MEMORANDUM	
TO	Dom Watson (Synergy)
FROM	Eco Logical Australia
DATE	February 2020
SUBJECT	Flora and Vegetation Survey – Albany Wind Farm

1. Introduction

1.1 Project background

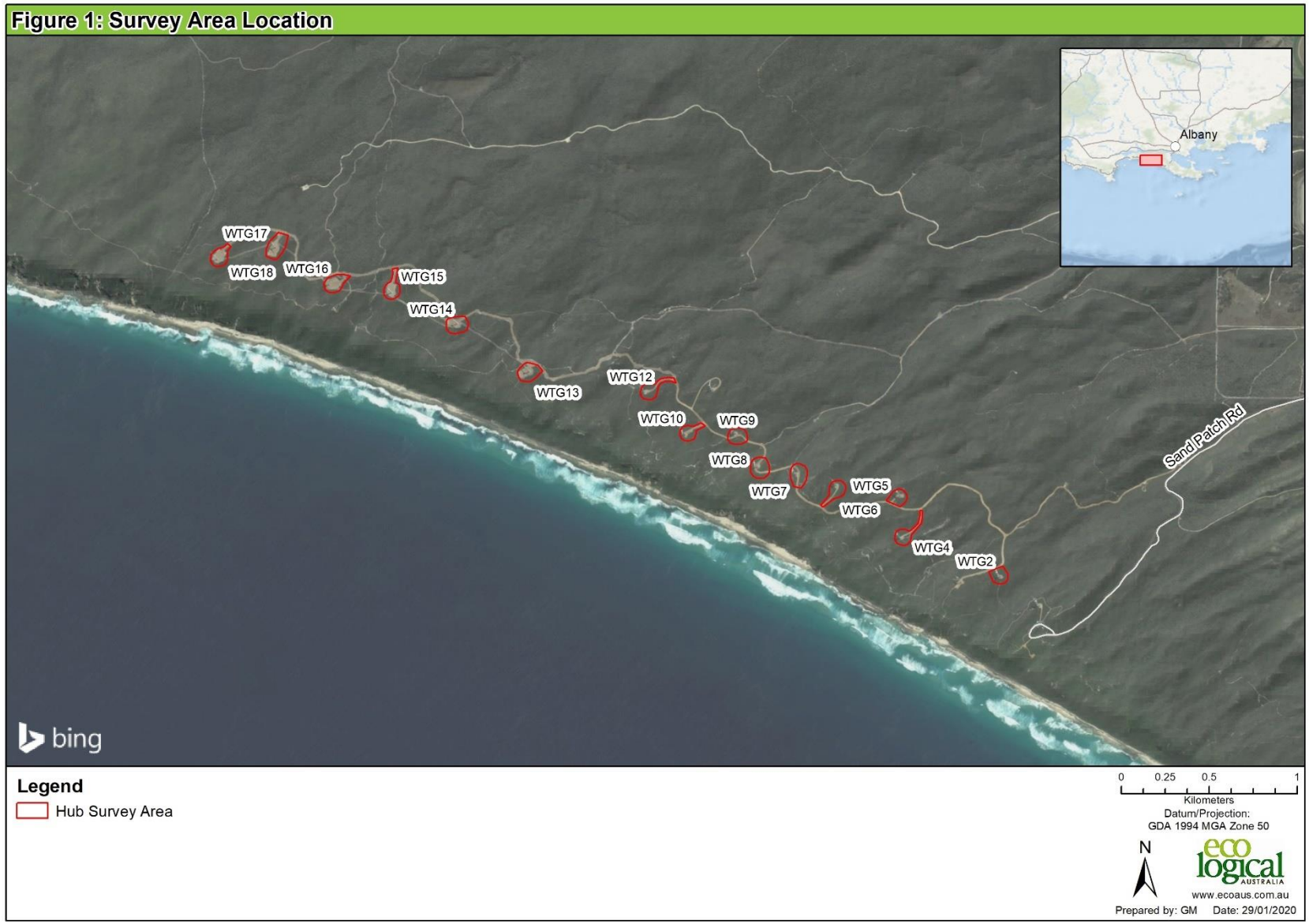
Eco Logical Australia (ELA) understands that Synergy is seeking approval to clear vegetation around 15 existing wind turbines at the Albany Wind Farm (the project area) in order to conduct ongoing maintenance and repair of turbines when required for up to ten years. To support this process, ELA was engaged by Synergy to undertake a Reconnaissance flora and vegetation survey and Targeted flora survey within the project area, the results of which will be included in the Native Vegetation Clearing Permit (NVCP).

The objective of this survey was to undertake the Reconnaissance and Targeted Flora and Vegetation Survey in accordance with the Environmental Protection Authority (EPA) *Technical Guide: Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA 2016).

1.2 Project area location

The project area consists of proposed clearing envelopes around 15 wind turbines located at the Albany Wind Farm, Western Australia (**Figure 1**). This covers a total of 14.33 ha. The project area comprises remnant vegetation, vegetation that has regenerated from historic clearing events, current cleared areas, tracks and paths.

Figure 1: Project area overview



1.3 Desktop Assessment

1.3.1 Climate

The project area is located in the Warren bioregion (Warren 01 subregion [WAR01]) as defined by the Interim Biogeographic Regionalisation for Australia (IBRA; DotEE 2020a). This subregion is described as having a moderate Mediterranean type climate (Hearn et al. 2002).

Based on the nearby Little Grove weather station (station number 9766, rainfall data 1969 – present, located approximately 7.5 km east of the project area), the local area receives, on average, a total of 924.2 millimetres (mm) of rainfall per year with most rainfall occurring during the winter months of June, July and August (131.0 mm, 144.4 mm and 132.0 mm respectively; Bureau of Meteorology [BoM] 2020; **Table 1**). A total of 232.0 mm of rainfall was received in the three months preceding the field survey (August to October), which is less than the average rainfall of 314.0 mm for the same period (BoM 2020).

Table 1: Rainfall data recorded at the Little Grove weather station (9766) 12 months prior to the field survey compared to the long-term average (BoM 2020)

Month	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Total monthly rainfall 2018-2019 (mm)	32.4	25.2	17.2	2.6	51.2	58.6	43.4	99.0	145.2	127.8	44.0	60.2	706.8
Average monthly rainfall 1969-current	52.1	27.3	25.8	21.0	35.3	66.4	106.9	131.0	144.4	132.0	105.2	76.8	924.2

1.3.2 Landform, topography and soils

The Warren bioregion broadly comprises dissected undulating country of the Leeuwin Complex and Albany Orogen with loamy soils supporting Karri forest, laterites supporting Jarrah-Marri forest, leached sandy soils in depressions and plains supporting paperbark/sedge swamps, and Holocene marine dunes with *Agonis flexuosa* and Banksia woodlands and heaths (Hearn et al. 2002).

1.3.3 Regional vegetation

1.3.3.1 IBRA subregion

IBRA divides Western Australia into 26 biogeographic regions and 53 subregions based on dominant landscape characteristics of climate, lithology, geology, landform and vegetation (DotEE 2020a). The Warren subregion is characterised by 'Jarrah-Marri forest on laterite gravels in the west with Bullich and Blackbutt in valleys grading to Wandoo – Marri woodlands on clayey soils in the east. Extensive but localised sand sheets with low *Banksia* woodlands occur throughout, with heath being found on granite outcroppings particularly in northern and eastern extents (Williams and Mitchell 2001).

1.3.3.2 Vegetation associations and Pre-European Vegetation Extent

Vegetation type and extent have been mapped at a regional scale by Beard (1979) who categorised vegetation into broad vegetation associations. Based on this mapping at a scale of 1:1,000,000, the Department of Primary Industries and Regional Development (DPIRD; previously Department of Agriculture and Food Western Australia [DAFWA]) has compiled a list of vegetation extent and types across WA (Shepherd et al. 2002).

One vegetation association occurs within the project area, namely *'Torrindup 49 (Shrublands; mixed heath)'.* It is estimated 97.39% pre-European extent of the Torrindup system – 49, remains within the Warren subregion (**Table 2**; Government of Western Australia 2020).

Table 2: Beard (1979) / Shepherd et al. (1980) vegetation associations occurring within project area

Vegetation association	Pre-European extent (ha) (Government of WA 2018)	Current extent (ha) (Government of WA 2018)	Remaining (%)
Torrindup System 49	9,696.96	9,443.73	97.39

The Albany Regional Vegetation Survey (ARVS 2010) has mapped the project area as a mosaic of vegetation units, *Peppermint Low Forest (2), Coastal Heath (3),* and *Coastal Limestone Heath (5)* (**Table 3**).

Table 3: ARVS (2010) vegetation units mapped within the project area

Vegetation Unit	Description	Current extent (ha) within the ARVS area	Current Extent in IUCN I-IV Reserves (ha)	Current Extent in other Crown Reserves (ha)
Peppermint Low Forest (2)	A dense canopy of *Agonis flexuosa* (Peppermint), varying from a closed heath on exposed slopes to a low closed forest in swales with shrub species often sub or co-dominant in exposed areas.	1232	281 (22.8%)	619 (50.2%)
Coastal Heath (3)	Mixed open heath above a low open heath and a mixed sedgeland with *Cyathochaeta equitans* prominent and clumps of *Agonis flexuosa*.	3737	830 (22.2%)	2391 (64.0%)
Coastal Limestone Heath (5)	Heterogeneous group that is restricted to yellow-grey and light grey alkaline sands and limestone soils of the coastal fringe.	1849	740 (40.0%)	782 (42.3%)

1.3.4 Conservation Significant Flora

After assessing the results of the database searches for suitable habitat, 12 conservation significant flora were considered to have the potential to occur within the project area (Table 4, **Appendix A, Appendix B**).

Table 4: Flora species identified in the likelihood assessment as having the potential to occur in the project area

Species			Likelihood of Occurrence
Calectasia cyanea	CR	S1	**Potential** – Suitable habitat Nearest record 0.3 km to the east of the project area
Chordifex abortivus	EN	S3	**Potential** – Suitable habitat Nearest record >10 km from the project area
Caladenia evanescens		P1	**Potential** – Suitable habitat Nearest record >10 km from the project area
Synaphea incurva		P1	**Potential** – Suitable habitat Nearest record 7.5 km to the north-west of the project area
Conospermum quadripetalum		P2	**Potential** – Suitable habitat Nearest record 7.1 km to the east of the project area
Gyrostemon thesioides		P2	**Potential** – Suitable habitat Nearest record 8.3 km to the north-east of the project area
Thelymitra variegata		P2	**Potential** – Suitable habitat Nearest record 8.3 km to the north-east of the project area
Austrostipa mundula		P3	**Potential** – Suitable habitat Nearest record 6.5 km to the east of the project area
Adenanthos x cunninghamii		P4	**Species detected onsite**
Corybas limpidus		P4	**Potential** – Suitable habitat One record 9.3 km to the north-east of the project area however the attributes of this point describes the location as Ledge Beach, Albany. Ledge Beach is 18.5 km east north-east of the project area.
Gahnia sclerioides		P4	**Potential** – Suitable habitat Nearest record 6.3 km to the east of the project area
Kunzea pauciflora		P4	**Potential** – Suitable habitat Nearest record 8.3 km to the north-east of the project area
Thomasia quercifolia		P4	**Species detected onsite**
Thomasia solanacea		P4	**Potential** – Suitable habitat Nearest record 5.3 km to the east of the project area

1.3.5 Conservation Significant Ecological Communities

Environmentally Sensitive Areas (ESAs) are defined in the Environmental Protection (Environmentally Sensitive Areas) Notice 2005 under section 51B of the State *Environmental Protection Act 1986* (EP Act). ESAs include areas declared as World Heritage, included on the Register of the National Estate, defined wetlands, vegetation containing rare (Threatened) flora and Threatened Ecological Communities (TECs).

Priority Ecological Communities (PECs) are vegetation communities that are recognised to be of significance, but do not meet the criteria for a TEC. There are five categories of PECs, none of which are currently protected under legislation.

The project area is located within the DBCA region South Coast (IBRA regions are not congruent with DBCA regions). The DBCA Threatened and Priority Communities database search (DBCA 2020c) identified 79 known occurrences of nine conservation significant ecological communities within a 10 km radius of the project area (**Table 5**). All conservation significant ecological communities are endorsed by the WA Minister/ listed by DBCA. The closest occurrence of a conservation significant ecological community is *Banksia coccinea Shrubland/Eucalyptus staeri/Sheok* Open Woodland PEC (14a), listed as Priority 1, which occurs approximately 3.3 km north of the project area (DBCA 2020c; **Table 5**). There are no known TECs or PECs within the project area itself.

Table 5: Conservation significant ecological communities within 10 km of the project area (DBCA 2019b)

Community name	Community description*	Conservation status[1]	Closest occurrence
Astartea scoparia Swamp Thicket	None available	Priority 1	5.5 km north
Banksia coccinea Shrubland/Eucalyptus staeri/Sheoak Open Woodland	Found on deep white/light grey sand on the lower slopes and valleys, usually occurring just upslope of seasonally wet drainage lines. The community is floristically very diverse and structurally quite variable. Typically *Allocasuarina fraseriana*, *Eucalyptus staeri*, *Banksia attenuata* and *Banksia ilicifolia* are present as emergents or as low open woodland above a Banksia coccinea tall open scrub, mixed open/closed heath, mixed low open heath, mixed sedgeland and open herbland. *Jacksonia spinosa* often forms a distinct stratum above the heathland, dominant heath species are *Melaleuca thymoides*, *Adenanthos cuneatus*, *Leucopogon rubricaulis*, *Phyllota barbata*, *Hypocalymma strictum* and *Leucopogon glabellus*. Common sedges and herbs include *Anarthria scabra*, *Lyginia barbata*, *Schoenus caespititius*, *Anarthria prolifera*, *Anarthria gracilis* and *Cyathochaeta equitans*. The community is highly susceptible to Phytophthora dieback with infestations resulting in greatly reduced floristic and structural diversity. Appears to be restricted to the Albany region.	Priority 1 Endangered (all/or portion in EPBC listed Kwongkan community)	3.3 km north
Banksia littoralis woodland / *Melaleuca incana* Shrubland	None available.	Priority 1	3.8 km east-north-east
Banksia occidentalis/Kunzea clavata shrubland	None available.	Priority 1	5.5km west
Coastal *Melaleuca incana / Taxandria juniperina* Shrubland/Closed Forest	None available.	Priority 1	4.3 km east-north-east
Subtropical and Temperate Coastal Saltmarsh	Consists of the assemblage of plants, animals and micro-organisms associated with saltmarsh in coastal regions of sub-tropical and temperate Australia (south of 23o S latitude). The habitat is coastal areas under tidal influence. In southern	Priority 3(iii) Vulnerable	4 km east-north-east

Community name	Community description*	Conservation status[1]	Closest occurrence
	latitudes saltmarsh are the dominant habitat in the intertidal zone and often occur in association with estuaries. It is typically restricted to the upper intertidal environment, generally between the elevation of the mean high tide, and the mean spring tide. The community consists mainly of salt-tolerant vegetation (halophytes) including: grasses, herbs, reeds, sedges and shrubs. Succulent herbs and grasses generally dominate and vegetation is generally		

* community descriptions sourced from DBCA 2019c

2. Methodology

2.1 Desktop review and likelihood of occurrence

Prior to the field survey, ELA conducted a desktop assessment to gather information on potentially occurring conservation listed flora species within the project area. The following databases were searched:

- Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Search Tool (PMST) for Threatened species and communities listed under the EPBC Act (DotEE 2020b);
- Department of Biodiversity, Conservation and Attractions (DBCA) and Western Australian Museum's NatureMap (DBCA 2007-2019);
- DBCA Threatened and Priority flora database searches for Declared Rare Flora (DRF) listed under the latest WA Wildlife Conservation (Rare Flora) Notice and Priority Flora (DBCA 2019a); and
- DBCA Threatened and Priority ecological communities database searches for Threatened Ecological Communities (TEC) and Priority Ecological Communities (PEC) listed under Federal and State legislation (DBCA 2019b).

A 10 km buffer around the project area was applied for each of the above database searches for flora and vegetation. These buffers were considered suitable based on species assemblages expected to occur within the project area. Conservation listed flora in the database search results were further assessed for using likelihood of occurrence assessment criteria presented in **Appendix A**.

2.2 Field survey

2.2.1 Survey team and timing

The field survey was conducted over five days, from the 25th to the 29th November 2019 by Daniel Marsh (Botanist) and Ellen Hickman (Botanist). The survey team's relevant qualifications, experience and licences are provided in Table 6.

Table 6: Survey team and relevant licences

Name	Qualifications	Relevant Experience	Licenses
Daniel Marsh	BSc. Hons. Biological Sciences	Daniel has experience undertaking flora and vegetation surveys across the Warren bioregion.	Flora scientific collection licence: FB62000074 DRF permit: TFL 14-1920
Dr Ellen Hickman	BSc. Hons. Botany PhD Botany	Ellen has extensive experience undertaking flora and vegetation surveys across the Warren bioregion.	Flora scientific collection licence: SW019763

The Reconnaissance and targeted flora and vegetation survey was conducted in accordance with the EPA *Technical Guidance: Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA 2016). The project area is located in the Warren IBRA. Recommended survey timing for vegetation surveys in the South-West and Interzone is during Spring (September to November). The current survey complied with this recommendation.

2.2.2 Flora and vegetation survey

The desktop assessment, including a review of reports relevant to the project area, aerial imagery and database searches, informed the approximate number of relevés required to describe vegetation communities within the project area. A total of 40 relevés were established across the project area to broadly delineate and characterise vegetation communities. The following data was recorded within each quadrat:

- Site details (site name, site number, observers, date and location);
- Environmental information including landform, soil type and colour, rock outcropping; and
- Biological information including vegetation structure, vegetation condition in accordance with Keighery (1994), degree of disturbance, dominant species present and species percentage cover of each stratum.

A Targeted survey was completed within the project area to identify any conservation significant flora or communities potentially occurring, including:

- Threatened flora or TECs listed under the EPBC Act;
- Threatened (Declared Rare) Flora listed under the latest WA Wildlife Conservation (Rare Flora) Notice under the State *Biodiversity Conservation Act 2016* (BC Act);
- PEC's endorsed by the Western Australian Minister for the Environment; and
- Priority (P) flora recognised by DBCA.

Meandering transects were conducted in order to develop a list of flora species present within the project area, to search for conservation significant flora (including habitat supporting these species) and to record opportunistic introduced flora. Flora species able to be identified in the field were recorded, and voucher specimens of unfamiliar species were collected for later identification. All collections were assigned a unique collecting number. For conservation significant flora species identified in the field, the following was recorded:

- A colour photograph;
- GPS location;
- Population size estimate;
- Location of population boundaries;
- Associated habitat/landscape element;
- Time and date observed;
- Observer details; and
- A voucher specimen suitable for use as a reference specimen (if appropriate to do so for conservation significant flora).

Specimen identification was undertaken by Dr Ellen Hickman and ELA Botanists, Daniel Marsh and Daniel Brassington. Species identification utilised taxonomic literature and keys and where required specimens were confirmed using the Western Australian Herbarium (WAH) reference collection. Suitable material that meets WAH specimen lodgement requirements, such as flowering material and range extensions, will submitted along with Threatened and Priority Report forms to DBCA, as required by conditions of collection licences issued under the BC Act.

A known population of *Calectasia cyanea* (T), located approximately 1 km north-east of turbine 2, was examined at the time of the survey and was recorded flowering. The population consisted of two plants and was easily located.

2.3 Mapping

Following the field survey, vegetation communities were defined and mapped based on dominant flora species recorded in each stratum. Where possible, vegetation communities defined in this survey were aligned with and named according to vegetation units described in the ARVS. Vegetation community boundaries were defined using notes made in the field in conjunction with the use of recent and historical imagery. This was particularly useful for identifying and assessing areas that had been previously cleared for installation of the turbines.

2.4 Survey Limitations

The EPA Technical Guide – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA 2016) recommends including discussion of the constraints and limitations of the survey methods used. Constraints and limitations for the targeted priority flora survey for the study area are summarised in Table 7.

Table 7: Survey limitations

Limitation	Comment
Sources of information	**Not a constraint**. Information available was sufficient for the purposes of the work being undertaken and as such sources of information were not considered a major limitation. For example, the Albany Regional Vegetation Survey and flora and vegetation survey reports for turbines 1, 3 and 11.
Scope of works	**Not a constraint**. The survey requirement of a Reconnaissance Flora and Vegetation and targeted flora survey within the project area in accordance with relevant State and Commonwealth guidance was adequately met.
Completeness and intensity of survey	**Not a constraint**. The study area was surveyed to the satisfaction of the scope and a Reconnaissance Flora and Vegetation and targeted flora survey as per the relevant guidelines. The survey effort was adequately met. The project area was searched for conservation significant species by field staff undertaking transects across the study area spaced approximately 10 m apart on average (**Appendix C**). Where habitat considered suitable for priority flora was present, survey effort was increased. This method provides an accurate assessment and likelihood of conservation significant species for the Warren botanical province.
Timing, weather, season, cycle	**Not a constraint**. The project area is located in the Warren bioregion of Western Australia. Recommended survey timing for this region is 6-8 weeks post wet season (September-November; EPA, 2016). The majority of flora species were flowering at the time of the survey and contained sufficient material for identification at the WA Herbarium. The remaining species were either conspicuous or had sufficient flowering material to exclude threatened and priority flora species considered to have the potential to occur within the project area, the exception being *Corybas limpidus* (P4).
Disturbances	**Not a constraint.** Disturbances within the project area included previously cleared areas, old and current tracks, edge effects and minor weeds. Disturbances did not limit the study.

Limitation	Comment
Resources	**Not a constraint.** The personnel conducting this field survey were both suitably qualified to identify specimens, having previously undertaken numerous flora surveys in the Warren botanical region of Western Australia.
Accessibility/Remoteness	**Not a constraint.** All relevant areas in the study area were accessed and able to be surveyed.

3. Results

3.1 Flora

A total of 155 taxa representing 106 genera and 49 families were recorded within the project area. A complete flora species list is provided in **Appendix D**. Families with the highest number of species included Proteaceae (17 taxa), Fabaceae (16 taxa), Asteraceae (16), Poaceae (8), Cyperaceae (7), Myrtaceae (7), Ericaceae (6) and Dilleniaceae (5). *Banksia* was the best represented genera with seven species recorded, followed by *Hibbertia* (5), *Melaleuca* (5) and *Acacia, Adenanthos*, *Hakea* and *Leucopogon* with each genus having four species recorded.

No flora species listed as Threatened under the EPBC Act or the BC Act were recorded within the project area. Two Priority species, *Adenanthos* x *cunninghamii* (P4) and *Thomasia quercifolia* (P4), listed by DBCA were recorded (Table 8).

Table 8: Priority flora species recorded during the survey

Species name	Conservation Status		Habitat	No. individuals recorded within the survey boundary		
	EPBC Act1	BC Act2/ DBCA3		T6	T7	T8
Adenanthos x cunninghamii		P4	Predominantly recorded mid-slopes in vegetation community LH (ARVS 5)	0	2	0
Thomasia quercifolia		P4	Growing on shallow soils on limestone in vegetation community LH (ARVS 5)	500-1000	0	500-1000

[1]EPBC Act = Flora listed under the *Environment Protection and Biodiversity Conservation Act 1999.*
VU = listed as Vulnerable under the EPBC Act
[2]BC Act = Flora listed under the *Biodiversity Conservation Act 2016.*
P4 = Priority 4: Rare, Near Threatened and other species in need of monitoring.

Large populations of *Thomasia quercifolia* (P4) were recorded at turbines 6 and 8 (Table 8**, Appendix E**). The local abundance and sprawling nature of this species made it difficult to differentiate individual plants within a clump. Populations within the survey boundary were estimated at between 500-1000 plants. The boundaries of these populations extended outside the survey boundary but were not included in population estimates. This species was associated with mosaics of Coastal Heath and Peppermint Low Forest, and Coastal Limestone Heath and Peppermint Low Forest on shallow soils over limestone.

A total of two *Adenanthos x cunninghamii* (P4) plants were recorded within the project area surrounding turbine 7. An additional two plants were recorded just outside the survey boundary. This species was recorded growing on mid-slopes and was associated with vegetation community Coastal Limestone Heath (ARVS 5). No Priority species were recorded at turbines 2, 4, 5, 9, 10, 12, 13, 14, 15, 16, 17 or 18.

Figure 2: *Adenanthos x cunninghamii* (listed as P4 under the BC act) recorded within the project area.

Figure 3: *Thomasia quercifolia* (listed as P4 under the BC act) recorded within the project area.

Twenty-two weed species were recorded within the project area, none of which are listed as a Declared Plant species in Western Australia pursuant to Section 22 of the State *Biosecurity and Agriculture Management Act 2007* (BAM Act; DPIRD 2019) or as a Weed of National Significance (WoNS). All weed species recorded in the project area have been included in DPAWs South Coast Region Impact and Invasiveness ratings and are listed in Table 9. None of these weeds are on the DBCA priority alert list.

Table 9: Ecological impact and invasiveness of weeds recorded within the project area.

Scientific Name	Ecological Impact	Invasiveness
**Avena barbata*	Medium	Moderate
**Bartsia trixago*	Unknown	Rapid
**Brassica tournefortii*	Unknown	Unknown
**Briza maxima*	Low	Moderate
**Centaurium erythraea*	Unknown	Rapid
**Carpobrotus aequilaterus*	Unknown	Moderate

Scientific Name	Ecological Impact	Invasiveness
**Carpobrotus edulis*	Unknown	Moderate
**Catapodium rigidum*	High	Moderate
**Conyza bonariensis*	Unknown	Rapid
**Dittrichia viscosa*	Unknown	Rapid
**Eragrostis curvula*	High	Moderate
**Hypochaeris glabra*	Unknown	Rapid
**Lagurus ovatus*	Low	Rapid
**Lotus angustissimus*	Unknown	Unknown
**Lysimachia arvensis*	Unknown	Rapid
**Orobanche minor*	Unknown	Rapid
**Pelargonium capitatum*	Medium	Rapid
**Plantago lanceolata*	Medium	Unknown
**Psoralea pinnata*	High	Moderate
**Senecio elegans*	Unknown	Rapid
**Sonchus oleraceus*	Unknown	Rapid
**Zantedeschia aethiopica*	High	Moderate

Table adapted from (DPaW 2016

Weeds were more frequent on the edges of cleared areas and tracks, in rehabilitated areas and almost entirely absent from established vegetation.

3.2 Vegetation Communities

A total of five vegetation communities were delineated and mapped within the project area (Table 10**; Appendix F**). Their extents within the project area are listed in **Appendix G**. Three of the five vegetation communities, namely Peppermint Low Forest (2), Coastal Heath (3) and Coastal Limestone Heath (5) were closely aligned with vegetation units defined in the ARVS.

Parts of the project area had been rehabilitated from the original clearing for the installation of the turbines. The floristic composition and structure of these communities did not resemble any vegetation units defined in the ARVS, namely *Eucalyptus angulosa* low mallee woodland (Ea) and Rehabilitated. In areas lining the access track to the turbines, *Eucalyptus angulosa* has established itself along with *Agonis flexuosa* to form a dense canopy over sparse shrubs and sedges (Vegetation community Ea). In other previously cleared areas, regeneration is limited, consisting of sparse understorey vegetation, with low to high densities of weeds. Due to lack of vegetation structure and composition, these areas were defined and mapped as Rehabilitated (R).

No conservation significant ecological communities listed under the EPBC Act, the BC Act or by DBCA occur or were inferred to occur within the project area.

