophile septemfida* (P4)	• *Echium plantagineum*
		October and November 2011	• Modified Vegetation • Drainage Areas • Loam/Clay Plains • Stony Hills and Slopes • Sandy Plains and Low Hills	Two of the vegetation types (HB5 and HX1) appear similar to the description that is available for the Lesueur-Coomallo Floristic Community (D1), which is listed as a Threatened Ecological Community. These units are of Very High conservation significance.	

Report	Survey Location	Survey Type and Timing	Significant Fauna and Fauna Habitats	Significant Flora and Ecological Communities	Introduced Fauna and Declared Weeds
Waddi Wind Farm Project – Cataby Supplemenary Flora, vegetation and fauna survey (Ecologia, 2016)	48 km southeast of the Survey Area	Basic flora Basic fauna	• Carnaby's Black Cockatoo (*Zanda latirostris*) – EN (BC Act; EPBC Act)	• *Conostephium magnum* (P4)	• Rabbit (*Oryctolagus cuniculus*)
		October 2016	• Banksia Woodland • Mining Rehabilitation • Cleared/Disturbed • Cleared Farmland with • Paddock Trees • Cleared Farmland • Drainage Line	Nil	
EP3 Study Area – Eneabba Flora and Vegetation Desktop Assessment (Umwelt Environmental, 2021)	46 km northeast of the Survey Area, adjacent the town of Eneabba	Desktop	N/A	N/A	N/A
		N/A	N/A	N/A	
Yandin Wind Farm Flora, Vegetation and Avifauna Assessment (Ecologia, 2017)	50 km southeast of the Survey Area	Reconnaissance flora and vegetation survey Threatened Ecological Community assessment Avifauna survey September 2017	• Carnaby's Black Cockatoo (*Zanda latirostris*) – EN (BC Act; EPBC Act)	• *Hypocalymma tetrapterum (*P3)	Nil
			• Parkland /Cleared • Marri Woodland • Proteaceous Heath • Dryandra Allocasuarina • Shrubland • Eucalyptus todtiana Woodland • Banksia Woodland • Creek line	Banksia Woodlands of the Swan Coastal Plain ecological community	

Conservation significant flora or vegetation	Warradarge Wind Farm Flora, Vegetation and Fauna Assessment	Level 2 Flora and Vegetation Survey – North Perth Mineral Sands Project (Single Phase) (360 Environmental, 2012a)	Waddi Wind Farm Project – Cataby Supplemenary Flora, vegetation and fauna survey (Ecologia, 2016)	Yandin Wind Farm Flora, Vegetation and Avifauna Assessment (Ecologia, 2017)
T				
Acacia wilsonii	✓			
Banksia catoglypta	✓			
Eucalyptus pruiniramis	✓			
Thelymitra stellata	✓			
P1				
Grevillea cooljarloo		✓		
Grevillea stenogyne	✓			
P2				
Comesperma griffinii	✓			
Schoenus badius		✓		
P3				
Allocasuarina grevilleoides	✓			
Allocasuarina ramosissima	✓			
Angianthus micropodioides		✓		
Arnocrinum gracillimum	✓			
Austrostipa nunaginensis	✓			

Conservation significant flora or vegetation	Warradarge Wind Farm Flora, Vegetation and Fauna Assessment	Level 2 Flora and Vegetation Survey – North Perth Mineral Sands Project (Single Phase) (360 Environmental, 2012a)	Waddi Wind Farm Project – Cataby Supplemenary Flora, vegetation and fauna survey (Ecologia, 2016)	Yandin Wind Farm Flora, Vegetation and Avifauna Assessment (Ecologia, 2017)
Banksia cypholoba	✓			
Banksia nobilis subsp. fragrans	✓			
Banksia splendida subsp. macrocarpa	✓			
Conospermum scaposum		✓		
Desmocladus nodatus		✓		
Grevillea erinacea	✓			
Hensmania stoniella		✓		
Hypocalymma tetrapterum				✓
Isopogon panduratus subsp. palustris		✓		
Lepidobolus quadratus	✓			
Stylidium aceratum		✓		
Synaphea endothrix	✓			
P4				
Calytrix chrysantha	✓			
Desmocladus elongatus	✓			
Hemiandra sp. Watheroo (S. Hancocks 4)	✓			
Hypolaena robusta	✓			
Petrophile septemfida	✓			
Stylidium longitubum		✓		
Conostephium magnum	✓		✓	
Threatened and Priority Ecological Communities				
Two of the vegetation types (HB5 and HX1) appear similar to the description that is available for the Lesueur-Coomallo Floristic Community (D1), which is listed as a Threatened Ecological Community.	✓			
Banksia Woodlands of the Swan Coastal Plain ecological community				✓

Appendix C Flora Desktop Assessment Results and Likelihood of Occurrence

WA Limestone Jurien Bay

Flora, Vegetation, Fauna and Black Cockatoo Assessment

WA Limestone

SLR Project No.: 675.073307.00001

17 February 2026

Appendix C: Assessment of the Likelihood of Occurrence of Threatened and Priority Flora as per Desktop Assessment Database Searches surrounding the Survey Area

Distance to Nearest Record from the Survey Area is based on a distance analysis undertaken against 2025 DBCA database. High = Suitable habitat present and records less than 5 km from the Survey Area, Medium = Suitable habitat present and records between 5 km and 15 km from the Survey Area, and Low = No suitable habitat present and/or records greater than 15 km from the Survey Area, Unknown = Insufficient information available to classify . CR= Listed as Critically Endangered under the EPBC Act, EN = Listed as Endangered under the EBPC Act, VU = listed as Vulnerable under the EBPC Act. T = Threatened under the BC Act, P = Priority Listed, Ranked and Listed by the DBCA. Likelihoods are assessed both pre and post survey based on knowledge of the Survey Area, nearest known records, known flowering period of flora taxa and knowledge gained from the survey effort during ground truthing. 1: Department of the Environment (2026). SPRAT EPBC Threatened Flora in Species Profile and Threats Database, Department of the Environment, Canberra. Available from: http://www.environment.gov.au/sprat. 2: Department of Biodiversity, Conservation and Attractions (2026). FloraBase - TheWestern Australian Flora. https://florabase.dpaw.wa.gov.au/

Species	Conservation Status		Source				Distance to Nearest Record (km)	Flowering Period	Prefered Habitat	Pre-Survey Likelihood of Occurrence	Habitat occurs within the Survey Area	Post-Survey Likelihood of Occurrence
	DBCA	EPBC	Nature Map	PMST	DBCA	Literature Review						
Acacia forrestiana	T	VU	-	✓	-		21.1	Nov - Dec	The species inhabits gullies and slopes of lateritic hills, often growing in rocky or lateritic clay loams, or gravelly soils over sandstone.[1]	Low	No	Low
Eucalyptus johnsoniana	T	VU	-	✓	✓		21.2	Jul - Aug, Oct - Dec, Jan - May	White/grey sand with lateritic gravel. Sandplains, lateritic breakaways.[2]	Low	No	Low
Eucalyptus leprophloia	T	EN	-	✓	✓		20.0	Aug - Oct	White or grey sand over laterite. Valley slopes.[2]	Low	No	Low
Eucalyptus suberea	T	VU	-	✓	✓		19.9	Nov - Dec, Jan	Grey sand. Near or on lateritic breakaways.[2]	Low	No	Low
Eucalyptus x balanites	T	EN	-	✓	✓		24.4	Oct - Jan	Sandy soils with lateritic gravel.[2]	Low	No	Low
Eucalyptus x lateritica	T	VU	-	-	-		18.6	Aug - Oct	White or grey sand with gravel. Lateritic breakaways and mesas.[2]	Low	No	Low
Grevillea batrachioides	T	EN	-	✓	✓		22.4	Oct	Sandy loam. Sandstone outcrops.[2]	Low	No	Low
Grevillea humifusa	T	EN	-	✓	✓		14.0	Jul - Oct	Gravelly loam over laterite.[2]	Medium	No	Low
Hakea megalosperma	T	VU	✓	✓	✓		1.5	May - Jun	This Hakea grows in low heath in grey sand and lateritic gravel or laterite boulders on hilltops and ridges, or occasionally with emergent Eucalyptus todtiana in white or yellow grey sand.[1]	High	No	Low
Hemiandra gardneri	T	EN	-	✓	✓		21.9	Aug - Oct	Grey or Yellow sand, clayey sands. Sandplains.[2]	Low	No	Low
Paracaleana dixonii	T	EN	-	✓	✓		22.3	Oct - Dec, Jan	Typically occurs in deep sand in open areas beneath dense tall shrubland with scattered emergent banksias, or in shallow sand over laterite in heathland.[2]	Low	No	Low
Patersonia spirifolia	T	EN	-	✓	✓		24.0	Oct - Nov	Sand over laterite. Low hills.[2]	Low	No	Low
Styphelia obtecta	T	EN	-	✓	✓		24.9	Aug - Oct	Grey sand.[2]	Low	Yes	Low
Thelymitra stellata	T	EN	-	✓	✓		15.1	Oct - Nov	Grows on both on ridges and slopes, flats, also on riverbanks and breakaways. Soil types are red, brown, yellow, or grey sandy loams clay or gravel over laterite or gravel. Dry, moist or saline conditions are tolerated.[1]	Medium	No	Low
Asterolasia drummondii	P4		-	-	✓		20.6	Jul - Sep	Lateritic gravel and sand or loam. Lateritic hills and sandplains, breakaways.[2]	Low	No	Low
Banksia chamaephyton	P4		-	-	✓		20.7	Oct - Dec	Grey or white sand over laterite.[2]	Low	No	Low

[1] Department of Agriculture, Water and Environment (2026) [2]Western Australian Herbarium (2026)

Species	Conservation Status		Source				Distance to Nearest Record (km)	Flowering Period	Prefered Habitat	Pre-Survey Likelihood of Occurrence	Habitat occurs within the Survey Area	Post-Survey Likelihood of Occurrence
	DBCA	EPBC	Nature Map	PMST	DBCA	Literature Review						
Banksia tricuspis	P4		-	-	✓		12.7	May - Sep	Lateritic rocky soils. Sides and hilltops, breakaway edges.[2]	Medium	No	Low
Conostylis pauciflora subsp. euryrhipis	P4		-	-	✓		13.3	Jul	White, grey or yellow sand. Consolidated dunes.[2]	Medium	No	Low
Diuris recurva	P4		-	-	✓		12.7	Jul - Aug	Loam. Winter-wet areas.[2]	Low	No	Low
Eucalyptus exilis	P4		-	-	✓		20.6	Dec - Apr	Grey sand, gravelly loam. Lateritic ridges.[2]	Low	No	Low
Eucalyptus foecunda subsp. foecunda	P4		✓	-	✓		3.8	Feb - Aug	Sand. Outcropping limestone. Hills, slopes.[2]	High	Yes	Low
Eucalyptus macrocarpa subsp. elachantha	P4		-	-	✓		17.4	Apr - Sep	White or grey sand over laterite. Hillslopes, ridges, sandplains.[2]	Low	No	Low
Eucalyptus pendens	P4		-	-	✓		18.6	Jul - Aug	White or grey sand with lateritic gravel. Hillsides, breakaways, sandplains.[2]	Low	No	Low
Eucalyptus zopherophloia	P4		✓	-	✓		1.9	Nov - Jan	Grey/white sand with limestone rubble. Coastal areas.[2]	High	Yes	Low
Grevillea olivacea	P4		✓	-	✓		7.9	Jun - Aug	White or grey sand. Coastal dunes, limestone rocks.[2]	Medium	Yes	Low
Grevillea rudis	P4		-	-	✓		17.6	Jul - Feb	White, grey, yellow or red sand, often with gravel and over laterite.[2]	Low	No	Low
Grevillea saccata	P4		-	-	✓		11.1	Jun - Sep	Yellow or brown sand, often with lateritic gravel.[2]	Medium	No	Low
Hakea neurophylla	P4		-	-	✓		18.0	Jun - Aug	Lateritic sandy soils. Hillsides.[2]	Low	No	Low
Hibbertia propinqua	P4		-	-	✓		21.0	Aug - Sep	Laterite ridges and base of breakaways, stony soil, gravelly loam.	Low	No	Low
Hypolaena robusta	P4		-	-	✓		21.2	Sep - Oct	White sand. Sandplains.[2]	Low	No	Low
Lepidium puberulum	P4		✓	-	✓		6.9	Aug	Sandy soils.[2]	Medium	No	Low
Schoenus griffinianus	P4		-	-	✓		12.0	Oct - Nov	White sand.[2]	Medium	No	Low
Stylidium aeonioides	P4		-	-	✓		21.1	Sep - Nov	Sandy clay loam over laterite. Hillsides and breakaways. Low heath, open woodland.[2]	Low	No	Low
Stylidium inversiflorum	P4		-	-	✓		12.4	Sep - Oct	White or grey sand over laterite. Sandplains, hillslopes and gullies. Heath, open woodland.[2]	Medium	No	Low
Stylidium longitubum	P4		-	-	-	✓	23.0	Nov	Sandy clay, clay. Seasonal wetlands.[2]	Low	No	Low
Stylidium striatum	P4		-	-	✓		21.0	Oct - Nov	Brown clay loam over laterite. Hillslopes. Jarrah/Marri forest, Wandoo woodland.[2]	Low	No	Low

[1] Department of Agriculture, Water and Environment (2026) [2]Western Australian Herbarium (2026)

Species	Conservation Status		Source				Distance to Nearest Record (km)	Flowering Period	Prefered Habitat	Pre-Survey Likelihood of Occurrence	Habitat occurs within the Survey Area	Post-Survey Likelihood of Occurrence
	DBCA	EPBC	Nature Map	PMST	DBCA	Literature Review						
Thelymitra apiculata	P4		-	-	✓		12.7	Jun - Jul	Grey sand, lateritic gravel.[2]	Medium	No	Low
Thysanotus glaucus	P4		-	-	✓		16.2	Nov - Feb	White, grey or yellow sand, sand gravel.[2]	Low	No	Low
Xanthosia tomentosa	P4		✓	-	✓		5.5	Sep - Nov	Lateritic gravelly soils.[2]	Medium	No	Low
Acacia epacantha	P3		-	-	✓		17.6	July to August	Lateritic gravelly loam or clay.[2]	Medium	No	Low
Acacia plicata	P3		✓	-	✓		9.6	Aug - Oct	Loamy and clayey soils, often over sandstone or siltstone. Along drainage lines.[2]	Medium	No	Low
Allocasuarina grevilleoides	P3		-	-	✓	✓	24.3	Sep - Nov	Sand over laterite, gravel.[2]	Low	No	Low
Angianthus micropodioides	P3		-	-	-	✓	23.0	Jan - Feb	Saline sandy soils. River edges, saline depressions, claypans.[2]	Low	No	Low
Banksia fraseri var. crebra	P3		-	-	✓		12.7	Jul - Aug	Sandplains.[2]	Medium	No	Low
Banksia kippistiana var. paenepeccata	P3		-	-	✓		22.4	Sep - Oct	Lateritic gravelly soils.[2]	Low	No	Low
Beaufortia bicolor	P3		-	-	✓		22.1	Nov - Dec	White sand over laterite. Sandplains.[2]	Low	No	Low
Beyeria cinerea subsp. cinerea	P3		✓	-	✓		1.1	Nov	Grey sand over limestone.[2]	High	Yes	Recorded
Calandrinia oraria	P3		✓	-	✓		8.7	Aug - Oct	Low coastal heath or forb-land on small white sand dunes immediately adjacent to the beach and up to 100–150 m inland in slightly larger dunes with grey or grey-brown sands.[2]	Medium	No	Low
Centrolepis milleri	P3		-	-	✓		22.4	Aug - Nov	Sandplains.[2]	Low	No	Low
Comesperma rhadinocarpum	P3		-	-	✓		24.5	Oct - Nov	Sandy soils.[2]	Low	Yes	Low
Conospermum scaposum	P3		-	-	✓		24.1	Jan	White-grey sand, sandy clay. Low swampy areas, road verges.[2]	Low	No	Low
Dampiera tephrea	P3		✓	✓	✓		0.8	Aug	Sand, gravelly loam.[2]	High	Yes	Medium
Daviesia pteroclada	P3		-	-	✓		21.1	Jul - Aug	Sandy or clay gravelly soils over laterite. Hills.[2]	Low	No	Low
Drosera atrata	P3		-	-	✓		21.3	May - Aug	Hillslope. White/grey sandy loam over lateritic gravel.	Low	No	Low
Gompholobium gairdnerianum	P3		-	-	✓		11.9	Sep - Nov	White, cream or brown sandy clay, white sand over sandstone, brown or grey sand over laterite, gravel. Hill summits and slopes, ridges.[2]	Medium	No	Low

[1] Department of Agriculture, Water and Environment (2026) [2]Western Australian Herbarium (2026)

Species	Conservation Status		Source			Literature Review	Distance to Nearest Record (km)	Flowering Period	Prefered Habitat	Pre-Survey Likelihood of Occurrence	Habitat occurs within the Survey Area	Post-Survey Likelihood of Occurrence
	DBCA	EPBC	Nature Map	PMST	DBCA							
Grevillea uniformis	P3		-	-	✓		15.8	Sep - Nov	Sand or sandy loam on sandstone, lateritic gravel. Sandstone outcrops, creek lines.[2]	Low	No	Low
Guichenotia alba	P3		✓	-	✓		6.1	Jul - Aug	Sandy and gravelly soils. Low-lying flats, depressions.[2]	Medium	No	Low
Haemodorum loratum	P3		-	-	✓		12.7	Sep - Nov	Grey or yellow sand, gravel.[2]	Medium	No	Low
Hakea longiflora	P3		-	-	✓		21.3	Jul - Sep	White sand, loam, gravel, laterite. Breakaways.[2]	Low	No	Low
Haloragis foliosa	P3		✓	-	✓		1.2	Oct	White/grey sand over limestone.[2]	High	Yes	Medium
Hensmania stoniella	P3		✓	-	✓		9.2	Sep - Nov	White, grey or lateritic sand, often winter-wet.[2]	Medium	No	Low
Hibbertia subglabra	P3		-	-	✓		21.0	Sep - Oct	Mid-slope. Lateritic gravel.[2]	Low	No	Low
Isopogon autumnalis	P3		-	-	✓		21.9	Jun	White, yellow or grey sand. Laterite gravel. Sandplains, gentle slopes.[2]	Low	No	Low
Isopogon panduratus subsp. palustris	P3		-	-	✓		13.1	Aug - Oct	Species-rich heath, less often Banksia woodland, usually in shallow sandy soils over laterite, but sometimes also in deep white sand.[2]	Medium	No	Low
Jacksonia anthoclada	P3		-	-	✓		22.2	Mar - Apr, Dec	White or grey sand. Sandplains.[2]	Low	Yes	Low
Lechenaultia juncea	P3		-	-	✓		23.8	Sep - Dec	White, grey or yellow sand, sandy gravel.[2]	Low	No	Low
Lepidobolus quadratus	P3		-	-	✓		20.0	Aug - Sep	Lateritic gravel, grey/white sand. Dry kwongan.[2]	Low	No	Low
Leucopogon foliosus	P3		-	-	✓		20.8	Oct - Dec	Hills/rises, grey sand, laterite.[2]	Low	No	Low
Patersonia argyrea	P3		-	-	✓		19.3	Sep - Oct	Grey sand and lateritic gravel.[2]	Low	No	Low
Persoonia filiformis	P3		-	-	✓		21.4	Nov	Yellow or white sand over laterite.[2]	Low	No	Low
Persoonia rudis	P3		✓	-	✓		5.2	Sep - Nov	White, grey or yellow sand, often over laterite.[2]	Medium	No	Low
Phlebocarya pilosissima subsp. pilosissima	P3		-	-	✓		17.8	Aug - Sep	White or grey sand, lateritic gravel.[2]	Low	No	Low
Platysace ramosissima	P3		-	-	✓		11.7	Oct - Nov	Sandy soils.[2]	Medium	Yes	Low
Sarcozona bicarinata	P3		✓	-	✓		5.2	Aug	White sand.[2]	Medium	Yes	Medium
Spergularia nesophila	P3		✓	-	✓		8.7	Aug	Brown guano soil over limestone rock. Rock platform off high rock island.[2]	Medium	No	Low