3.3 Vegetation condition

Vegetation condition within the project area ranged from Pristine to Degraded (**Appendix H**) based on the condition scale adapted from Keighery (1994) described in the EPA *Technical Guidance: Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA 2016). Their extents within the project area are listed in **Appendix I.** The majority of intact native vegetation within the survey was considered Pristine. Areas of intact native vegetation were often dissected by walking tracks or old 4WD tracks and as a result were defined as Excellent rather than Pristine. Low densities of weeds were recorded on the edges of cleared and intact vegetation.

In some previously cleared areas, regeneration is limited, consisting of sparse understorey vegetation, with low to high densities of weeds. Small patches of minor erosion were recorded in a number of sloped areas.

Table 10: Vegetation communities recorded within the project area

Image	Vegetation community description	ARVS Equivalent
	**Vegetation community PLF (Peppermint Low Forest)**: *Agonis flexuosa* mid closed forest over *Leucopogon obovatus, Hibbertia furfuracea, Bossiaea linophylla and Rhagodia baccata* tall sparse shrubland over *Lepidosperma squamatum, Lepidosperma gladiatum and Desmocladus flexuosus low sparse sedgeland.*	Low Peppermint Forest (2)
	**Vegetation community CH (Coastal Heath)**: Isolated clumps of *Agonis flexuosa* over *Bossiaea linophylla*, *Hakea florida* and *Leucopogon obovatus* tall open heathland over *Allocasuarina humilis*, *Jacksonia horrida* and *Adenanthos cuneatus* mid open heathland over *Opercularia hispidula* and *Velleia trinervis* low sparse forbland and *Cyathochaeta equitans*, *Lepidosperma squamatum* and *Anarthria prolifera* low sparse sedgeland.	Coastal Heath (3)
	**Vegetation community CLH (Coastal Limestone Heath)**: Isolated clumps of *Agonis flexuosa* over *Bossiaea linophylla*, *Hakea florida, Banksia sessilis and Olearia axillaris* tall open heathland over *Leucopogon obovatus*, *Acacia littorea* and *Acrotriche cordata* mid open heathland over *Opercularia hispidula* and *Platysace compressa* low sparse forbland and *Desmocladus flexuosus* and *Lepidosperma squamatum* low sparse sedgeland.	Coastal Limestone Heath (5)

Image	Vegetation community description	ARVS Equivalent
	**Vegetation community Ea** : *Eucalyptus angulosa* low mallee woodland and *Agonis flexuosa* woodland over *Melaleuca diosmifolia*, *Hibbertia furfuracea* and *Olearia axillaris* tall sparse heathland over *Lepidosperma squamatum*, *Lepidosperma gladiatum* and *Desmocladus flexuosus* low sparse sedgeland.	N/A
	**Vegetation Community R:** Rehabilitated areas with inadequate flora structure and composition to define.	N/A

4. Discussion

ELA undertook a Reconnaissance Flora and Vegetation and Targeted survey around 15 existing wind turbines at the Albany Wind Farm. The field survey was conducted over five days (25th November 2019 and 29th November 2019) by Daniel Marsh (Botanist) and Dr Ellen Hickman (Botanist).

A total of 155 taxa representing 106 genera and 49 families were recorded within the project area. No flora species listed as Threatened under the EPBC Act or the BC Act were recorded within the project area. Two Priority species, *Adenanthos* x *cunninghamii* (P4) and *Thomasia quercifolia* (P4), listed by DBCA were recorded.

Large populations of *Thomasia quercifolia* (P4) were recorded at turbines 6 and 8. Populations within the survey boundary were estimated at between 500-1000 plants as the sprawling nature of this species makes differentiating individual plants difficult. The boundaries of these populations extended outside the survey boundary and were mapped outside the boundary. This species was associated with mosaics of Coastal Heath and Peppermint Low Forest, and Coastal Limestone Heath and Peppermint Low Forest on shallow soils over limestone.

A total of two *Adenanthos x cunninghamii* (P4) plants were recorded within the project area surrounding turbine 7. An additionaltwo plants were recorded just outside the survey boundary. This species was recorded growing on mid-slopes and was associated with vegetation community Coastal Limestone Heath (ARVS 5).

Species that were considered to have the potential to occur within the project area are mostly conspicuous. As a result, it would be expected that the extensive foot-transverse of the project area would have recorded individuals if they were indeed present. One *Thelymitra* sp. and one *Caladenia* sp. recorded during the current survey contained insufficient material (old flowering material) to identify to species level but sufficient material to exclude priority and threatened species that were identified to have the potential to occur within the project area. One *Corybas* sp. recorded had no flowering material at the time of the survey. It was not possible to exclude *Corybas limpidus* (P4), that was identified in the likelihood of occurrence assessment. One record of *Corybas limpidus* (P4), 9.3 km to the north-east of the project area exists however the attributes of this point describes the location as Ledge Beach, Albany. Ledge Beach is 18.5 km east north-east of the project area. *Corybas limpidus* (P4) has been recorded to the east and west of the project area, in similar habitat to what was recorded in the current survey. While unlikely, it was still considered to have the potential to occur within the survey area.

A known population of *Calectasia cyanea* (T), located approximately 1 km north-east of turbine 2, was examined at the time of the survey and was recorded flowering. The population consisted of two plants and was easily located. Considering the conspicuous nature of this species while flowering, the intensity of the survey and the experience level of the botanists conducting the survey, *Calectasia cyanea* (T) is unlikely to occur within the project area.

Five vegetation communities were delineated and mapped within the project area. None of the vegetation communities recorded within the project area were inferred to represent conservation significant ecological communities listed under the EPBC Act, the BC Act or by DBCA. Vegetation communities comprising of remnant vegetation are well reserved.

Vegetation communities defined in this survey, Peppermint Low Forest, Coastal Heath and Coastal Limestone Heath were aligned with and named according to vegetation units defined in the ARVS. The ARVS mapped the project area as a mosaic of vegetation units, *Peppermint Low Forest (2), Coastal Heath (3),* and *Coastal Limestone Heath (5)*. This is consistent with the findings of the current survey.

Peppermint Low Forest (2) is restricted to the coastal dune system where it commonly occurs in swales and flats and is common along the south west coastline. The current extent was estimated at 1232 ha, of which 73% is reserved in either IUCN I-IV or other crown reserves. This vegetation unit forms a mosaic with Coastal Heath (3), Coastal Limestone Heath (5), Coastal *Banksia ilicifolia*/Peppermint Low Woodland (4) and Coastal Yate Woodland (1) (ARVS 2010).

Coastal Heath (3) is restricted to light grey sand on the coastal dune system with extensive areas occurring from Torrindup National Park west to Torbay Inlet. The current extent was estimated at 3737ha, of which 86.2% is reserved in either IUCN I-IV or other crown reserves (ARVS 2010).

Coastal Limestone Heath (5) is described as a heterogenous group that is restricted to limestone soils and yellow-grey and light grey alkaline sands of the coastal fringe. An extensive area of this unit was mapped along the coastal fringe of the wind farm area (Halpern Glick Maunsell 2000) and has been described as common in the consolidated sand dunes in the south western part of Two peoples Bay (Hopkins et al. unpublished). The current extent was estimated at 1849 ha, of which 82.3% is reserved in either IUCN I-IV or other crown reserves (ARVS 2010).

Parts of the project area had been rehabilitated from the original clearing for the installation of the turbines. The floristic composition and structure of these communities did not resemble any of the vegetation units defined in the ARVS. By comparing historical imagery with the vegetation recorded in the field survey, it was evident that regeneration of native vegetation in the original cleared areas has been variable. In areas lining the access track to the turbines, *Eucalyptus angulosa* has established itself along with *Agonis flexuosa* to form a dense canopy over sparse shrubs and sedges. This vegetation community does not resemble any vegetation units defined in the ARVS and is likely a result of increased runoff from to the track. In other previously cleared areas, regeneration is limited, consisting of sparse understorey vegetation, with low to high densities of weeds. The reason for the variability in regeneration is unclear but could be due to soil depth or topography. Small patches of minor erosion were recorded in a number of sloped areas.

Weeds were predominantly recorded in rehabilitated areas. DBCA prioritises early detection and rapid response to new infestations and introductions of all weed species, populations that are still small enough for eradication to be achieved and high impact, rapidly-moderately invasive species that are impacting high conservation value conservation assets (DBCA 2020). While weeds recorded during the current survey do appear to be impacting the conservation values of remnant vegetation in the area at this point, the populations of these invasive species are considered small enough to achieve eradication.

For the purposes of a Reconnaissance and targeted flora and vegetation survey, adequate data was collected to define and assess the presence, extent and significance of flora and vegetation communities within the project area. Taxa recorded are generally widespread throughout the region and the percentage impact to pre-European vegetation associations and complexes is low.

5. References

Beard, J. S. 1981. *Swan, 1:1 000,000 vegetation series: Explanatory notes to sheet 7, the vegetation of the Swan*. Nedlands, W.A.: University of Western Australia

Bureau of Meteorology (BoM). 2020. Climate Data Online: Little Grove (9766). Available: http://www.bom.gov.au/climate/data/?ref=ftr. Accessed December 2019.

Department of Biodiversity, Conservation and Attractions (DBCA). 2007 - 2019. *NatureMap*. Department of Parks and Wildlife and WA Museum. Accessed November 2019. Available: https://naturemap.dpaw.wa.gov.au/

Department of Parks and Wildlife (DPaW). 2016. South Coast Impact and Invasiveness Ratings. Accessed January 2020. Available from: https://www.dpaw.wa.gov.au/plants-and-animals/plants/weeds/156-how-does-dpaw-manage-weeds

Department of Biodiversity, Conservation and Attractions (DBCA). 2019a. *Threatened and Priority Flora database search*. Department of Biodiversity, Conservation and Attractions, Perth.

Department of Biodiversity, Conservation and Attractions (DBCA). 2019b. *Threatened and Priority Ecological Communities database search*. Department of Biodiversity, Conservation and Attractions, Perth.

Department of Biodiversity, Conservation and Attractions (DBCA). 2019c. *Priority Ecological Communities for Western Australia Version 28.* Available from: https://www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/wa-s-threatened-ecological-communities

Department of the Environment and Energy (DotEE). 2020a. *Australia's bioregions (IBRA).* Available from: https://www.environment.gov.au/land/nrs/science/ibra.

Department of the Environment and Energy (DotEE). 2020b. *EPBC Protected Matters Search Tool (PMST).* Available from: http://www.environment.gov.au/epbc/pmst/

Department of Primary Industries and Regional Development (DPIRD). 2019. *Soil-landscape systems mapping of Western Australia, version 5.* Department of Agriculture and Food Western Australia, Perth.

Environmental Protection Authority (EPA). 2016. *Technical Guidance: Flora and Vegetation Surveys for Environmental Impact Assessment*. Perth, Western Australia.

Government of Western Australia. 2019. *Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report).* Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions.

Halpern Glick Maunsell. 2000. *Albany WindFarm Feasibility Study*, report prepared for Western Power Corporation, Perth.

Hopkins, A.J.M, Williams, A.A.E. and Harvey, J.M. unpublished, *Vegetation descriptions for Two Peoples Bay Nature Reserve*, Department of Environment and Conservation.

Keighery, B. J. 1994. Bushland Plant Survey: A *guide to plant community survey for the community.* Wildflower Society of Western Australia, Nedlands.

Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. 2002. *Native Vegetation in Western Australia – Extent, Type and Status.* Resource Management Technical Report 249, Department of Agriculture, Western Australia.

Hearn, R., Williams, W., Comer, S. 2002. *Warren (WAR – Warren).* In: A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002. Available from: https://www.dpaw.wa.gov.au/images/documents/about/science/projects/waaudit/warren_p637-655.pdf

Williams, K., Mitchell, D. 2001. "*Warren (WAR) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002*. The Department of Conservation and Land Management.

Appendix A Likelihood of occurrence assessment criteria

Likelihood rating	Criteria
Recorded	The species has previously been recorded within project area from DBCA database search results and/or from previous surveys of the project area, and/or the species has been confirmed through a current vouchered specimen at WA Herbarium.
Potential	The species has not previously been recorded from within the project area. However, (one or more criteria requires to be met): • targeted surveys may locate the species based on records occurring in proximity to the project area and suitable habitat occurring in the project area • the project area has been assessed as having potentially suitable habitat • the species is known to be cryptic and may not have been detected despite extensive surveys
Unlikely	The species has been recorded locally through DBCA database searches. However, it has not been recorded within the project area and • it is unlikely to occur due to the site lacking critical habitat, having at best marginally suitable habitat, and/or being severely degraded • it is unlikely to occur due to few historic record/s and no other current collections in the local area. The species has been recorded within the bioregion based on literature review but has not been recorded locally or within the project area through DBCA database searches. • The species has not been recorded in the project area despite adequate survey efforts, such as a standardised methodology or targeted searching within potentially suitable habitat.

Appendix B Flora likelihood of occurrence assessment

Family	Species	Conservation Status		Source[4]	Habitat	Suitable Habitat Present	Flowering Period	Flowering Y/N	Likelihood of occurrence
		EPBC Act[1]	BC Act[2]/ DBCA[3]						
Asparagaceae	*Thysanotus isantherus*		P4	Naturemap, WA Herb	Sand or loam over laterite or granite	N	Nov-Dec	Y	**Unlikely** - No suitable habitat on site.
Brassicaceae	*Lepidium pseudotasmanicum*		P4	Naturemap	Dark loamy clay on slightly saline, seasonally wet flats, loam over granite, alkaline soil	N	Feb or Dec	N	**Unlikely** - No suitable habitat on site.
Cyperaceae	*Gahnia sclerioides*		P4	Naturemap, TPFL, WA Herb	Dark grey sand, middle slope of coastal hills. Loam, sandy soils. Moist shaded situations.	Y	Unknown	NA	**Potential** – Suitable habitat Nearest record 6.3km to the east of the project area
Cyperaceae	*Schoenus sp. Grassy*		P2	Naturemap	Black silt, moist clay or sandy loams on granite, swamps.	N	Unknown	NA	**Unlikely** - No suitable habitat on site.
Dasypogonaceae	*Calectasia cyanea*	CR	S1	Naturemap, PMST, TPFL, WA Herb	White, grey or yellow sand, gravel on limestone.	Y	Jun-Oct	Y*	**Potential** – Suitable habitat Nearest record 0.3km to the east of the project area
Droseraceae	*Drosera fimbriata*		P4	Naturemap, WA Herb	White sand on granite.	N	Sept-Oct	N	**Unlikely** - No suitable habitat on site.
Droseraceae	*Drosera paleacea*		P1	Naturemap, WA Herb	White sand, sandy clay on flat ground, wetlands.	N	Sept-Dec or Jan	Y	**Unlikely** - No suitable habitat on site.
Ericaceae	*Andersonia* sp. Jamesii (J. Liddelow 84)		P4	TPFL, WA Herb	Grey sand, clay, laterite in Eucalyptus and Banksia woodlands.	N	Unknown	NA	**Unlikely** - No suitable habitat on site.
Ericaceae	*Andersonia* sp. Mitchell River		P3	Naturemap	Grey sand over laterite or granite. Usually in Eucalyptus and Banksia woodlands.	N	Jen-Sept	N	**Unlikely** - No suitable habitat on site.

Family	Species	Conservation Status		Source[4]	Habitat	Suitable Habitat Present	Flowering Period	Flowering Y/N	Likelihood of occurrence
		EPBC Act[1]	BC Act[2]/ DBCA[3]						
	(B.G. Hammersley 925)								
Ericaceae	*Leucopogon alternifolius*		P3	Naturemap, WA Herb	Grey/white sand. Swampy areas, seasonally wet areas.	N	Aug-Dec	Y	**Unlikely** - No suitable habitat on site.
Ericaceae	*Leucopogon bracteolaris*		P2	Naturemap	Stony sand, gravelly loam predominantly recorded in Eucalyptus woodland.	N	Feb or May or Jul or Oct	N	**Unlikely** - No suitable habitat on site.
Ericaceae	*Leucopogon cymbiformis*		P2	Naturemap, WA Herb	White/grey or yellow sand, lateritic gravelly soils. Sandplains, wet flats, foothills. Predominantly recorded in *Eucalyptus marginata* woodlands.	N	Jul-Nov or Feb-Mar	Y	**Unlikely** - No suitable habitat on site.
Ericaceae	*Lysinema lasianthum*		P4	Naturemap, TPFL, WA Herb	Swamps, seasonally wet areas.	N	Jul-Nov or Feb-Mar	N	**Unlikely** - No suitable habitat on site.
Ericaceae	*Sphenotoma drummondii*	EN	S2	PMST	Stony or shallow soils over granite or quartzite. Steep rocky slopes, crevices of rocks.	N	Sept-Dec	Y	**Unlikely** - No suitable habitat on site.
Fabaceae	*Acacia ataxiphylla* subsp. *ataxiphylla*		P3	Naturemap, WA Herb	Gravelly clay loam, white/grey sand. Flats, roadsides. Recorded in *Eucalyptus marginata* or *Eucalyptus marginata* woodlands.	N	Nov-Dec or Jan	Y	**Unlikely** - No suitable habitat on site.
Fabaceae	*Acacia prismifolia*		X	Naturemap, WA Herb	Sandy loam, gravelly, quartz in *Leptospermum erubsescens*/*Calothamnus quadrifidus* shrublands.	N	N/A	N/A	**Unlikely** - No suitable habitat on site.

Family	Species	Conservation Status		Source[4]	Habitat	Suitable Habitat Present	Flowering Period	Flowering Y/N	Likelihood of occurrence
		EPBC Act[1]	BC Act[2]/ DBCA[3]						
Fabaceae	*Chorizema carinatum*		P3	Naturemap	Sand, sandy clay. Predominantly recorded in Eucalyptus woodland and Eucalyptus mallee heath.	N	Oct-Dec	Y	**Unlikely** - No suitable habitat on site.
Fabaceae	*Kennedia glabrata*	VU	S3	PMST	Soil pockets, sandy soils. Granite outcrops.	N	Aug-Nov	Y	**Unlikely** - No suitable habitat on site.
Gyrostemonaceae	*Gyrostemon thesioides*		P2	Naturemap, WA Herb	Sand over limestone. Consolidated coastal dunes	Y	Nov-Dec or Jan	Y	**Potential** – Suitable habitat Nearest record 8.3km to the north-east of the project area
Haloragaceae	*Gonocarpus pusillus*		P4	Naturemap	Grey sandy clay. Winter-wet swamps	N	Nov-Dec	Y	**Unlikely** - No suitable habitat on site.
Haloragaceae	*Gonocarpus simplex*		P4	Naturemap, TPFL, WA Herb	Peaty sand. Swamps, seasonally inundated areas.	N	Nov-Dec	Y	**Unlikely** - No suitable habitat on site.
Haemodoraceae	*Conostylis misera*	EN	S3	Naturemap, PMST	White or grey sand, sandy loam. Eucalyptus marginata woodlands, shrublands and Pericalymma ellipticum dominated heath. Winter-wet flats.	N	Oct-Nov	Y	**Unlikely** - No suitable habitat on site.
Hemerocallidaceae	*Agrostocrinum scabrum* subsp. *littorale*		P2	Naturemap, WA Herb	Shallow granite loams. Coastal slopes.	N	Oct-Nov	Y	**Unlikely** - No suitable habitat on site.
Juncaceae	*Juncus meianthus*		P3	Naturemap, TPFL, WA Herb	Black sand, sandy clay. Creeks, seepage areas.	N	Nov-Dec or Jan	Y	**Unlikely** - No suitable habitat on site.
Malvaceae	*Thomasia multiflora*		P1	Naturemap, WA Herb	Black sand. Seasonally wet areas, granite outcrops.	N	Sept-Oct	N	**Unlikely** - No suitable habitat on site.

Family	Species	Conservation Status		Source[4]	Habitat	Suitable Habitat Present	Flowering Period	Flowering Y/N	Likelihood of occurrence
		EPBC Act[1]	BC Act[2]/ DBCA[3]						
Malvaceae	*Thomasia quercifolia*		P4	Naturemap, TPFL, WA Herb	Coastal heath on secondary limestone	Y	Sept-Oct	Y	Species detected onsite
Malvaceae	*Thomasia solanacea*		P4	Naturemap, WA Herb	Alluvium, sand over limestone, rocky loam. Coastal areas. Coastal shrublands, peppermint woodlands.	Y	Sept-Dec	Y	**Potential** – Suitable habitat Nearest record 5.3km to the east of the project area
Myrtaceae	*Kunzea pauciflora*		P4	Naturemap, WA Herb	Gravelly sandy or loamy soils over limestone, sandstone or spongolite. Hillsides, coastal slopes.	Y	Aug to Nov	Y	**Potential** – Suitable habitat Nearest record 8.3km to the north-east of the project area
Myrtaceae	*Verticordia endlicheriana* var. *angustifolia*		P3	Naturemap	Sandy clay. Granite outcrops.	N	Oct-Nov	Y	**Unlikely** - No suitable habitat on site.
Orchidaceae	*Caladenia evanescens*		P1	Naturemap	Sand. Consolidated sand dunes. Amongst coastal heath.	Y	Nov	Y	**Potential** – Suitable habitat Nearest record >10km from the project area
Orchidaceae	*Caladenia granitora*	EN	S2	PMST	Shallow soil crevices on granite. Coastal areas.	N	Oct-Nov	Y	**Unlikely** - No suitable habitat on site.
Orchidaceae	*Caladenia harringtoniae*	VU	S3	Naturemap, PMST	Sandy loam. Winter-wet flats, margins of lakes, creeklines, granite outcrops.	N	Oct-Nov	Y	**Unlikely** - No suitable habitat on site.
Orchidaceae	*Corybas limpidus*		P4	Naturemap, WA Herb	Sand. coastal heath, *Agonis flexuosa* woodlands, shrublands. Coastal dunes.	Y	Aug-Sept	N	**Potential** – Suitable habitat One record 9.3km to the north-east of the project area however the attributes of this point describes the location as Ledge Beach, Albany. Ledge Beach is 18.5km east north-east of the project area.

Family	Species	Conservation Status		Source[4]	Habitat	Suitable Habitat Present	Flowering Period	Flowering Y/N	Likelihood of occurrence
		EPBC Act[1]	BC Act[2]/ DBCA[3]						
Orchidaceae	*Diuris drummondii*	VU	S3	PMST	Low-lying depressions, swamps.	N	Nov-Dec or Jan	Y	**Unlikely** - No suitable habitat on site.
Orchidaceae	*Drakaea micrantha*	VU	S2	PMST	White-grey sand in *Eucalyptus marginata* or Banksia woodlands	N	Sept-Oct	N	**Unlikely** - No suitable habitat on site.
Orchidaceae	*Microtis pulchella*		P4	Naturemap, WA Herb	Peaty sand. Winter-wet swamps.	N	Nov-Dec or Jan	Y	**Unlikely** - No suitable habitat on site.
Orchidaceae	*Microtis quadrata*		P4	Naturemap	Sand, clay, loam, peat. Swamp	N	Unknown	NA	**Unlikely** - No suitable habitat on site.
Orchidaceae	*Prasophyllum paulinae*		P1	Naturemap, WA Herb	Known only from a degraded area in a complex of cleared swamps to the west of Albany. The species grows among grasses and herbs in black, peaty, alkaline soil.	N	Sept-Nov	Y	**Unlikely** - No suitable habitat on site.
Orchidaceae	*Thelymitra variegata*		P2	Naturemap, WA Herb	Sandy clay, sand, laterite. Usually in association with *Eucalyptus marginata* or *Allocasuarina* sp	Y	Jun-Sept	N	**Potential** – Suitable habitat Nearest record 8.3km to the north-east of the project area
Pannariaceae	*Degelia flabellata*		P2	TPFL, WA Herb	Information not available	N/A	N/A	N/A	Lichen species, no lichen found during the survey.
Poaceae	*Austrostipa mundula*		P3	Naturemap, WA Herb	Sandy to clay loams and limestone in grassland, heathland, shrubland and mallee.	Y		N	**Potential** – Suitable habitat Nearest record 6.5km to the east of the project area
Proteaceae	*Adenanthos x cunninghamii*		P4	Naturemap, TPFL, WA Herb	Grey sand. Coastal dunes & sandplains.	Y	Mar or Sept- Oct	N	**Species detected onsite**

Family	Species	Conservation Status		Source[4]	Habitat	Suitable Habitat Present	Flowering Period	Flowering Y/N	Likelihood of occurrence
		EPBC Act[1]	BC Act[2]/ DBCA[3]						
Proteaceae	*Banksia brownii*	EN	S1	Naturemap, PMST, TPFL, WA Herb	Sand over laterite, gravel, loam over granite. In gullies.	N	Mar-Jul	N	**Unlikely** - No suitable habitat on site.
Proteaceae	*Banksia goodii*	VU	S3	Naturemap, PMST, WA Herb	Shallow white to grey sand over laterite, in low open forest or low woodland of Jarrah and Sheoak.	N	May, Nov	Y	**Unlikely** - No suitable habitat on site.
Proteaceae	*Banksia seneciifolia*		P4	Naturemap, WA Herb	Sandy clay loam, often on laterite. Rocky hillslopes. Mallee heath.	N	Jun or Aug	N	**Unlikely** - No suitable habitat on site.
Proteaceae	*Banksia serra*		P4	Naturemap, WA Herb	Gravel, sand or clay loam over laterite. Hillslopes.	N	Jul-Sept	N	**Unlikely** - No suitable habitat on site.
Proteaceae	*Banksia verticillata*	VU	S1	Naturemap, PMST, WA Herb	Sandy loam. On or beside granite outcrops.	N	Jan-Apr	N	**Unlikely** - No suitable habitat on site.
Proteaceae	*Conospermum quadripetalum*		P2	Naturemap, WA Herb	Sandy clay, grey sand. Flats behind coastal hills. Open peppermint woodland over heath, open scrub, often in association with *Dampiera linearis*.	Y	Sept-Nov	Y	**Potential** – Suitable habitat Nearest record 7.1km to the east of the project area
Proteaceae	*Conospermum spectabile*		P2	Naturemap, TPFL	Pink sand on sandstone, white lateritic clayey sand, sandy clay loam. Recorded in *Eucalyptus marginata* woodlands, mallee/heath and shrublands.	N	Oct-Nov	Y	**Unlikely** - No suitable habitat on site.
Proteaceae	*Isopogon buxifolius* var. *buxifolius*		P2	Naturemap, WA Herb	Grey sand. Swampy areas.	N	Jul-Dec	Y	**Unlikely** - No suitable habitat on site.

Family	Species	Conservation Status		Source[4]	Habitat	Suitable Habitat Present	Flowering Period	Flowering Y/N	Likelihood of occurrence
		EPBC Act[1]	BC Act[2]/ DBCA[3]						
Proteaceae	*Isopogon uncinatus*	EN	S1	Naturemap, PMST, TPFL, WA Herb	Loam or sand on granite, peaty sand. Swampy depressions, hillslopes.	N	Oct-Nov	Y	**Unlikely** - No suitable habitat on site.
Proteaceae	*Synaphea incurva*		P1	Naturemap, TPFL, WA Herb	Gravelly loam or sand on laterite. Sandy soils. Slopes.	Y	Sept-Nov	Y	**Potential** – Suitable habitat Nearest record 7.5km to the north-west of the project area
Proteaceae	*Synaphea preissii*		P3	Naturemap, WA Herb	Sand on granite or laterite, gravelly loam, sandy loam flats.	N	Jul-Nov or Feb-Mar	N	**Unlikely** - No suitable habitat on site.
Restionaceae	*Chordifex abortivus*	EN	S3	PMST	Sand. Low rises and undulating areas.	N	Sep-Oct	N	**Potential** – Suitable habitat Nearest record >10km from the project area
Rhamnaceae	*Spyridium spadiceum*		P4	Naturemap	Sand or gravelly loam. Granitic hills.	N	Aug-Dec or Jan-Feb	Y	**Unlikely** - No suitable habitat on site.
Rutaceae	*Boronia crassipes*		P3	Naturemap, WA Herb	Sand, peaty sand. Winter-wet swamps, creeklines.	N	Aug-Sept	N	**Unlikely** - No suitable habitat on site.
Stylidiaceae	*Stylidium falcatum*		P1	Naturemap, WA Herb	Sand, gravelly clay loam. Plains, lateritic ridges.	N	Oct-Nov	Y	**Unlikely** - No suitable habitat on site.

* A known population of this species was inspected during the survey (November) and was observed to be flowering.

[1]EPBC Act = Flora listed under the *Environment Protection and Biodiversity Conservation Act 1999*

EN = listed as Endangered under the EPBC Act

[2]BC Act = Flora listed under the State *Biodiversity Conservation Act 2016*.

S1 = Schedule 1: Flora that are considered likely to become extinct or rare, as critically endangered flora

S2 = Schedule 2: Flora that are considered likely to become extinct or rare, as endangered flora

S3 = Schedule 3: Flora that are considered likely to become extinct or rare, as vulnerable flora

[3]DBCA = Flora listed as Priority species under the DBCA

P1 = Priority 1: Poorly known taxa

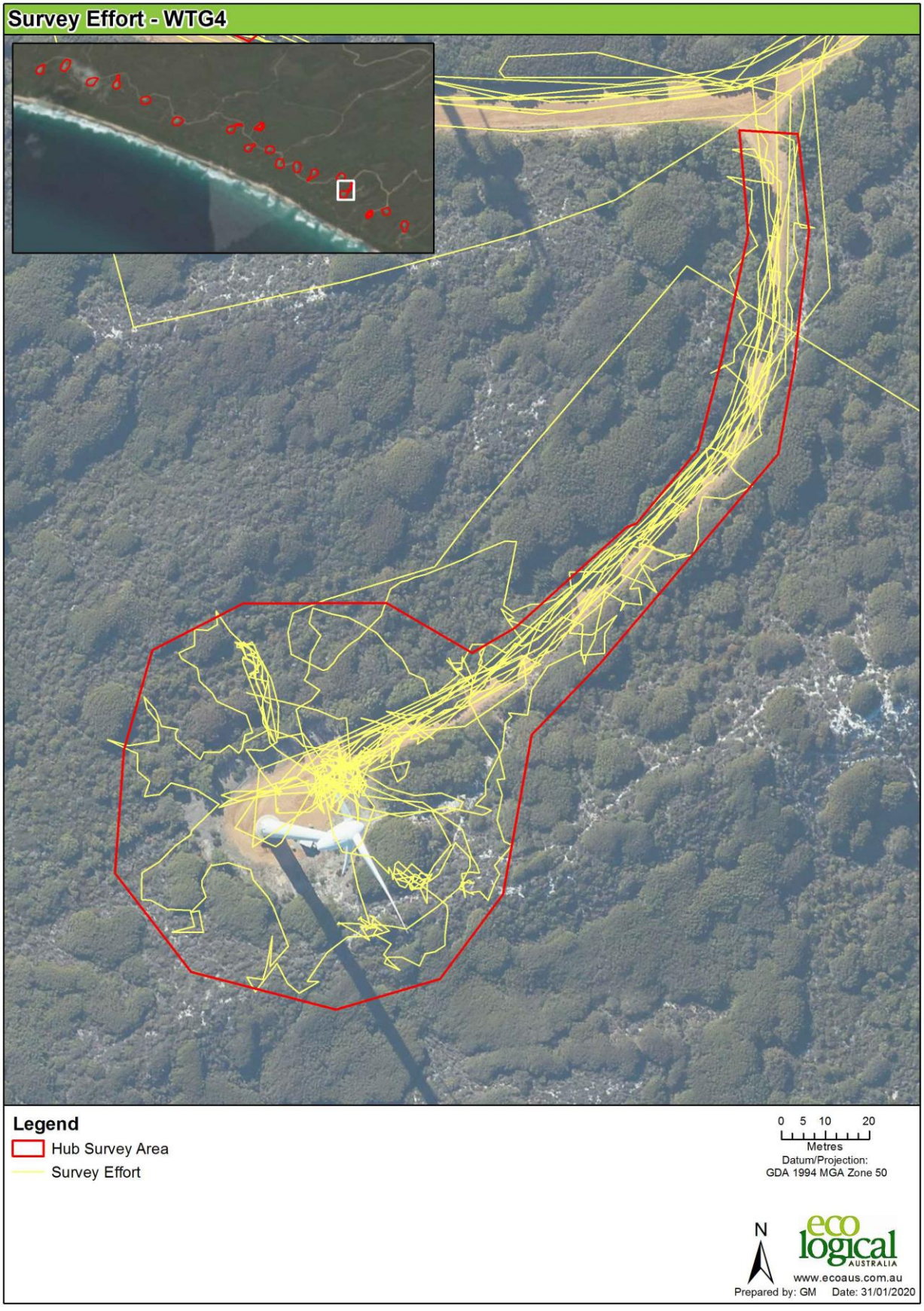
P2 = Priority 2: Poorly known taxa

P3 = Priority 3: Poorly known taxa

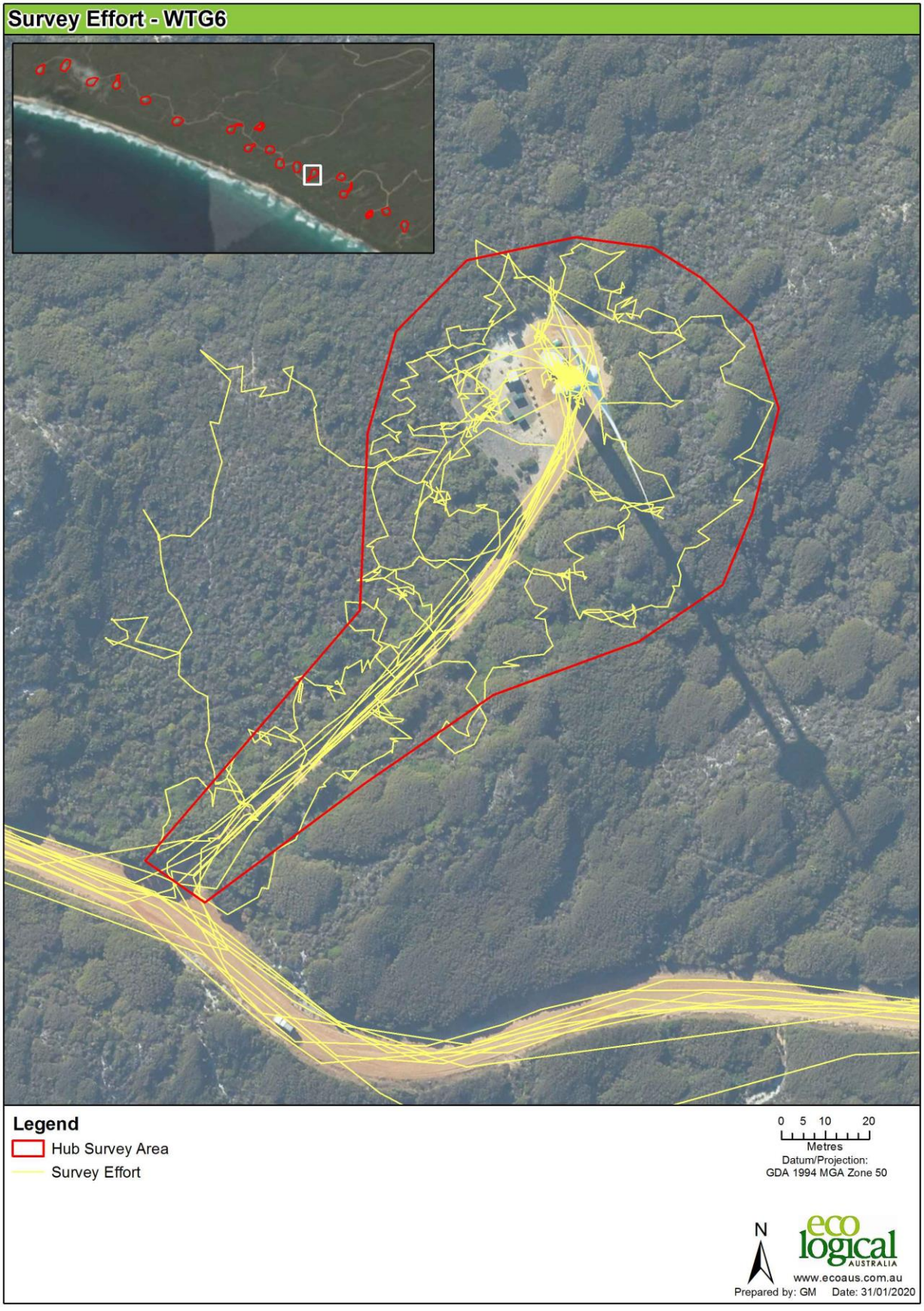
P4 = Priority 4: Rare, Near Threatened and other species in need of monitoring.

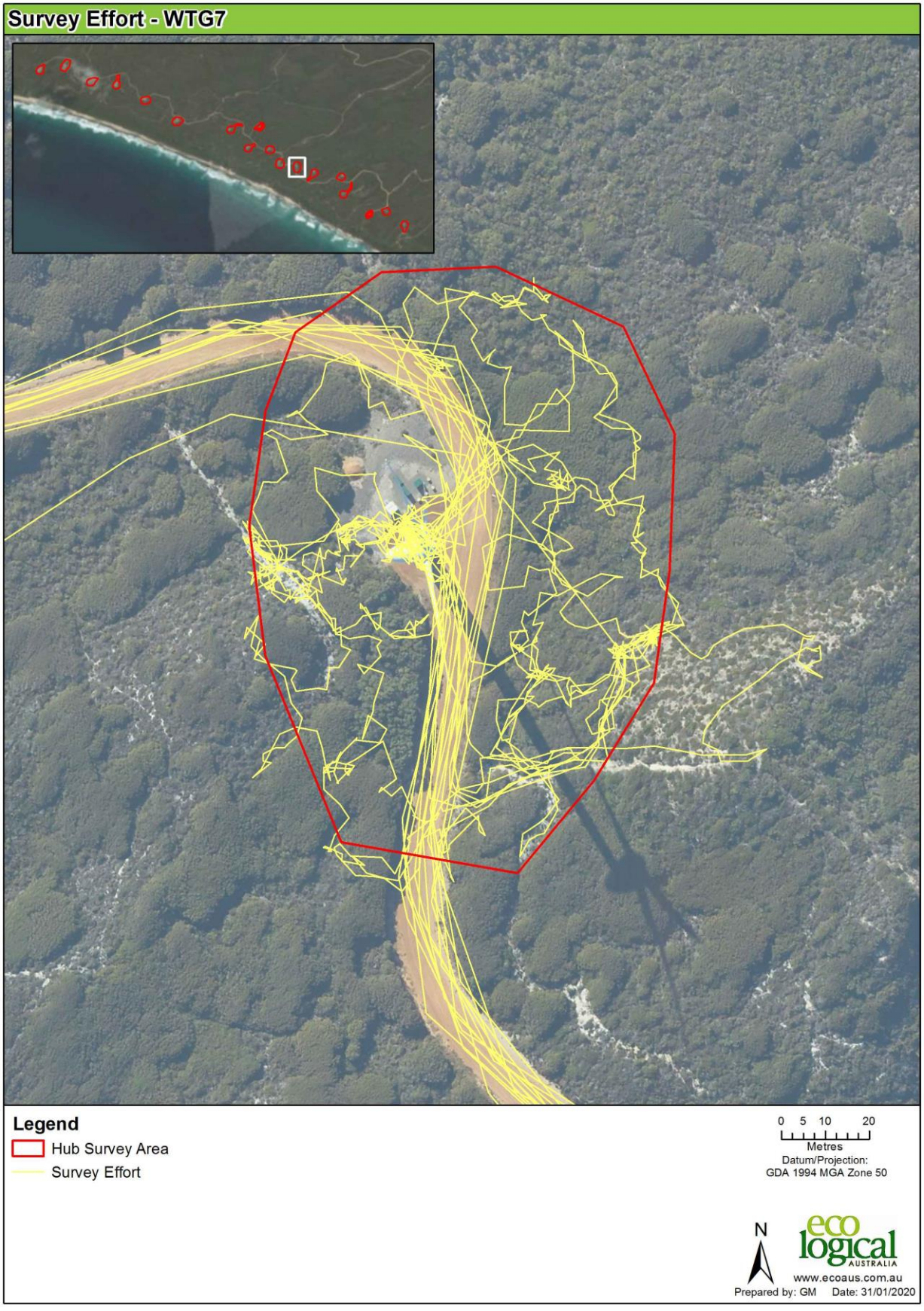
[4]TPFL = Department of Biodiversity, Conservation and Attractions Threatened and Priority Flora database search (DBCA 2019a); WA Herb = Western Australian Herbarium Specimen database for Threatened and Priority flora species (DBCA 2019a); NatureMap = NatureMap database search (DBCA 2007-2019); PMST = EPBC Act Protected Matters Search Tool report (DoEE 2019

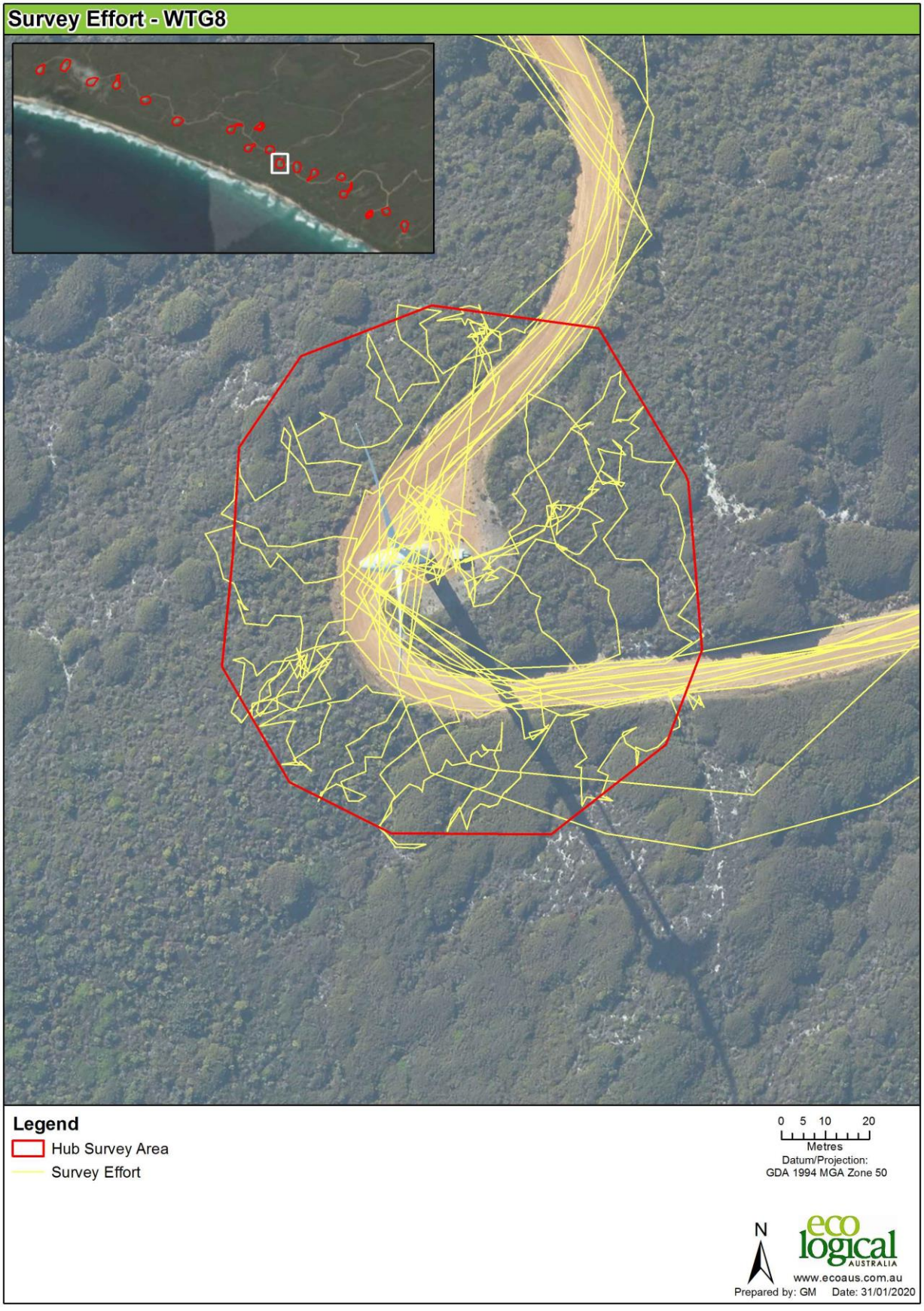
Appendix C Survey Effort

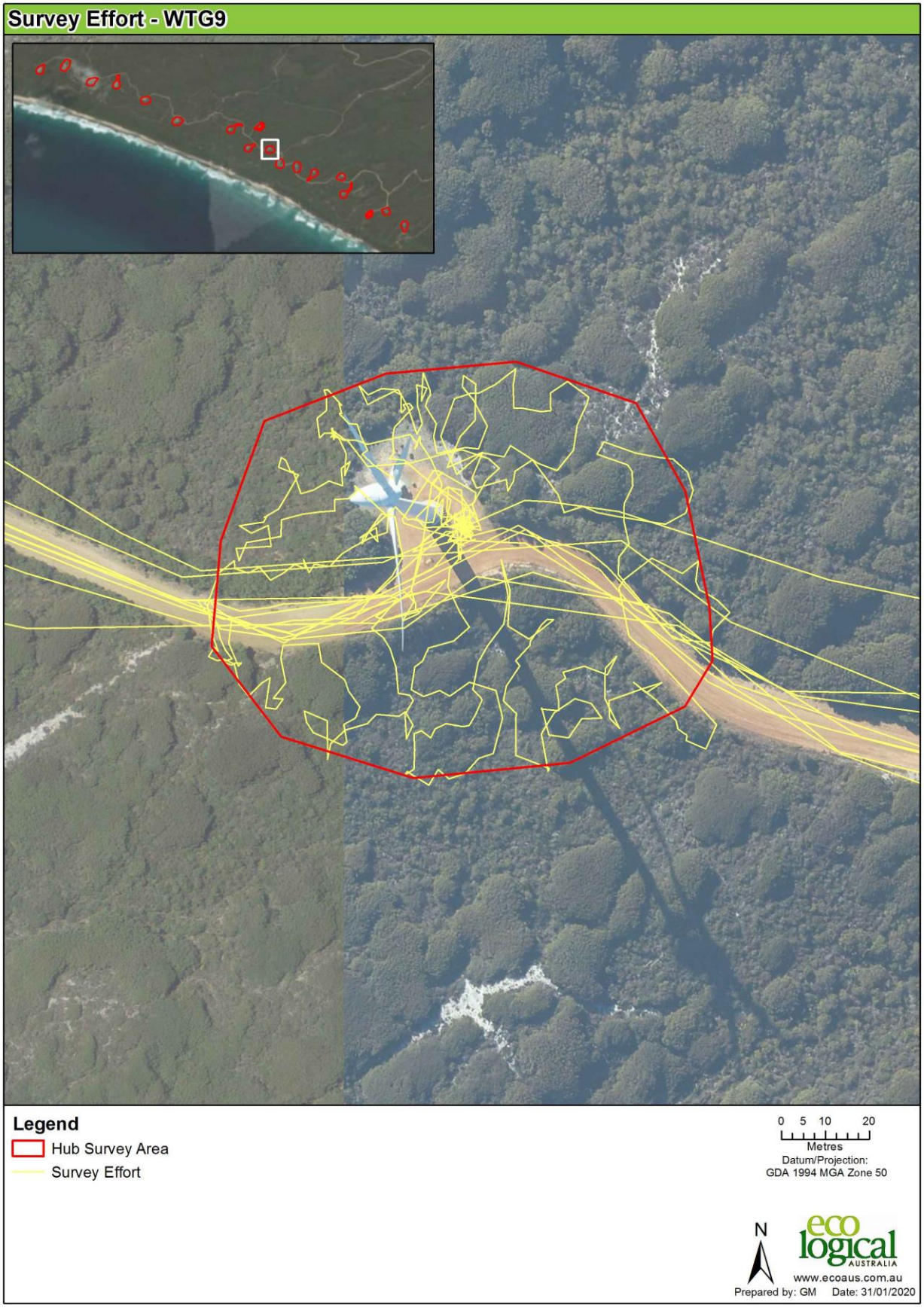

Survey Effort - WTG4
Legend
Hub Survey Area
Survey Effort
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 31/01/2020

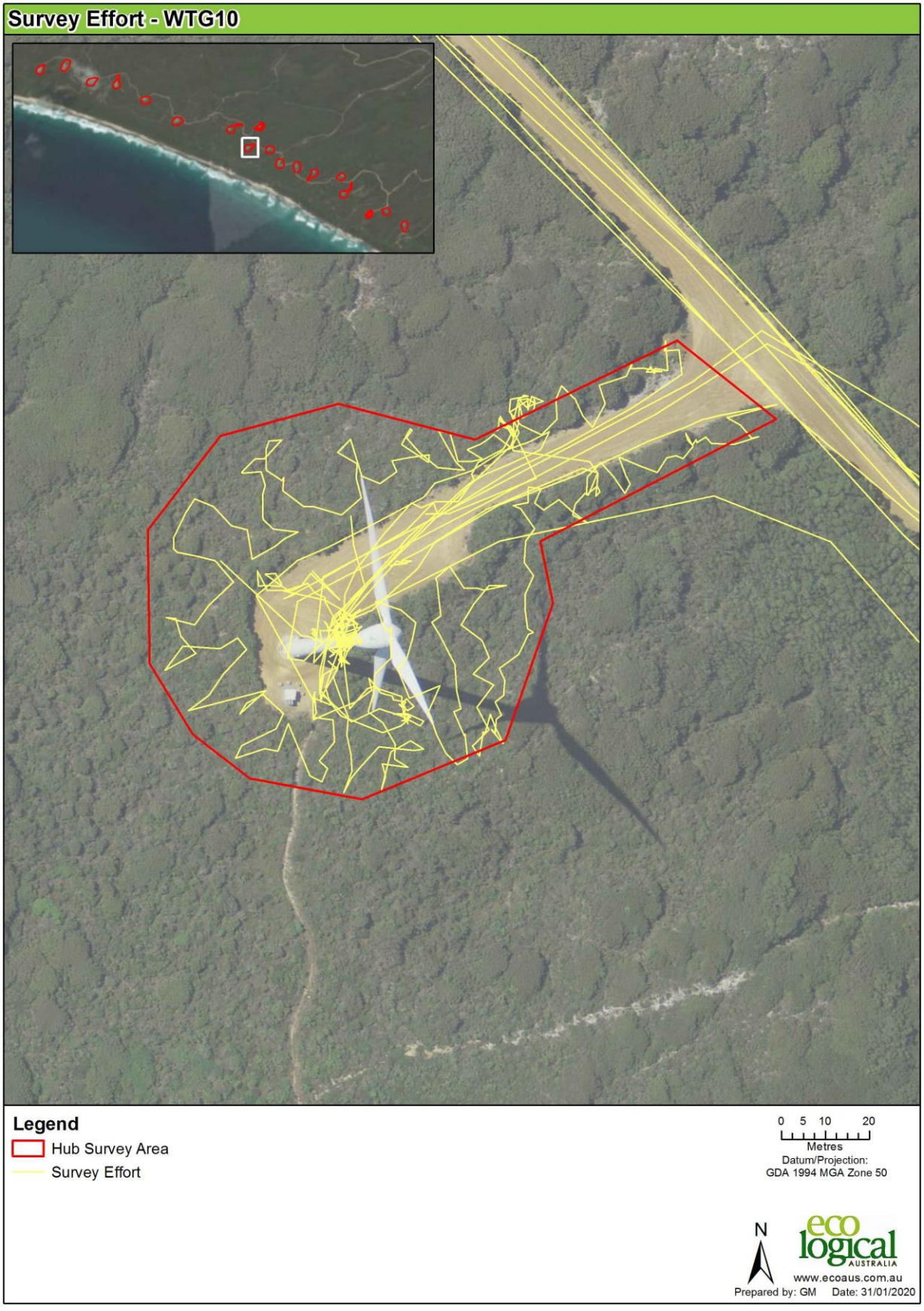

Survey Effort - WTG5
Legend
Hub Survey Area
Survey Effort
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 31/01/2020

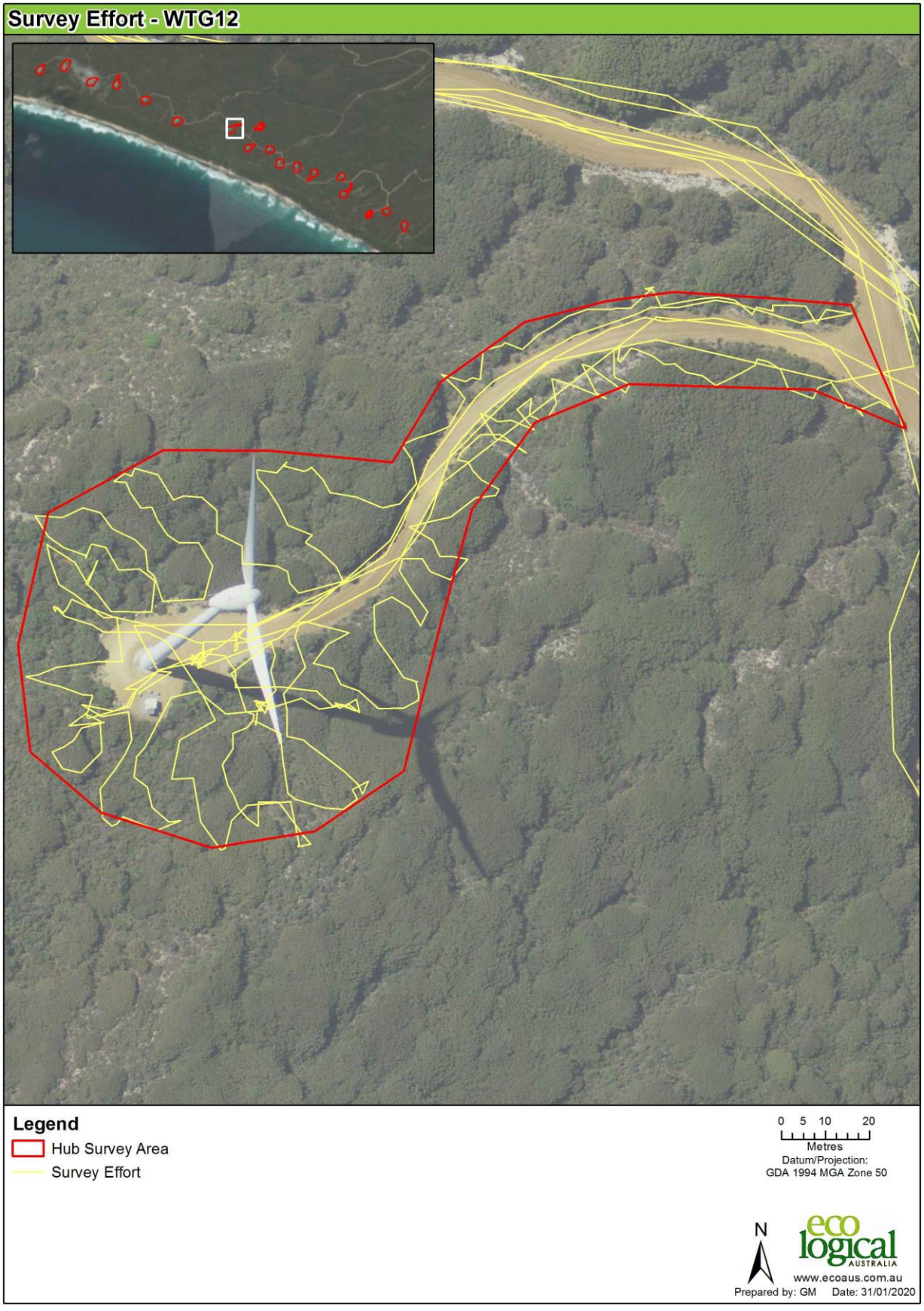

Survey Effort - WTG6
Legend
Hub Survey Area
Survey Effort
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 31/01/2020