[1] Department of Agriculture, Water and Environment (2026) [2]Western Australian Herbarium (2026)

Species	Conservation Status		Source			Literature Review	Distance to Nearest Record (km)	Flowering Period	Prefered Habitat	Pre-Survey Likelihood of Occurrence	Habitat occurs within the Survey Area	Post-Survey Likelihood of Occurrence
	DBCA	EPBC	Nature Map	PMST	DBCA							
Stylidium asteroideum	P3		-	-	✓		22.4	Sep - Oct	Wandoo open woodland, Winter-wet flat; brown loam, granite.[2]	Low	No	Low
Stylidium maritimum	P3		✓	-	✓		6.1	Sep - Nov	Sand over limestone. Dune slopes and flats. Coastal heath and shrubland, open Banksia woodland.[2]	Medium	Yes	Medium
Stylidium nonscandens	P3		-	-	✓		22.7	Sep - Nov	Sand over laterite. Hillslopes and crests. Banksia woodland, heath, mallee shrubland.[2]	Low	No	Low
Stylidium periscelianthum	P3		-	-	✓		14.4	Sep - Oct	Loamy clay, moist soils pockets. Wet flats, low granitic hills.[2]	Medium	No	Low
Stylidium torticarpum	P3		-	-	✓		12.6	Oct	Sandy clay and clay loam over laterite. Adjacent to creek lines, depressions, and beneath breakaways. Heath or mallee shrubland.[2]	Medium	No	Low
Styphelia filamentosa	P3		-	-	✓		23.7	Oct - Dec	Low rises. Dry white sand over laterite, gravel.[2]	Low	No	Low
Styphelia filifolia	P3		-	-	✓		19.8	Mar - May	Yellow sand, brown sand, grey sand, flat sandplains, lower slopes.[2]	Low	Yes	Low
Styphelia williamsiorum	P3		-	-	✓		23.6	Nov - Dec	Hill slopes, rises with laterite, gravel, clayey sand, sandy loam.[2]	Low	No	Low
Synaphea endothrix	P3		-	-	✓		14.9	Aug - Sep	Gravelly loam, sand. Lateritic rises.[2]	Medium	No	Low
Tetratheca angulata	P3		-	-	✓		20.6	Aug - Oct	Sandy to gravelly laterite soils. Low hill crests, breakaways with massive laterite boulders.[2]	Low	No	Low
Thryptomene butleri	P3		✓	-	✓		3.3	Sep	Calcareous sand.[2]	High	Yes	Medium
Thysanotus anceps	P3		-	-	✓		21.4	Dec	White or grey sand, lateritic gravel, laterite.[2]	Low	No	Low
Thysanotus vernalis	P3		-	-	✓		16.2	Sep - Oct	Sandy loam.[2]	Low	Yes	Low
Verticordia amphigia	P3		-	-	✓		17.6	Oct	Sandy loam, clay and rocky loam. Winter-wet depressions.[2]	Low	No	Low
Verticordia fragrans	P3		-	-	✓		24.7	Oct	White, grey or yellow sand, clay loam. Low-lying areas, sandplains.[2]	Low	Yes	Low
Verticordia insignis subsp. eomagis	P3		-	-	✓		23.1	Oct	Sandy soils over laterite. Sandplains, rocky rises.[2]	Low	No	Low
Verticordia rutilastra	P3		-	-	✓		20.5	Oct	Sand and lateritic gravel. Hills.[2]	Low	No	Low
Acacia carens	P2		-	-	✓		21.1	Apr - Jun	Gravel or sandy gravel. Lateritic uplands.[2]	Low	No	Low
Acacia lasiocarpa var. lasiocarpa Cockleshell Gully variant (E.A. Griffin 2039)	P3		-	-	✓		20.6	Aug	Grey-yellow sand with laterite. Low open heath.[2]	Low	Yes	Recorded
Acacia retrorsa	P2		✓	-	✓		9.6	Aug - Sep	Grey sand and lateritic gravel, sandy loam.[2]	Medium	No	Low

[1] Department of Agriculture, Water and Environment (2026) [2]Western Australian Herbarium (2026)

Species	Conservation Status		Source			Literature Review	Distance to Nearest Record (km)	Flowering Period	Prefered Habitat	Pre-Survey Likelihood of Occurrence	Habitat occurs within the Survey Area	Post-Survey Likelihood of Occurrence
	DBCA	EPBC	Nature Map	PMST	DBCA							
Andersonia sp. Mt Lesueur (E.A. Griffin 5536)	P2		-	-	✓		20.1	N/A	Sandy clay over sandstone. Breakaway slope.[2]	Low	Unknown	Low
Andersonia sp. Mysosma (E.A. Griffin 2213)	P2		-	-	✓		12.6	N/A	Brown, stony sand with lateric pebbles. Breakaway, Hillslope.[2]	Medium	Unknown	Low
Banksia fraseri var. effusa	P2		-	-	✓		22.0	Jul - Aug	Laterite, gravelly loam on slopes.[2]	Low	No	Low
Beyeria similis	P2		-	-	✓		21.4	Aug - Sep	Yellow or red clayey sand. Sandplains.[2]	Low	Yes	Low
Boronia scabra subsp. condensata	P2		-	-	✓		20.6	Aug	Sandy clay or gravel. Upper slopes, edges of lateritic breakaways.[2]	Low	No	Low
Corymbia chlorolampra	P2		-	-	✓		20.6	N/A	Sand over limestone. Hills, lateritic breakaways.[2]	Low	No	Low
Cyanothamnus ramosus subsp. lesueuranus	P2		-	-	✓		20.6	Jul - Aug	Midslopes. White sand over laterite.	Low	No	Low
Daviesia debilior subsp. debilior	P2		-	-	✓		21.4	May - Jul	Sand over lateritic gravel.[2]	Low	No	Low
Drosera rubricalyx	P2		-	-	✓		11.8	Aug - Sep	Brown sandy clay loam with underlying laterite.[2]	Medium	No	Low
Eucalyptus abdita	P2		-	-	✓		23.3	Feb	Laterite, sandy clay with gravel over laterite. Slopes, breakaways.[2]	Low	No	Low
Eucalyptus angularis	P2		-	-	✓		13.0	Unknown	Lateritic breakaways.[2]	Medium	No	Low
Eucalyptus foecunda subsp. aeolica	P2		-	-	✓		15.0	Unknown	Outcropping limestone.	Medium	Yes	Low
Goodenia xanthotricha	P2		-	-	✓		20.6	Jan - Feb	Sandy soils. Gravelly hills.[2]	Low	No	Low
Grevillea delta	P2		-	-	✓		21.1	Oct	Sandy clay, loam, gravelly soils, often over sandstone. Sandstone outcrops, creek beds.[2]	Low	No	Low
Hypocalymma tenuatum	P2		-	-	✓		22.2	Jul	Sandy loam over sandstone. Outcrops, ridges.[2]	Low	No	Low
Lasiopetalum rutilans	P2		-	-	✓		11.1	Aug - Oct, Dec	Lateritic brown sand, white sand, or skeletal soil over sandstone, on upper slopes or valley floors.[2]	Medium	No	Low
Lepyrodia curvescens	P2		-	-	✓		11.3	Sep - Nov	Sand, laterite. Seasonally inundated swampland.[2]	Medium	No	Low
Leucopogon plumuliflorus	P2		-	-	✓		12.7	Aug - Oct	Lateritic sandy soils. Amongst lateritic boulders, hillslopes.[2]	Medium	No	Low
Phlebocarya pilosissima subsp. teretifolia	P2		-	-	✓		13.8	Aug - Oct	White or grey sand.[2]	Medium	Yes	Medium
Ptilotus clivicola	P2		-	-	✓		22.5	Oct - Nov	Kwongan heath on gently sloping gravelly rises with a shallow covering of coarse sand.[2]	Low	No	Low

[1] Department of Agriculture, Water and Environment (2026) [2]Western Australian Herbarium (2026)

Species	Conservation Status		Source				Distance to Nearest Record (km)	Flowering Period	Prefered Habitat	Pre-Survey Likelihood of Occurrence	Habitat occurs within the Survey Area	Post-Survey Likelihood of Occurrence
	DBCA	EPBC	Nature Map	PMST	DBCA	Literature Review						
Schoenus badius	P2		-	-	-	✓	23.0	Sep - Oct	Grey sand. Moist areas.[2]	Low	No	Low
Scholtzia calcicola	P2		✓	-	✓		8.5	Sept-Oct, Dec	Limestone ridges. Skeletal brown sand over limestone. Slopes of undulating plains.[2]	Medium	Yes	Medium
Stenanthemum limitatum	P2		-	-	✓		11.1	Oct - Nov	Sand and lateritic gravel, sandstone.[2]	Medium	No	Low
Stylidium cornuatum	P2		-	-	✓		22.7	Sep	Winter wet depressions, brown clay loam.	Low	No	Low
Stylidium diplotrichum	P2		-	-	✓		20.6	Oct	Clayey sand or clay loam over laterite. Hillslopes and gullies. Acacia and myrtaceous shrubland, low heath.[2]	Low	No	Low
Stylidium strigosum	P2		-	-	✓		22.1	Oct	Gentle slope; grey/brown sandy loam.[2]	Low	Yes	Low
Styphelia carolineae	P2		-	-	✓		10.2	Dec	White sand over gravel.[2]	Medium	No	Low
Synaphea lesueurensis	P2		-	-	✓		12.4	Aug - Oct	Laterite, sandy soils over laterite or sandstone. Hillslopes.[2]	Medium	No	Low
Synaphea sparsiflora	P2		-	-	✓		23.4	Aug - Sep	Sandy loam over laterite.	Low	No	Low
Synaphea xela	P2		-	-	✓		20.6	Jul - Sep	Red-brown gravelly sand, white-pink, grey-brown clayey sand and loam, over laterite. Undulating sites.	Low	No	Low
Tetratheca remota	P2		✓	-	✓		4.7	Aug	Sandy gravel.[2]	High	No	Low
Thelymitra pulcherrima	P2		-	-	✓		16.5	Aug - Sep	Gravel.[2]	Low	No	Low
Thomasia rulingioides	P2		-	-	✓		11.7 SSE	May-Oct	White/grey sand over limestone.[2]	Medium	Yes	Medium
Walteranthus erectus	P2		-	-	✓		21.9	Sep	Sand over limestone. Coastal limestone ridges.[2]	Low	Yes	Low
Drosera allantostigma	P1		-	-	✓		19.4	Nov, Dec	Loam, silica sand or peaty soils. Margins of winter-wet depressions.[2]	Low	No	Low
Grevillea cooljarloo	P1		-	-	✓		18.7	Jun - Oct	Grey Sand. Plain.[2]	Low	No	Low
Stylidium carnosum	P1		-	-	-		22.4	Sep, Oct	White/grey sand. Lateritic soils. Slopes of laterite hill.[2]	Low	No	Low
Stylidium carnosum subsp. Narrow leaves (J.A. Wege 490)	P1		-	-	✓		22.4	Sep, Oct	White/grey sand. Lateritic soils. Slopes of laterite hill.[2]	Low	No	Low

[1] Department of Agriculture, Water and Environment (2026) [2]Western Australian Herbarium (2026)

Appendix D Flora Recorded During the Survey

WA Limestone Jurien Bay

Flora, Vegetation, Fauna and Black Cockatoo Assessment

WA Limestone

SLR Project No.: 675.073307.00001

17 February 2026

Family	Taxa	Status
Amaranthaceae	*Amaranthus ?viridis*	Introduced
Apiaceae	*Daucus glochidiatus*	
Araliaceae	*Hydrocotyle ?medicaginoides*	
Asparagaceae	*Lomandra maritima*	
	Thysanotus manglesianus/patersonii	
	Thysanotus sp.	
	Acanthocarpus preissii	
	Thysanotus ?sp. Coastal plain (N. H. Brittan 66/63)	
Asteraceae	*Rhodanthe corymbosa*	
	Senecio glossanthus	
	Ursinia anthemoides	Introduced
	Brachyscome iberidifolia	
	Lagenophora huegelli	
	Sonchus oleraceus	Introduced
	Hypochaeris radicata	Introduced
	Olearia axillaris	
	Senecio pinnatifolius var. *pinnatifolius*	
	Olearia lehmanniana	
Brassicaceae	*Raphanus raphanistrum*	Introduced
	Brassica tourneforti	Introduced
Casuarinaceae	*Allocasuarina humilis*	
	Allocasuarina lehmanniana subsp. *lehmanniana*	
Celastraceae	*Tripterococcus brunonis*	
Centrolepidaceae	*Centrolepis drummondiana*	
Colchicaceae	*Wurmbea monantha*	
Crassulaceae	*Crassula colorata* var. *colorata*	
Cyperaceae	*Lepidosperma* sp.	
	Mesomelaena pseudostygia	
	Lepidosperma calcicola	
	Schoenus clandestinus	
	Morelotia octandra	
	Ficinia marginata	Introduced
	Schoenus latitans	
	Schoenus sp. G Broad Sheath (K. L. Wilson 2633)	
Dilleniaceae	*Hibbertia hypericoides subsp. hypericoides*	
	Hibbertia racemosa	
Droseraceae	*Drosera pallida*	
	Drosera erythrorhiza	
	Drosera sp. climbing	
Ericaceae	*Leucopogon polymorphus*	
	Styphelia speciosa	
	Styphelia insularis	
	Styphelia propinqua	
	Andersonia lehmanniana subsp. *lehmanniana*	
Euphorbiaceae	*Beyeria cinerea* subsp. *cinerea*	P3
	Ricinocarpus undulatus	
Fabaceae	*Labichea cassioides*	
	Acacia truncata	
	Acacia lasiocarpa var *lasiocarpa* Cockleshell variant (E.A. Griffin 2039)	P2

Family	Taxa	Status
Fabaceae	*Templetonia retusa*	
	Acacia spathulifolia	
	Jacksonia ?hakeoides	
	Acacia cyclops	
	Isotropis cuneifolia	
	Hovea pungens	
	Gompholobium tomentosum	
	Jacksonia floribunda	
	Daviesia polyphylla	
	Daviesia divaricata subsp. *divaricata*	
	Acacia rostellifera	
	Isotropis cuneifolia	
Geraniaceae	*Erodium cicutarium*	
Goodeniaceae	*Scaevola thesioides*	
	Scaevola canescens	
	Lechenaultia linarioides	
	Dampiera tephrea	P3
Haemodoraceae	*Conostylis candicans* subsp. *calcicola*	
	Anigozanthos flavidus	
	Haemodoraceae sp.	
Hemerocallidaceae	*Tricoryne elatior*	
	Dianella revoluta	
Iridaceae	*Patersonia occidentalis*	
	Iridaceae *sp.*	
Juncaginaceae	*Triglochin isingiana*	
Lamiaceae	*Hemigenia barbata*	
Lauraceae	*Cassytha flava*	
Loganiaceae	*Phyllangium divergens*	
Malvaceae	*Guichenotia ledifolia*	
Myrtaceae	*Melaleuca huegelli*	
	Melaleuca systena	
	Calothamnus quadrifidus subsp. *quadrifidus*	
	Scholtzia umbellifera	
	Hypocalymma xanthopetalum	
	Calothamnus sanguineus	
Orchidaceae	*Caladenia crebra*	
	Caladenia sp.	
	Caladenia flava	
	Pterostylis vittata	
	Caladenia longicaudia	
	Diuris sp.	
	Pyrorchis nigricans	
Phyllanthaceae	*Poranthera microphylla*	
	Lysiandra calycina	
Poaceae	*Austrostipa elegantissima*	
Poaceae	*Austrostipa ?exilis*	
	Ehrharta calycina	Introduced
	Avellinia festucoides	Introduced
Portulacaceae	*Calandrinia corrigioloides*	

Family	Taxa	Status
Primulaceae	*Lysimachia arvensis*	Introduced
Proteaceae	*Grevillea glabrilimba*	
	Banksia dallenneyi subsp. dallanneyi var. dallanneyi	
	Banksia sessilis var. cygnorum	
	Petrophile axillaris	
	Banksia leptophylla var. melletica	
	Hakea costata	
	Hakea trifurcata	
	Hakea prostrata	
	Petrophile brevifolia subsp. *rosea*	
	Hakea lissocarpha	
	Hakea trifurcata	
	Synaphea spinulosa subsp. *spinulosa*	
	Conospermum sp.	
Ranunculaceae	*Clematis linearifolia*	
Restionaceae	*Desmocladus asper*	
	Lepidobolus preissianus subsp. *preissianus*	
Rhamnaceae	*Trymalium odoratissimum* subsp. *odoratissumum*	
	Spyridium globulosum	
	Stenanthemum notiale subsp. *notiale*	
	Cryptandra pungens	
Rubiaceae	*Opercularia vaginata*	
	Opercularia spermacocea	
Rutaceae	*Diplolaena obovata*	
	Philotheca spicata	
Scrophulariaceae	*Myoporum insulare*	
Solanaceae	*Anthocercis littorea*	
Stylidiaceae	*Stylidium ?kalbarriense*	
Violaceae	*Pigea calycina*	
Xanthorrhoeaceae	*Xanthorrhoea* ?sp. Lesueur (G.J. Keighery 16404)	
Zamiaceae	*Macrozamia fraseri*	

Appendix E Threatened and Priority Flora Report Forms

WA Limestone Jurien Bay

Flora, Vegetation, Fauna and Black Cockatoo Assessment

WA Limestone

SLR Project No.: 675.073307.00001

17 February 2026

Appendix F Flora Site Sheets

WA Limestone Jurien Bay

Flora, Vegetation, Fauna and Black Cockatoo Assessment

WA Limestone

SLR Project No.: 675.073307.00001

17 February 2026

FLORA SITE SHEET

Project Name Jurien bay Flora, Vegetation, Fauna and Black Cockatoo Assessment
Site: JBQ01
Location -30.34579, 115.08325

Described by: GB PW
Date: 2025-09-01
Type: Quadrat 10m x 10m

Landform: Limestone ridge/outcropping
Rock Type: Limestone
Soil Type: Loam
Soil Colour: Brown, Grey



Vegetation: *Melaleuca huegelii and M. systena mid shrubland over Grevillea glabrilimba low sparse shrubland over Desmocladus asper low open rushland and low open mixed herbs*

Condition: Excellent
Fire Age:
Disturbance Type: Weeds
Fire Evidence:

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
?Rhodanthe corymbosa	10	0.5	
Acacia lasiocarpa var lasiocarpa Cockleshell variant (E.A. Griffin 2039)	80	1	P2
Acacia truncata	80	1	
Austrostipa elegantissima	70	0.2	
Banksia dallenneyi subsp. dallanneyi var. dallanneyi	15	1	
Banksia sessilis var. cygnorum	20	0.5	
Beyeria cinerea subsp. cinerea	25	0.5	P3
Calothamnus quadrifidus subsp. quadrifidus	90	1	
Conostylis candicans subsp. calcicola	15	0.5	
Daucus glochidiatus	10	1.5	
Desmocladus asper	15	20	
Drosera pallida	50	0.1	
Grevillea glabrilimba	30	4	
Hibbertia hypericoides subsp. hypericoides	60	0.2	
Hydrocotyle ?medicaginoides	10	0.2	
Labichea cassioides	35	2	
Lepidosperma sp.	25	1	
Lomandra maritima	40	0.2	
Melaleuca huegelli	150	25	
Melaleuca systena	100	5	
Opercularia vaginata	25	0.2	
Patersonia occidentalis	40	0.2	
Petrophile axillaris	70	1	
Poaceae sp. (sterile)	30	0.1	
Scaevola thesioides	15	0.5	
Sonchus oleraceus	5	0.5	Introduced
Templetonia retusa	80	0.1	
Thysanotus manglesianus/patersonii complex	1	0.1	
Tricoryne elatior	40	0.1	
Triglochin isingiana	5	0.1	
Trymalium odoratissimum subsp. odoratissumum	50	1	
Wumbea monantha	20	0.1	
Xanthorrhoea ?sp. Lesueur (G.J. Keighery 16404)	65	0.5	

FLORA SITE SHEET

Project Name Jurien bay Flora, Vegetation, Fauna and Black Cockatoo Assessment
Site: JBQ02
Location -30.345657, 115.084781

Described by: GB PW
Date: 2025-09-01
Type: Quadrat 10m x 10m

Landform: Limestone outcropping
Rock Type: Limestone
Soil Type: Loam, Sand
Soil Colour: Brown, Orange



Vegetation: *Melaleuca huegelii and M. systena mid shrubland over Grevillea glabrilimba low sparse shrubland over Desmocladus asper low open rushland and low open mixed herbs*

Condition: Very Good
Fire Age:
Disturbance Type: Weeds
Fire Evidence:

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
?Iridaceae sp.	20	0.1	
Acacia lasiocarpa var lasiocarpa Cockleshell variant (E.A. Griffin 2039)	70	1	P2
Amaranthus ?viridis	15	0.1	
Caladenia crebra	25	0.1	
Calandrinia corrigioloides	5	0.1	
Calothamnus quadrifidus subsp. quadrifidus	30	0.2	
Clematis linearifolia	50	0.5	
Conostylis candicans subsp. calcicola	20	0.2	
Crassula colorata var. colorata	4	0.1	
Daucus glochidiatus	10	1	
Desmocladus asper	15	10	
Drosera erythrorhiza	2	0.2	
Drosera pallida	50	0.1	
Erodium cicutarium	5	0.5	
Grevillea glabrilimba	30	0.5	
Hypochaeris radicata	5	1	Introduced
Lysimachia arvensis	15	0.2	Introduced
Melaleuca huegelii	200	25	
Melaleuca systena	100	7	
Myoporum insulare	150	1.5	
Opercularia spermacocea	25	1	
Poaceae sp. (sterile)	20	0.5	
Rhaphanus raphanistrum	10	0.2	Introduced
Scaevola thesioides	20	0.5	
Scholtzia umbellifera	50	0.5	
Senecio glossanthus	25	0.5	
Sonchus oleraceus	15	0.1	Introduced
Thysanotus manglesianus/patersonii complex	50	0.1	
Triglochin isingiana	10	0.1	
Ursinia anthemoides	5	0.1	Introduced

FLORA SITE SHEET

Project Name Jurien bay Flora, Vegetation, Fauna and Black Cockatoo Assessment
Site: JBQ03
Location -30.346175, 115.086565

Described by: GB PW
Date: 2025-09-02
Type: Quadrat 10m x 10m

Landform: Undulating plain
Rock Type: Limestone
Soil Type: Loam, Sand
Soil Colour: Brown, Grey, Orange



Vegetation: *Melaleuca systena, Calothamnus quadrifidus subsp. quadrifidus, Banksia sessilis var. cynorum, B. leptophylla var. melletica low to mid shrubland over Hibbertia hypericoides subsp. hypericoides and Acacia lasiocarpa var. lasiocarpa Cockleshelll variant (E.A. Griffin 2039) (P2) low heathland over Desmocladus asper low open rushland and mixed forbs.*

Condition: Excellent
Fire Age:
Disturbance Type:
Fire Evidence:

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
?Thysanotus sp.	40	0.1	
Acacia lasiocarpa var lasiocarpa Cockleshell variant (E.A. Griffin 2039)	100	2	P2
Acacia spathulifolia	100	2	
Allocasuarina humilis	90	1	
Austrostipa ?exilis	40	0.1	
Banksia dallenneyi subsp. dallanneyi var. dallanneyi	20	1	
Banksia leptophylla var. melletica	90	3	
Banksia sessilis var. cygnorum	180	5	
Brachyscome iberidifolia	10	0.1	
Caladenia sp	5	0.1	
Calothamnus quadrifidus subsp. quadrifidus	100	7	
Centrolepis drummondiana	3	0.1	
Conostylis candicans subsp. calcicola	15	2	
Crassula colorata var. colorata	3	0.1	
Daucus glochidiatus	5	0.1	
Desmocladus asper	15	5	
Drosera climbing	20	0.1	
Drosera erythrorhiza	1	0.1	
Ficinia marginata	5	0.1	Introduced
Grevillea glabrilimba	30	0.2	
Hakea costata	70	0.5	
Hakea trifurcata	100	1	
Hibbertia hypericoides subsp. hypericoides	50	4	
Hypochaeris radicata	2	0.1	Introduced
Labichea cassioides	40	2	
Lepidobolus preissianus subsp. preissianus	35	0.1	
Lepidosperma calcicola	15	0.2	
Lepidosperma sp.	35	0.5	
Melaleuca systena	90	8	
Mesomelaena pseudostygia	35	0.2	
Opercularia spermacocea	20	0.2	
Petrophile axillaris	80	1	
Poaceae sp. (sterile)	30	0.2	
Poranthera microphylla	3	0.1	
Scaevola canescens	10	0.1	
Scaevola thesioides	10	0.2	
Schoenus clandestinus	3	0.1	
Scholtzia umbellifera	35	0.5	
Stylidium ?kalbarriense	10	0.1	

FLORA SITE SHEET

Project Name Jurien bay Flora, Vegetation, Fauna and Black Cockatoo Assessment
Site: JBQ04
Location -30.343932, 115.086575

Described by: GB PW
Date: 2025-09-02
Type: Quadrat 10m x 10m

Landform: Undulating plain
Rock Type: Limestone
Soil Type: Loam, Sand
Soil Colour: Brown, Grey, Orange



Vegetation: *Melaleuca systena, Calothamnus quadrifidus subsp. quadrifidus, Banksia sessilis var. cynorum, B. leptophylla var. melletica low to mid shrubland over Hibbertia hypericoides subsp. hypericoides and Acacia lasiocarpa var. lasiocarpa Cockleshelll variant (E.A. Griffin 2039) (P2) low heathland over Desmocladus asper low open rushland and mixed forbs.*

Condition: Excellent
Fire Age:
Disturbance Type: Weeds
Fire Evidence:

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes	
Acacia cyclops	60	0.1		
Acacia lasiocarpa var lasiocarpa Cockleshell variant (E.A. Griffin 2039)	100	2	P2	
Acanthocarpus preissii	30	0.1		
Allocasuarina humilis	50	0.2		
Austrostipa elegantissima	110	0.2		
Banksia leptophylla var. melletica	100	25		
Banksia sessilis var. cygnorum	200	2		
Caladenia flava	15	0.1		
Calothamnus quadrifidus subsp. quadrifidus	100	8		
Cassytha flava	50	0.2		
Centrolepis drummondiana	3	0.1		
Conostylis candicans subsp. calcicola	15	2		
Crassula colorata var. colorata	5	0.1		
Daucus glochidiatus	5	0.5		
Desmocladus asper	15	2		
Diplolaena obovata	30	0.2		
Drosera erythrorhiza	2	0.2		
Ehrharta calycina	40	0.1	Introduced	
Ficinia marginata	2	0.1	Introduced	
Grevillea glabrilimba	30	1		
Hakea trifurcata	120	1.5		
Hibbertia hypericoides subsp. hypericoides	60	4		
Hypochaeris radicata	2	0.1	Introduced	
Jacksonia ?hakeoides	100	0.2		
Lepidosperma calcicola	30	0.5		
Lomandra maritima	30	0.2		
Lomandra maritima	30	0.2		
Melaleuca systena	80	7		
Morelotia octandra	30	0.1		
Opercularia spermacocea	30	1		
Opercularia vaginata	25	0.1		
Patersonia occidentalis	35	0.2		
Poranthera microphylla	4	0.1		
Scaevola canescens	10	0.1		
Scaevola thesioides	10	0.2		
Scholtzia umbellifera	70	2		
Sonchus oleraceus	5	0.1		Introduced
Spyridium globulosum	130	0.5		
Xanthorrhoea ?sp. Lesueur (G.J. Keighery 16404)	50	0.2		

FLORA SITE SHEET

Project Name Jurien bay Flora, Vegetation, Fauna and Black Cockatoo Assessment
Site: JBQ05
Location -30.3427202, 115.0841224

Described by: GB PW
Date: 2025-09-02
Type: Quadrat 10m x 10m

Landform: Undulating plain
Rock Type: Limestone
Soil Type: Loam, Sand
Soil Colour: Brown, Grey, Orange



Vegetation: *B. leptophylla var. melletica, Calothamnus quadrifidus subsp. quadrifidus, Melaleuca systena, Banksia sessilis var. cynorum low to mid shrubland over Hibbertia hypericoides subsp. hypericoides and Acacia lasiocarpa var. lasiocarpa Cockleshelll variant (E.A. Griffin 2039) (P2) low heathland over Desmocladus asper low open rushland and mixed forbs.*

Condition: Excellent
Fire Age:
Disturbance Type: Weeds
Fire Evidence:

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
Acacia lasiocarpa var lasiocarpa Cockleshell variant (E.A. Griffin 2039)	100	1	P2
Acanthocarpus preissii	15	0.1	
Anigozanthus flavidus	10	0.1	
Austrostipa elegantissima	50	0.1	
Banksia leptophylla var. melletica	120	11	
Banksia sessilis var. cygnorum	130	1.5	
Brachyscome iberidifolia	10	0.1	
Calothamnus quadrifidus subsp. quadrifidus	100	8	
Calothamnus sanguineus	100	0.5	
Centrolepis drummondiana	5	0.1	
Conostylis candicans subsp. calcicola	15	0.1	
Daucus glochidiatus	5	0.2	
Desmocladus asper	15	3	
Drosera climbing	20	0.1	
Ehrharta calycina	25	0.5	Introduced
Haemodoraceae sp	25	0.1	
Hakea costata	100	0.1	
Hakea trifurcata	100	0.5	
Hibbertia hypericoides subsp. hypericoides	70	8	
Hypocalymma xanthopetalum	35	0.5	
Hypochaeris radicata	2	0.1	Introduced
Labichea cassioides	50	1.5	
Leschenaultia linarioides	50	0.5	
Lysimachia arvensis	5	0.1	Introduced
Melaleuca systena	100	4	
Morelotia octandra	20	0.1	
Opercularia vaginata	20	0.1	
Patersonia occidentalis	35	0.2	
Petrophile axillaris	80	0.5	
Poranthera microphylla	1	0.1	
Pyllangium divergens	5	0.1	
Scaevola canescens	15	0.1	
Schoenus clandestinus	4	0.1	
Sonchus oleraceus	5	0.1	Introduced
Stenanthemum notiale subsp. notiale	30	0.5	
Stylidium ?kalbarriense	10	0.1	
Ursinia anthemoides	10	0.1	Introduced
Xanthorrhoea ?sp. Lesueur (G.J. Keighery 16404)	70	0.5	

FLORA SITE SHEET

Project Name Jurien bay Flora, Vegetation, Fauna and Black Cockatoo Assessment
Site: JBQ06
Location -30.341463, 115.084865

Described by: GB PW
Date: 2025-09-02
Type: Quadrat 10m x 10m

Landform: Undulating plain
Rock Type: Limestone
Soil Type: Loam, Sand
Soil Colour:



Vegetation: *Melaleuca systena, Calothamnus quadrifidus subsp. quadrifidus, Banksia sessilis var. cynorum, B. leptophylla var. melletica low to mid shrubland over Hibbertia hypericoides subsp. hypericoides and Acacia lasiocarpa var. lasiocarpa Cockleshelll variant (E.A. Griffin 2039) (P2) low heathland over Desmocladus asper low open rushland and mixed forbs.*

Condition: Excellent
Fire Age:
Disturbance Type: Weeds
Fire Evidence:

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
?Iridaceae sp.	40	0.1	
Acacia lasiocarpa var lasiocarpa Cockleshell variant (E.A. Griffin 2039)	50	0.5	P2
Acanthocarpus preissii	15	0.1	
Anigozanthus flavidus	20	0.5	
Banksia leptophylla var. melletica	150	5	
Brachyscome iberidifolia	10	0.1	
Caladenia flava	10	0.2	
Calothamnus quadrifidus subsp. quadrifidus	80	5	
Centrolepis drummondiana	5	0.1	
Conostylis candicans subsp. calcicola	15	0.5	
Crassula colorata var. colorata	5	0.1	
Daucus glochidiatus	10	0.5	
Desmocladus asper	15	8	
Drosera climbing	15	0.1	
Ehrharta calycina	30	0.1	Introduced
Ficinia marginata	5	0.1	Introduced
Grevillea glabrilimba	35	1	
Hakea prostrata	110	1.5	
Hakea trifurcata	100	1.5	
Hibbertia hypericoides subsp. hypericoides	45	35	
Hypocalymma xanthopetalum	30	0.1	
Hypochaeris radicata	2	0.1	Introduced
Isotropis cuneifolia	10	0.2	
Labichea cassioides	80	0.5	
Lepidobolus preissianus subsp. preissianus	30	0.1	
Lepidosperma calcicola	30	0.2	
Leucopogon polymorphus	40	0.2	
Melaleuca systena	100	10	
Mesomelaena pseudostygia	35	0.1	
Opercularia vaginata	20	0.5	
Patersonia occidentalis	30	0.1	
Petrophile brevifolia subsp. rosea	25	0.2	
Scaevola canescens	10	0.1	
Schoenus clandestinus	3	0.5	
Stenanthemum notiale subsp. notiale	25	0.2	
Stylidium ?kalbarriense	10	0.1	
Styphelia insularis	60	0.2	
Styphelia speciosa	40	0.2	
Ursinia anthemoides	10	0.2	Introduced

FLORA SITE SHEET

Project Name Jurien bay Flora, Vegetation, Fauna and Black Cockatoo Assessment
Site: JBQ07
Location -30.3414394, 115.0866244



Described by: GB PW
Date: 2025-09-02
Type: Quadrat 10m x 10m

Landform: Limestone ridge/outcropping
Rock Type: Limestone
Soil Type: Loam, Sand
Soil Colour: Brown

Vegetation: *Melaleuca huegelii and M. systena mid shrubland over Grevillea glabrilimba low sparse shrubland over Desmocladus asper low open rushland and low open mixed herbs*

Condition: Very Good
Fire Age:
Disturbance Type: Weeds
Fire Evidence:

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
?Rhodanthe corymbosa	10	1	
Acacia truncata	20	0.5	
Austrostipa elegantissima	50	0.2	
Banksia dallenneyi subsp. dallanneyi var. dallanneyi	15	0.1	
Banksia sessilis var. cygnorum	100	1	
Conostylis candicans subsp. calcicola	15	1	
Daucus glochidiatus	10	1	
Desmocladus asper	15	1	
Dianella revoluta	80	0.5	
Ehrharta calycina	30	0.2	Introduced
Gompholobium tomentosum	50	0.1	
Grevillea glabrilimba	40	2	
Hibbertia hypericoides subsp. hypericoides	25	0.1	
Hovea pungens	40	1	
Labichea cassioides	50	1.5	
Lagenophora huegelli	5	0.1	
Lepidosperma calcicola	30	0.5	
Lepidosperma sp.	35	0.2	
Lomandra maritima	30	0.5	
Melaleuca huegelli	190	50	
Melaleuca systena	100	2	
Petrophile axillaris	60	0.5	
Scaevola thesioides	20	0.1	
Sonchus oleraceus	10	1.5	Introduced
Spyridium globulosum	50	0.1	
Thysanotus ?sp. Coastal plain (N. H. Brittan 66/63)	20	0.1	
Trymalium odoratissimum subsp. odoratissumum	20	0.1	

FLORA SITE SHEET

Project Name Jurien bay Flora, Vegetation, Fauna and Black Cockatoo Assessment
Site: JBQ08
Location -30.3463669, 115.0832163

Described by: GB PW
Date: 2025-09-03
Type: Quadrat 10m x 10m

Landform: Limestone ridge/outcropping
Rock Type: Limestone
Soil Type: Loam, Sand
Soil Colour: Brown



Vegetation: *Melaleuca huegelii and M. systena mid shrubland over Grevillea glabrilimba low sparse shrubland over Desmocladus asper low open rushland and low open mixed herbs*

Condition: Excellent
Fire Age:
Disturbance Type: Weeds
Fire Evidence:

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
?Rhodanthe corymbosa	10	0.1	
Acacia lasiocarpa var lasiocarpa Cockleshell variant (E.A. Griffin 2039)	100	1	P2
Acacia truncata	15	0.1	
Austrostipa elegantissima	40	0.2	
Avellinia festucoides	10	0.1	Introduced
Banksia sessilis var. cygnorum	200	1.5	
Beyeria cinerea subsp. cinerea	30	0.2	
Calothamnus quadrifidus subsp. quadrifidus	60	1.5	
Cassytha flava	30	0.1	
Centrolepis drummondiana	3	0.1	
Conostylis candicans subsp. calcicola	15	0.1	
Crassula colorata var. colorata	2	0.1	
Daucus glochidiatus	10	1.5	
Desmocladus asper	10	15	
Drosera climbing	15	0.1	
Ehrharta calycina	25	0.1	Introduced
Grevillea glabrilimba	35	3	
Hakea lissocarpha	30	0.2	
Hypochaeris radicata	2	0.1	Introduced
Labichea cassioides	40	0.2	
Lepidosperma calcicola	30	0.1	
Lomandra maritima	30	0.2	
Lysimachia arvensis	4	0.1	Introduced
Melaleuca huegelii	170	35	
Melaleuca systena	80	5	
Mesomelaena pseudostygia	25	0.1	
Opercularia spermacocea	25	4	
Poranthera microphylla	3	0.1	
Scaevola thesioides	15	0.1	
Scholtzia umbellifera	45	0.5	
Sonchus oleraceus	15	0.5	Introduced
Triglochin isingiana	4	0.1	
Trymalium odoratissimum subsp. odoratissumum	50	0.5	
Wumbea monantha	25	0.1	