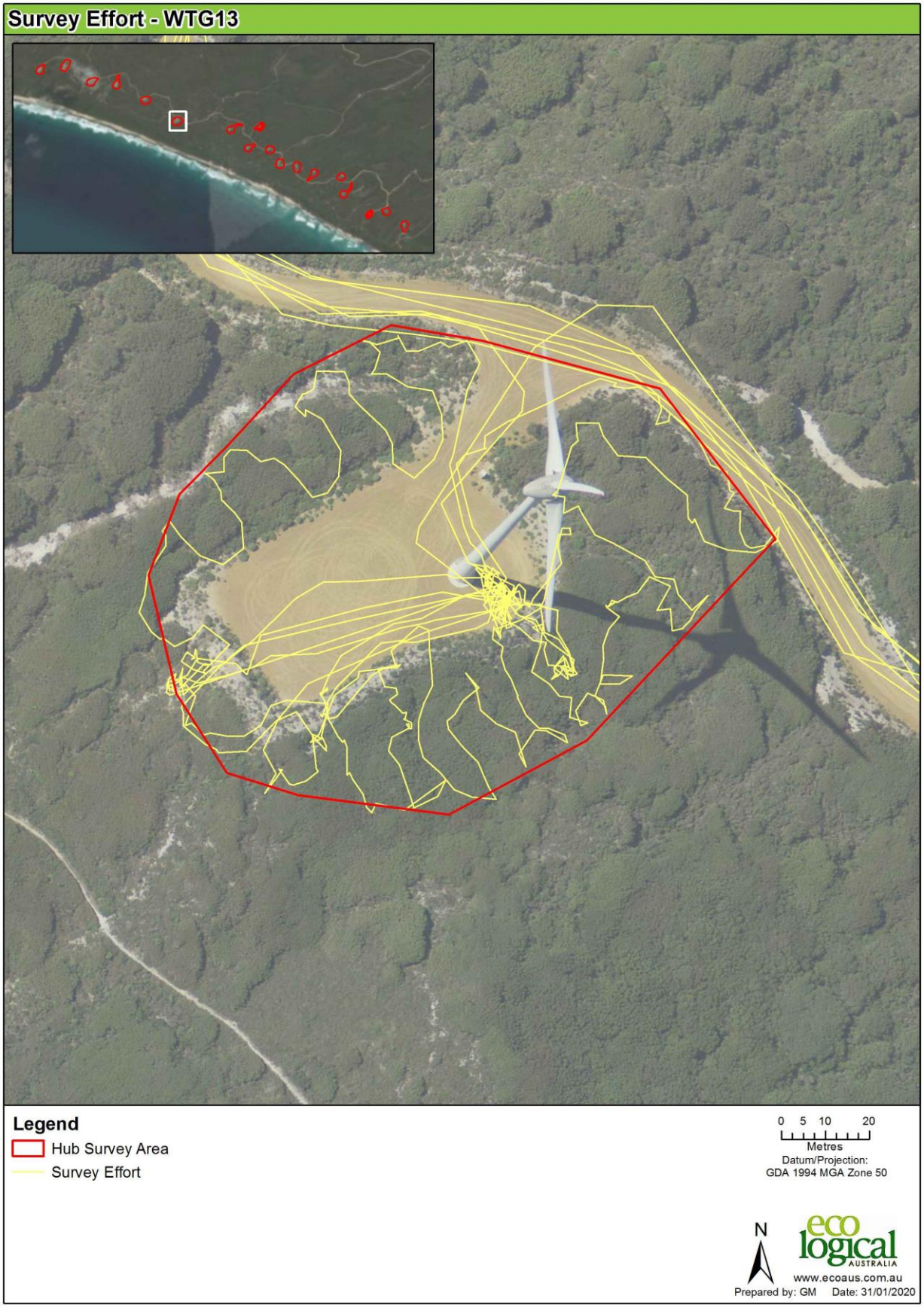

Survey Effort - WTG7
Legend
Hub Survey Area
Survey Effort
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 31/01/2020

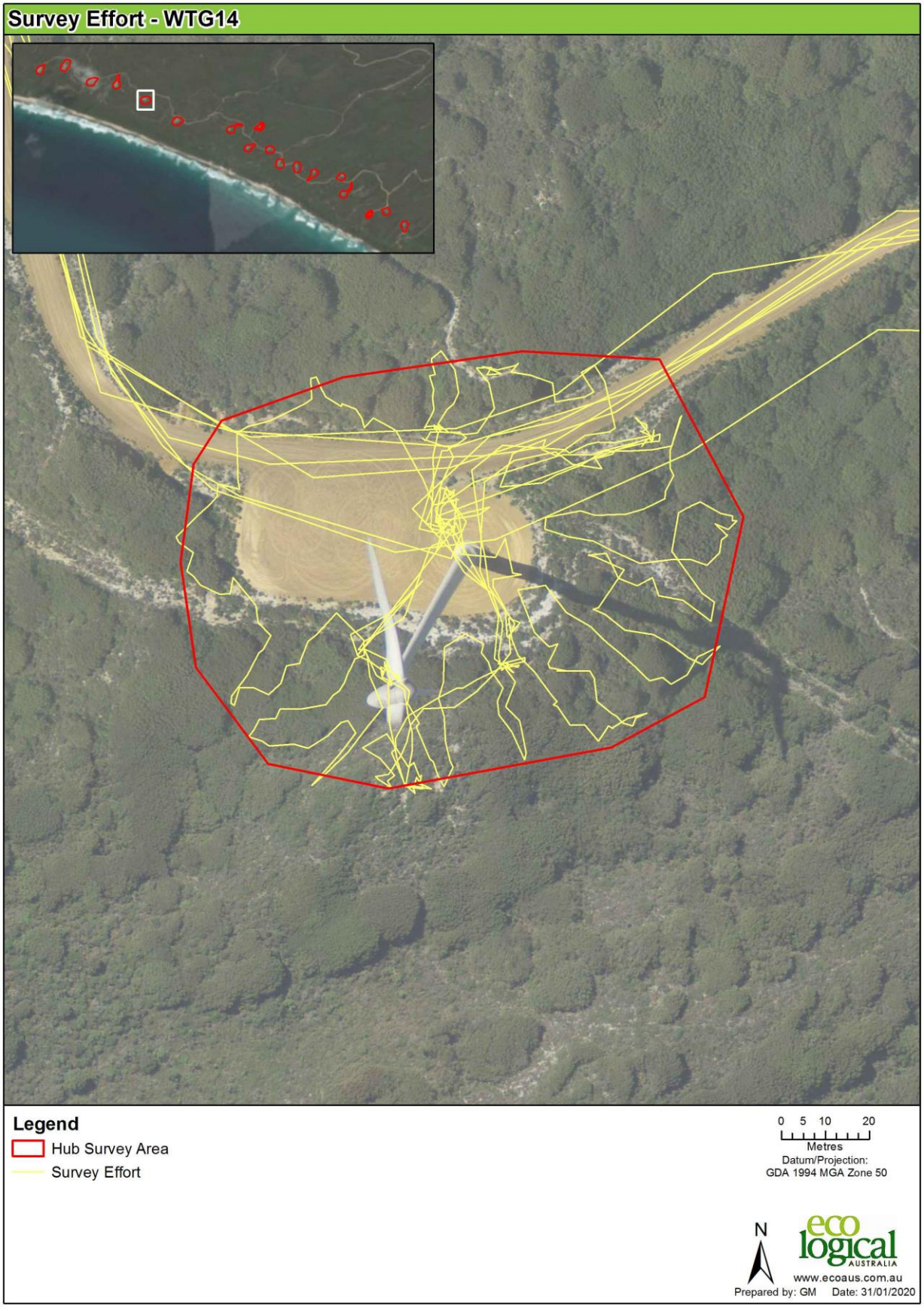

Survey Effort - WTG8
Legend
Hub Survey Area
Survey Effort
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 31/01/2020

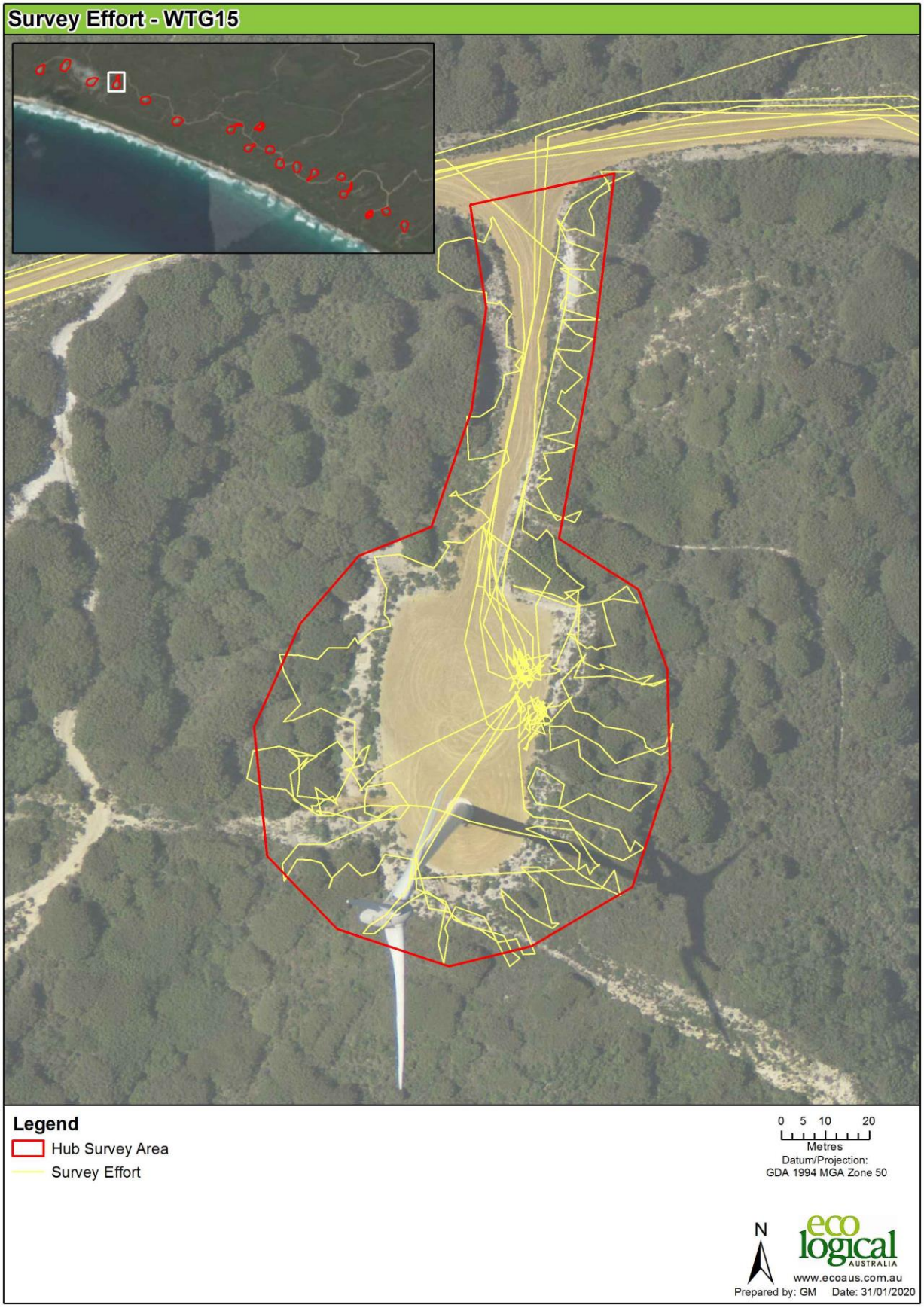

Survey Effort - WTG9
Legend
Hub Survey Area
Survey Effort
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 31/01/2020

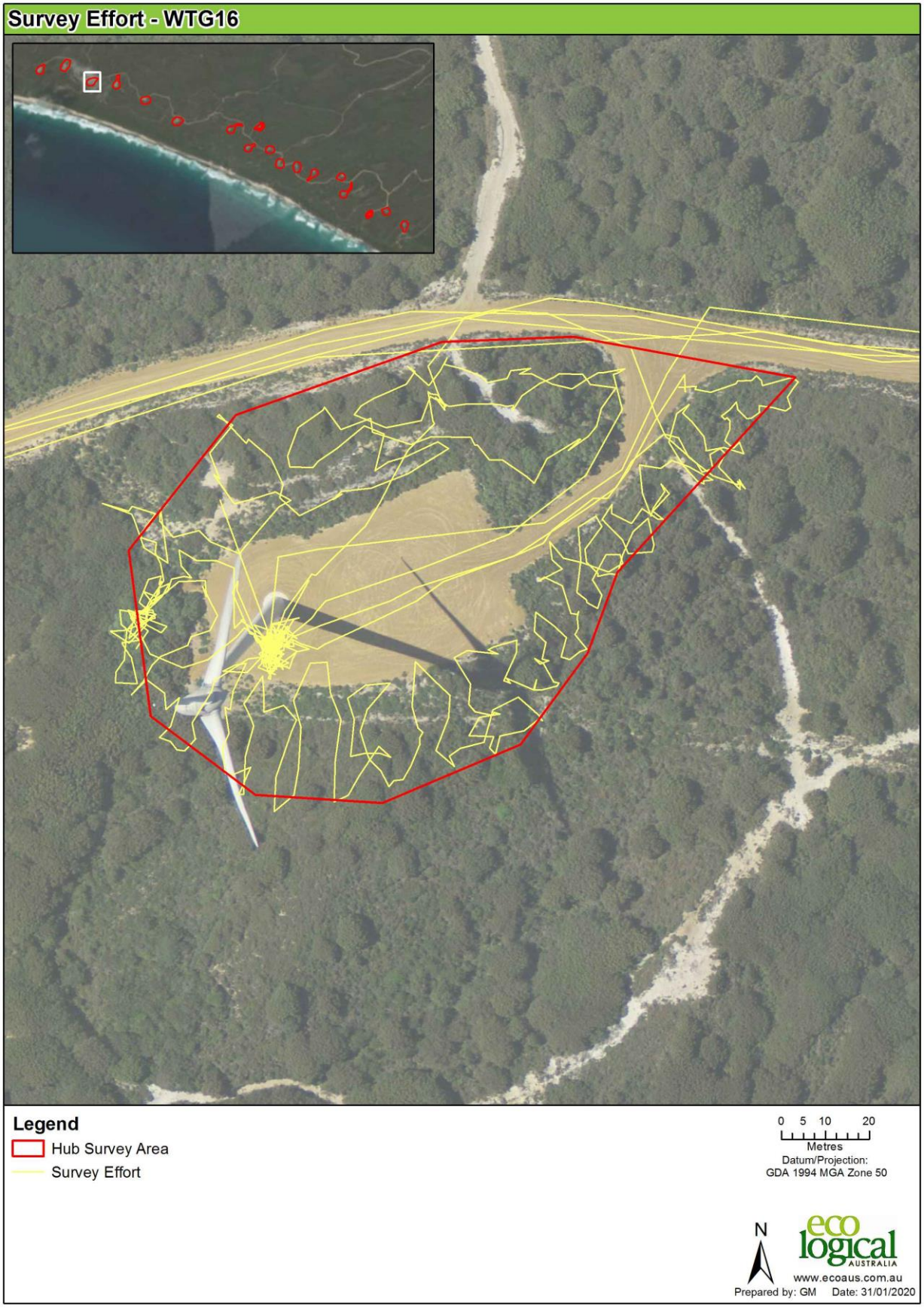

Survey Effort - WTG10
Legend
Hub Survey Area
Survey Effort
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 31/01/2020


Survey Effort - WTG12
Legend
Hub Survey Area
Survey Effort
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 31/01/2020

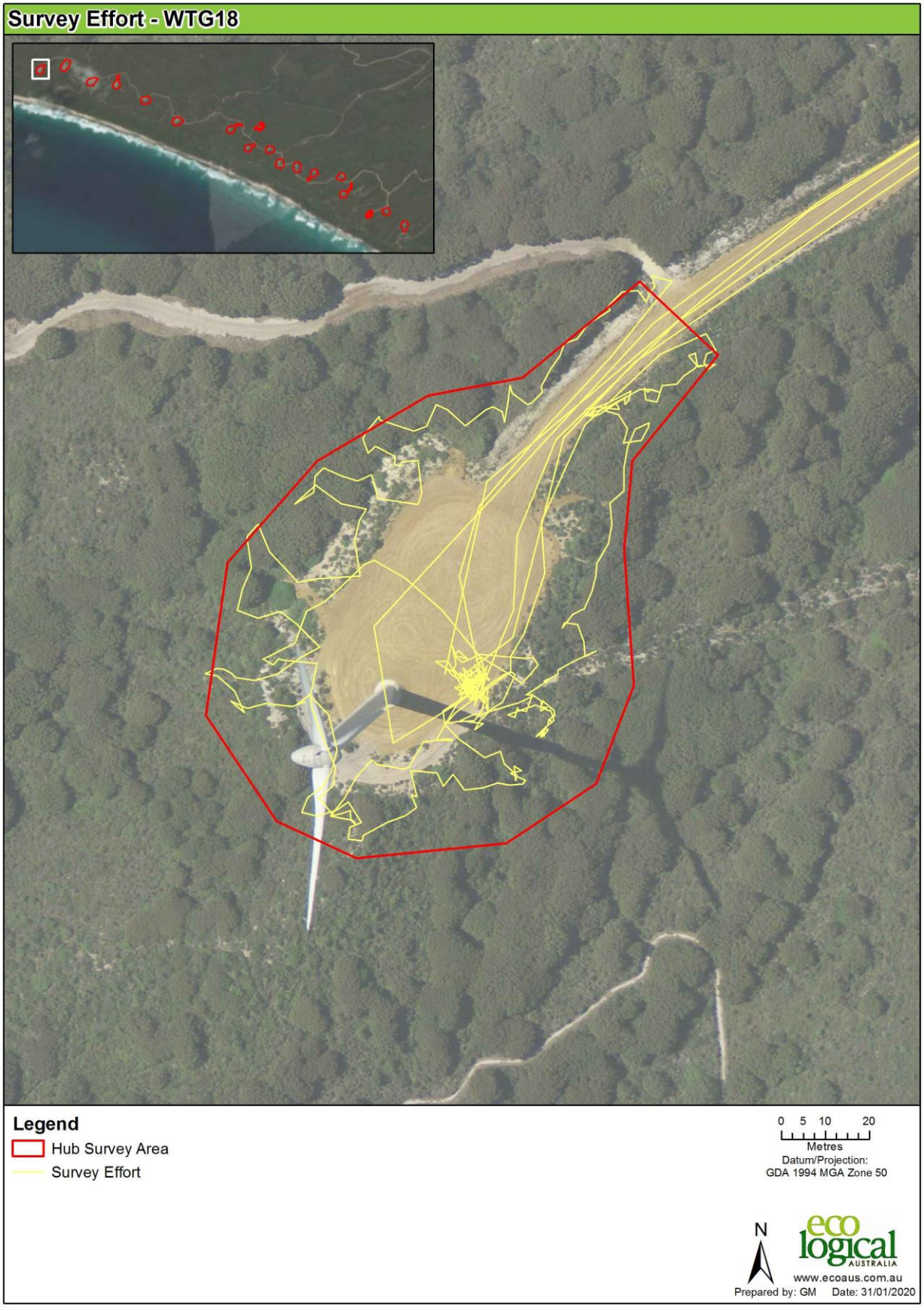

Survey Effort - WTG13
Legend
Hub Survey Area
Survey Effort
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 31/01/2020


Survey Effort - WTG14
Legend
Hub Survey Area
Survey Effort
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 31/01/2020


Survey Effort - WTG15
Legend
Hub Survey Area
Survey Effort
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 31/01/2020


Survey Effort - WTG16
Legend
Hub Survey Area
Survey Effort
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 31/01/2020


Survey Effort - WTG17
Legend
Hub Survey Area
Survey Effort
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 31/01/2020


Survey Effort - WTG18
Legend
Hub Survey Area
Survey Effort
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 31/01/2020

Appendix D Species List

Species	T2	T4	T5	T6	T7	T8	T9	T10	T12	T13	T14	T15	T16	T17	T18
**Avena barbata*						X	X	X	X	X	X				
**Bartsia trixago*		X	X	X			X								
**Bellardia trixago*	X														
**Brassica tournefortii*							X		X						
**Briza maxima*			X					X							
**Catapodium rigidum*	X	X			X										
**Centaurium erythraea*		X													
**Conyza bonariensis*			X		X	X								X	
**Dittrichia viscosa*				X											
**Eragrostis curvula*				X		X		X			X	X			X
**Hypochaeris glabra*	X	X	X	X	X	X	X	X		X	X	X	X		X
**Lagurus ovatus*			X		X			X							
**Lotus angustissimus*		X													
**Lysimachia arvensis*	X	X	X	X			X			X	X				X
**Orobanche minor*						X					X				X
**Pelargonium capitatum*	X	X	X	X	X		X	X	X	X		X	X		X
**Plantago lanceolata*						X									
**Psoralea pinnata*		X		X	X										
**Senecio elegans*		X													X
**Solanum nigrum*						X									
**Sonchus oleraceus*			X	X	X	X	X		X	X					
**Zantedeschia aethiopica*		X			X										
Acacia alata				X											

Species	T2	T4	T5	T6	T7	T8	T9	T10	T12	T13	T14	T15	T16	T17	T18
Acacia cochlearis			X		X					X				X	
Acacia littorea	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Acacia pulchella		X	X	X	X				X						
Acrotriche cordata				X		X		X			X			X	
Adenanthos cuneatus	X	X	X	X	X	X	X	X	X		X	X	X	X	X
Adenanthos obovatus		X													
Adenanthos sericea			X	X	X	X							X		
Adenanthos x cunninghamii (P4)					X										
Agonis flexuosa	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Allocasuarina humilis	X	X	X	X	X		X	X	X		X	X	X	X	X
Allocasuarina lehmanniana subsp. lehmanniana	X	X	X	X	X	X	X		X	X	X	X	X	X	X
Amperea ericoides	X	X	X	X	X		X	X	X	X	X	X	X	X	X
Anarthria prolifera		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Anigozanthos flavidus								X							
Anthocercis littorea				X											
Austrostipa compressa							X	X		X	X	X	X		
Austrostipa flavescens	X	X	X	X		X	X	X	X	X	X	X	X		X
Banksia attenuata		X	X	X	X				X						
Banksia dallanneyi		X		X	X	X		X	X	X	X		X	X	
Banksia formosa													X		
Banksia grandis		X	X	X	X			X		X	X	X	X	X	X
Banksia praemorsa										X	X	X	X	X	X
Banksia sessilis	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Banksia dallanneyi	X		X												
Billardiera fusiformis		X	X	X	X	X	X	X	X	X		X	X	X	X
Bossiaea linophylla	X	X	X		X	X	X	X	X		X	X	X	X	X
Caladenia sp.												X			
Calandrinia brevipedata					X										
Carpobrotus sp.														X	X

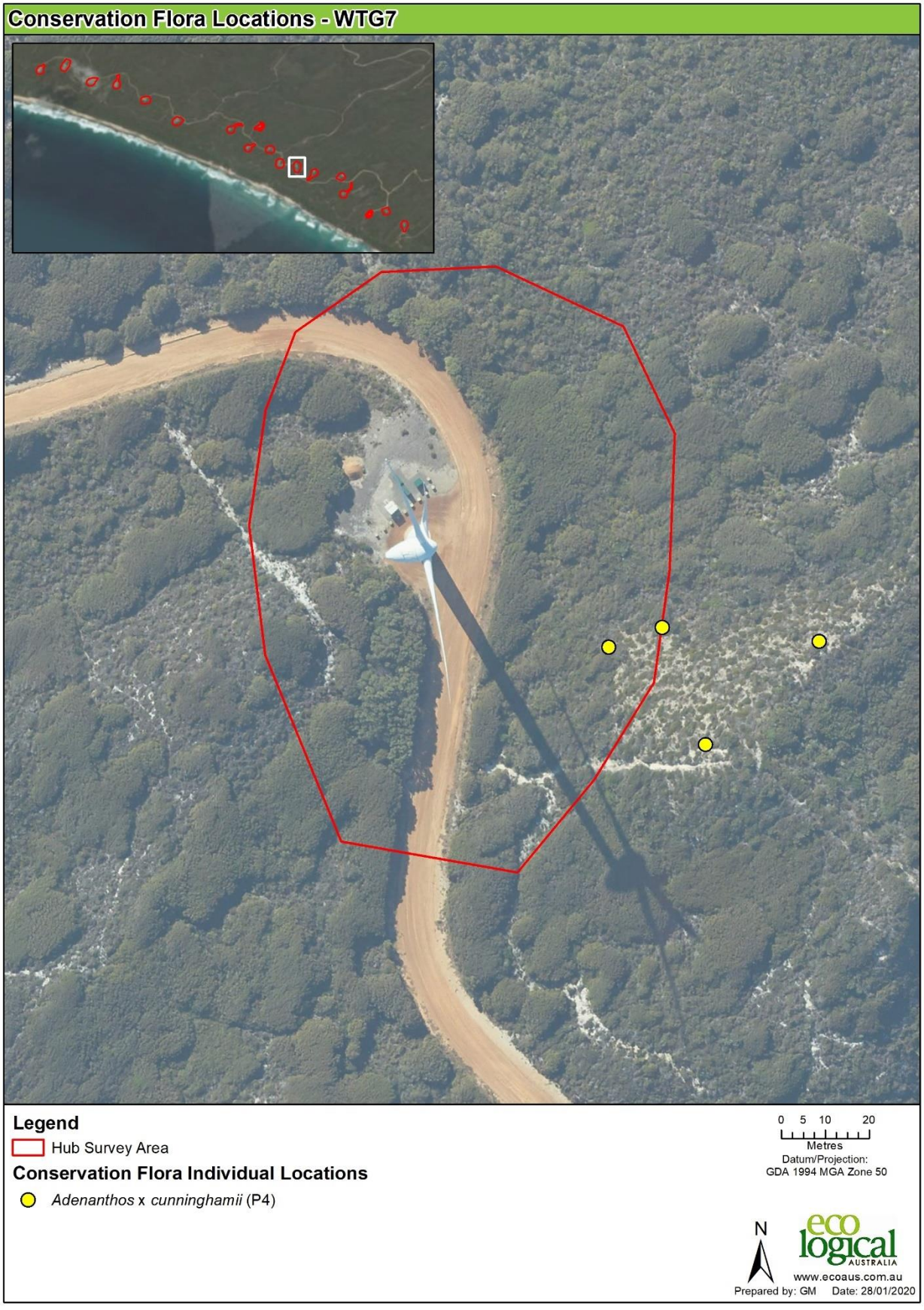
Species	T2	T4	T5	T6	T7	T8	T9	T10	T12	T13	T14	T15	T16	T17	T18
Cassytha glabella	X														
Cassytha racemosa		X		X	X	X	X	X		X	X	X	X	X	X
Chorizema aciculare					X										
Chorizema ilicifolia						X		X			X	X			
Clematis pubescens	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Comesperma calymega														X	
Comesperma virgatum	X	X	X	X	X	X	X	X	X	X		X	X	X	X
Conostylis aculeata subsp. aculeata	X	X	X	X	X	X	X	X	X			X	X	X	X
Corybas sp.			X		X										
Corynotheca micrantha				X											
Cyathochaeta equitans	X	X	X	X	X		X	X	X	X	X	X	X	X	
Daucus glochidiatus	X	X			X	X									
Desmocladus flexuosus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Haloragis acutangula						X									
Eucalyptus angulosa	X	X	X	X	X	X	X	X	X				X	X	X
Euchiton sphaericus						X	X								
Exocarpos odoratus						X			X	X			X		
Exocarpos sparteus						X									
Ficinia nodosa										X		X			
Gompholobium confertum		X				X	X	X	X			X	X	X	
Gompholobium polymorphum	X	X	X					X					X	X	
Gompholobium tomentosum	X	X			X										
Gyrostemon sheathii				X	X	X									
Hakea florida	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hakea oleifolia						X									
Hakea prostrata		X	X	X	X		X	X	X	X	X	X	X	X	
Hakea ruscifolia	X	X	X	X	X	X	X	X	X		X	X	X	X	X
Hibbertia cuneiformis		X				X				X	X		X	X	X
Hibbertia cunninghamii					X										