Appendix G Flora Statistical Analysis

WA Limestone Jurien Bay

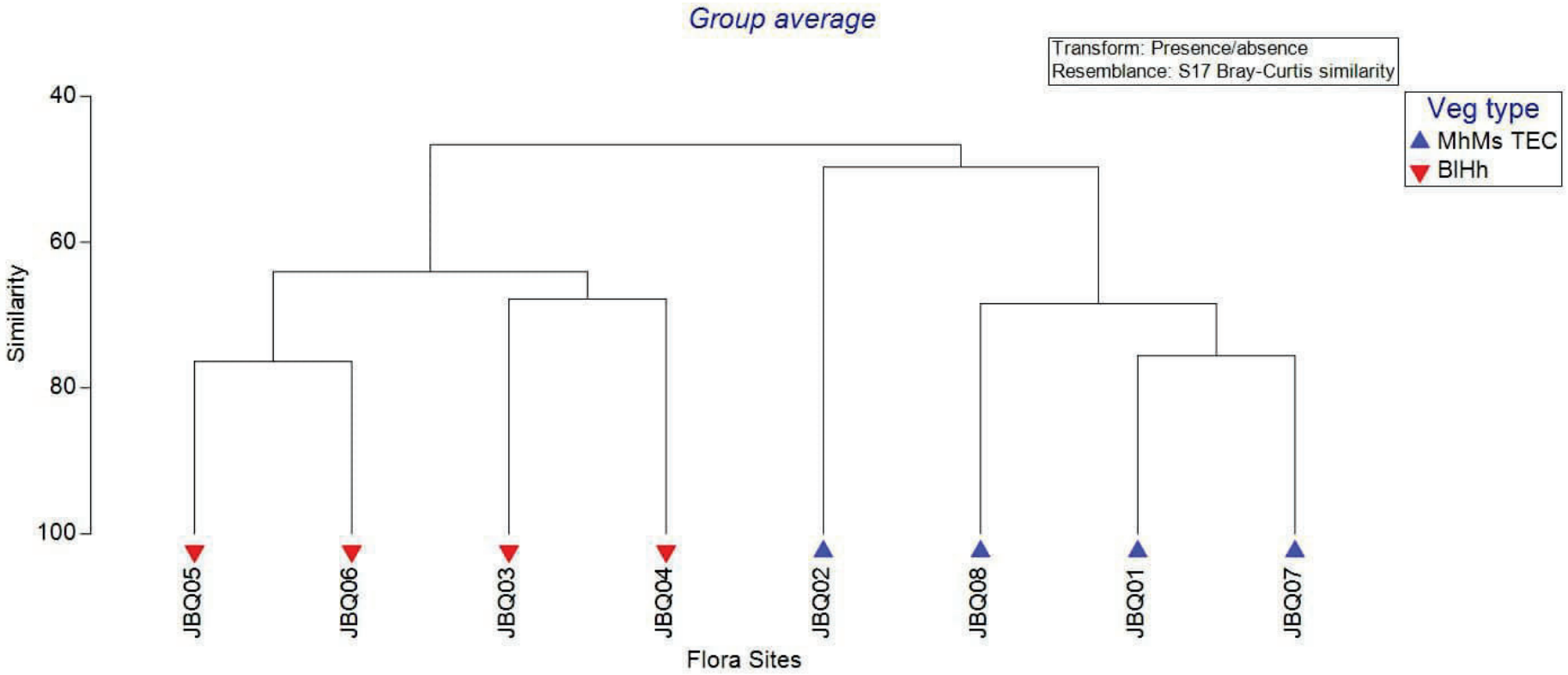
Flora, Vegetation, Fauna and Black Cockatoo Assessment

WA Limestone

SLR Project No.: 675.073307.00001

17 February 2026

Appendix G.1 Dendrogram



Appendix G.2 - Multivariate Analysis Species Rationalisation

Confirmed name	Name for analysis	Reason for name change	Reason for PRIMER omission	Reason for FCT omission	Removed from Species Accumulation Analysis
Acacia cyclops	*Acacia cyclops*		Singleton		N
Acacia lasiocarpa var. *lasiocarpa* Cockleshell variant (E.A. Griffin 2039)	*Acacia lasiocarpa* var. *lasiocarpa*	Consistency with SCP dataset			N
Acacia spathulifolia	*Acacia spathulifolia*		Singleton	Not in SCP dataset	N
Acacia truncata	*Acacia truncata*				N
Acanthocarpus preissii	*Acanthocarpus preissii*				N
Allocasuarina humilis	*Allocasuarina humilis*				N
Amaranthus ?viridis	*Amaranthus ?viridis*		Singleton	Not in SCP dataset	N
Lysimachia arvensis	*Anagallis arvensis*	Consistency with SCP dataset	Weed		N
Anigozanthus flavidus	*Anigozanthus flavidus*				N
Austrostipa ?exilis	*Austrostipa ?exilis*		Singleton	Not in SCP dataset	N
Austrostipa elegantissima	*Austrostipa elegantissima*				N
**Avellinia festucoides*	*Avellinia michelii*	Consistency with SCP dataset	Weed, Singleton		N
Banksia leptophylla var. *melletica*	*Banksia leptophylla* var. *melletica*				N
Beyeria cinerea subsp. cinerea	*Beyeria cinerea*				N
Brachyscome iberidifolia	*Brachyscome iberidifolia*				N
Caladenia crebra	*Caladenia crebra*		Singleton	Not in SCP dataset	N
Caladenia flava	*Caladenia flava*				N
Calandrinia corrigioloides	*Calandrinia corrigioloides*				N
Calothamnus quadrifidus subsp. quadrifidus	*Calothamnus quadrifidus*				N
Calothamnus sanguineus	*Calothamnus sanguineus*		Singleton		N
Cassytha flava	*Cassytha flava*				N
Centrolepis drummondiana	*Centrolepis drummondiana*				N
Clematis linearifolia	*Clematis linearifolia*		Singleton		N
Conostylis candicans subsp. *calcicola*	*Conostylis candicans* subsp. *calcicola*				N
Crassula colorata var. colorata	*Crassula colorata var. colorata*				N
Daucus glochidiatus	*Daucus glochidiatus*				N
Desmocladus asper	*Desmocladus asper*				N
Dianella revoluta var. *divaricata*	*Dianella revoluta* var. *divaricata*		Singleton		N
Diplolaena obovata	*Diplolaena obovata*		Singleton	Not in SCP dataset	N
Drosera erythrorhiza	*Drosera erythrorhiza* subsp. *magna*	closest distribution			N
Drosera pallida	*Drosera pallida*				N
Banksia dallenneyi subsp. *dallanneyi* var. *dallanneyi*	*Dryandra lindleyana*	Consistency with SCP dataset			N
Banksia sessilis var. *cygnorum*	*Dryandra sessilis* var. *sessilis*	Consistency with SCP dataset			N
**Ehrharta calycina*	*Ehrharta calycina*		Weed		N
Erodium cicutarium	*Erodium cicutarium*		Singleton		N
Gompholobium tomentosum	*Gompholobium tomentosum*		Singleton		N

Appendix G.2 - Multivariate Analysis Species Rationalisation

Confirmed name	Name for analysis	Reason for name change	Reason for PRIMER omission	Reason for FCT omission	Removed from Species Accumulation Analysis
Grevillea glabrilimba	*Grevillea preissii* subsp. *preissii*	Taxonomic change			N
Hakea costata	*Hakea costata*				N
Hakea lissocarpha	*Hakea lissocarpha*		Singleton		N
Hakea prostrata	*Hakea prostrata*		Singleton		N
Hakea trifurcata	*Hakea trifurcata*				N
Hibbertia hypericoides subsp. *hypericoides*	*Hibbertia hypericoides*				N
Hovea pungens	*Hovea pungens*		Singleton		N
Hypocalymma xanthopetalum	*Hypocalymma xanthopetalum*				N
**Hypochaeris radicata*	*Hypochaeris glabra*	Consistency with SCP dataset, and likely historical confusion between species.	Weed		N
**Ficinia marginata*	*Isolepis marginata*	Consistency with SCP dataset	Weed		N
Isotropis cuneifolia	*Isotropis cuneifolia* subsp. *cuneifolia*		Singleton		N
Jacksonia ?hakeoides	*Jacksonia hakeoides*		Singleton, indeterminate taxon		N
Labichea cassioides	*Labichea cassioides*				N
Lagenophora huegelli	*Lagenophora huegelli*		Singleton		N
Lepidobolus preissianus subsp. *preissianus*	*Lepidobolus preissianus*	Consistency with SCP dataset			N
Lepidosperma calcicola	*Lepidosperma calcicola*			Not in SCP dataset	N
Leschenaultia linarioides	*Leschenaultia linarioides*		Singleton		N
Styphelia insularis	*Leucopogon insularis*	Consistency with SCP dataset	Singleton		N
Leucopogon polymorphus	*Leucopogon polymorphus*		Singleton		N
Lomandra maritima	*Lomandra maritima*				N
Melaleuca huegelli	*Melaleuca huegelli*				N
Melaleuca systena	*Melaleuca systena*				N
Mesomelaena pseudostygia	*Mesomelaena pseudostygia*				N
Myoporum insulare	*Myoporum insulare*		Singleton		N
?Iridaceae sp.	N/A		Indeterminate taxon	Indeterminate taxon	Y
Opercularia spermacocea	*Opercularia spermacocea*				N
Opercularia vaginata	*Opercularia vaginata*				N
Patersonia occidentalis	*Patersonia occidentalis*				N
Petrophile axillaris	*Petrophile axillaris*				N
Petrophile brevifolia subsp. *rosea*	*Petrophile brevifolia* subsp. *brevifolia*	Consistency with SCP dataset	Singleton		N
Poranthera microphylla	*Poranthera microphylla*		Singleton		N
Pyllangium divergens	*Phyllangium paradoxum*	Consistency with SCP dataset	Singleton		N
**Raphanus raphanistrum*	*Raphanus raphanistrum*		Weed, Singleton		N

Appendix G.2 - Multivariate Analysis Species Rationalisation

Confirmed name	Name for analysis	Reason for name change	Reason for PRIMER omission	Reason for FCT omission	Removed from Species Accumulation Analysis
?Rhodanthe corymbosa	*Rhodanthe corymbosa*				N
Scaevola canescens	*Scaevola canescens*				N
Scaevola thesioides	*Scaevola thesioides* subsp. *thesioides*	Consistency with SCP dataset			N
Schoenus clandestinus	*Schoenus clandestinus*				N
Scholtzia umbellifera	*Scholtzia umbellifera*			Not in SCP dataset	N
Senecio glossanthus	*Senecio glossanthus*		Singleton	Not in SCP dataset	N
**Sonchus oleraceus*	*Sonchus oleraceus*		Weed		N
Spyridium globulosum	*Spyridium globulosum*				N
Stenanthemum notiale subsp. *notiale*	*Stenanthemum notiale* subsp. *notiale*				N
Stylidium ?kalbarriense	*Stylidium ?kalbarriense*		Unconfirmed taxon	Not in SCP dataset	N
Styphelia speciosa	*Styphelia speciosa*		Singleton	Not in SCP dataset	N
Templetonia retusa	*Templetonia retusa*		Singleton		N
Morelotia octandra	*Tetraria octandra*	Consistency with SCP dataset			N
Thysanotus ?sp. Coastal plain (N. H. Brittan 66/63)	*Thysanotus* ?sp. Coastal plain (N. H. Brittan 66/63)		Singleton, indeterminate taxon	Not in SCP dataset	N
Thysanotus climbing	*Thysanotus manglesianus/patersonii complex*	Consistency with SCP dataset			N
Tricoryne elatior	*Tricoryne elatior*		Singleton		N
Triglochin isingiana	*Triglochin isingiana*		N/A	Not in SCP dataset	N
Trymalium odoratissimum subsp. *odoratissumum*	*Trymalium floribundum*	Consistency with SCP dataset			N
Ursinia anthemoides	*Ursinia anthemoides*				N
Wumbea monantha	*Wumbea monantha*				N
Xanthorrhoea ?sp. Lesueur (G.J. Keighery 16404)	*Xanthorrhoea* sp. Lesueur (G.J. Keighery 16404)			Indeterminate taxon, not in SCP dataset	N

Appendix G.3 - FCT and Nearest Neighbour Analysis

Flora Site and Vegetation Type	Nearest Neighbour Analysis			FCT Comparison
	Similarity (%)	Site	FCT	
JBQ01	37.33	YAN-24	26a	Melaleuca huegelii - M. systena shrublands of limestone ridges (TEC, EN)
	32.43	SHE-5	26a	Melaleuca huegelii - M. systena shrublands of limestone ridges (TEC, EN)
	32.00	NEER-10	24	Northern Spearwood shrublands and woodlands.
JBQ02	23.88	YAN-15	26a	Melaleuca huegelii - M. systena shrublands of limestone ridges (TEC, EN)
	23.33	YAN-13	26a	Melaleuca huegelii - M. systena shrublands of limestone ridges (TEC, EN)
	23.19	Guild06	29b	Acacia shrublands on taller dunes (P3)
JBQ03	28.95	WABL-3	26b	Woodlands and mallees on limestone
	25.64	wilb04	26b	Woodlands and mallees on limestone
	25.35	wilb09	29b	Acacia shrublands on taller dunes (P3)
JBQ04	29.41	Guild02	29b	Acacia shrublands on taller dunes (P3)
	28.57	bold12	24	Northern Spearwood shrublands and woodlands (P3, EN).
	26.67	SEAB-6	28	Spearwood Banksia attenuata or Banksia attenuata-Eucalyptus woodlands
JBQ05	23.53	YAN-8	28	Spearwood Banksia attenuata or Banksia attenuata-Eucalyptus woodlands
	21.92	YAN-11	26b	Woodlands and mallees on limestone
	21.74	NEER-7	24	Northern Spearwood shrublands and woodlands.
JBQ06	24.49	wilb06	28	Spearwood Banksia attenuata or Banksia attenuata-Eucalyptus woodlands
	23.76	Hepb01	28	Spearwood Banksia attenuata or Banksia attenuata-Eucalyptus woodlands
	22.86	SEAB-6	28	Spearwood Banksia attenuata or Banksia attenuata-Eucalyptus woodlands
JBQ07	30.99	YAN-24	26a	Melaleuca huegelii - M. systena shrublands of limestone ridges (TEC)
	28.13	BOLD-4	24	Northern Spearwood shrublands and woodlands.
	28.57	WHILL-4	27	Species poor mallees and shrublands on limestone
JBQ08	31.58	SHE-5	26a	Melaleuca huegelii - M. systena shrublands of limestone ridges (TEC)
	31.25	Guild02	29b	Acacia shrublands on taller dunes (P3)
	31.17	YAN-24	26a	Melaleuca huegelii - M. systena shrublands of limestone ridges

TEC PATCH ASSESSMENT		Vegetation Type: Mh		
	Tec Patch No.	Patch 1	Patch 2	Patch 3
	Flora site	JBQ01, JBQ08	JBQ02	JBQ07
Key Diagnostics	**Criteria**			
Location and Physical Environment	Occurs in the Swan Coastal Plain or Jarrah Forest IBRA bioregions.	Yes - Swan Coastal Plain	Yes - Swan Coastal Plain	Yes - Swan Coastal Plain
Soils and Landform	Shallow to *skeletal soils, on the ridge slopes and tops of limestone ridges and outcrops associated with Tamala Limestone. *Skeletal soils contain little or no organic content. They are typically shallow and may consist merely of weathered rock (Britannica 2023). Deeper soils occur on the lower slopes, or in pockets, on which Eucalyptus gomphocephala, E. foecunda and/or E. petrensis woodland or mallee may develop over a dense heath (this is not the nationally defined Honeymyrtle shrubland ecological community).	Yes - patch consisted of weathered, exposed limestone on low ridges/outcroppings with shallow soils.	Yes - patch consisted of weathered, exposed limestone on low ridges/outcroppings with shallow soils.	Yes - patch consisted of weathered, exposed limestone on low ridges/outcroppings with shallow soils.
Structure	It occurs as shrubland, heath, or thickets; and it has less than 10% canopy cover of Eucalyptus species or other tall trees.	Yes	Yes	Yes
	The shrub layer is dominated by *Melaleuca huegelii* (chenille honeymyrtle), and/or *M. systena* (coastal honeymyrtle), and/or *Banksia sessilis* (parrot bush) — commonly over *Acacia lasiocarpa* (pajang), *Grevillea preissii* (spider net grevillea) and *Spyridium globulosum* (basket bush).	Yes	Yes	Yes
	The ground layer is typically rich with numerous herbs (including grasses) and smaller shrubs and may develop a mossy ground cover.	Yes	Yes	Yes
Condition Threshold	There isn't a condition threshold - all areas of this ecological community are critical to its survival, regardless of their condition. Minimum condition thresholds are not proposed as a cut-off for protection.	N/A	N/A	N/A
Minimum patch size	at least 0.01 ha in size (100 m2 e.g. 10 x 10 m)	Yes - 2.352 ha	Yes - 0.086 ha	Yes - 0.121 ha
Assessment Result	**Does patch meet criteria for TEC status?**	**Yes**		

Closely allied vegetation communities	The nationally defined Honeymyrtle shrubland ecological community most closely corresponds to one of the two subgroups of a broader WA Swan Coastal Plain floristic community type — FCT 26 (that is restricted to the large limestone ridges north of Perth and in the Yalgorup area; on Spearwood Sands, on Tamala Limestone).
	The nationally defined Honeymyrtle shrubland ecological community (which best corresponds to FCT/Subgroup 26a)
	FCT 27 'Species poor mallees and shrublands on limestone'. This is largely restricted to the Yalgorup area; and is either shrubland or mallee heath, variously dominated by *Eucalyptus decipiens*, *E. foecunda*, *Melaleuca systena* or *Hakea prostrata* (without *Melaleuca huegelii*).
	FCT 24 'Northern Spearwood shrublands and woodlands'. FCT 24 consists of heaths, or heaths with scattered *Eucalyptus gomphocephala*, occurring on deeper soils north from Woodmans Point. It grades into FCT 26b where the heath element is richer (WA DBCA 2022).
	Honeymyrtle shrubland (FCT 26a) is also closely related to FCT 25 'Southern *Eucalyptus gomphocephala – Agonis flexuosa* woodlands', which encompasses woodlands south of Woodmans Point

Appendix H Fauna Desktop Assessment Results

WA Limestone Jurien Bay

Flora, Vegetation, Fauna and Black Cockatoo Assessment

WA Limestone

SLR Project No.: 675.073307.00001

17 February 2026

Conservation Status: State - Listed under Biodiversity Conservation Act 2016 or by the Department of Biodiversity, Conservation and Attractions Conservation, Commonwealth - Listed under Environmental Protection and Biodiversity Conservation Act 1999. CR/CE - Critically Endangered, EN - Endangered, VU - Vulnerable, MI - Migratory, CD - Conservation Dependent fauna, OS - Other Specially Protected fauna, MA - Marine, P - Listed as Priority by DBCA.

Database: NM - NatureMap, PMST - EPBC Protected Matters Search Tool, DBCA - DBCA Threatened and Priority Fauna database search, Field - Recorded during the current field survey.

Literature A: Cervantes – Jurien Coastal Road: Consultative Environmental Review (Ecologia, 1997)
Literature B: Shire of Dandaragan: Jurien East Road – Cockleshell Road to Brand Highway – Level 1 Flora, Vegetation and Vertebrate Fauna Survey (Maia Environmental
Literature C: Level 2 Vertebrate Fauna Survey (Single Phase) – North Perth Mineral Sands Project (360 Environmental, 2012b)
Literature D: Atlas Project – Detailed Fauna Assessment (Spectrum Ecology & Spatial, 2021)
Literature E: Waddi Wind Farm Project – Cataby Supplemenary Flora, vegetation and fauna survey (Ecologia, 2016)
Literature F: Yandin Wind Farm Flora, Vegetation and Avifauna Assessment (Ecologia, 2017)

Family	Scientific Name	Common Name	Conservation Status		Database				Literature					
			State	Commonwealth	NM	PMST	DBCA	ALA	A	B	C	D	E	F
Amphibians														
Limnodynastidae	*Heleioporus albopunctatus*	Western Spotted Frog			1			2						
Limnodynastidae	*Heleioporus eyrei*	Moaning Frog			3			3	x		x	x		
Limnodynastidae	*Heleioporus psammophilus*	Sand Frog							x		x			
Limnodynastidae	*Limnodynastes dorsalis*	Western Banjo Frog			2			3	x		x			
Limnodynastidae	*Neobatrachus pelobatoides*	Humming Frog			6			6						
Myobatrachidae	*Crinia glauerti*	Clicking Frog									x			
Myobatrachidae	*Crinia insignifera*	Squelching Froglet									x	x		
Myobatrachidae	*Myobatrachus gouldii*	Turtle Frog									x	x		
Myobatrachidae	*Pseudophryne guentheri*	Crawling Toadlet			5			2			x	x		
Pelodryadidae	*Litoria adelaidensis*	Slender Tree Frog							x					
Pelodryadidae	*Litoria moorei*	Motorbike Frog						1	x					
Birds														
Acanthizidae	*Acanthiza apicalis*	Inland Thornbill			8			12	x		x	x		x
Acanthizidae	*Acanthiza chrysorrhoa*	Yellow-rumped Thornbill			5			9			x	x		x
Acanthizidae	*Acanthiza inornata*	Western Thornbill									x	x		x
Acanthizidae	*Acanthiza uropygialis*	Chestnut-rumped Thornbill										x		
Acanthizidae	*Aphelocephala leucopsis*	Southern Whiteface	VU	VU		x								
Acanthizidae	*Calamanthus campestris*	Rufous Fieldwren			3			4			x	x		
Acanthizidae	*Calamanthus cautus*	Shy Groundwren			1							x		
Acanthizidae	*Gerygone fusca*	Western Gerygone			16			14	x		x	x		x
Acanthizidae	*Sericornis maculatus*	Spotted Scrubwren			29			42	x		x	x		x
Acanthizidae	*Smicrornis brevirostris*	Weebill			1			2		x		x		x

Family	Scientific Name	Common Name	Conservation Status		Database				Literature					
			State	Commonwealth	NM	PMST	DBCA	ALA	A	B	C	D	E	F
Accipitridae	*Aquila audax*	Wedge-tailed Eagle			1			1						
Accipitridae	*Circus assimilis*	Spotted Harrier									x			
Accipitridae	*Elanus axillaris*	Black-shouldered Kite			2			21	x					x
Accipitridae	*Haliaeetus leucogaster*	White-bellied Sea-eagle		MA	1	x		6	x					
Accipitridae	*Hieraaetus morphnoides*	Little Eagle							x					
Accipitridae	*Lophoictinia isura*	Square-tailed Kite						1						x
Accipitridae	*Tachyspiza cirrocephala*	Collared Sparrowhawk			1							x	x	
Accipitridae	*Tachyspiza fasciata*	Brown Goshawk			1			2						
Alcedinidae	*Dacelo novaeguineae*	Laughing Kookaburra			2			7	x	x				x
Alcedinidae	*Todiramphus sanctus*	Sacred Kingfisher		MA	6			10	x					
Anatidae	*Anas gracilis*	Grey Teal			1			3				x		
Anatidae	*Anas superciliosa*	Pacific Black Duck			5			12	x			x		
Anatidae	*Aythya australis*	Hardhead			1									
Anatidae	*Biziura lobata*	Musk Duck		MA				2						
Anatidae	*Chenonetta jubata*	Australian Wood Duck			1			1						
Anatidae	*Cygnus atratus*	Black Swan			3			5						
Anatidae	*Malacorhynchus membranaceus*	Pink-eared Duck						3						
Anatidae	*Oxyura australis*	Blue-billed Duck	P4				1							
Anatidae	*Spatula rhynchotis*	Australasian Shoveler			1			2						
Anatidae	*Tadorna tadornoides*	Australian Shelduck			1			9	x			x		
Anhingidae	*Anhinga melanogaster*	Oriental Darter							x					
Anhingidae	*Anhinga novaehollandiae*	Australasian Darter			1			8						
Apodidae	*Apus pacificus*	Pacific Swift	MI	MI, MA		x	4	1						
Ardeidae	*Ardea alba*	Great Egret		MA	1			1						
Ardeidae	*Ardea ibis*	Eastern Cattle Egret		MA		x								
Ardeidae	*Ardea pacifica*	White-necked Heron						3						
Ardeidae	*Egretta novaehollandiae*	White-faced Heron						3			x	x		x
Ardeidae	*Egretta sacra*	Eastern Reef Heron		MA	3			8						
Artamidae	*Artamus cinereus*	Black-faced Woodswallow			8			9			x	x		x
Artamidae	*Artamus cyanopterus*	Dusky Woodswallow						1						
Artamidae	*Cracticus nigrogularis*	Pied Butcherbird			3			3				x		
Artamidae	*Cracticus torquatus*	Grey Butcherbird			5			6	x		x	x		x
Artamidae	*Gymnorhina tibicen*	Australian Magpie			13			43	x	x	x	x	x	x
Artamidae	*Strepera versicolor*	Grey Currawong						2						

Family	Scientific Name	Common Name	Conservation Status		Database				Literature					
			State	Commonwealth	NM	PMST	DBCA	ALA	A	B	C	D	E	F
Burhinidae	*Esacus magnirostris*	Beach Stone-curlew		MA				1						
Cacatuidae	*Cacatua pastinator*	Western Long-billed Corella						3						x
Cacatuidae	*Cacatua sanguinea*	Little Corella						2						
Cacatuidae	*Calyptorhynchus banksii ?samueli*	Red-tailed Black Cockatoo			1									
Cacatuidae	*Eolophus roseicapilla*	Galah			8			63	x	x	x	x	x	x
Cacatuidae	*Nymphicus hollandicus*	Cockatiel										x		
Cacatuidae	*Zanda baudinii*	Baudin's Cockatoo	EN	EN			1	5						
Cacatuidae	*Zanda latirostris*	Carnaby's Cockatoo	EN	EN	1	x	580	4		x		x		x
Cacatuidae	*Zanda sp. 'white-tailed black cockatoo'*		EN	EN			43							
Campephagidae	*Coracina novaehollandiae*	Black-faced Cuckooshrike		MA	11			26	x		x	x		x
Campephagidae	*Lalage tricolor*	White-winged Triller										x		
Casuariidae	*Dromaius novaehollandiae*	Emu			3			9	x		x	x	x	x
Charadriidae	*Anarhynchus leschenaultii*	Greater Sand Plover	VU	VU, MI, MA		x	7	3						
Charadriidae	*Anarhynchus mongolus*	Siberian Sand Plover		EN, MI, MA			2							
Charadriidae	*Anarhynchus ruficapillus*	Red-capped Plover		MA	7			15						
Charadriidae	*Charadrius cucullatus*	Hooded Dotterel	P4	MA	1	x	6	1						
Charadriidae	*Charadrius melanops*	Black-fronted Dotterel			1									
Charadriidae	*Pluvialis fulva*	Pacific Golden Plover	MI	MI, MA			2	1						
Charadriidae	*Pluvialis squatarola*	Grey Plover	MI	VU, MI, MA	1		41	6						
Charadriidae	*Vanellus miles*	Masked Lapwing						1						
Charadriidae	*Vanellus tricolor*	Banded Lapwing			1			2						
Columbidae	*Columba livia*	Domestic Pigeon, Rock Dove						2						
Columbidae	*Geopelia cuneata*	Diamond Dove										x		
Columbidae	*Ocyphaps lophotes*	Crested Pigeon			22			57			x	x		
Columbidae	*Phaps chalcoptera*	Common Bronzewing			3			3				x		x
Columbidae	*Phaps elegans*	Brush Bronzewing			1			3						
Columbidae	*Spilopelia chinensis*	Spotted Turtle Dove			1									
Columbidae	*Spilopelia senegalensis*	Laughing Turtle Dove			11			17	x			x		
Corvidae	*Corvus bennetti*	Little Crow			1			1						
Corvidae	*Corvus coronoides*	Australian Raven			36			68	x	x	x	x	x	x
Cuculidae	*Cacomantis flabelliformis*	Fan-tailed Cuckoo		MA	3			4				x		x
Cuculidae	*Chalcites basalis*	Horsfield's Bronze Cuckoo		MA				1	x		x	x		
Cuculidae	*Chalcites lucidus*	Shining Bronze Cuckoo		MA				1						

Family	Scientific Name	Common Name	Conservation Status		Database				Literature					
			State	Commonwealth	NM	PMST	DBCA	ALA	A	B	C	D	E	F
Cuculidae	*Chalcites osculans*	Black-eared Cuckoo		MA		x		1						
Cuculidae	*Heteroscenes pallidus*	Pallid Cuckoo		MA	2			3			x			
Dicaeidae	*Dicaeum hirundinaceum*	Mistletoebird			14			10						
Diomedeidae	*Diomedea amsterdamensis*	Amsterdam Albatross	CR	EN, MI, MA		x								
Diomedeidae	*Diomedea epomophora*	Southern Royal Albatross	VU			x								
Diomedeidae	*Diomedea exulans*	Wandering Albatross	VU	VU, MI, MA		x								
Diomedeidae	*Phoebetria fusca*	Sooty Albatross	EN	VU, MI, MA		x								
Diomedeidae	*Thalassarche carteri*	Indian Yellow-nosed Albatross	EN	VU, MI, MA		x								
Diomedeidae	*Thalassarche cauta*	Shy Albatross	EN	EN, MI, MA		6								
Diomedeidae	*Thalassarche impavida*	Campbell Island Albatross	VU	VU, MI, MA		x								
Diomedeidae	*Thalassarche melanophris*	Black-browed Albatross	EN	VU, MI, MA		x								
Estrildidae	*Taeniopygia castanotis*	Australian Zebra Finch									x			
Falconidae	*Falco berigora*	Brown Falcon			3			10			x	x		
Falconidae	*Falco cenchroides*	Nankeen Kestral		MA	19			47	x	x	x	x		x
Falconidae	*Falco hypoleucos*	Grey Falcon	VU	VU		x								
Falconidae	*Falco longipennis*	Australian Hobby			4			6						x
Falconidae	*Falco peregrinus*	Peregrine Falcon	OS		2		3	3						
Falconidae	*Falco subniger*	Black Falcon									x			
Haematopodidae	*Haematopus longirostris*	Pied Oystercatcher			12			64						
Hirundinidae	*Cheramoeca leucosterna*	White-backed Swallow						7		x	x			
Hirundinidae	*Hirundo neoxena*	Welcome Swallow		MA	47			114	x		x	x		
Hirundinidae	*Petrochelidon nigricans*	Tree Martin		MA	4			13		x	x			x
Laridae	*Anous stolidus*	Common Noddy	MI	MI, MA		x	1							
Laridae	*Anous tenuirostris melanops*	Australian Lesser Noddy	EN	VU, MA		x								
Laridae	*Chlidonias hybrida*	Whiskered Tern		MA				1						
Laridae	*Chroicocephalus novaehollandiae*	Silver Gull			8	x		211	x					
Laridae	*Hydroprogne caspia*	Caspian Tern	MI	MI, MA	12	x	36	34						
Laridae	*Larus dominicanus*	Kelp Gull		MA	1			2						
Laridae	*Larus pacificus*	Pacific Gull		MA	25	x		94						
Laridae	*Onychoprion anaethetus*	Bridled Tern	MI	MI, MA	2	x	30	16						
Laridae	*Onychoprion fuscatus*	Sooty Tern		MA		x								
Laridae	*Sterna dougallii*	Roseate Tern	MI	MI, MA		x	41	2						
Laridae	*Sterna paradisaea*	Arctic Tern	MI	MA			1							
Laridae	*Sternula albifrons*	Little Tern	MI	VU, MI, MA		x								

Family	Scientific Name	Common Name	Conservation Status		Database				Literature					
			State	Commonwealth	NM	PMST	DBCA	ALA	A	B	C	D	E	F
Laridae	*Sternula nereis nereis*	Fairy Tern	VU	MA, VU	5	x	13	13						
Laridae	*Thalasseus bergii*	Greater Crested Tern	MI	MI, MA	20	x	139	60						
Locustellidae	*Cincloramphus cruralis*	Brown Songlark							x					
Locustellidae	*Cincloramphus mathewsi*	Rufous Songlark			1			3			x	x		
Maluridae	*Malurus assimilis*	Purple-backed Fairywren			16			34	x			x		x
Maluridae	*Malurus leucopterus*	White-winged Fairywren			16			28	x		x	x		
Maluridae	*Malurus pulcherrimus*	Blue-breasted Fairywren			2			8			x	x		
Maluridae	*Malurus splendens*	Splendid Fairywren			13			21		x	x	x		x
Megapodiidae	*Leipoa ocellata*	Malleefowl	VU	VU		x	8							
Meliphagidae	*Acanthagenys rufogularis*	Spiny-cheeked Honeyeater						2	x			x		
Meliphagidae	*Acanthorhynchus superciliosus*	Western Spinebill			1			2						
Meliphagidae	*Anthochaera carunculata*	Red Wattlebird			28			53	x		x	x		x
Meliphagidae	*Anthochaera lunulata*	Western Little Wattlebird			4			7				x	x	x
Meliphagidae	*Epthianura albifrons*	White-fronted Chat			1			8	x		x	x		
Meliphagidae	*Gavicalis virescens*	Singing Honeyeater			54			122	x		x	x	x	x
Meliphagidae	*Gliciphila melanops*	Tawny-crowned Honeyeater			4			5	x	x		x		
Meliphagidae	*Lichmera indistincta*	Brown Honeyeater			51			64	x	x	x	x		x
Meliphagidae	*Manorina flavigula*	Yellow-throated Miner			1			2						x
Meliphagidae	*Melithreptus brevirostris*	Brown-headed Honeyeater									x			
Meliphagidae	*Phylidonyris niger*	White-cheeked Honeyeater			23			50	x	x	x	x		x
Meliphagidae	*Phylidonyris novaehollandiae*	New Holland Honeyeater			9			9						x
Meliphagidae	*Purnella albifrons*	White-fronted Honeyeater						1						
Meropidae	*Merops ornatus*	Rainbow Bee-eater		MA		x		5			x	x		
Monarchidae	*Grallina cyanoleuca*	Magpie-lark		MA	29			86	x		x	x		x
Motacillidae	*Anthus australis*	Australian Pipit		MA	2			21	x		x	x		x
Motacillidae	*Motacilla cinerea*	Grey Wagtail	MI	MI, MA		x								
Neosittidae	*Daphoenositta chrysoptera*	Varied Sittella			1									
Oceanitidae	*Pelagodroma marina*	White-faced Storm-petrel		MA		x		5						
Oreoicidae	*Oreoica gutturalis*	Crested Bellbird										x		
Otididae	*Ardeotis australis*	Australian Bustard			2			2			x			
Pachycephalidae	*Colluricincla harmonica*	Grey Shrikethrush			16			17	x	x		x	x	x
Pachycephalidae	*Pachycephala pectoralis*	Golden Whistler			12			8	x					
Pachycephalidae	*Pachycephala rufiventris*	Rufous Whistler			7			12		x	x	x	x	x
Pandionidae	*Pandion haliaetus*	Osprey	MI	MI, MA	9	x	2	48						

Family	Scientific Name	Common Name	Conservation Status		Database				Literature					
			State	Commonwealth	NM	PMST	DBCA	ALA	A	B	C	D	E	F
Pardalotidae	*Pardalotus punctatus*	Spotted Pardalote			1			1	x					
Pardalotidae	*Pardalotus striatus*	Striated Pardalote			13			15		x	x	x		x
Pelecanidae	*Pelecanus conspicillatus*	Australian Pelican		MA	8			19						
Petroicidae	*Melanodryas cucullata*	Hooded Robin			1			2						
Petroicidae	*Microeca fascinans*	Jacky Winter									x			
Petroicidae	*Petroica boodang*	Scarlet Robin			2			4						
Petroicidae	*Petroica goodenovii*	Red-capped Robin			1						x			
Petroicidae	*Quoyornis georgianus*	White-breasted Robin			8				x					
Phaethontidae	*Phaethon rubricauda westralis*	Red-tailed Tropicbird		EN, MI, MA		x								
Phalacrocoracidae	*Microcarbo melanoleucos*	Little Pied Cormorant						23						
Phalacrocoracidae	*Phalacrocorax carbo*	Great Cormorant			4			6						
Phalacrocoracidae	*Phalacrocorax sulcirostris*	Little Black Cormorant			8			14						
Phalacrocoracidae	*Phalacrocorax varius*	Pied Cormorant			23			112						
Phasianidae	*Coturnix pectoralis*	Stubble Quail		MA							x			x
Phasianidae	*Synoicus ypsilophorus*	Brown Quail									x			
Podicipedidae	*Poliocephalus poliocephalus*	Hoary-headed Grebe			1			4						
Podicipedidae	*Tachybaptus novaehollandiae*	Australasian Grebe						3						
Pomatostomidae	*Pomatostomus superciliosus*	White-browed Babbler										x		
Procellariidae	*Ardenna carneipes*	Flesh-footed Shearwater	VU	MI, MA		x								
Procellariidae	*Ardenna pacifica*	Wedge-tailed Shearwater	MI	MI, MA		x	45	16						
Procellariidae	*Fulmarus glacialoides*	Southern Fulmar		MA	1			2						
Procellariidae	*Halobaena caerulea*	Blue Petrel		VU, MA		x								
Procellariidae	*Macronectes giganteus*	Southern Giant Petrel	MI	EN, MI, MA	3	x	3							
Procellariidae	*Macronectes halli*	Northern Giant Petrel	MI	VU, MI, MA		x								
Procellariidae	*Pterodroma macroptera*	Great-winged Petrel		MA		x								
Procellariidae	*Pterodroma mollis*	Soft-plumaged Petrel		VU, MA		x								
Procellariidae	*Puffinus assimilis*	Little Shearwater		MA	1	x		12						
Psittaculidae	*Barnardius zonarius*	Australian Ringneck			4			24	x		x	x		x
Psittaculidae	*Neophema petrophila*	Rock Parrot		MA	5			14						
Psittaculidae	*Pezoporus wallicus flaviventris*	Western Ground Parrot	CR	CE			1							
Psittaculidae	*Polytelis anthopeplus*	Regent Parrot			1			1						
Rallidae	*Fulica atra*	Eurasian Coot						3						
Rallidae	*Gallinula tenebrosa*	Dusky Moorhen						1						
Rallidae	*Hypotaenidia philippensis*	Buff-banded Rail		MA	1			1						