Species	T2	T4	T5	T6	T7	T8	T9	T10	T12	T13	T14	T15	T16	T17	T18
Hibbertia furfuracea	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hibbertia grossulariifolia				X	X	X	X	X		X	X	X	X		X
Hibbertia racemosa	X	X	X	X	X	X		X	X	X	X	X	X	X	X
Isopogon attenuatus												X	X	X	X
Isopogon formosus subsp. formosus	X	X		X	X	X	X	X	X	X			X		
Isotoma hypocrateriformis										X		X			
Isotropis cuneifolia subsp. cuneifolia					X					X					
Ixiolaena viscosa	X	X		X		X	X			X					
Jacksonia horrida	X	X	X	X	X	X	X	X	X	X		X	X	X	X
Kennedia coccinea												X		X	X
Lagenophora huegelii				X	X		X				X				
Lechenaultia expansa					X										
Lepidosperma gladiatum		X	X	X	X	X		X	X	X			X		
Lepidosperma sp.														X	
Lepidosperma squamatum	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Leucopogon obovatus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Leucopogon parviflorus				X		X		X		X	X		X		
Leucopogon propinquus				X											
Leucopogon reflexus	X	X	X		X	X								X	
Levenhookia stipitata								X							
Lobelia heterophylla						X									
Logania buxifolia						X									
Lyginia barbata			X		X	X	X	X	X	X	X	X	X	X	X
Lyginia imberbis	X	X													
Lysinema ciliatum	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Melaleuca diosmifolia				X	X	X	X	X	X	X		X	X	X	X
Melaleuca incana					X						X	X	X	X	X
Melaleuca pentagona		X								X	X	X	X	X	X
Melaleuca thymoides	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Species	T2	T4	T5	T6	T7	T8	T9	T10	T12	T13	T14	T15	T16	T17	T18
Melaleuca diosmifolia	X	X	X												
Microtis media				X											
Olax phyllanthi		X	X	X	X	X							X	X	X
Olearia axillaris	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Olearia ciliata		X	X		X					X	X	X	X	X	
Opercularia hispidula	X	X			X	X	X	X	X	X	X	X	X	X	X
Opercularia vaginata					X	X	X	X						X	
Opercularia vaginata				X											
Orianthera serpyllifolia	X	X	X		X		X	X	X	X	X	X	X		X
Patersonia occidentalis	X		X	X	X	X				X	X	X	X	X	X
Pelargonium littorale		X													
Phyllanthus calycinus		X		X	X	X	X	X	X	X	X			X	X
Pimelea ferruginea	X	X	X	X		X			X		X			X	X
Pimelea rosea	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Pimelea suaveolens		X													
Pithocarpa cordata				X		X				X	X		X		X
Platysace compressa	X	X	X	X	X	X		X	X	X	X	X	X	X	X
Podolepis gracilis								X		X				X	X
Podotheca gnaphalioides			X		X	X				X	X	X	X	X	X
Poranthera huegelii		X		X		X			X		X				
Pterochaeta paniculata					X		X								
Pultenaea reticulata											X	X	X	X	
Rhagodia baccata	X	X	X	X	X	X	X		X	X	X	X	X		X
Rhodanthe citrina	X	X		X	X	X	X	X	X	X	X	X	X	X	X
Rytidosperma setaceum	X	X	X			X	X	X	X	X	X	X		X	X
Scaevola crassifolia	X	X	X		X	X	X	X		X	X				
Scaevola globulifera					X										
Schoenus caespitosa	X	X	X		X		X		X		X		X	X	
Schoenus sublateralis	X				X										

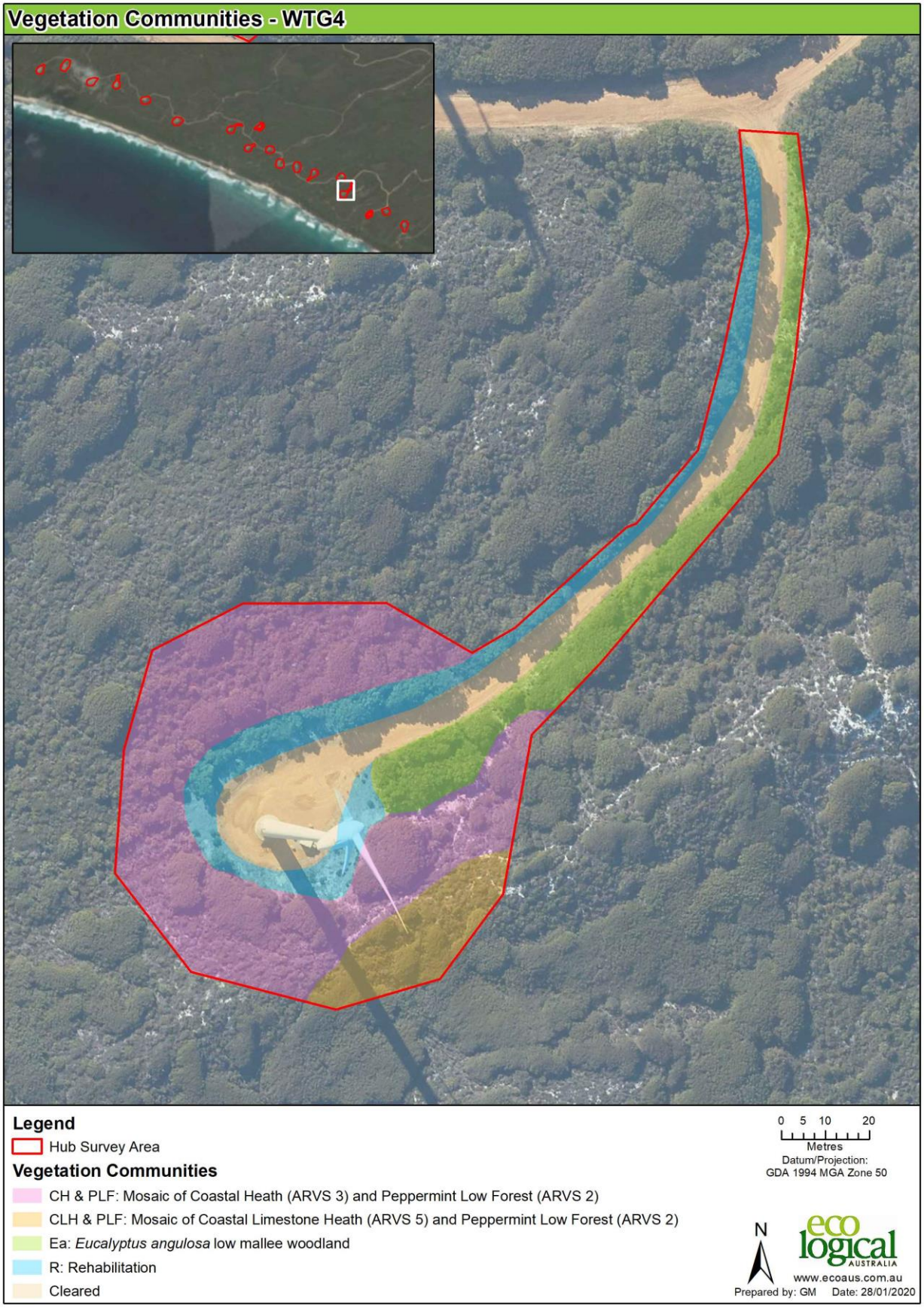
Species	T2	T4	T5	T6	T7	T8	T9	T10	T12	T13	T14	T15	T16	T17	T18
Senecio pinnatifolius		X	X	X	X	X		X		X		X			X
Spyridium globulosum	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Spyridium majoranifolium		X		X	X	X	X	X	X		X	X	X	X	X
Stylidium fasciculatum		X	X	X	X	X					X			X	
Stylidium hirsutum	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Stylidium violaceum	X						X				X		X		
Thelymitra ?benthamiana		X	X		X				X		X	X	X		
Thomasia quercifolia (P4)				X			X								
Thysanotus patersonii			X		X				X						X
Trachymene pilosa		X							X		X				X
Tremandra stelligera	X	X						X	X	X	X	X	X	X	X
Tricoryne elatior				X	X	X	X							X	X
Velleia trinervis	X		X		X	X	X		X		X	X		X	
Westringia dampieri	X							X							
Xanthosia huegelii	X		X	X	X		X			X					X

Appendix E Priority Flora recorded during the current survey


Conservation Flora Locations - WTG7
Legend
Hub Survey Area
Conservation Flora Individual Locations
Adenanthos x cunninghamii (P4)
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020

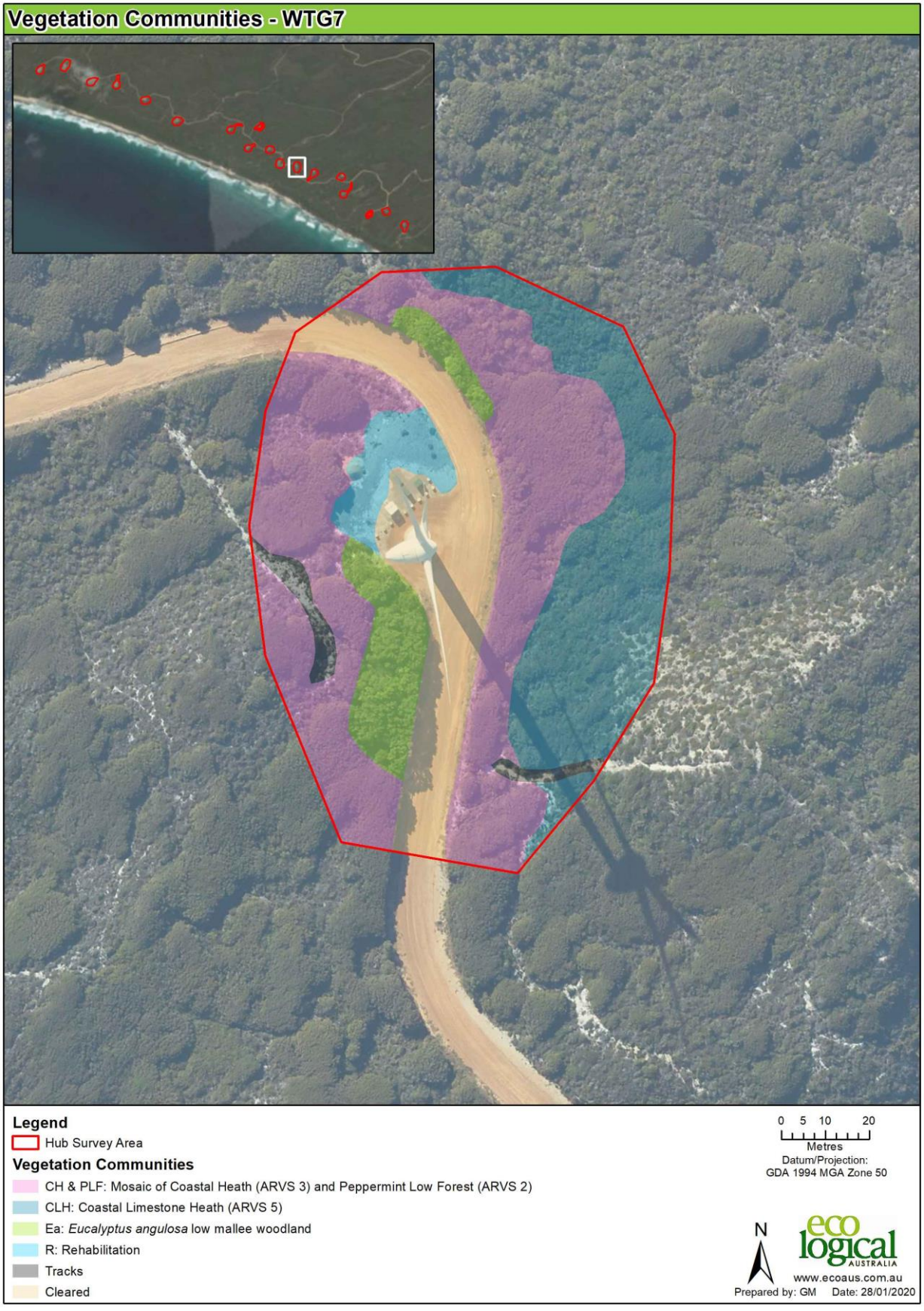

Conservation Flora Locations - WTG8
Legend
Hub Survey Area
Conservation Flora Population Locations
Thomasia quercifolia (P4)
Conservation Flora Individual Locations
Thomasia quercifolia (P4)
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020

Appendix F Vegetation Communities recorded during the current survey


Vegetation Communities - WTG4
Legend
Hub Survey Area
Vegetation Communities
CH & PLF: Mosaic of Coastal Heath (ARVS 3) and Peppermint Low Forest (ARVS 2)
CLH & PLF: Mosaic of Coastal Limestone Heath (ARVS 5) and Peppermint Low Forest (ARVS 2)
Ea: Eucalyptus angulosa low mallee woodland
R: Rehabilitation
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020


Vegetation Communities - WTG5
Legend
Hub Survey Area
Vegetation Communities
CH & PLF: Mosaic of Coastal Heath (ARVS 3) and Peppermint Low Forest (ARVS 2)
Ea: Eucalyptus angulosa low mallee woodland
R: Rehabilitation
Tracks
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020


Vegetation Communities - WTG6
Legend
Hub Survey Area
Vegetation Communities
CH & PLF: Mosaic of Coastal Heath (ARVS 3) and Peppermint Low Forest (ARVS 2)
Ea: Eucalyptus angulosa low mallee woodland
R: Rehabilitation
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020


Vegetation Communities - WTG7
Legend
Hub Survey Area
Vegetation Communities
CH & PLF: Mosaic of Coastal Heath (ARVS 3) and Peppermint Low Forest (ARVS 2)
CLH: Coastal Limestone Heath (ARVS 5)
Ea: Eucalyptus angulosa low mallee woodland
R: Rehabilitation
Tracks
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020

Vegetation Communities - WTG8

Legend

Hub Survey Area

Vegetation Communities

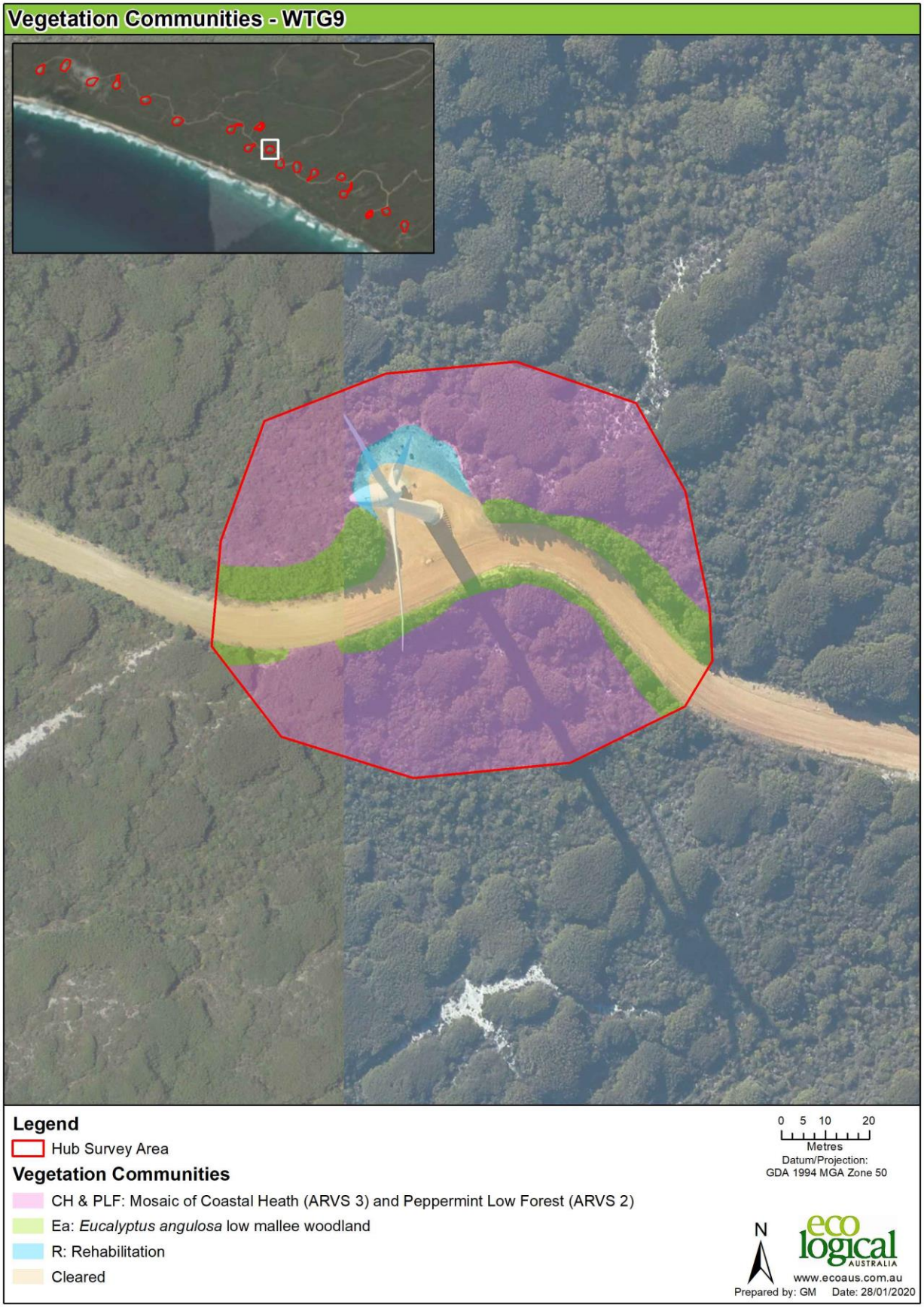
- CH & PLF: Mosaic of Coastal Heath (ARVS 3) and Peppermint Low Forest (ARVS 2)
- CLH & PLF: Mosaic of Coastal Limestone Heath (ARVS 5) and Peppermint Low Forest (ARVS 2)
- R: Rehabilitation
- Cleared

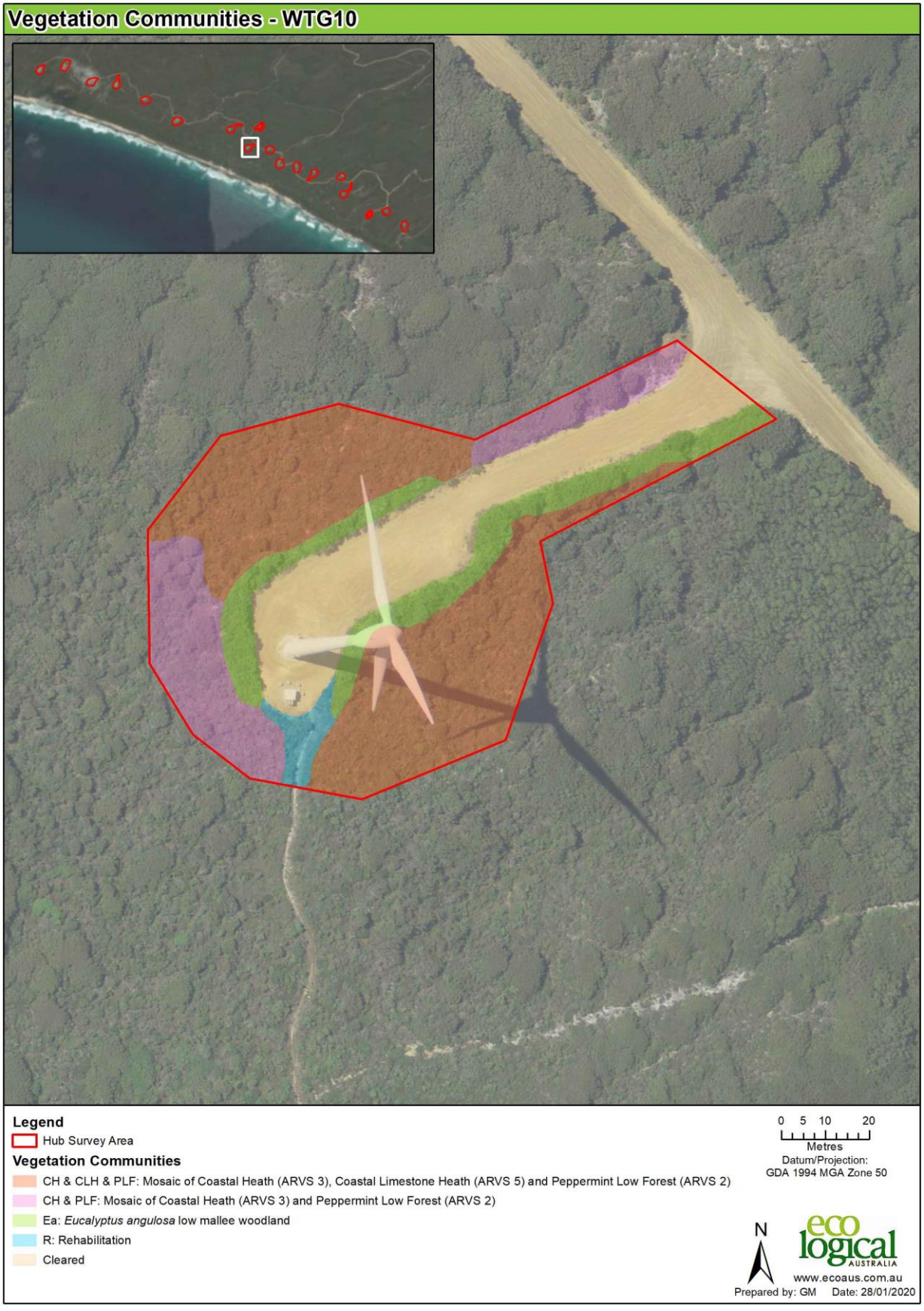
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50