Family	Scientific Name	Common Name	Conservation Status		Database				Literature					
			State	Commonwealth	NM	PMST	DBCA	ALA	A	B	C	D	E	F
Rallidae	*Porphyrio melanotus*	Australasian Swamphen		MA				2						
Rallidae	*Porzana fluminea*	Australian Spotted Crake										x		
Rallidae	*Tribonyx ventralis*	Black-tailed Native-hen						2						
Recurvirostridae	*Cladorhynchus leucocephalus*	Banded Stilt			1			1						
Recurvirostridae	*Himantopus himantopus*	Black-winged Stilt		MA	2			9	x					
Recurvirostridae	*Recurvirostra novaehollandiae*	Red-necked Avocet		MA				1						
Rhipiduridae	*Rhipidura albiscapa*	Grey Fantail			20			21	x	x	x	x		x
Rhipiduridae	*Rhipidura leucophrys*	Willie Wagtail			40			106	x	x	x	x		x
Rostratulidae	*Rostratula australis*	Australian Painted Snipe	EN	EN, MA		x								
Scincidae	*Cyclodomorphus celatus*	Western Slender Blue-tongue			7			17			x	x		
Scolopacidae	*Actitis hypoleucos*	Common Sandpiper	MI	MI, MA	7	x		3						
Scolopacidae	*Arenaria interpres*	Ruddy Turnstone	MI	VU, MI, MA	2		59	4						
Scolopacidae	*Calidris acuminata*	Sharp-tailed Sandpiper	MI	VU, MI, MA		x	9	2						
Scolopacidae	*Calidris alba*	Sanderling	MI	MI, MA			10							
Scolopacidae	*Calidris canutus*	Red Knot	EN	VU, MI, MA		x	2	1						
Scolopacidae	*Calidris ferruginea*	Curlew Sandpiper	CR	CE, MI, MA		x	11							
Scolopacidae	*Calidris melanotos*	Pectoral Sandpiper	MI	MI, MA		x	1							
Scolopacidae	*Calidris ruficollis*	Red-necked Stint	MI	MI, MA			51	2						
Scolopacidae	*Calidris subminuta*	Long-toed Stint	MI	MI, MA			1							
Scolopacidae	*Calidris tenuirostris*	Great Knot	CR	VU, MI, MA			2	3						
Scolopacidae	*Limosa lapponica menzbieri*	Bar-tailed Godwit	CR, MI	EN, MA, MI	4	x	22	11						
Scolopacidae	*Limosa limosa*	Black-tailed Godwit	MI	EN, MI, MA			1							
Scolopacidae	*Numenius madagascariensis*	Far Eastern Curlew	CR	CE, MI, MA		x								
Scolopacidae	*Numenius phaeopus*	Whimbrel	MI	MI, MA			5							
Scolopacidae	*Tringa brevipes*	Grey-tailed Tattler	MI, P4	MI, MA				3						
Scolopacidae	*Tringa glareola*	Wood Sandpiper	MI	MI, MA			1	1						
Scolopacidae	*Tringa nebularia*	Common Greenshank	MI	EN, MI, MA	1	x	33	2				x		
Stercorariidae	*Stercorarius antarcticus*	Brown Skua				x								
Strigidae	*Ninox boobook boobook*	Southern Boobook		MA	2			1			x	x		
Sulidae	*Morus serrator*	Australasian Gannet		MA	3			4						
Threskiornithidae	*Platalea flavipes*	Yellow-billed Spoonbill									x			
Threskiornithidae	*Threskiornis molucca*	Australian White Ibis		MA	2			3			x			
Threskiornithidae	*Threskiornis spinicollis*	Straw-necked Ibis		MA	1			5			x			x
Turnicidae	*Turnix varius*	Painted Button-quail						2				x		

Family	Scientific Name	Common Name	Conservation Status		Database				Literature					
			State	Commonwealth	NM	PMST	DBCA	ALA	A	B	C	D	E	F
Tytonidae	*Tyto javanica*	Eastern Barn Owl						1						
Zosteropidae	*Zosterops lateralis*	Grey-breasted White-eye		MA	51			69	x		x	x		x
Mammals														
Bovidae	*Bos primigenius taurus*	European Cattle										x		
Bovidae	*Capra aegagrus hircus*	Goat						1						
Canidae	*Vulpes vulpes*	Red Fox						3			x	x		
Dasyuridae	*Dasyurus geoffroii fortis*	Western Quoll, Chuditch	VU	VU		x								
Dasyuridae	*Parantechinus apicalis*	Dibbler	EN	EN	54	x	57	48						
Dasyuridae	*Sminthopsis dolichura*	Little Long-tailed Dunnart			1			1						
Dasyuridae	*Sminthopsis griseoventer*	Grey-bellied Dunnart			37									
Felidae	*Felis catus*	Cat			1			2			x			
Leporidae	*Oryctolagus cuniculus*	Rabbit						4	x	x	x	x	x	
Macropodidae	*Macropus fuliginosus melanops*	Western Grey Kangaroo			7			8	x	x	x	x	x	
Macropodidae	*Notamacropus eugenii derbianus*	Tammar Wallaby	P4				3							
Macropodidae	*Notamacropus irma*	Western Brush Wallaby	P4		1		12		x		x	x		
Macropodidae	*Osphranter robustus*	Common Wallaroo						1						
Macropodidae	*Osphranter robustus erubescens*	Euro, Biggada			1									
Megadermatidae	*Macroderma gigas*	Ghost Bat	VU	VU		x	1							
Molossidae	*Austronomus australis*	White-striped Free-tailed Bat									x	x		
Molossidae	*Ozimops kitcheneri*	Western Free-tailed Bat										x		
Muridae	*Mus musculus*	House Mouse			17			24	x		x	x		
Muridae	*Pseudomys albocinereus*	Ash-grey Mouse			8			7	x					
Muridae	*Rattus fuscipes fuscipes*	Western Bush Rat			14			14	x					
Peramelidae	*Isoodon fusciventer*	Quenda	P4				10							
Potoroidae	*Bettongia penicillata ogilbyi*	Brush-tailed Bettong, Woylie	CR	EN		x	2							
Tachyglossidae	*Tachyglossus aculeatus acanthion*	Short-beaked Echidna						3						
Tarsipedidae	*Tarsipes rostratus*	Honey Possum, Noolbenger			3			3	x		x	x		
Vespertilionidae	*Chalinolobus gouldii*	Gould's Wattled Bat			1			2			x	x		
Vespertilionidae	*Chalinolobus morio*	Chocolate Wattled Bat			60			34			x			
Vespertilionidae	*Nyctophilus geoffroyi geoffroyi*	Lesser Long-eared Bat			1			1			x	x		
Vespertilionidae	*Vespadelus baverstocki*	Inland Forest Bat										x		
Vespertilionidae	*Vespadelus regulus*	Southern Forest Bat			2						x	x		
Reptiles														
Agamidae	*Ctenophorus adelaidensis*	Western Heath Dragon			6			6			x	x		

Family	Scientific Name	Common Name	Conservation Status		Database				Literature					
			State	Commonwealth	NM	PMST	DBCA	ALA	A	B	C	D	E	F
Agamidae	*Ctenophorus maculatus*	Spotted Sand Dragon			11			14						
Agamidae	*Pogona minor minor*	Western Bearded Dragon			10			9	x		x	x		
Carphodactylidae	*Underwoodisaurus milii*	Southern Barking Gecko			2			2						
Chelidae	*Chelodina oblonga*	Oblong Turtle			2			3						
Cheloniidae	*Caretta caretta*	Loggerhead Turtle	EN	EN, MI, MA		x								
Cheloniidae	*Chelonia mydas*	Green Turtle	VU	VU, MI, MA		x								
Cheloniidae	*Natator depressus*	Flatback Turtle	VU	VU, MI, MA		x								
Dermochelyidae	*Dermochelys coriacea*	Leatherback Turtle	VU	EN, MI, MA		x	7							
Diplodactylidae	*Crenadactylus ocellatus*	South-western Clawless Gecko			32			32	x					
Diplodactylidae	*Diplodactylus ornatus*	Ornate Stone Gecko			6			7	x					
Diplodactylidae	*Diplodactylus polyophthalmus*	Spotted Sandplain Gecko			1			1						
Diplodactylidae	*Lucasium alboguttatum*	White-spotted Ground Gecko			2			2						
Diplodactylidae	*Strophurus spinigerus*	Soft Spiny-tailed Gecko			16			19	x		x	x		
Elapidae	*Aipysurus pooleorum*			MA		x								
Elapidae	*Demansia reticulata*	Reticulated Whipsnake			2			2			x			
Elapidae	*Echiopsis curta*	Bardick			4			6						
Elapidae	*Hydrophis kingii*	Spectacled Seasnake		MA		x								
Elapidae	*Narophis bimaculatus*	Black-naped Snake										x		
Elapidae	*Neelaps calonotos*	Black-striped Snake	P3				4					x		
Elapidae	*Pseudechis australis*	Mulga Snake			4			4						
Elapidae	*Pseudonaja mengdeni*	Western Brown Snake			7			7						
Elapidae	*Simoselaps littoralis*	West Coast Banded Snake			2			2						
Elapidae	*Suta gouldii*	Gould's Hooded Snake			2			2			x	x		
Gekkonidae	*Christinus marmoratus*	Marbled Gecko			3			2				x		
Gekkonidae	*Gehyra variegata*	Variegated Gehyra			2			2						
Pygopodidae	*Delma concinna concinna*											x		
Pygopodidae	*Delma grayii*	Side-barred Delma			1			2						
Pygopodidae	*Lialis burtonis*	Burton's Snake-lizard						3			x	x		
Pygopodidae	*Pletholax gracilis*	Slender Slider									x			
Pygopodidae	*Pygopus lepidopodus*	Common Scaly Foot			3			4			x			
Pythonidae	*Aspidites ramsayi*	Woma	P1 (southwest subpop.)				1							
Pythonidae	*Morelia spilota*	Carpet Python			3			4						
Scincidae	*Acritoscincus trilineatus*				1			1						
Scincidae	*Cryptoblepharus buchananii*	Buchanan's Snake-eyed Skink			1			2			x	x		

Family	Scientific Name	Common Name	Conservation Status		Database				Literature					
			State	Commonwealth	NM	PMST	DBCA	ALA	A	B	C	D	E	F
Scincidae	*Cryptoblepharus plagiocephalus*	Péron's Snake-eyed Skink									x			
Scincidae	*Ctenotus australis*	Western Limestone Ctenotus			6			6				x		
Scincidae	*Ctenotus fallens*	West-coast Laterite Ctenotus			13			14			x	x		
Scincidae	*Ctenotus gemmula*		P3 (Swan Coastal Plain subpop.)				2							
Scincidae	*Ctenotus lancelini*	Lancelin Island Ctenotus	VU	VU	6	x	7							
Scincidae	*Ctenotus pantherinus*	Leopard Ctenotus						6						
Scincidae	*Cyclodomorphus branchialis*	Gilled Slender Blue-tongue	VU				1		x					
Scincidae	*Egernia kingii*	King's Skink			5			6						
Scincidae	*Egernia napoleonis*	South-western Crevice-skink			9			9			x			
Scincidae	*Egernia stokesii badia*	Western Spiny-tailed Skink	VU	EN		x	1							
Scincidae	*Hemiergis quadrilineatus*	Two-toed Earless Skink			21			21						
Scincidae	*Lerista elegans*	Elegant Slider			4			4			x	x		
Scincidae	*Lerista lineopunctulata*	Dotted-line Robust Slider			20			19						
Scincidae	*Lerista miopus*							2						
Scincidae	*Lerista praepedita*	Blunt-tailed West-coast Slider			7			6			x	x		
Scincidae	*Liopholis multiscutata*	Bull Skink			22			22						
Scincidae	*Liopholis pulchra longicauda*		VU	VU	40	x	41							
Scincidae	*Liopholis pulchra pulchra*							25						
Scincidae	*Menetia greyii*	Common Dwarf Skink			2			2		x	x	x		
Scincidae	*Morethia lineoocellata*	West Coast Morethia Skink									x			
Scincidae	*Morethia obscura*	Shrubland Morethia Skink			7			7			x	x		
Scincidae	*Tiliqua occipitalis*	Western Bluetongue			4			6	x					
Scincidae	*Tiliqua rugosa*	Bobtail						22	x	x	x	x	x	
Scincidae	*Tiliqua rugosa rugosa*	Bobtail			5									
Typhlopidae	*Anilios australis*	Southern Blind Snake			3			3			x			
Varanidae	*Varanus gouldii*	Bungarra Or Sand Goanna			1			1			x	x		

Appendix I Fauna Site Sheets

WA Limestone Jurien Bay

Flora, Vegetation, Fauna and Black Cockatoo Assessment

WA Limestone

SLR Project No.: 675.073307.00001

17 February 2026

HAB-01

Project	WA Limestone Jurien Bay			**Latitude**	-30.34534181	**Longitude**	115.084189
Date	2025-09-01	**Sample Type**	Terrestrial vertebrate fauna - HAB			**Weather**	Mild, clear

Landform and Soil		**Rock**	
Landform	Undulating plain	**Rock type/s**	Limestone
Aspect	Southwest	**Pebble/stone cover**	Absent
Soil type	Sand	**Rock/boulder cover**	<5%
Soil colour	White, Yellow	**Outcropping cover**	5 - 25%
Condition		**Habitat Features**	
Quality	Very high	**Water Source**	Absent
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Peeling bark, Woody debris leaf litter
Disturbance	None observed		
Introduced fauna	Rabbit	**Leaf litter cover**	50 - 75%

Vegetation			
Upper stratum	Absent		
Mid stratum	Mid (1-2 m)	Isolated shrubs and/or heath shrubs (<0.25%)	*Banksia spp., Melaleuca huegelii*
Ground stratum	Low (>0.5 m)	Closed shrubland and/or heathland (>80%)	*Mixed: Proteaceae/Banksia spp., Xanthorrhoea sp., Acacia spp., sedges*



Fulcrum photo ID	913d22e1-7cfb-422a-9038-8aae1481067b

HAB-02

Project	WA Limestone Jurien Bay			**Latitude**	-30.3458171	**Longitude**	115.0831961
Date	2025-09-01	**Sample Type**	Terrestrial vertebrate fauna - HAB			**Weather**	Mild, clear

Landform and Soil		**Rock**	
Landform	Undulating plain	**Rock type/s**	Limestone
Aspect	West	**Pebble/stone cover**	<5%
Soil type	Sand	**Rock/boulder cover**	5 - 25%
Soil colour	Brown, Yellow	**Outcropping cover**	50 - 75%
Condition		**Habitat Features**	
Quality	Very high	**Water Source**	Absent
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Rock crevices, Woody debris
Disturbance	None observed		
Introduced fauna	Rabbit	**Leaf litter cover**	25 - 50%

Vegetation			
Upper stratum	Low (<10 m)	Isolated shrubs (<0.25%)	*Acacia spp.*
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	*Melaleuca spp., Banksia spp.*
Ground stratum	Low (>0.5 m)	Shrubland and/or heathland (50-80%)	*Mixed: Proteaceae/Banksia spp., Acacia spp., Grevillea spp., Conostylis, sedges*



Fulcrum photo ID	7ee66eb4-bb93-494d-9e5a-18e4d7fbba90

HAB-03

Project	WA Limestone Jurien Bay			**Latitude**	-30.3455801	**Longitude**	115.0848801
Date	2025-09-01	**Sample Type**	Terrestrial vertebrate fauna - HAB			**Weather**	Mild, clear

Landform and Soil		**Rock**	
Landform	Undulating plain	**Rock type/s**	Limestone
Aspect	West	**Pebble/stone cover**	Absent
Soil type	Sand	**Rock/boulder cover**	5 - 25%
Soil colour	Orange, Yellow	**Outcropping cover**	5 - 25%
Condition		**Habitat Features**	
Quality	High	**Water Source**	Absent
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Woody debris
Disturbance	Weeds		
Introduced fauna	Rabbit	**Leaf litter cover**	25 - 50%

Vegetation			
Upper stratum	Absent		
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	*Acacia spp., Melaleuca huegelii*
Ground stratum	Low (>0.5 m)	Open shrubland and/or heathland (20-50%)	*Mixed over mixed open forbland*



Fulcrum photo ID	5fe4e2e5-3d62-4479-97d0-77ae210f7970

HAB-04

Project	WA Limestone Jurien Bay			**Latitude**	-30.3465284	**Longitude**	115.0853449
Date	2025-09-02	**Sample Type**	Terrestrial vertebrate fauna - HAB			**Weather**	Mild, clear

Landform and Soil		**Rock**	
Landform	Undulating plain	**Rock type/s**	Limestone
Aspect	Southwest	**Pebble/stone cover**	Absent
Soil type	Sand	**Rock/boulder cover**	<5%
Soil colour	Brown, White	**Outcropping cover**	5 - 25%
Condition		**Habitat Features**	
Quality	Very high	**Water Source**	Absent
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Woody debris
Disturbance	Weeds		
Introduced fauna	Rabbit	**Leaf litter cover**	25 - 50%

Vegetation			
Upper stratum	Absent		
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	*Banksia spp.*
Ground stratum	Mid (0.5-1 m)	Shrubland and/or heathland (50-80%)	*Mixed: Proteaceae/Banksia spp., Acacia spp., Hakea spp., Calothamnus spp., Melaleuca spp.*



Fulcrum photo ID	d426b602-2526-48a0-973a-2797661a3f0a

HAB-05

Project	WA Limestone Jurien Bay			**Latitude**	-30.3461136	**Longitude**	115.0865635
Date	2025-09-02	**Sample Type**	Terrestrial vertebrate fauna - HAB			**Weather**	Mild, clear

Landform and Soil		**Rock**	
Landform	Undulating plain	**Rock type/s**	Limestone
Aspect	West	**Pebble/stone cover**	Absent
Soil type	Sand	**Rock/boulder cover**	<5%
Soil colour	Brown, Yellow	**Outcropping cover**	5 - 25%
Condition		**Habitat Features**	
Quality	Very high	**Water Source**	Absent
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Woody debris
Disturbance	None observed		
Introduced fauna	Rabbit	**Leaf litter cover**	25 - 50%

Vegetation			
Upper stratum	Absent		
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	*Banksia spp., Hakea spp.*
Ground stratum	Mid (0.5-1 m)	Open shrubland and/or heathland (20-50%)	*Mixed: Proteaceae/Banksia spp., Calothamnus spp., Melaleuca spp., Hibbertia spp.*



Fulcrum photo ID	dfa4819a-2fb2-421a-9e46-5d8f27856c24

HAB-06

Project	WA Limestone Jurien Bay			**Latitude**	-30.3441989	**Longitude**	115.0862394
Date	2025-09-02	**Sample Type**	Terrestrial vertebrate fauna - HAB			**Weather**	Mild, clear

Landform and Soil		**Rock**	
Landform	Undulating plain	**Rock type/s**	Limestone
Aspect	Northeast	**Pebble/stone cover**	<5%
Soil type	Sand	**Rock/boulder cover**	5 - 25%
Soil colour	Brown, Yellow	**Outcropping cover**	50 - 75%
Condition		**Habitat Features**	
Quality	Very high	**Water Source**	Absent
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Rock crevices, Woody debris
Disturbance	None observed		
Introduced fauna	Rabbit	**Leaf litter cover**	5 - 25%

Vegetation			
Upper stratum	Absent		
Mid stratum	Mid (1-2 m)	Isolated shrubs and/or heath shrubs (<0.25%)	*Acacia spp., Banksia spp.*
Ground stratum	Mid (0.5-1 m)	Shrubland and/or heathland (50-80%)	*Mixed: Myrtaceae/Melaleuca spp., Proteaceae/Banksia spp.*



Fulcrum photo ID	dba97cf5-a4d9-4ac5-8a98-356543acff06

HAB-07

Project	WA Limestone Jurien Bay			**Latitude**	-30.34265292	**Longitude**	115.0839027
Date	2025-09-02	**Sample Type**	Terrestrial vertebrate fauna - HAB			**Weather**	Mild, clear