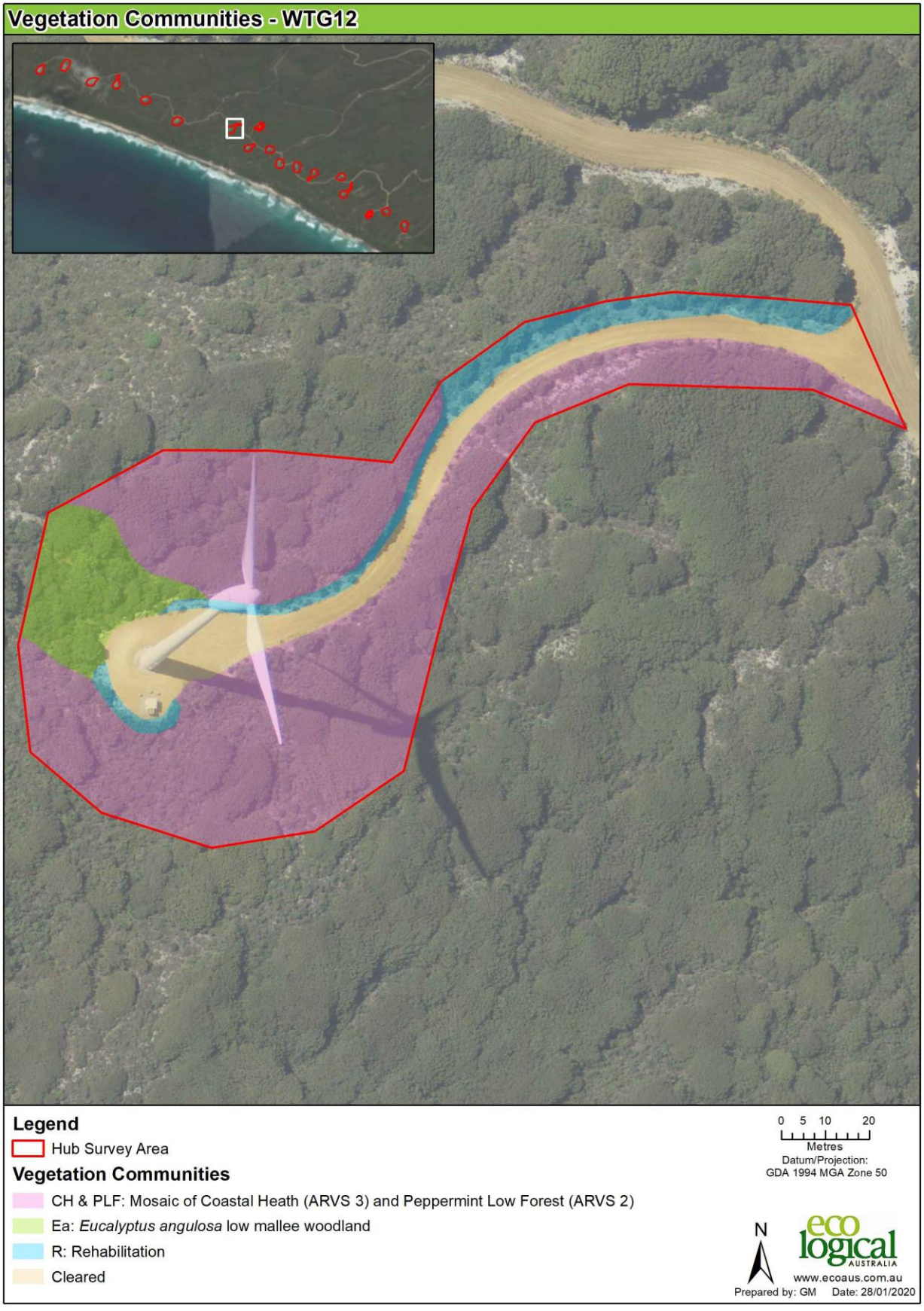
N

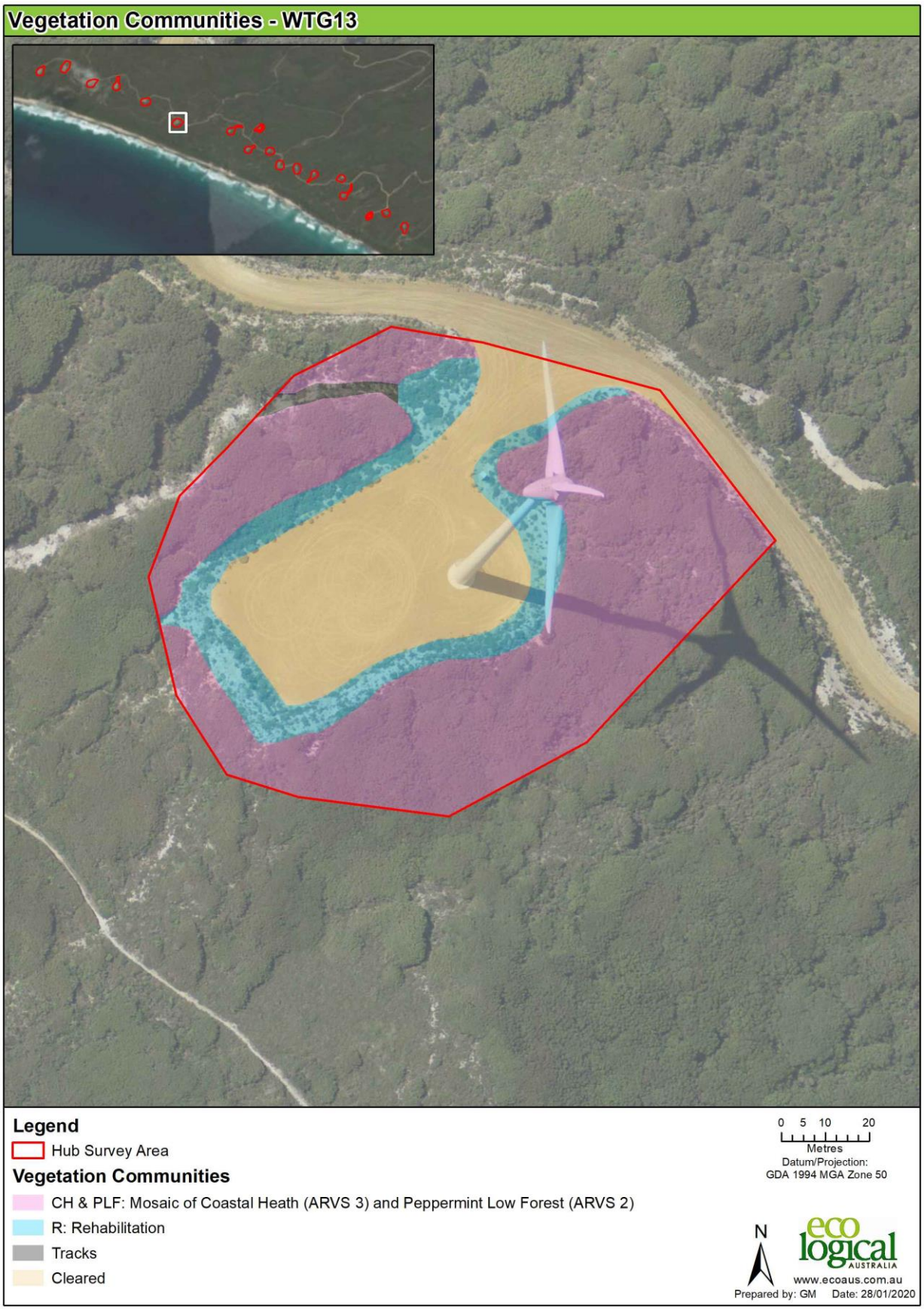
eco logical AUSTRALIA
www.ecoaus.com.au

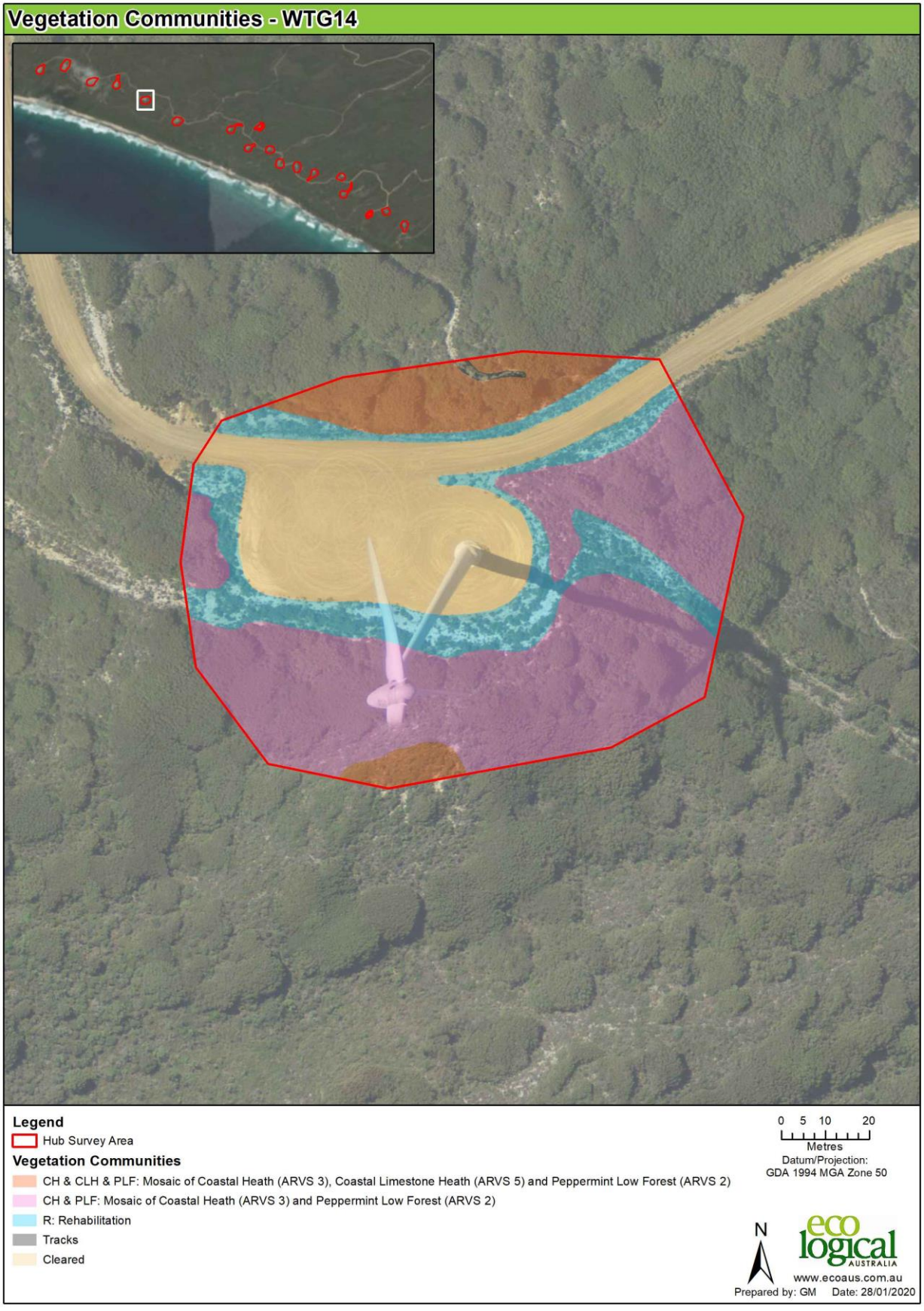
Prepared by: GM Date: 28/01/2020

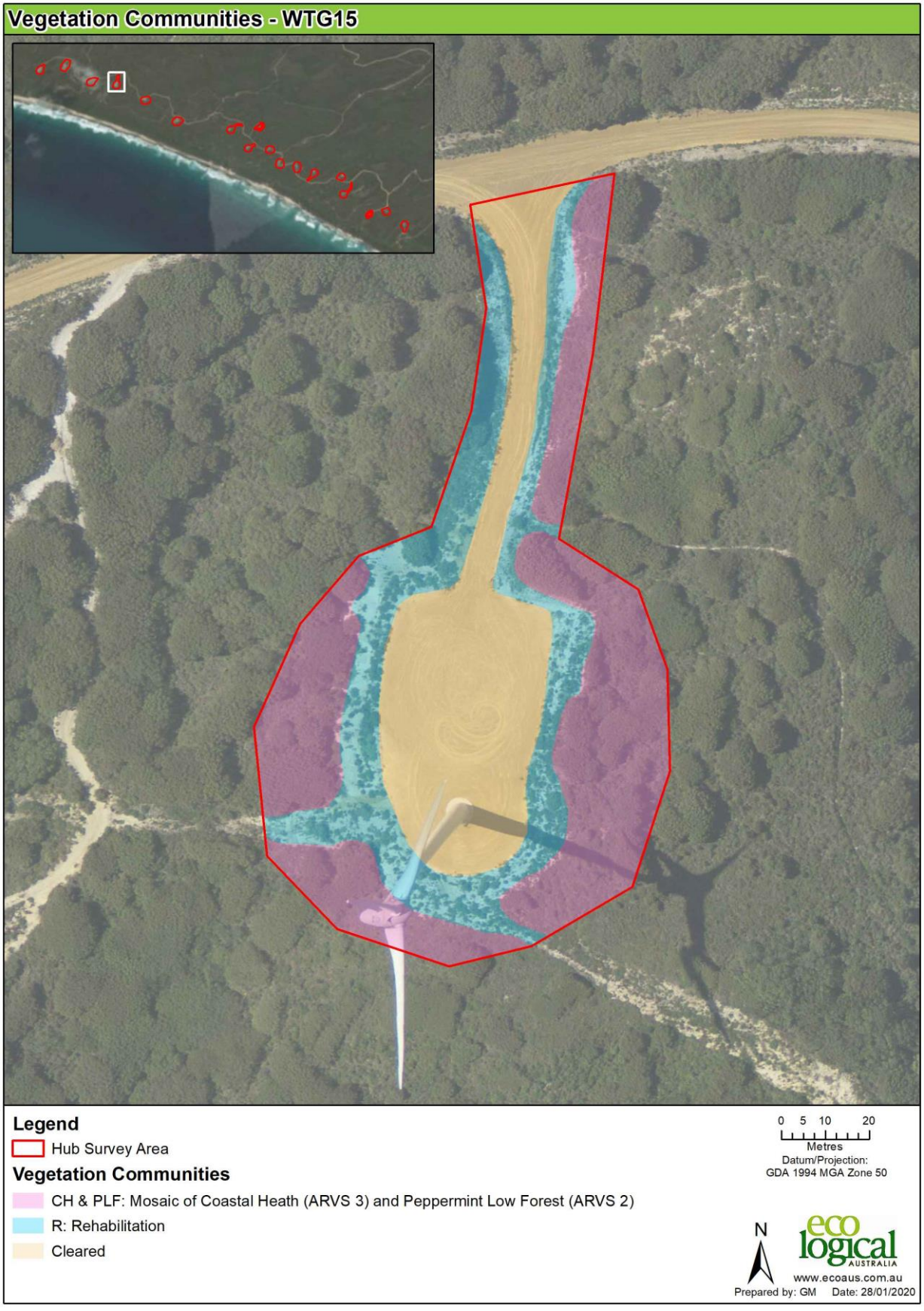

Vegetation Communities - WTG9
Legend
Hub Survey Area
Vegetation Communities
CH & PLF: Mosaic of Coastal Heath (ARVS 3) and Peppermint Low Forest (ARVS 2)
Ea: Eucalyptus angulosa low mallee woodland
R: Rehabilitation
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020

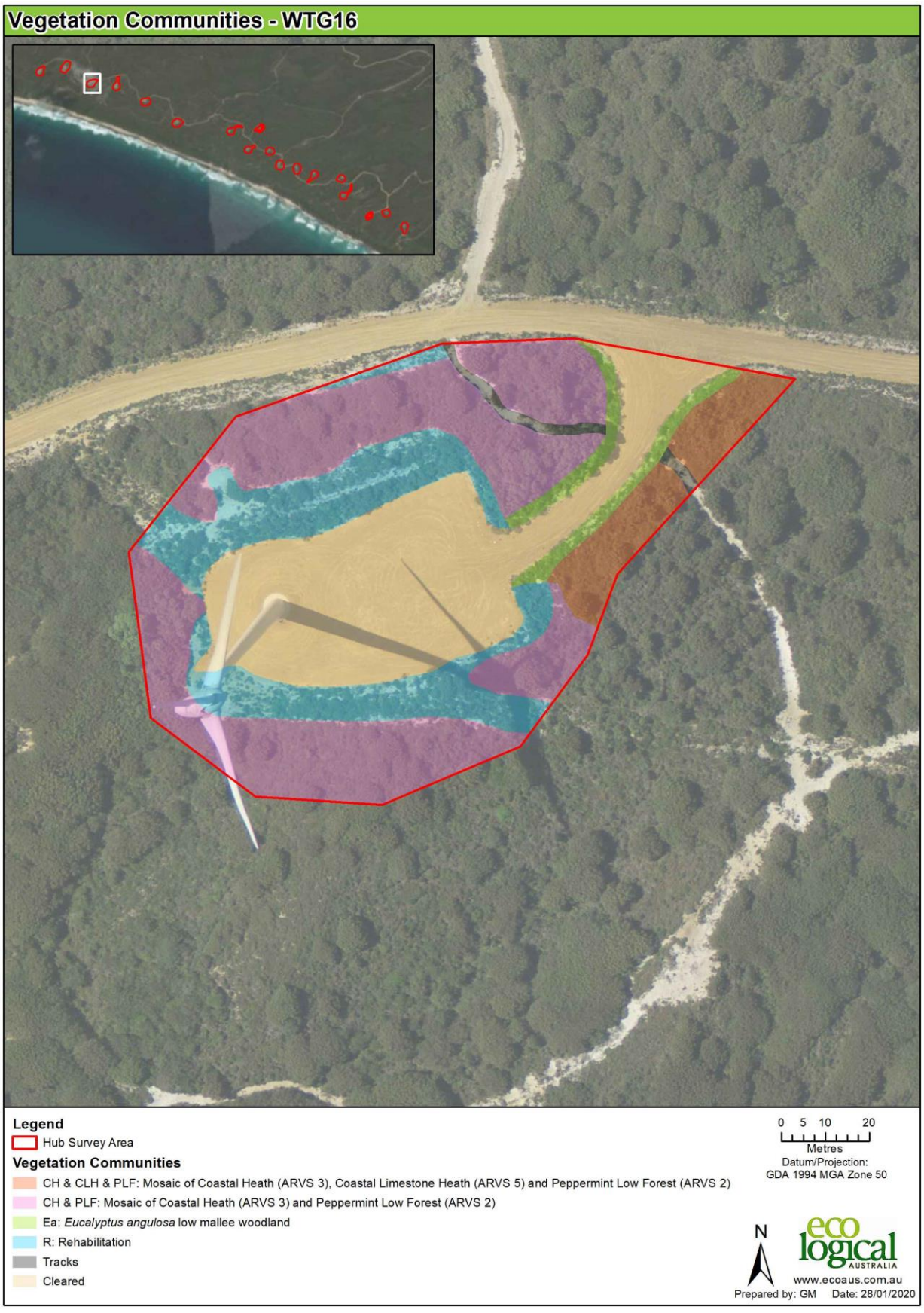

Vegetation Communities - WTG10
Legend
Hub Survey Area
Vegetation Communities
CH & CLH & PLF: Mosaic of Coastal Heath (ARVS 3), Coastal Limestone Heath (ARVS 5) and Peppermint Low Forest (ARVS 2)
CH & PLF: Mosaic of Coastal Heath (ARVS 3) and Peppermint Low Forest (ARVS 2)
Ea: Eucalyptus angulosa low mallee woodland
R: Rehabilitation
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020

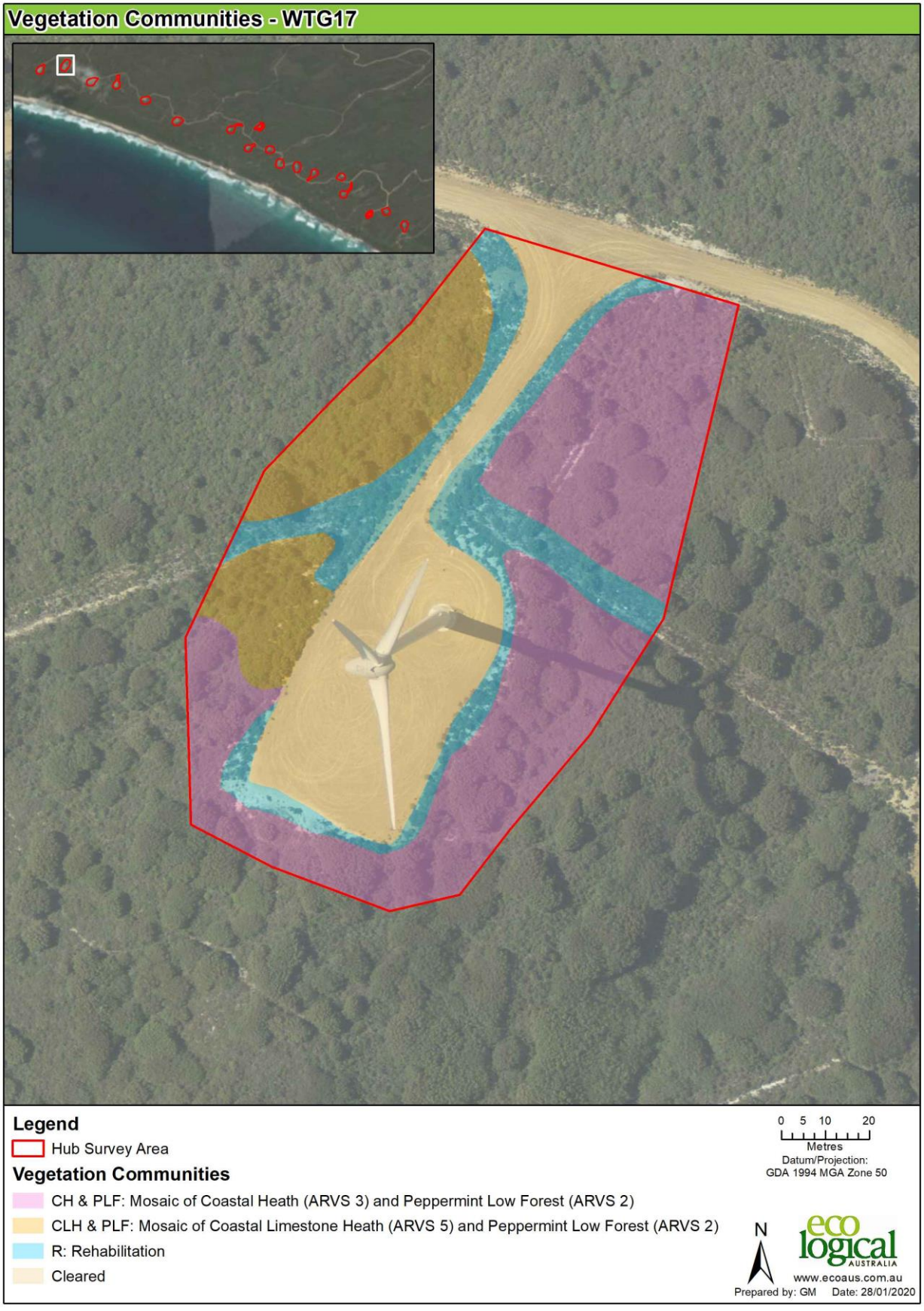

Vegetation Communities - WTG12
Legend
Hub Survey Area
Vegetation Communities
CH & PLF: Mosaic of Coastal Heath (ARVS 3) and Peppermint Low Forest (ARVS 2)
Ea: Eucalyptus angulosa low mallee woodland
R: Rehabilitation
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020

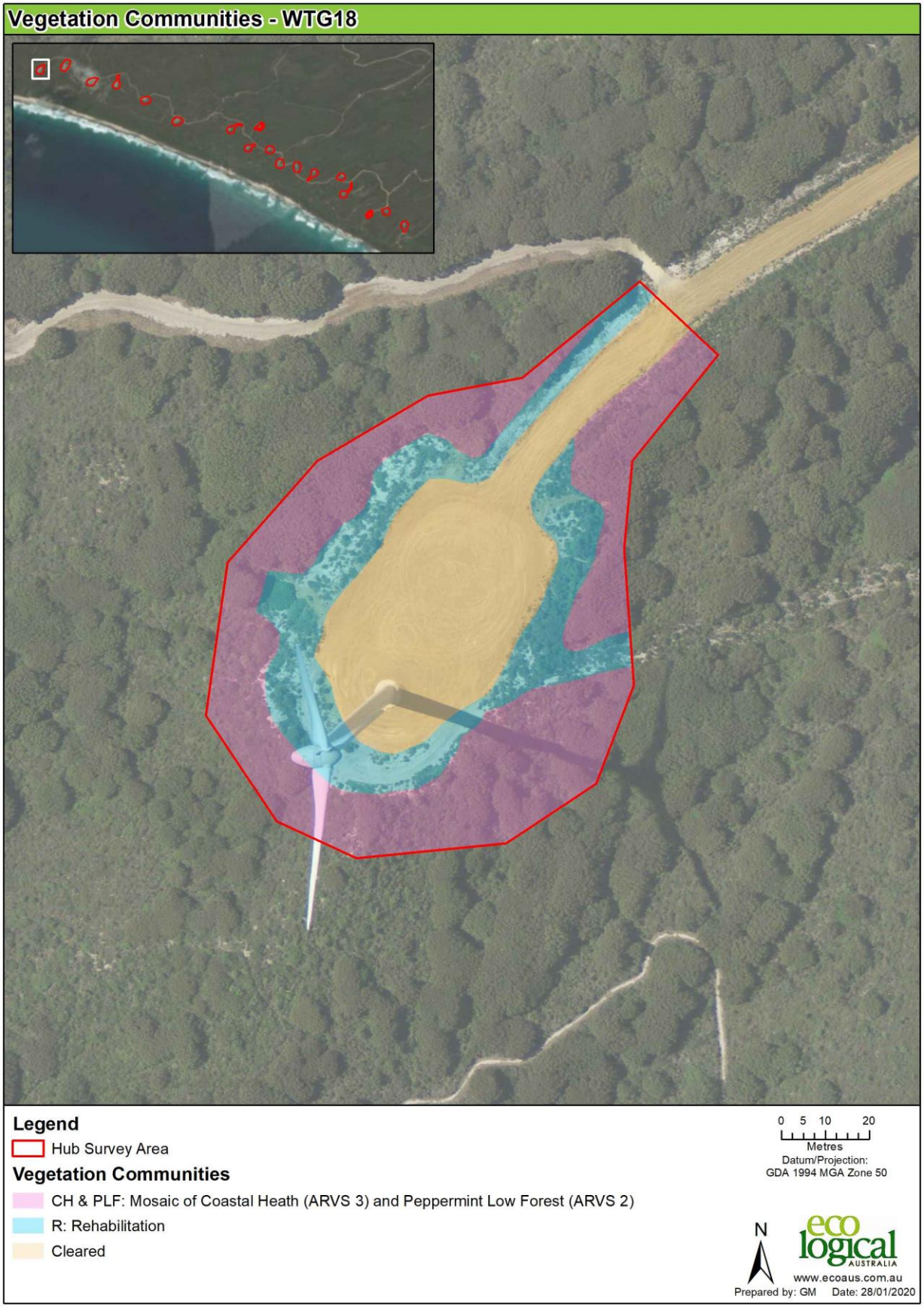

Vegetation Communities - WTG13
Legend
Hub Survey Area
Vegetation Communities
CH & PLF: Mosaic of Coastal Heath (ARVS 3) and Peppermint Low Forest (ARVS 2)
R: Rehabilitation
Tracks
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020


Vegetation Communities - WTG14
Legend
Hub Survey Area
Vegetation Communities
CH & CLH & PLF: Mosaic of Coastal Heath (ARVS 3), Coastal Limestone Heath (ARVS 5) and Peppermint Low Forest (ARVS 2)
CH & PLF: Mosaic of Coastal Heath (ARVS 3) and Peppermint Low Forest (ARVS 2)
R: Rehabilitation
Tracks
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020


Vegetation Communities - WTG15
Legend
Hub Survey Area
Vegetation Communities
CH & PLF: Mosaic of Coastal Heath (ARVS 3) and Peppermint Low Forest (ARVS 2)
R: Rehabilitation
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020


Vegetation Communities - WTG16
Legend
Hub Survey Area
Vegetation Communities
CH & CLH & PLF: Mosaic of Coastal Heath (ARVS 3), Coastal Limestone Heath (ARVS 5) and Peppermint Low Forest (ARVS 2)
CH & PLF: Mosaic of Coastal Heath (ARVS 3) and Peppermint Low Forest (ARVS 2)
Ea: Eucalyptus angulosa low mallee woodland
R: Rehabilitation
Tracks
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020


Vegetation Communities - WTG17
Legend
Hub Survey Area
Vegetation Communities
CH & PLF: Mosaic of Coastal Heath (ARVS 3) and Peppermint Low Forest (ARVS 2)
CLH & PLF: Mosaic of Coastal Limestone Heath (ARVS 5) and Peppermint Low Forest (ARVS 2)
R: Rehabilitation
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020


Vegetation Communities - WTG18
Legend
Hub Survey Area
Vegetation Communities
CH & PLF: Mosaic of Coastal Heath (ARVS 3) and Peppermint Low Forest (ARVS 2)
R: Rehabilitation
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020

Appendix G Extents of Vegetation communities recorded during the current survey (ha)

Turbine	CH & CLH & PLF	CH & PLF	CLH	CLH & PLF	Ea	R	Cleared	Tracks	Total
WTG2		0.41 (53.64%)		0.13 (16.79%)	0.09 (11.87%)	0.03 (4.11%)	0.10 (12.56%)	0.01 (1.03%)	**0.76 (100%)**
WTG4		0.39 (41.89%)		0.07 (7.51%)	0.14 (15.20%)	0.14 (15.42%)	0.19 (19.98%)		**0.93 (100%)**
WTG5		0.45 (58.76%)			0.13 (17.50%)	0.01 (1.83%)	0.15 (19.82%)	0.02 (2.09%)	**0.76 (100%)**
WTG6		0.59 (62.69%)			0.17 (18.12%)	0.05 (5.67%)	0.13 (13.52%)		**0.94 (100%)**
WTG7		0.46 (43.53%)	0.25 (23.69%)		0.08 (7.87%)	0.04 (4.08%)	0.20 (18.59%)	0.02 (2.23%)	**1.05 (100%)**
WTG8		0.36 (34.25%)		0.45 (42.69%)		0.03 (2.92%)	0.21 (20.14%)		**1.06 (100%)**
WTG9		0.55 (63.98%)			0.12 (14.25%)	0.02 (2.52%)	0.17 (19.25%)		**0.86 (100%)**
WTG10	0.34 (43.44%)	0.12 (15.62%)			0.11 (13.60%)	0.02 (2.21%)	0.20 (25.12%)		**0.79 (100%)**
WTG12		0.65 (66.62%)			0.08 (8.43%)	0.09 (9.22%)	0.15 (15.72%)		**0.97 (100%)**
WTG13		0.61 (55.88%)				0.17 (15.64%)	0.30 (27.56%)	0.01 (0.92%)	**1.09 (100%)**
WTG14	0.11 (10.42%)	0.46 (44.96%)				0.19 (18.50%)	0.26 (25.82%)	0.00 (0.30%)	**1.02 (100%)**
WTG15		0.39 (40.80%)				0.27 (28.81%)	0.29 (30.40%)		**0.95 (100%)**
WTG16	0.08 (7.43%)	0.38 (37.70%)			0.04 (3.71%)	0.20 (19.74%)	0.31 (30.09%)	0.01 (1.32%)	**1.02 (100%)**
WTG17		0.52 (41.64%)		0.20 (15.77%)		0.21 (16.85%)	0.32 (25.74%)		**1.24 (100%)**
WTG18		0.40 (44.43%)				0.23 (25.21%)	0.27 (30.36%)		**0.90 (100%)**
Total	**0.52 (3.65%)**	**6.73 (46.92%)**	**0.25 (1.74%)**	**0.85 (5.89%)**	**0.97 (6.75%)**	**1.72 (11.97%)**	**3.24 (22.57%)**	**0.07 (0.51%)**	**14.34 (100%)**