Landform and Soil		**Rock**	
Landform	Undulating plain	**Rock type/s**	Limestone
Aspect	Northwest	**Pebble/stone cover**	<5%
Soil type	Sand	**Rock/boulder cover**	<5%
Soil colour	Brown, Yellow	**Outcropping cover**	<5%
Condition		**Habitat Features**	
Quality	High	**Water Source**	Absent
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Woody debris
Disturbance	None observed		
Introduced fauna	Rabbit	**Leaf litter cover**	50 - 75%

Vegetation			
Upper stratum	Absent		
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	*Banksia spp.*
Ground stratum	Mid (0.5-1 m)	Shrubland and/or heathland (50-80%)	*Mixed: Proteaceae/Banksia spp., Xanthorrhoea sp., Hibbertia spp.*



Fulcrum photo ID	79e496e1-7418-44a9-8f7a-94acd4bb81eb

HAB-08

Project	WA Limestone Jurien Bay			**Latitude**	-30.3414699	**Longitude**	115.0848649
Date	2025-09-02	**Sample Type**	Terrestrial vertebrate fauna - HAB			**Weather**	Mild, clear

Landform and Soil		**Rock**	
Landform	Undulating plain	**Rock type/s**	Limestone
Aspect	Southwest	**Pebble/stone cover**	Absent
Soil type	Sand	**Rock/boulder cover**	<5%
Soil colour	Grey, Yellow	**Outcropping cover**	5 - 25%
Condition		**Habitat Features**	
Quality	Very high	**Water Source**	Absent
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Woody debris
Disturbance	None observed		
Introduced fauna	Rabbit	**Leaf litter cover**	5 - 25%

Vegetation			
Upper stratum	Absent		
Mid stratum	Mid (1-2 m)	Isolated shrubs and/or heath shrubs (<0.25%)	*Banksia spp.*
Ground stratum	Mid (0.5-1 m)	Open shrubland and/or heathland (20-50%)	*Mixed: Proteaceae/Banksia spp., Calothamnus spp., Melaleuca spp., Hibbertia spp.*



Fulcrum photo ID	3227ab06-3167-41f9-9292-9de866b1713e

HAB-09

Project	WA Limestone Jurien Bay			**Latitude**	-30.3414979	**Longitude**	115.0866365
Date	2025-09-02	**Sample Type**	Terrestrial vertebrate fauna - HAB			**Weather**	Mild, clear

Landform and Soil		**Rock**	
Landform	Undulating plain	**Rock type/s**	Limestone
Aspect	West	**Pebble/stone cover**	Absent
Soil type	Sand	**Rock/boulder cover**	<5%
Soil colour	Brown, Yellow	**Outcropping cover**	50 - 75%
Condition		**Habitat Features**	
Quality	High	**Water Source**	Absent
Fire History	Little or no fire evidence (>5 years)	**Microhabitats**	Rock crevices
Disturbance	Weeds		
Introduced fauna	Rabbit	**Leaf litter cover**	5 - 25%

Vegetation			
Upper stratum	Absent		
Mid stratum	Mid (1-2 m)	Shrubland and/or heathland (50-80%)	*Melaleuca spp.*
Ground stratum	Mid (0.5-1 m)	Open shrubland and/or heathland (20-50%)	*Mixed: Proteaceae/Banksia spp., Calothamnus spp., Melaleuca spp., Hibbertia spp.*



Fulcrum photo ID	3a0c86d4-6c8e-4925-8653-12af1355712a

Appendix J Significant Fauna Likelihood of Occurrence

WA Limestone Jurien Bay

Flora, Vegetation, Fauna and Black Cockatoo Assessment

WA Limestone

SLR Project No.: 675.073307.00001

17 February 2026

Conservation Status: State - Listed under Biodiversity Conservation Act 2016 or by the Department of Biodiversity, Conservation and Attractions Conservation, Commonwealth - Listed under Environmental Protection and Biodiversity Conservation Act 1999. CR/CE - Critically Endangered, EN - Endangered, VU - Vulnerable, MI - Migratory, CD - Conservation Dependent fauna, OS - Other Specially Protected fauna, MA - Marine, P - Listed as Priority by DBCA.

Family	Scientific Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Common-wealth			
Birds						
Acanthizidae	*Aphelocephala leucopsis* Southern Whiteface	VU	VU	Open forest and woodland, inland scrubs such as mallee, mulga, cypress pine; saltbush, dead trees, stumps (Pizzey and Knight, 2012).	No nearby records identified from the database searches or literature.	**Low** No recent nearby records.
Anatidae	*Oxyura australis* Blue-billed Duck	P4	-	Densely vegetated freshwater lakes, swamps, dams (Morcombe, 2003).	The DBCA database search identified one record within 50 km of the Survey Area, 46.9 km north in 1981 (DBCA, 2025).	**Low** One historic record and no suitable habitat within the Survey Area.
Apodidae	*Apus pacificus* Pacific Swift	MI	MI, MA	Low to very high airspace over varied habitat (Pizzey and Knight, 2012).	The DBCA database search identified four records within 50 km of the Survey Area, all were 16.5 km south in 2013 (DBCA, 2025).	**Low** Limited nearby records, but may occupy airspace above the Survey Area and will not rely on terrestrial habitats within the Survey Area,
Cacatuidae	*Zanda baudinii* Baudin's Cockatoo	EN	EN	Forests, farm trees; feeds on Marri and wood-boring insects (Morcombe, 2003).	The DBCA database search identified one record within 50 km of the Survey Area, 8 km northwest in 1958 (DBCA, 2025).	**Low** Outside taxon distribution.
Cacatuidae	*Zanda latirostris* Carnaby's Cockatoo	EN	EN	Forests, woodlands, heathlands, farms; feeds on Banksias and Hakeas, pine plantations (Morcombe, 2003).	The DBCA database search identified 580 records within 50 km of the Survey Area, including 6.9 km north in 2022 and 45 km north in 2022 (DBCA, 2025).	**Recorded** Recent nearby records with suitable foraging habitat within the Survey Area.
Charadriidae	*Anarhynchus leschenaultii* Greater Sand Plover	VU	VU, MI, MA	Wide, sandy or shelly beaches; sandspits, tidal mudflats, reefs, sand cays, mangroves, saltmarsh, dune wilderness, bare paddocks; seldom far inland (Pizzey and Knight, 2012).	The DBCA database search identified seven records within 50 km of the Survey Area, including 30 km north in 2001 and 44.5 km south in 1979 (DBCA, 2025).	**Low** Records are historical, and no suitable habitat within the Survey Area,
Charadriidae	*Anarhynchus mongolus* Siberian Sand Plover	-	EN, MI, MA	Tidal mudflats and sandflats; gently sloping sandy and shelly beaches; saltmarsh, estuaries, atolls, reefs, mangroves, airfield. Occasionally inland on freshwater lakes, swamps, bore drains (Pizzey and Knight, 2012).	The DBCA database search identified two records within 50 km of the Survey Area, including 23.8 km south in 2013 and 17.7 km south in 2003 (DBCA, 2025).	**Low** No recent records, and no suitable habitat within the Survey Area.

Family	Scientific Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Common-wealth			
Charadriidae	*Charadrius cucullatus* Hooded Dotterel	P4	MA	Beaches (Menkhorst et al., 2019)	The DBCA database search identified six records within 50 km of the Survey Area, all were 5.6 km northwest in 1995 (DBCA, 2025).	**Low** Records are historical, and no suitable habitat within the Survey Area,
Charadriidae	*Pluvialis fulva* Pacific Golden Plover	MI	MI, MA	Estuaries, mudflats, saltmarshes, mangroves; rocky reefs and stranded seaweed on ocean shores; margins of shallow open inland swamps; sewage ponds, short-grass paddocks, sportsground, airfield, ploughed land (Pizzey and Knight, 2012).	The DBCA database search identified two records within 50 km of the Survey Area, both were 17.7 km south in 2009 (DBCA, 2025).	**Low** No recent records, and no suitable habitat within the Survey Area.
Charadriidae	*Pluvialis squatarola* Grey Plover	MI	VU, MI, MA	Mudflats, saltmarsh; tidal reefs and estuaries, rarely inland (Pizzey and Knight, 2012).	The DBCA database search identified 41 records within 50 km of the Survey Area, including 23.9 km south in 2013 and 17.5 km south in 2007 (DBCA, 2025).	**Low** No suitable habitat within the Survey Area.
Diomedeidae	*Diomedea amsterdamensis* Amsterdam Albatross	CR	EN, MI, MA	Oceanic (Pizzey & Knight 1999).	No nearby records identified from the database searches or literature.	**Low** No recent nearby records or suitable habitat within the Survey Area.
Diomedeidae	*Diomedea epomophora* Southern Royal Albatross	VU	-	Breeds on NZ sub-Antarctic islands with circumpolar distribution in Southern Ocean south, rare off south Western Australia (Menkhorst et al., 2017).	No nearby records identified from the database searches or literature.	**Low** No recent nearby records or suitable habitat within the Survey Area.
Diomedeidae	*Diomedea exulans* Wandering Albatross	VU	VU, MI, MA	Breeds on South Georgia and sub-Antarctic islands of Indian Ocean with very small breeding population at Macquarie and Heard Island; otherwise, circumpolar in Southern Ocean (Menkhorst et al., 2017).	No nearby records identified from the database searches or literature.	**Low** No recent nearby records or suitable habitat within the Survey Area.
Diomedeidae	*Phoebetria fusca* Sooty Albatross	EN	VU, MI, MA	Oceanic (Morecombe, 2003).	No nearby records identified from the database searches or literature.	**Low** No recent nearby records or suitable habitat within the Survey Area.
Diomedeidae	*Thalassarche carteri* Indian Yellow-nosed Albatross	EN	VU, MI, MA	Inshore and offshore waters (Menkhorst et al., 2017).	No nearby records identified from the database searches or literature.	**Low** No recent nearby records or suitable habitat within the Survey Area.
Diomedeidae	*Thalassarche cauta*	EN				**Low**

Family	Scientific Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Common-wealth			
	Shy Albatross		EN, MI, MA	Breeds on Australian and New Zealand islands with circumpolar distribution in Southern Ocean; scarce visitor to south-western seas. Oceanic (Johnstone & Storr, 1998).	No nearby records identified from the database searches or literature.	No recent nearby records or suitable habitat within the Survey Area.
Diomedeidae	*Thalassarche impavida* Campbell Island Albatross	VU	VU, MI, MA	Oceanic (Menkhorst et al., 2017).	No nearby records identified from the database searches or literature.	**Low** No recent nearby records or suitable habitat within the Survey Area.
Diomedeidae	*Thalassarche melanophris* Black-browed Albatross	EN	VU, MI, MA	Oceanic (Menkhorst et al., 2017).	No nearby records identified from the database searches or literature.	**Low** No recent nearby records or suitable habitat within the Survey Area.
Falconidae	*Falco hypoleucos* Grey Falcon	VU	VU	Open plains with treed watercourses in arid inland (Menkhorst et al., 2017).	No nearby records identified from the database searches or literature.	**Low** No recent nearby records.
Falconidae	*Falco peregrinus* Peregrine Falcon	OS	-	Most environments with suitable nest sites: cliff faces preferred, including man-made ones, commonly uses stick nests built by other species (Menkhorst et al., 2017).	The DBCA database search identified three records within 50 km of the Survey Area, including 32.8 km east in 2010 and 22.4 km south in 1999 (DBCA, 2025).	**Low** No recent nearby records, no suitable habitat within the Survey Area.
Laridae	*Anous stolidus* Common Noddy	MI	MI, MA	Oceanic; cays, reefs, buoys and piles (Pizzey and Knight, 2012).	The DBCA database search identified one record within 50 km of the Survey Area, 32 km northwest in 1977 (DBCA, 2025).	**Low** One historic record and no suitable habitat within the Survey Area.
Laridae	*Anous tenuirostris melanops* Australian Lesser Noddy	EN	VU, MA	Main Australia breeding population on Abrolhos Island, infrequently storm-blown to coast of mainland WA (Menkhorst et al., 2017).	No nearby records identified from the database searches or literature.	**Low** No recent nearby records or suitable habitat within the Survey Area.
Laridae	*Hydroprogne caspia* Caspian Tern	MI	MI, MA	Coastal, offshore waters; beaches, mudflats, estuaries, larger rivers, reservoirs, lakes. Sometimes found inland (Pizzey and Knight, 2012).	The DBCA database search identified 36 records within 50 km of the Survey Area, including 6.9 km west in 1991 and 8.6 km northwest in 1991 (DBCA, 2025).	**Low** Records are historical, and no suitable habitat within the Survey Area,
Laridae	*Onychoprion anaethetus* Bridled Tern	MI	MI, MA	Oceanic, rarely coastal (Pizzey and Knight, 2012).	The DBCA database search identified 30 records within 50 km of the Survey Area, including 26.3	**Low** Records are historical, and no suitable habitat within the Survey Area,

Family	Scientific Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Common-wealth			
					km northwest in 1992 and 20.7 km south in 1979 (DBCA, 2025).	
Laridae	*Sterna dougallii* Roseate Tern	MI	MI, MA	Offshore waters, islands, coral reefs, sand cays, beaches, tidal inlets (Pizzey and Knight, 2012).	The DBCA database search identified 41 records within 50 km of the Survey Area, including 20.7 km south in 2000 and 7.6 km south in 1981 (DBCA, 2025).	**Low** Records are historical, and no suitable habitat within the Survey Area,
Laridae	*Sterna paradisaea* Arctic Tern	MI	MA	Pelagic migrant (Menkhorst et al., 2021).	The DBCA database search identified one record within 50 km of the Survey Area, 31.7 km northwest in 1970 (DBCA, 2025).	**Low** Record is historical and no suitable habitat within the Survey Area.
Laridae	*Sternula albifrons* Little Tern	MI	VU, MI, MA	Coastal waters, bays, inlets, saline or brackish lakes, salt fields, sewage ponds near coast (Pizzey and Knight, 2012).	No nearby records identified from the database searches or literature.	**Low** No recent nearby records or suitable habitat within the Survey Area.
Laridae	*Sternula nereis nereis* Australian Fairy Tern	VU	VU	Coastal, bays, inlets, beaches, salt ponds and lakes (Morcombe, 2003).	The DBCA database search identified 13 records within 50 km of the Survey Area, including 7.6 km west in 2013 and 6.9 km west in 1985 (DBCA, 2025).	**Low** No recent records, and no suitable habitat within the Survey Area.
Laridae	*Thalasseus bergii* Greater Crested Tern	MI	MI, MA	Coastal, beaches, bays, lagoons, salt ponds and lakes, estuaries, tidal creeks (Morcombe, 2003; Johnstone and Storr, 1998).	The DBCA database search identified 139 records within 50 km of the Survey Area, including 16.5 km south in 2013 and 4.7 km northwest in 2012 (DBCA, 2025).	**Low** No suitable habitat within the Survey Area.
Megapodiidae	*Leipoa ocellata* Malleefowl	VU	VU	Mallee, acacia, paperbark, she-oak and other scrubs; eucalypt woodland; coastal heath; mostly on sandy or gravel soils (Pizzey and Knight, 2012).	The DBCA database search identified eight records within 50 km of the Survey Area, including 29.1 km south in 2012 and 21 km north in 1959 (DBCA, 2025).	**Low** No recent records. The Survey Area contains suitable foraging habitat but is unlikely to be suitable for nesting.
Motacillidae	*Motacilla cinerea* Grey Wagtail	MI	MI, MA	Running water near disused quarries; sandy, rocky streams in escarpments; sewage ponds, ploughed fields, airfields (Pizzey and Knight 2012).	No nearby records identified from the database searches or literature.	**Low** No recent nearby records.
Pandionidae	*Pandion haliaetus* Osprey	MI	MI, MA	Coasts, estuaries, bays, inlets; islands and surrounding waters; coral atolls, reefs, lagoons, rock cliffs, stacks; larger rivers (Pizzey and Knight, 2012).	The DBCA database search identified two records within 50 km of the Survey Area, both were 8 km northwest in 1914 (DBCA, 2025).	**Low** Both records are historical, no suitable habitat within the Survey Area,

Family	Scientific Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Common-wealth			
Phaethontidae	*Phaethon rubricauda westralis* Indian Ocean Red-tailed Tropicbird	MI, P4	EN, MI, MA	Tropical pelagic waters off the coasts of Christmas, Cocos and islands off Western Australia (Menkhorst et al., 2019).	No nearby records identified from the database searches or literature.	**Low** Outside taxon distribution.
Procellariidae	*Ardenna carneipes* Flesh-footed Shearwater	VU	MI, MA	Oceanic. Temperate to tropical waters, breeding mostly on islands off south WA, also SA and Lord Howe Island (Menkhorst et al., 2019).	No nearby records identified from the database searches or literature.	**Low** Outside taxon distribution.
Procellariidae	*Ardenna pacifica* Wedge-tailed Shearwater	MI	MI, MA	Oceanic; common in inshore and offshore waters of tropical and subtropical seas. Small numbers present year-round off northwestern WA. Trans-equatorial migrant in Indian Pacific Oceans, largely absent from Australian waters late May to early September (Menkhorst et al., 2019).	The DBCA database search identified 45 records within 50 km of the Survey Area, including 4.7 km northwest in 2023 and 8.1 km west in 1998 (DBCA, 2025).	**Low** Recent nearby records are associated with coastal habitats, no suitable habitat within the Survey Area.
Procellariidae	*Halobaena caerulea* Blue Petrel	-	VU, MA	Oceanic, breeding on sub-Antarctic islands. Regular winter-spring visitor to offshore waters of southern Australia, with records north to approximately Fremantle and Sydney (Pizzey and Knight, 2012).	No nearby records identified from the database searches or literature.	**Low** No recent nearby records or suitable habitat within the Survey Area.
Procellariidae	*Macronectes giganteus* Southern Giant Petrel	MI	EN, MI, MA	Occupies southern oceans, moving north in winter when juveniles and immatures frequent waters off southern Australia and will enter bays and harbours. Breeding sites found at Macquarie and Heard Islands and in Antarctica. At breeding grounds, routinely ashore to feed and rest, rarely so on mainland (Menkhorst et al., 2019).	The DBCA database search identified three records within 50 km of the Survey Area, including two records 5.1 km northwest in 2003 and 7.9 km northwest in 2003 (DBCA, 2025).	**Low** No recent records, and no suitable habitat within the Survey Area.
Procellariidae	*Macronectes halli* Northern Giant Petrel	MI	VU, MI, MA	Widespread in southern oceans, moving north in winter when juveniles and immature members frequent waters off southern Australia. Adults are rare off the mainland and more frequent off southern Tasmania. Seasonally common off the southern coastline, breeding at Macquarie Island and	No nearby records identified from the database searches or literature.	**Low** No recent nearby records or suitable habitat within the Survey Area.