CH & CLH & PLF: Mosaic of Coastal Heath (ARVS 3), Coastal Limestone Heath (ARVS 5) and Peppermint Low Forest (ARVS 2)

CH & PLF: Mosaic of Coastal Heath (ARVS 3) and Peppermint Low Forest (ARVS 2)

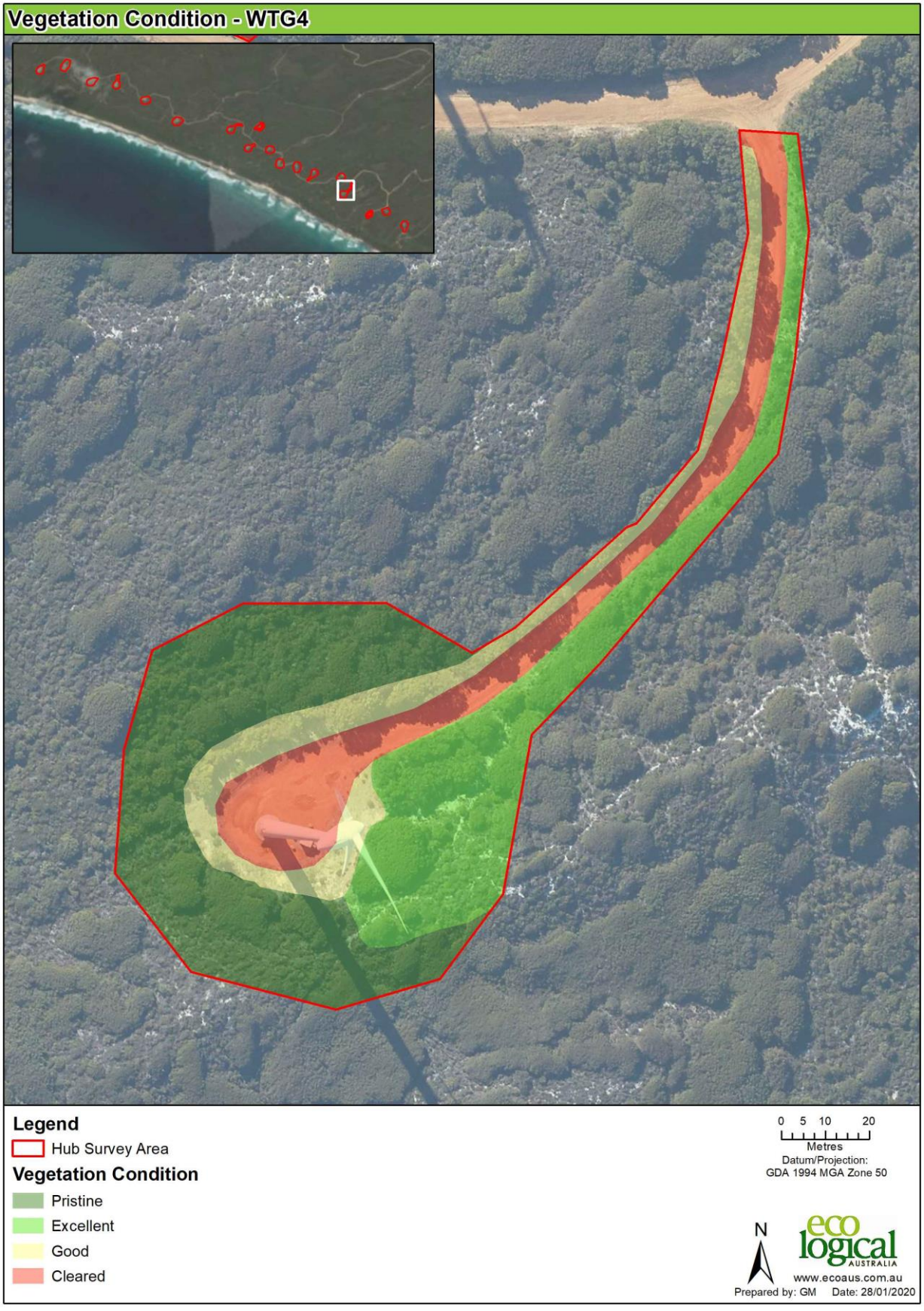
CLH: Coastal Limestone Heath (ARVS 5)

CLH & PLF: Mosaic of Coastal Limestone Heath (ARVS 5) and Peppermint Low Forest (ARVS 2)

Ea: *Eucalyptus angulosa* low mallee woodland

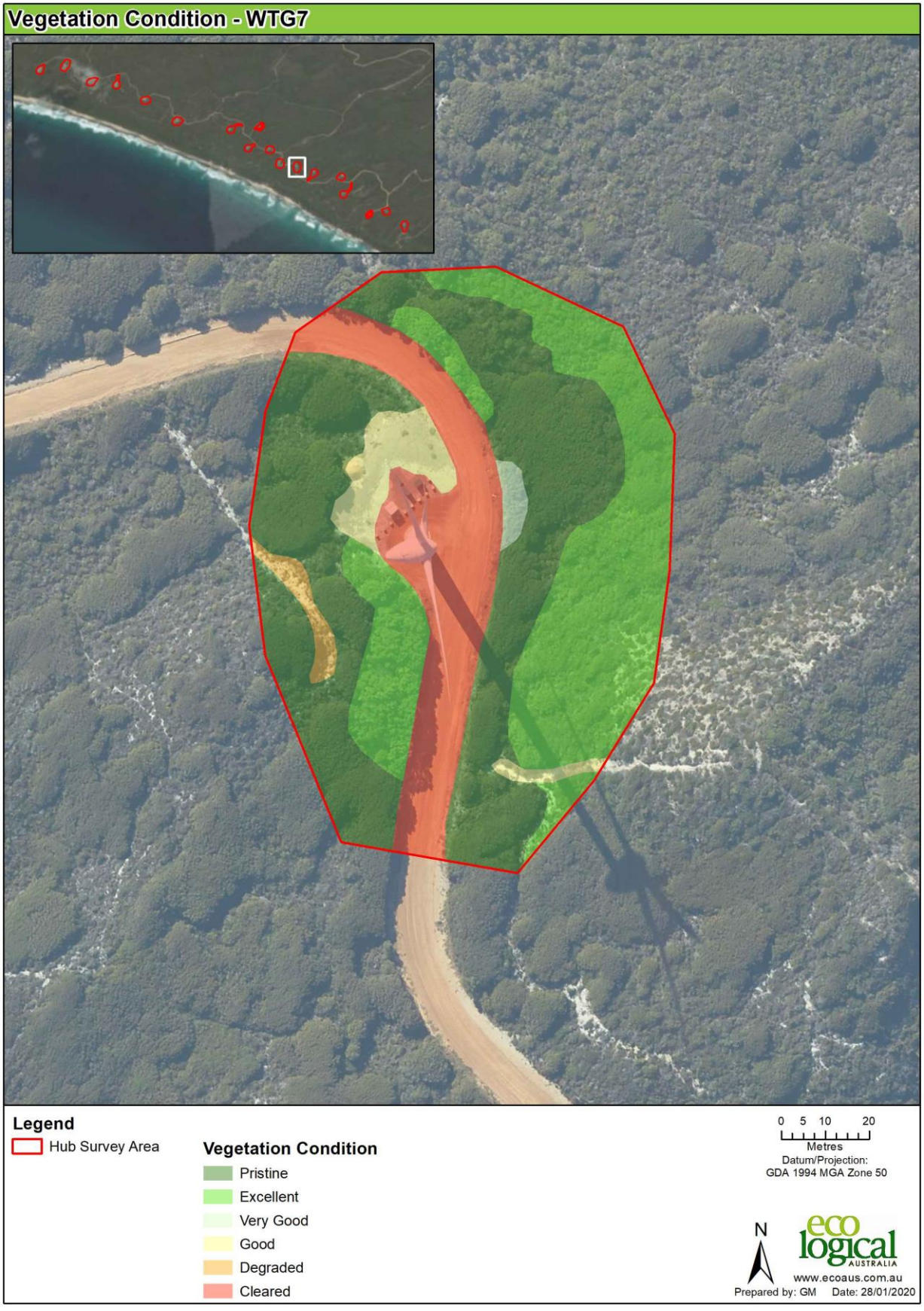
R: Rehabilitation

Appendix H Vegetation Condition recorded during the current survey

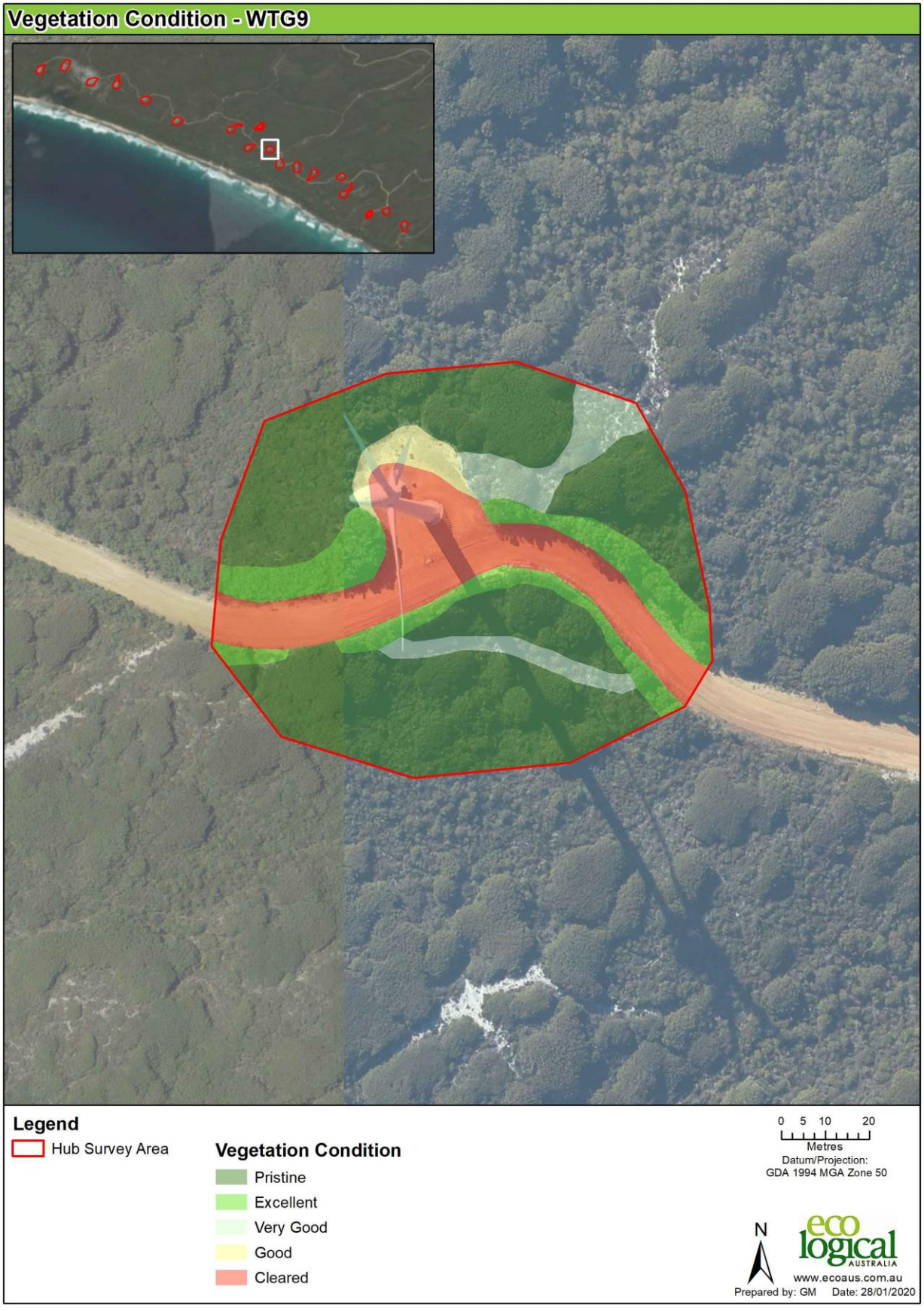

Vegetation Condition - WTG4
Legend
Hub Survey Area
Vegetation Condition
Pristine
Excellent
Good
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020

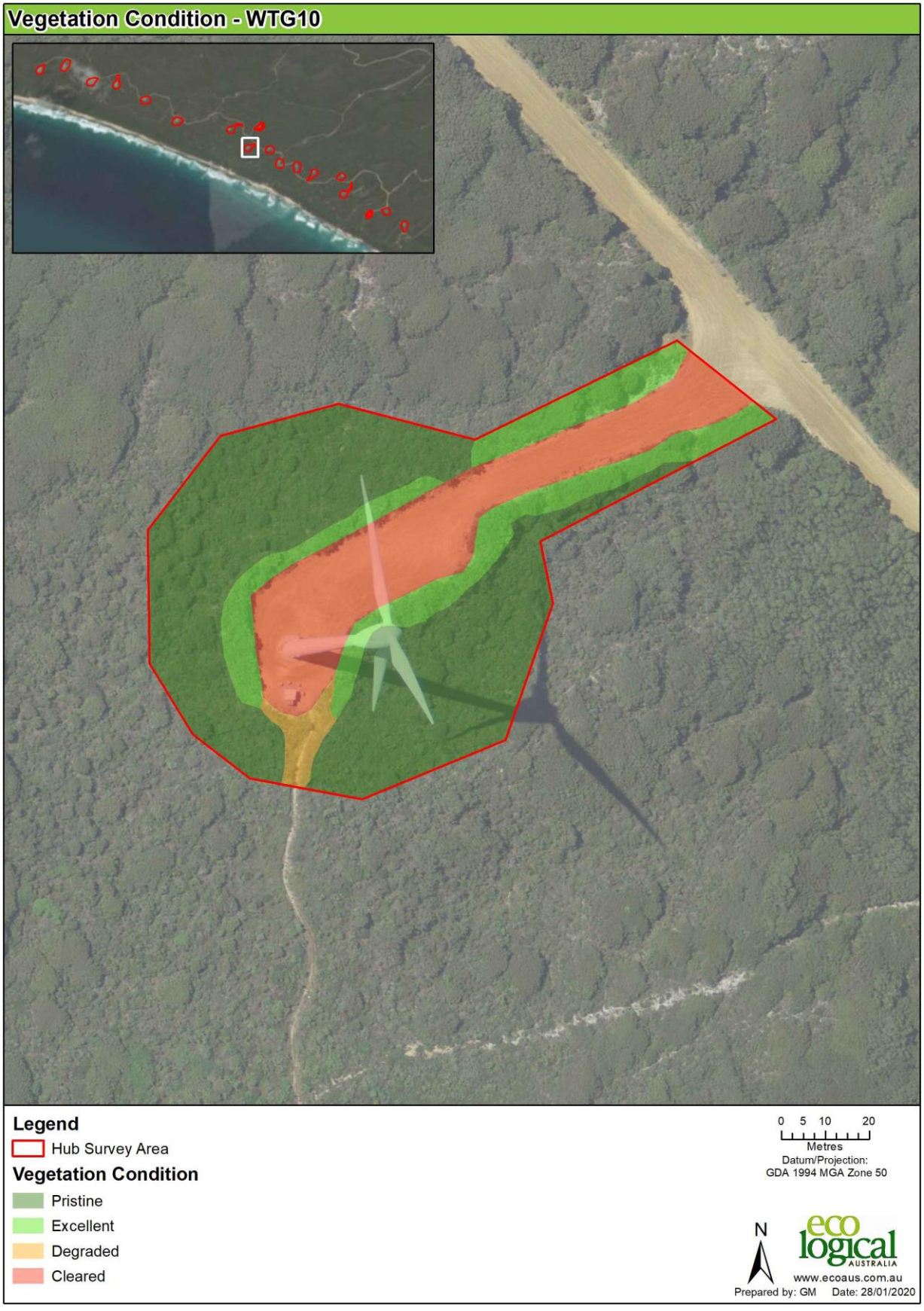

Vegetation Condition - WTG5
Legend
Hub Survey Area
Vegetation Condition
Excellent
Good
Degraded
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020


Vegetation Condition - WTG6
Legend
Hub Survey Area
Vegetation Condition
Excellent
Good
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020


Vegetation Condition - WTG7
Legend
Hub Survey Area
Vegetation Condition
Pristine
Excellent
Very Good
Good
Degraded
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020


Vegetation Condition - WTG8
Legend
Hub Survey Area
Vegetation Condition
Pristine
Excellent
Good
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020

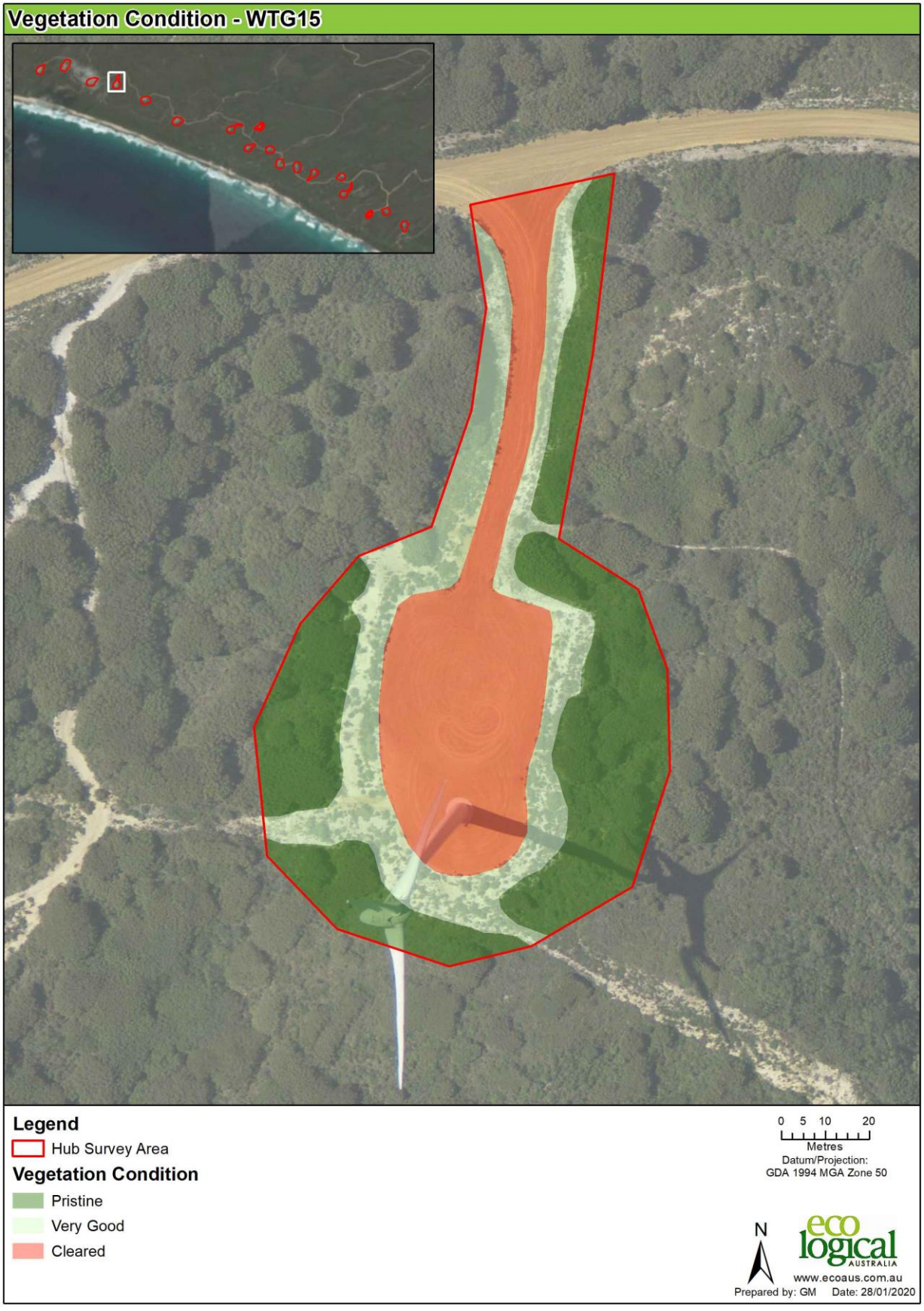

Vegetation Condition - WTG9
Legend
Hub Survey Area
Vegetation Condition
Pristine
Excellent
Very Good
Good
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020

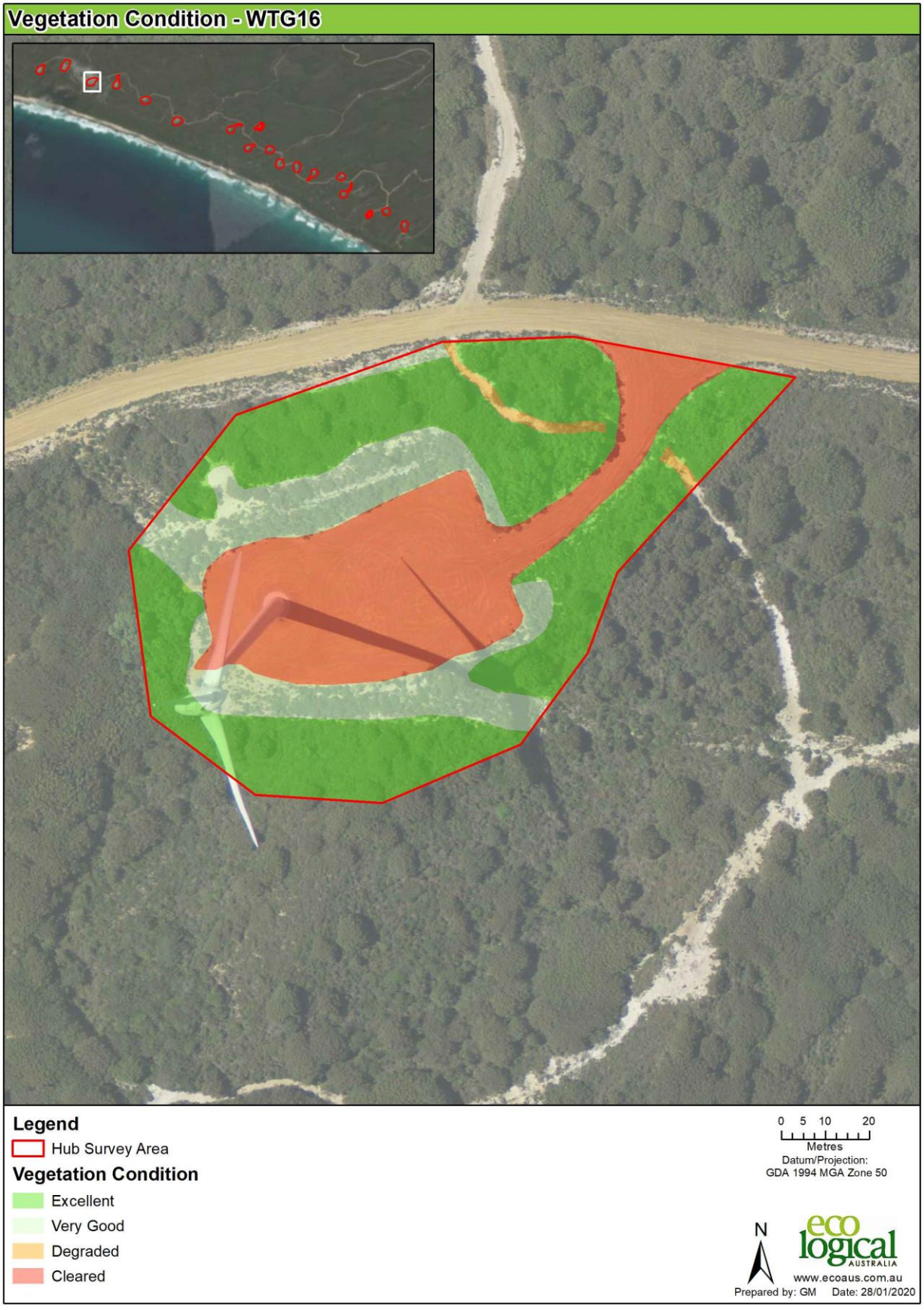

Vegetation Condition - WTG10
Legend
Hub Survey Area
Vegetation Condition
Pristine
Excellent
Degraded
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020


Vegetation Condition - WTG12
Legend
Hub Survey Area
Vegetation Condition
Pristine
Excellent
Good
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020


Vegetation Condition - WTG13
Legend
Hub Survey Area
Vegetation Condition
Pristine
Excellent
Very Good
Degraded
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020


Vegetation Condition - WTG14
Legend
Hub Survey Area
Vegetation Condition
Excellent
Very Good
Degraded
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020


Vegetation Condition - WTG15
Legend
Hub Survey Area
Vegetation Condition
Pristine
Very Good
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020


Vegetation Condition - WTG16
Legend
Hub Survey Area
Vegetation Condition
Excellent
Very Good
Degraded
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020


Vegetation Condition - WTG17
Legend
Hub Survey Area
Vegetation Condition
Excellent
Very Good
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020


Vegetation Condition - WTG18
Legend
Hub Survey Area
Vegetation Condition
Pristine
Very Good
Degraded
Cleared
0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50
N
eco logical AUSTRALIA
www.ecoaus.com.au
Prepared by: GM Date: 28/01/2020

Appendix I Extents of Vegetation Condition recorded during the current survey (ha)

Turbine	Pristine	Excellent	Very Good	Good	Degraded	Completely Degraded*	Grand Total
WTG2	0.53 (70.43%)	0.09 (11.87%)		0.03 (4.11%)	0.01 (1.03%)	0.10 (12.56%)	**0.76 (100%)**
WTG4	0.34 (36.80%)	0.26 (27.80%)		0.14 (15.42%)		0.19 (19.98%)	**0.93 (100%)**
WTG5		0.58 (76.27%)		0.01 (1.83%)	0.02 (2.09%)	0.15 (19.82%)	**0.76 (100%)**
WTG6		0.76 (80.82%)		0.05 (5.67%)		0.13 (13.52%)	**0.94 (100%)**
WTG7	0.45 (42.64%)	0.33 (31.57%)	0.01 (0.90%)	0.05 (4.81%)	0.02 (1.49%)	0.20 (18.59%)	**1.05 (100%)**
WTG8	0.75 (71.23%)	0.06 (5.71%)		0.03 (2.92%)		0.21 (20.14%)	**1.06 (100%)**
WTG9	0.48 (56.32%)	0.12 (14.25%)	0.07 (7.65%)	0.02 (2.52%)		0.17 19.25%)	**0.86 (100%)**
WTG10	0.43 (54.29%)	0.14 (18.38%)			0.02 (2.21%)	0.20 (25.12%)	**0.79 (100%)**
WTG12	0.58 (59.35%)	0.23 (24%)		0.01 (0.93%)		0.15 (15.72%	**0.97 (100%)**
WTG13	0.56 (51.95%)	0.03 (2.90%)	0.18 (16.67%)		0.01 (0.92%)	0.30 (27.56%)	**1.09 (100%)**
WTG14		0.57 (55.38%)	0.19 (18.50%)		0.01 (0.30%)	0.26 ((25.82%)	**1.02 (100%)**
WTG15	0.39 (40.80%)		0.27 (28.81%)			0.29 (30.40%)	**0.95 (100%)**
WTG16		0.50 (48.84%)	0.20 (19.74%)		0.01 (1.32%)	0.31 30.09%)	**1.02 (100%)**
WTG17		0.71 (57.41%)	0.21 (16.85%)			0.32 (25.74%)	**1.24 (100%)**
WTG18	0.40 (44.43%)		0.18 (19.79%)		0.05 (5.42%)	0.27 (30.36%)	**0.90 (100%)**
Grand Total	**4.92 (34.31%)**	**4.39 (30.59%)**	**1.31 (9.13%)**	**0.35 (2.47%)**	**0.13 (0.92%)**	**3.24 (22.57%)**	**14.34 (100%)**

*Areas mapped as cleared have been included in the Completely Degraded extents.