Family	Scientific Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Common-wealth			
				other sub-Antarctic islands north of the Antarctic Convergence (Menkhorst et al., 2019).		
Procellariidae	*Pterodroma mollis* Soft-plumaged Petrel	-	VU, MA	Common winter-spring visitor (May-August) to pelagic waters off southwest WA, north to around Exmouth and extending east to western Victoria (Menkhorst et al., 2019).	No nearby records identified from the database searches or literature.	**Low** No recent nearby records or suitable habitat within the Survey Area.
Psittaculidae	*Pezoporus wallicus flaviventris* Western Ground Parrot	CR	CE	Confined to dense heathland in Cape Arid NP, southwest WA (Menkhorst et al., 2019)	The DBCA database search identified one record within 50 km of the Survey Area, including 15.7 km east with no date available (DBCA, 2025).	**Low** Record is from historical distribution. Outside of current known distribution (southwest WA) and species is highly cryptic.
Rostratulidae	*Rostratula australis* Australian Painted Snipe	EN	EN, MA	Well-vegetated shallows and margins of wetlands, dams, sewage ponds; wet pastures, marshy areas, irrigation systems, lignum, tea-tree scrub, open timber (Pizzey and Knight, 2012).	No nearby records identified from the database searches or literature.	**Low** No recent nearby records or suitable habitat within the Survey Area.
Scolopacidae	*Actitis hypoleucos* Common Sandpiper	MI	MI, MA	Shallow, pebbly, muddy or sandy sedges of rivers and streams, coastal to far inland; dams, lakes, sewage ponds; margins of tidal rivers; waterways in mangroves or saltmarsh; mudflats; rocky or sandy beaches; causeways, riverside lawns, drains, street gutters (Pizzey and Knight, 2012).	The Atlas of Living Australia search returned three records within 50 km of the Survey Area (ALA, 2025).	**Low** No suitable habitat within the Survey Area.
Scolopacidae	*Arenaria interpres* Ruddy Turnstone	MI	VU, MI, MA	Tidal reefs and pools; weed-covered rocks; pebbly, shelly and sandy shores with stranded seaweed; mudflats; occasionally inland on shallow waters; sewage ponds, commercial salt flats (Pizzey and Knight, 2012).	The DBCA database search identified 59 records within 50 km of the Survey Area, including 23.9 km south in 2013 and 7.1 km west in 2000 (DBCA, 2025).	**Low** Records are associated with coastal habitat, no suitable habitat within the Survey Area.
Scolopacidae	*Calidris acuminata* Sharp-tailed Sandpiper	MI	VU, MI, MA	Tidal mudflats, saltmarshes, mangroves; shallow fresh, brackish or saline inland wetlands; muddy edges of lagoons, swamps, lakes, floodwaters, dams, irrigated pastures and crops; sewage ponds, salt fields	The DBCA database search identified nine records within 50 km of the Survey Area, including 17.7 km south in 2009 and 17.6 km south in 2005 (DBCA, 2025).	**Low** No recent records, records are associated with coastal habitat and no suitable habitat within the Survey Area.

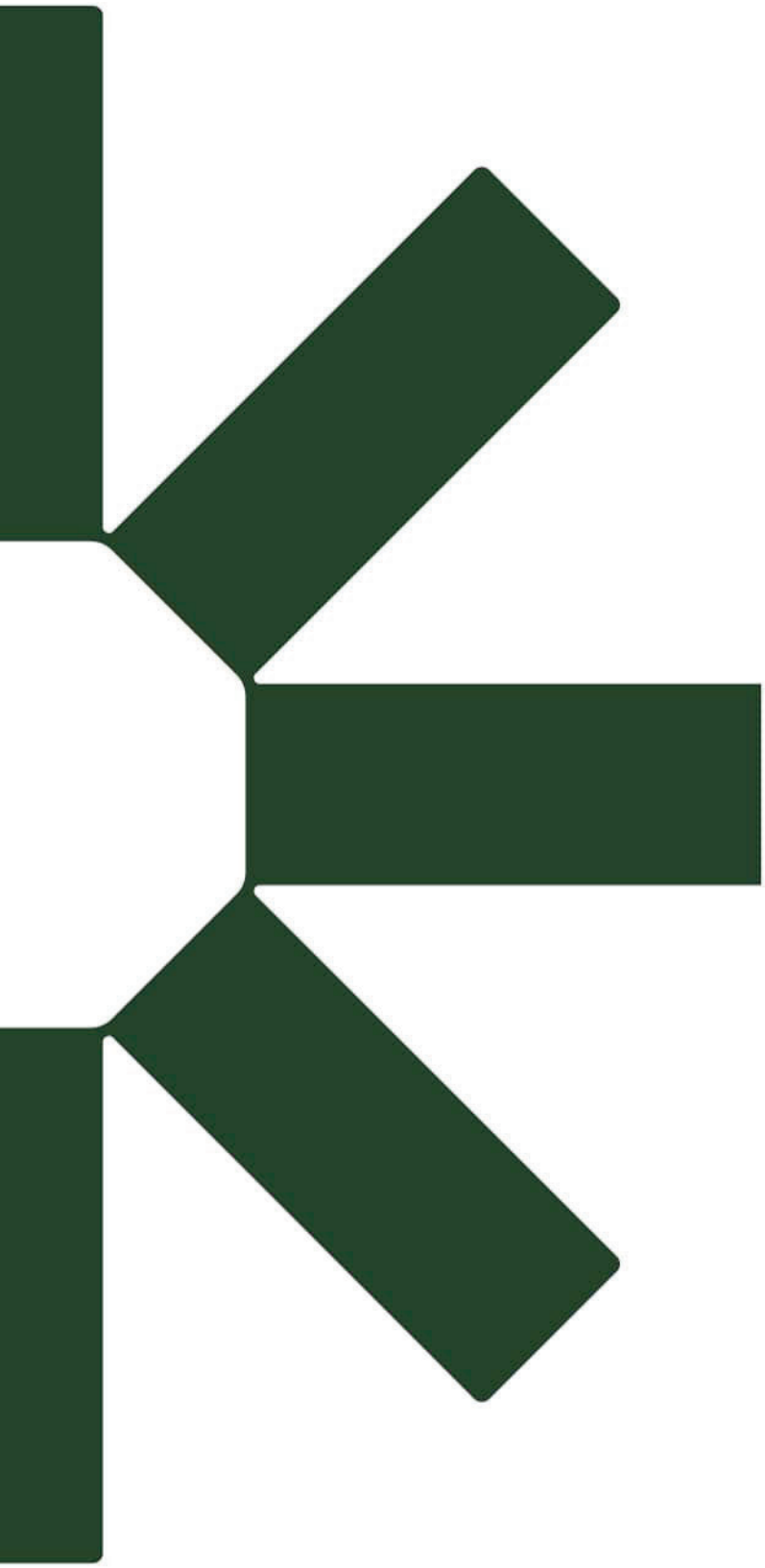
Family	Scientific Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Common-wealth			
				(Morcombe, 2003; Pizzey and Knight, 2012).		
Scolopacidae	*Calidris alba* Sanderling	MI	MI, MA	Broad ocean beaches of firm sand with seaweed; often near river mouths; also, inlets, tidal mudflats, coastal lagoons (Pizzey and Knight, 2012).	The DBCA database search identified ten records within 50 km of the Survey Area, including 23.9 km south in 2013 and 14.3 km northwest in 2003 (DBCA, 2025).	**Low** Records are associated with coastal habitat, no suitable habitat within the Survey Area.
Scolopacidae	*Calidris canutus* Red Knot	EN	VU, MI, MA	Tidal mudflats, sandflats, beaches, saltmarshes, flooded pastures, ploughed lands (Pizzey and Knight, 2012).	The DBCA database search identified two records within 50 km of the Survey Area, both were 17.6 km south in 2005 (DBCA, 2025).	**Low** Both records are associated with coastal and wetland habitats, no suitable habitat within the Survey Area.
Scolopacidae	*Calidris ferruginea* Curlew Sandpiper	CR	CE, MI, MA	Inter-tidal mudflats of estuaries, lagoons, mangrove channel; saltmarsh, salt fields; fresh, brackish or saline wetlands; flooded saltbush surrounds of inland lakes; dams, floodwaters, sewage ponds (Morcombe, 2003; Pizzey and Knight, 2012).	The DBCA database search identified 11 records within 50 km of the Survey Area, including 17.6 km south in 2005 and 17.6 km south in 2003 (DBCA, 2025).	**Low** Records are associated with coastal and wetland habitats, no suitable habitat within the Survey Area.
Scolopacidae	*Calidris melanotos* Pectoral Sandpiper	MI	MI, MA	Shallow fresh waters, often with low grass or other herbage; swamp margins, flooded pastures, sewage ponds; occasionally tidal areas, saltmarshes (Pizzey and Knight, 2012).	The DBCA database search identified one record within 50 km of the Survey Area, 17.7 km south in 2009 (DBCA, 2025).	**Low** Single record associated with wetland habitat, no suitable habitat within the Survey Area.
Scolopacidae	*Calidris ruficollis* Red-necked Stint	MI	MI, MA	Tidal mudflats, saltmarshes, sandy or shelly beaches; saline and freshwater wetlands, salt fields, sewage ponds (Pizzey and Knight, 2012).	The DBCA database search identified 51 records within 50 km of the Survey Area, including 23.9 km south in 2013 and 7.6 km south in 1981 (DBCA, 2025).	**Low** Records are associated with coastal habitat, no suitable habitat within the Survey Area.
Scolopacidae	*Calidris subminuta* Long-toed Stint	MI	MI, MA	Tussocky, weedy margins of shallow wetlands, coastal and inland; sewage ponds, weed on tideline, tidal mudflats (Pizzey and Knight, 2012).	The DBCA database search identified one record within 50 km of the Survey Area, 17.6 km south in 2001 (DBCA, 2025).	**Low** Single historic record associated with wetland habitat, no suitable habitat within the Survey Area.
Scolopacidae	*Calidris tenuirostris* Great Knot	CR	VU, MI, MA	Tidal mudflats; sandy ocean and bay shores; estuaries; shallow saline and freshwater wetlands (Pizzey and Knight, 2012).	The DBCA database search identified two records within 50 km of the Survey Area, both were 17.6 km south in 2005 (DBCA, 2025).	**Low** Records associated with coastal and wetland habitats, no suitable habitat in the Survey Area.
Scolopacidae	*Limosa lapponica menzbieri*	CR, MI				**Low**

Family	Scientific Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Common-wealth			
	Bar-tailed Godwit		EN, MI, MA	Tidal mudflats, estuaries, sewage ponds, shallow river margins, brackish or saline inland lakes, flooded pastures, airfields (Pizzey and Knight, 2012).	The DBCA database search identified one record within 50 km of the Survey Area, 31.7 km northwest in 1970 (DBCA, 2025).	Record is historical and no suitable habitat within the Survey Area.
Scolopacidae	*Limosa limosa* Black-tailed Godwit	MI	EN, MI, MA	Tidal mudflats, estuaries, sandspits, shallow river margins, sewage ponds; inland on large shallow fresh or brackish waters (Pizzey and Knight, 2012).	The DBCA database search identified one record within 50 km of the Survey Area, 20.7 km south in 2000 (DBCA, 2025).	**Low** One historic record and no suitable habitat within the Survey Area.
Scolopacidae	*Numenius madagascariensis* Far Eastern Curlew	CR	CE, MI, MA	Estuaries, tidal mudflats, sandspits, saltmarshes, mangroves; occasionally fresh or brackish lakes; bare grasslands near water (Pizzey and Knight, 2012).	No nearby records identified from the database searches or literature.	**Low** No recent nearby records or suitable habitat within the Survey Area.
Scolopacidae	*Numenius phaeopus* Whimbrel	MI	MI, MA	Estuaries, mangroves, tidal flats, coral cays, exposed reefs, flooded paddocks, sewage ponds, bare grasslands, sport grounds, lawns (Pizzey and Knight, 2012).	The DBCA database search identified five records within 50 km of the Survey Area, including 14.4 km northwest in 2004 and 14.3 km northwest in 2002 (DBCA, 2025).	**Low** Records are associated with coastal habitat, no suitable habitat within the Survey Area.
Scolopacidae	*Tringa brevipes* Grey-tailed Tattler	MI, P4	MI, MA	Estuaries, tidal mudflats, mangroves; wave-washed rocks and reefs; shallow margins of coastal or inland rivers (Pizzey and Knight, 2012).	The Atlas of Living Australia search returned three records within 50 km of the Survey Area (ALA, 2025)	**Low** No recent nearby records or suitable habitat within the Survey Area.
Scolopacidae	*Tringa glareola* Wood Sandpiper	MI	MI, MA	Muddy margins of wetlands with emergent sedges and taller fringing vegetation; tidal mangroves; margins of tidal mudflats; saltmarshes, sewage pond (Pizzey and Knight, 2012; Menkhorst et al., 2017).	The DBCA database search identified one record within 50 km of the Survey Area, 12.5 km northeast in 2001 (DBCA, 2025).	**Low** No recent nearby records or suitable habitat within the Survey Area.
Scolopacidae	*Tringa nebularia* Common Greenshank	MI	EN, MI, MA	Mudflats, estuaries, saltmarshes, swamps, margins of lakes, muddy shallows of lagoons; permanent and temporary wetlands, claypans; commercial salt field, irrigated crops, sewage ponds (Morcombe, 2003; Pizzey and Knight, 2012).	The DBCA database search identified 33 records within 50 km of the Survey Area, including 26.6 km east in 2024 and 7.6 km south in 1981 (DBCA, 2025).	**Low** Recent records but no suitable habitat within the Survey Area.
Mammals						
Dasyuridae	*Dasyurus geoffroii fortis*	VU	VU			**Low**

Family	Scientific Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Common-wealth			
	Western Quoll, Chuditch			Areas dominated by sclerophyll forest or drier woodland, heath and mallee shrubland (Van Dyck and Strahan, 2008).	No nearby records identified from the database searches or literature.	No recent nearby records or suitable habitat within the Survey Area.
Dasyuridae	*Parantechinus apicalis* Dibbler	EN	EN	Dense, long unburnt vegetation with a thick litter layer and sandy soils (DBCA, 2012). Mature mallee-heath on mainland; low heath and scrubland on islands (Van Dyck, Gynther and Baker, 2013).	The DBCA database search identified 57 records within 50 km of the Survey Area, including 6.7 km west in 2001 and 7.1 km west in 1999 (DBCA, 2025).	**Low** Records are associated with historical translocations to Boullanger Island, Whitlock Island and Escape Island off the coast of Jurien Bay.
Macropodidae	*Notamacropus eugenii derbianus* Tammar Wallaby	P4	-	Inhabits coastal scrub, heath, dry sclerophyll forest and thickets in mallee and woodland (Van Dyck and Strahan, 2008).	The DBCA database search identified three records within 50 km of the Survey Area, including 22.5 km south in 2006 and 22.1 km south in 2005 (DBCA, 2025).	**Low** No recent records. Records are associated with translocations completed in 2004 - 2006 at Nambung National Park.
Macropodidae	*Notamacropus irma* Western Brush Wallaby	P4	-	Optimum habitat of open forest or woodland, particularly favouring rather open, seasonally wet flats with low grasses and open, shrubby thickets. It is found in some larger areas of mallee and heathland in the wheatbelt and is uncommon in wet sclerophyll forest (Van Dyck and Strahan, 2008).	The DBCA database search identified 12 records within 50 km of the Survey Area, including 22 km northeast in 2016 and 10.1 km east in 2001 (DBCA, 2025). The literature recorded 2 individuals 17.5 km south of the Survey Area in 2011 (360 Environmental, 2012).	**Medium** Some nearby and recent records, marginal habitat within the Survey Area.
Megadermatidae	*Macroderma gigas* Ghost Bat	VU	VU	Deep caves and mines, and occasionally rock fissures and boulder piles occurring within a widespread but patchy distribution across northern Australia from the arid Pilbara to the lush rainforests of north Queensland (Baker and Gynther, 2023).	The DBCA database search identified one record within 50 km of the Survey Area, 12.2 km north in 1990 (DBCA, 2025).	**Low** No recent nearby records or suitable habitat within the Survey Area.
Peramelidae	*Isoodon fusciventer* Quenda	P4	-	Sandy soils with dense heathy vegetation (Van Dyck and Strahan, 2008).	The DBCA database search identified ten records within 50 km of the Survey Area, including 22.1 km south in 2014 and 14.3 km south in 2010 (DBCA, 2025).	**Low** No recent nearby records, suitable habitat within the Survey Area.
Potoroidae	*Bettongia penicillata ogilbyi* Brush-tailed Bettong, Woylie	CR	EN	Well-drained soils supporting patchy vegetation thickets, often characterised by the plant genus Gastrolobium. Diurnal rest sites also known from Macrozamia and skirts	The DBCA database search identified two records within 50 km of the Survey Area, both were 22.3 km south in 2005 (DBCA, 2025).	**Low** No recent nearby records, suitable habitat within the Survey Area.

Family	Scientific Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Common-wealth			
				of Xanthorrhoea (Van Dyck, Gynther and Baker, 2013).		
Reptiles						
Elapidae	*Neelaps calonotos* Black-striped Snake	P3	-	Dunes and sandplains vegetated with heaths and eucalypt/banksia woodlands. Restricted to sandy coastal strip near Perth, WA between Mandurah and Cataby, with isolated populations further north near Eneabba and Dongara (Wilson and Swan, 2021).	The DBCA database search identified four records within 50 km of the Survey Area, including 32.5 km southeast in 2012 and 45.7 km southeast in 2007 (DBCA, 2025).	**Low** No recent nearby records, suitable habitat within the Survey Area.
Pythonidae	*Aspidites ramsayi* Woma	P1 (southwest subpop.)	-	Woodlands, heaths, and shrublands, often with spinifex. Shelters mainly in abandoned monitor and mammal burrows and in soil cracks (Wilson and Swan, 2021).	The DBCA database search identified one historical record within 50 km of the Survey Area, 46.1 km east in 1966 (DBCA, 2025).	**Low** One historic record, outside of distribution of the southwest subpopulation.
Scincidae	*Ctenotus gemmula* South-west Jewelled Ctenotus	P3 (Swan Coastal Plain subpop.)	VU	Pale sandplains supporting heaths in association with Banksia or mallee woodlands (Wilson and Swan, 2021).	The DBCA database search identified two records within 50 km of the Survey Area, including 42.8 km southeast in 2012 and 43 km southeast in 2007 (DBCA, 2025).	**Low** No recent nearby records but the taxon is a small and cryptic and the distribution is not well surveyed. Suitable habitat within the Survey Area.
Scincidae	*Ctenotus lancelini* Lancelin Island Ctenotus	VU	VU	Limestone outcrops on Lancelin Island (Wilson and Swan, 2021).	The DBCA database search identified seven records within 50 km of the Survey Area, including 9 km northwest in 2016 and 8.6 km northwest in 2006 (DBCA, 2025).	**Low** Records are associated with a translocation to Favourite Island 2002 - 2004.
Scincidae	*Cyclodomorphus branchialis* Gilled Slender Blue-tongue	VU	-	Semi-arid shrublands on heavy red soils from Irwin River, north to Murchison River, and inland to Mount Magnet (Wilson and Swan, 2021).	The DBCA database search identified one historic record within 50 km of the Survey Area, 23.6 km north in 1999 (DBCA, 2025).	**Low** One historic record, suitable habitat within the Survey Area.
Scincidae	*Egernia stokesii badia* Western Spiny-tailed Skink	VU	EN	Occupies rock crevices and hollow timber in southwest interior of WA and on Dirk Hartog Island, Shark Bay (Wilson and Swan, 2021).	The DBCA database search identified one record within 50 km of the Survey Area, 33.5 km east in 2011 (DBCA, 2025).	**Low** No recent nearby records, limited suitable habitat within the Survey Area.
Scincidae	*Liopholis pulchra longicauda*	VU	VU	L. pulchra longicauda restricted to islands off Jurien Bay and shelters in	The DBCA database search identified 41 records within 50 km	**Low**

Family	Scientific Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Common-wealth			
	Jurien Bay Skink			burrows, beneath rocks and in crevices (Wilson and Swan, 2021)	of the Survey Area, including 6.9 km west in 2011 and 7.5 km west in 2003 (DBCA, 2025).	Records associated with Boullanger Island, Escape Island, Whitlock Island and Favourite Islands off the coast of Jurien Bay.



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