Appendix J Relevé Data

Site name and number	Date	Site type	Observer
AGWF-2-1	26/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Pristine	None	10-20 years	CH + PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey/white	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	572660	6119661

Lifeform	Height	Total % Cover	Species
Trees	<10m	30-70	*Agonis flexuosa* in patches
Shrubs	1-2m	30-70	*Bossiaea linophylla, Hibbertia furfuracea, Leucopogon obovatus*
	<1m		*Hakea florida, Allocasuarina humilis*
Herbs	<0.5m	<10	*Opercularia hispidula, Velleia trinervis, Gompholobium tomentosum, Comesperma virgatum*
Sedges	<0.5m	10-30	*Cyathochaeta equitans, Lepidosperma squamatum, Lyginia barbata*

Site name and number	Date	Site type	Observer
AGWF-2-2	26/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Pristine	None	10-20 years	CLH + PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey/white	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	572705	6119680

Lifeform	Height	Total % Cover	Species
Trees	<10m	30-70	*Agonis flexuosa* in patches
Shrubs	1-2m	30-70	*Bossiae linophylla, Hakea florida, Leucopogon obovatus, Banksia sessilis, Allocasuarina lehmanniana subsp. lehmanniana*
	<1m		*Isopogon formosus subsp. formosus, Acacia littorea, Lysinema ciliatum, Leucopogon obovatus*
Herbs	<0.5m	<10	*Opercularia hispidula, Platysace compressa*
Sedges	<0.5m	10-30	*Anarthria prolifera, Desmocladus flexuosus, Lepidosperma squamatum*

Site name and number	Date	Site type	Observer
AGWF-2-3	26/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Excellent	None	10-20 years	Ea
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey/white	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	572688	6119666

Lifeform	Height	Total % Cover	Species
Trees	<10m	>70	*Agonis flexuosa, Eucalyptus angulosa*
Shrubs	1-2m		
	<1m		
Herbs	<0.5m	<10	*Clematis pubescens*
Sedges	<0.5m	10-30	*Lepidosperma squamatum*

Site name and number	Date	Site type	Observer
AGWF-4-1	26/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Excellent	Walking track	10-20 years	CLH + PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	572155	6119830

Lifeform	Height	Total % Cover	Species
Trees	<10m	30-70	*Agonis flexuosa* in patches
Shrubs	1-2m	30-70	*Olearia axillaris, Hakea florida, Banksia sessilis, Scaevola crassifolia*
	<1m		*Leucopogon obovatus, Bossiaea linophylla, Hibbertia furfuracea*
Herbs	<0.5m	10-30	*Opercularia hispidula, Platysace compressa, Velleia trinervis, Conostylis aculeata subsp. aculeata*
Sedges	<0.5m	10-30	*Desmocladus flexuosus, Lepidosperma squamatum*

Site name and number	Date	Site type	Observer
AGWF-4-2	26/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Pristine	None	10-20 years	CH + PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	572127	6119897

No photo available

Lifeform	Height	Total % Cover	Species
Trees	<10m	30-70	*Agonis flexuosa* in patches
Shrubs	1-2m	30-70	*Hakea florida, Bossiaea linophylla, Adenanthos cuneatus*
	<1m		*Leucopogon obovatus, Adenanthos cuneatus, Banksia grandis, Allocasuarina humilis, Jacksonia horrida*
Herbs			
Sedges	>0.5m	10-30	*Lepidosperma squamatum, Anarthria prolifera, Lyginia barbata, Cyathochaeta equitans*

Site name and number	Date	Site type	Observer
AGWF-4-3	26/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Excellent	None	10-20 years	Ea
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	572127	6119897

Lifeform	Height	Total % Cover	Species
Trees	<10m	30-70	*Agonis flexuosa, Eucalyptus angulosa*
Shrubs	1-2m	30-70	
	<1m		*Hibbertia furfuracea, Tremandra stelligera*
Herbs			
Sedges	<0.5m	<10	*Lepidosperma squamatum, Desmocladus flexuosus*

Site name and number	Date	Site type	Observer
AGWF-6-1	29/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Excellent	Walking tracks	10-20 years	CH + PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
White/grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	571792	6120123

Lifeform	Height	Total % Cover	Species
Trees	<10m	30-70	*Agonis flexuosa* in patches
Shrubs	1-2m	30-70	*Banksia sessilis, Bossiaea linophylla, Spyridium globulosum*
	<1m		*Leucopogon obovatus, Scaevola crassifolia, Acacia littorea*
Herbs	<0.5m	<2	*Phyllanthus calycinus, Clematis pubescens, Opercularia hispidula, Cassytha racemosa*
Sedges	<0.5m	10-30	*Lepidosperma squamatum, Cyathochaeta equitans, Desmocladus flexuosus*

Site name and number	Date	Site type	Observer
AGWF-6-2	25/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Excellent	Walking tracks	10-20 years	CLH + PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
White/grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	571734	6120103

Lifeform	Height	Total % Cover	Species
Trees	<10m	30-70	*Agonis flexuosa* in patches
Shrubs	>2m	30-70	*Hakea florida, Adenanthos sericea, Spyridium globulosum*
	1-2m		*Banksia sessilis, Acacia littorea, Olearia axillaris*
	<1m		*Thomasia quercifolia*
Herbs			
Sedges	<0.5m	30-70	*Lepidosperma squamatum, Desmocladus flexuosus*

Site name and number	Date	Site type	Observer
AGWF-7-1	25/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Excellent	Near track	10-20 years	CH + PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
White/grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	571506	6120209

No photo available

Lifeform	Height	Total % Cover	Species
Trees	<10m	30-70	*Agonis flexuosa* in patches
Shrubs	<1m	30-70	*Hakea florida, Adenanthos cuneatus, Bossiaea linophylla, Jacksonia horrida, Allocasuarina humilis*
Herbs			
Sedges	<0.5m	30-70	*Cyathochaeta equitans, Lyginia barbata, Anarthria prolifera*

Site name and number	Date	Site type	Observer
AGWF-7-2	25/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Pristine	None	10-20 years	PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
White/grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	571527	6120202

No photo available

Lifeform	Height	Total % Cover	Species
Trees	<10m	>70	*Agonis flexuosa*
Shrubs	<1m		
Herbs			
Sedges	>0.5m	<10	*Lepidosperma gladiatum*

Site name and number	Date	Site type	Observer
AGWF-7-3	25/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Excellent	Near track	10-20 years	Ea
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
White/grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	571540	6120196

No photo available

Lifeform	Height	Total % Cover	Species
Trees	<10m	>70	*Agonis flexuosa, Eucalyptus angulosa*
Shrubs	1-2m	<10	*Melaleuca diosmifolia*
	<1m		*Bossiaea linophylla, Hibbertia furfuracea*
Herbs			
Sedges	<0.5m	<10	*Lepidosperma squamatum*

Site name and number	Date	Site type	Observer
AGWF-8-1	29/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Pristine	None	10-20 years	CH + PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	571293	6120222

Lifeform	Height	Total % Cover	Species
Trees	<10m	30-70	*Agonis flexuosa in patches*
Shrubs	1-2m	30-70	*Banksia sessilis*
	<1m		*Adenanthos cuneatus, Leucopogon obovatus, Olearia axillaris, Spyridium majoranifolium, Phyllanthus calycinus, Scaevola crassifolia, Acacia littorea*
Herbs	<0.5m	10-30	*Opercularia hispidula, Tricoryne elatior, Conostylis aculeata subsp. aculeata*
Sedges	<0.5m	<10	*Lepidosperma squamatum, Cyathochaeta equitans, Desmocladus flexuosus, Anarthria prolifera*

Site name and number	Date	Site type	Observer
AGWF-8-2	29/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Pristine	None	10-20 years	CLH + PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	2	571352	6120271

Lifeform	Height	Total % Cover	Species
Trees	<10m	2-10	*Agonis flexuosa in patches*
Shrubs	1-2m	>70	*Olearia axillaris*
	<1m		*Banksia sessilis, Leucopogon obovatus, Spyridium majoranifolium, Acacia littorea, Isopogon formosus subsp. formosus, Leucopogon parviflorus*
Herbs	<0.5m	10-30	*Pimelea ferruginea*
Sedges	<0.5m	<10	*Lepidosperma squamatum, Desmocladus flexuosus,*

Site name and number	Date	Site type	Observer
AGWF-8-3	29/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Pristine	None	10-20 years	PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	571347	6120217

Lifeform	Height	Total % Cover	Species
Trees	<10m	>70	*Agonis flexuosa*
Shrubs	1-2m	<2	
	<1m		*Hibbertia furfuracea, Rhagodia baccata*
Herbs			
Sedges	<0.5m	2-10	*Lepidosperma squamatum*

Site name and number	Date	Site type	Observer
AGWF-9-1	29/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Pristine	None	10-20 years	PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	571152	6120414

Lifeform	Height	Total % Cover	Species
Trees	<10m	>70	*Agonis flexuosa*
Shrubs	1-2m	<2	
	<1m		*Leucopogon obovatus*
Herbs			
Sedges	<0.5m	<2	*Lepidosperma squamatum*

Site name and number	Date	Site type	Observer
AGWF-9-2	29/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Excellent	None	10-20 years	Ea
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	571181	6120444

Lifeform	Height	Total % Cover	Species
Trees	<10m	>70	*Agonis flexuosa, Eucalyptus angulosa*
Shrubs	1-2m	<2	*Olearia axillaris, Melaleuca diosmifolia*
	<1m		
Herbs		<2	*Clematis pubescens*
Sedges	>0.5m	<2	*Lepidosperma gladiatum*

Site name and number	Date	Site type	Observer
AGWF-9-3	29/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Pristine	None	10-20 years	CH + PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	<2	571174	6120466

Lifeform	Height	Total % Cover	Species
Trees	<10m	<2	*Agonis flexuosa*
Shrubs	1-2m	30-70	*Olearia axillaris, Hakea florida, Bossiaea linophylla*
	<1m		*Leucopogon obovatus, Hakea prostrata, Allocasuarina humilis*
Herbs		<2	*Opercularia hispidula*
Sedges	<0.5m	10-30	*Lepidosperma squamatum, Cyathochaeta equitans, Desmocladus flexuosus, Anarthria prolifera*

Site name and number	Date	Site type	Observer
AGWF-10-1	29/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Pristine	None	10-20 years	CH + PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	570960	6120492

Lifeform	Height	Total % Cover	Species
Trees	<10m	<2	*Agonis flexuosa*
Shrubs	1-2m	30-70	*Bossiaea linophylla*
	<1m		*Leucopogon obovatus, Olearia axillaris, Acacia littorea, Banksia sessilis, Hibbertia racemosa, Adenanthos cuneatus, Spyridium globulosum, Melaleuca thymoides*
Herbs		<1	*Stylidium hirsutum*
Sedges	>0.5m	10-30	*Lepidosperma squamatum, Cyathochaeta equitans, Desmocladus flexuosus, Anarthria prolifera, Lyginia barbata*

Site name and number	Date	Site type	Observer
AGWF-10-2	29/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Pristine	None	10-20 years	CLH + CH + PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	<2	570936	6120426

Lifeform	Height	Total % Cover	Species
Trees	<10m	10-30	*Agonis flexuosa in patches*
Shrubs	1-2m	30-70	*Bossiaea linophylla, Olearia axillaris*
	<1m		*Leucopogon obovatus, Hakea florida, Allocasuarina humilis, Banksia sessilis, Adenanthos cuneatus, Spyridium majoranifolium, Melaleuca thymoides, Lysinema ciliatum*
Herbs		<2	*Platysace compressa*
Sedges	<0.5m	10-30	*Cyathochaeta equitans, Desmocladus flexuosus, Anarthria prolifera*

Site name and number	Date	Site type	Observer
AGWF-10-3	29/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Excellent	None	10-20 years	Ea
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	570908	6120457

Lifeform	Height	Total % Cover	Species
Trees	<10m	30-70	*Eucalyptus angulosa*
Shrubs	1-2m	30-70	*Olearia axillaris, Spyridium globulosum, Melaleuca diosmifolia*
	<1m		**Pelargonium capitatum*
Herbs			
Sedges	<0.5m	<2	*Lepidosperma squamatum*

Site name and number	Date	Site type	Observer
AGWF-12-1	28/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Excellent	None	10-20 years	Ea
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	2	570663	6120696

Lifeform	Height	Total % Cover	Species
Trees	<10m	30-70	*Eucalyptus angulosa, Agonis flexuosa*
Shrubs	1-2m	2-10	*Bossiaea linophylla, Melaleuca diosmifolia*
	<1m		*Olearia axillaris, Tremandra stelligera*
Herbs			
Sedges	<0.5m	<2	*Lepidosperma squamatum*

Site name and number	Date	Site type	Observer
AGWF-12-2	28/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Pristine	None	10-20 years	PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	570727	6120674

Lifeform	Height	Total % Cover	Species
Trees	<10m	30-70	*Eucalyptus angulosa, Agonis flexuosa*
Shrubs	1-2m	2-10	*Bossiaea linophylla, Melaleuca diosmifolia*
	<1m		*Olearia axillaris, Tremandra stelligera*
Herbs			
Sedges	<0.5m	<2	*Lepidosperma squamatum*

Site name and number	Date	Site type	Observer
AGWF-12-3	28/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Pristine	None	10-20 years	CH+ PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	570707	6120672

Lifeform	Height	Total % Cover	Species
Trees	<10m	30-70	*Agonis flexuosa* in patches
Shrubs	1-2m	30-70	*Bossiaea linophylla, Hakea florida, Leucopogon obovatus*
	<1m		*Tremandra stelligera, Banksia grandis, Melaleuca thymoides, Allocasuarina humilis, Adenanthos cuneatus*
Herbs			
Sedges	>0.5m	30-70	*Cyathochaeta equitans, Anarthria prolifera, Lepidosperma squamatum*

Site name and number	Date	Site type	Observer
AGWF-13-1	28/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Excellent	None	10-20 years	CH+ PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	<2	569961	6120770

Lifeform	Height	Total % Cover	Species
Trees	<10m	30-70	*Agonis flexuosa* in patches
Shrubs	1-2m <1m	30-70	*Bossiaea linophylla, Melaleuca thymoides, Adenanthos cuneatus, Jacksonia horrida, Hibbertia cunninghamii, Spyridium majoranifolium*
Herbs		<2	*Platysace compressa, Opercularia hispidula, Podolepis gracilis*
Sedges	>0.5m	10-30	*Lepidosperma squamatum, Desmocladus flexuosus, Lyginia barbata*

Site name and number	Date	Site type	Observer
AGWF-13-2	28/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Pristine	None	10-20 years	PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	570047	6120778

Lifeform	Height	Total % Cover	Species
Trees	<10m	>70	*Agonis flexuosa*
Shrubs	1-2m	2-10	
	<1m		*Tremandra stelligera, Hibbertia furfuracea*
Herbs		<1	*Clematis pubescens*
Sedges	<0.5m	30-70	*Lepidosperma squamatum*

Site name and number	Date	Site type	Observer
AGWF-14-1	28/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Excellent	None	10-20 years	CLH + PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	569655	6121095

Lifeform	Height	Total % Cover	Species
Trees	<10m	>70	*Agonis flexuosa in patches*
Shrubs	1-2m	30-70	*Banksia sessilis, Adenanthos cuneatus, Bossiaea linophylla*
	<1m		*Banksia grandis, Leucopogon obovatus, Acacia littorea, Hibbertia furfuracea, Acrotriche cordata, Hibbertia grossulariifolia*
Herbs	<0.5	<2	*Platysace compressa*
Sedges	<0.5m	30-70	*Cyathochaeta equitans, Anarthria prolifera, Lepidosperma squamatum, Desmocladus flexuosus, Schoenus caespitosa*

Site name and number	Date	Site type	Observer
AGWF-14-2	28/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Excellent	None	10-20 years	CH + PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	569621	6121045

Lifeform	Height	Total % Cover	Species
Trees	<10m	30-70	*Agonis flexuosa in patches*
Shrubs	1-2m	30-70	*Banksia sessilis, Adenanthos cuneatus,*
	<1m		*Bossiaea linophylla, Adenanthos cuneatus Hakea florida, Leucopogon obovatus, Hibbertia furfuracea, Pultenaea reticulata,*
Herbs	<0.5	<2	*Velleia trinervis, Stylidium violaceum*
Sedges	<0.5m	10-30	*Cyathochaeta equitans, Anarthria prolifera, Lepidosperma squamatum*

Site name and number	Date	Site type	Observer
AGWF-15-1	28/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Pristine	None	10-20 years	PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
White/Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	569203	6121258

Lifeform	Height	Total % Cover	Species
Trees	<10m	>70	*Agonis flexuosa*
Shrubs	1-2m	<10	
	<1m		*Hibbertia furfuracea, Rhagodia baccata*
Herbs			
Sedges	<0.5m	30-70	*Lepidosperma squamatum, Desmocladus flexuosus*

Site name and number	Date	Site type	Observer
AGWF-15-2	28/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Pristine	None	10-20 years	CH + PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	569267	6121233

Lifeform	Height	Total % Cover	Species
Trees	<10m	30-70	*Agonis flexuosa in patches*
Shrubs	1-2m	30-70	*Adenanthos cuneatus*
	<1m		*Adenanthos cuneatus, Hakea florida, Leucopogon obovatus, Jacksonia horrida, Melaleuca thymoides, Bossiaea linophylla, Amperea ericoides*
Herbs			
Sedges	<0.5m	30-70	*Cyathochaeta equitans, Anarthria prolifera, Desmocladus flexuosus*

Site name and number	Date	Site type	Observer
AGWF-15-3	28/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Very Good	None	10-20 years	Ea
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
White/Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	569208	6121247

Lifeform	Height	Total % Cover	Species
Trees	<10m	30-70	*Eucalyptus angulosa*
Shrubs	1-2m	<10	*Melaleuca diosmifolia, Melaleuca pentagona, Allocasuarina lehmanniana subsp. lehmanniana*
	<1m		
Herbs		<2	**Pelargonium capitatum, Podotheca gnaphalioides, Senecio pinnatifolius*
Sedges	<0.5m	<2	*Desmocladus flexuosus, Lepidosperma squamatum*

Site name and number	Date	Site type	Observer
AGWF-16-1	27/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Excellent	None	10-20 years	CLH + PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	568990	6121329

Lifeform	Height	Total % Cover	Species
Trees	<10m	30-70	*Agonis flexuosa in patches*
Shrubs	1-2m	30-70	*Hakea florida, Bossiaea linophylla*
	<1m		*Leucopogon obovatus, Banksia sessilis, Hakea prostrata*
Herbs	<0.5	<2	*Opercularia hispidula*
Sedges	<0.5m	10-30	*Lepidosperma squamatum, Anarthria prolifera, Desmocladus flexuosus*

Site name and number	Date	Site type	Observer
AGWF-16-2	27/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Excellent	None	10-20 years	Ea
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	568859	6121290

Lifeform	Height	Total % Cover	Species
Trees	<10m	<70	*Agonis flexuosa, Eucalyptus angulosa*
Shrubs	1-2m	30-70	
	<1m		*Hibbertia furfuracea, Tremandra stelligera*
Herbs			
Sedges	<0.5m	10-30	*Lepidosperma squamatum, Lepidosperma gladiatum*

Site name and number	Date	Site type	Observer
AGWF-16-3	27/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Excellent	None	10-20 years	Ea
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	568923	6121342

Lifeform	Height	Total % Cover	Species
Trees	<10m	30-70	*Agonis flexuosa*
Shrubs	1-2m <1m	30-70	*Bossiaea linophylla, Melaleuca thymoides, Leucopogon obovatus, Pultenaea reticulata, Adenanthos cuneatus, Jacksonia horrida, Hakea florida*
Herbs			
Sedges	<0.5m	10-30	*Lepidosperma squamatum, Cyathochaeta equitans, Anarthria prolifera*

Site name and number	Date	Site type	Observer
AGWF-17-1	26/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Excellent	None	10-20 years	CH + PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	568638	6121566

Lifeform	Height	Total % Cover	Species
Trees	<10m	30-70	*Agonis flexuosa*
Shrubs	1-2m	30-70	*Leucopogon obovatus, Bossiaea linophylla, Adenanthos cuneatus*
	<1m		*Melaleuca thymoides, Jacksonia horrida, Hakea florida*
Herbs	<0.5	<2	*Platysace compressa*
Sedges	<0.5m	30-70	*Lepidosperma squamatum, Cyathochaeta equitans, Anarthria prolifera, Desmocladus flexuosus*

Site name and number	Date	Site type	Observer
AGWF-17-2	26/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Excellent	None	10-20 years	PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	568611	6121509

Lifeform	Height	Total % Cover	Species
Trees	<10m	>70	*Agonis flexuosa*
Shrubs	1-2m		
	<1m		
Herbs			
Sedges	<0.5m	10-30	*Lepidosperma squamatum*

Site name and number	Date	Site type	Observer
AGWF-17-3	26/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Excellent	None	10-20 years	CLH + PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	568584	6121570

Lifeform	Height	Total % Cover	Species
Trees	<10m	30-70	*Agonis flexuosa in patches*
Shrubs	1-2m	30-70	*Banksia sessilis, Hakea florida, Olearia axillaris, Bossiaea linophylla*
	<1m		*Leucopogon obovatus, Hakea prostrata, Allocasuarina humilis, Hakea ruscifolia, Banksia dallanneyi*
Herbs	<0.5	<2	*Phyllanthus calycinus, Tricoryne elatior*
Sedges	<0.5m	30-70	*Lepidosperma squamatum, Cyathochaeta equitans, Desmocladus flexuosus*

Site name and number	Date	Site type	Observer
AGWF-18-1	26/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Pristine	None	10-20 years	PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
White/Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	568320	6121510

Lifeform	Height	Total % Cover	Species
Trees	<10m	>70	*Agonis flexuosa*
Shrubs	1-2m	10-30	*Rhagodia baccata*
	<1m		
Herbs			
Sedges	<0.5m	10-30	*Lepidosperma squamatum*

Site name and number	Date	Site type	Observer
AGWF-18-2	26/11/2019	Relevé	DM + EH
Vegetation condition	**Disturbance notes**	**Age since fire**	**Vegetation type**
Pristine	None	10-20 years	CH + PLF
Soil colour	**Landform unit**	**Soil type**	**Soil condition**
White/Grey	Undulating	Sand	Dry
Rock type	**Outcropping %**	**Easting**	**Northing**
Limestone	0	568286	6121427

Lifeform	Height	Total % Cover	Species
Trees	<10m	30-70	*Agonis flexuosa in patches*
Shrubs	1-2m	30-70	*Bossiaea linophylla, Olearia axillaris, Hakea florida, Leucopogon obovatus, Hibbertia furfuracea, Lysinema ciliatum, Spyridium majoranifolium*
	<1m		
Herbs	<0.5	<10	*Xanthosia huegelii, Opercularia hispidula, Orianthera serpyllifolia*
Sedges	<0.5m	10-30	*Lepidosperma squamatum, Cyathochaeta equitans, Anarthria prolifera*

Level 1 Vertebrate Fauna Survey for the Albany Wind Farm, Albany, Western Australia.

Report by Invertebrate Solutions Pty Ltd for Eco Logical Australia Pty Ltd on behalf of Synergy Pty Ltd

February 2020

Dr Timothy Moulds
Director and Principal Ecologist
Invertebrate Solutions Pty Ltd
PO Box 14
Victoria Park, WA 6979
Australia
tim@invertebratesolutions.com
www.invertebratesolutions.com

Invertebrate Solutions. (2020). Level 1 Vertebrate Fauna Survey for the Albany Wind Farm, Albany, Western Australia. Unpublished report to Eco Logical Australia Pty Ltd on behalf of Synergy Pty Ltd, February 2020.

Report Number 2020ISJ1202_F01_20200228

Prepared for: Eco Logical Australia Pty Ltd on behalf of Synergy

Frontispiece: Albany Wind Farm Turbine.

Table of Contents

List of Figures

List of Tables

List of Plates

Executive Summary

Synergy plans to undertake clearing surrounding wind turbines at the Albany Wind Farm, west of Albany in the south west of Western Australia, to enable ongoing maintenance of turbines. The Albany Wind Farm is situated in coastal peppermint (*Agonis sp*.) and heathland that is known to provide habitat for various vertebrate fauna species.

Invertebrate Solutions Pty Ltd (invertebrate Solutions) has been requested by Eco Logical Australia Pty Ltd (Eco Logical) on behalf of Synergy to undertake a Level 1 vertebrate fauna survey for the Albany wind farm project area. The results of the survey will be used to support a native vegetation clearing permit application to allow ongoing maintenance of the facility.

A total of 67 conservation significant vertebrate species (including Priority species) from 23 families were identified during the desktop review of the database searches (These were comprised of 59 bird species from 17 families, and eight mammal species from six families. A total of 11 conservation significant species retrieved from the database searches are considered as either Likely, Possibly or Unlikely to occur in the Survey Area. Of these nine conservation significant species, one species was recorded during the survey, three species are considered Likely to occur, two species are considered as Possibly occurring and five species are considered Unlikely to occur in the survey area.

During the field survey, three reptile species were recorded, the King Skink (*Egernia kingii*), Tiger Snake (*Notechis scutatus*) and Dugite (*Pseudonaja affinis*), 20 bird species from 14 families were recorded, and three mammal species were recorded, the Southern Brown Bandicoot (*Isoodon fusciventer*), Western Grey Kangaroo (*Macropus fuliginosus*) and a bat species, thought possibly to be the White-striped Freetail Bat (*Austronomus australis*).

A single species of conservation interest was recorded in the Survey Area during the fauna survey – the Southern Brown Bandicoot.

It is important to note, that although the survey area does provide potential habitat for a number of species, including a number of conservation significant species , the total proposal area is 14.34 ha, of which 11.1 ha comprises native vegetation that is required to be cleared on an as needs basis, for turbine maintenance will have limited effect on these fauna species.

1. Introduction

Synergy plans to undertake clearing surrounding wind turbines at the Albany Wind Farm, west of Albany in the south west of Western Australia, to enable ongoing maintenance of turbines. The Albany Wind Farm is situated in coastal peppermint (*Agonis sp*.) and heathland that is known to provide habitat for various vertebrate fauna species.

Invertebrate Solutions Pty Ltd (invertebrate Solutions) has been requested by Eco Logical Australia Pty Ltd (Eco Logical) on behalf of Synergy to undertake a Level 1 vertebrate fauna survey for the Albany wind farm project area. The results of the survey will be used to support a native vegetation clearing permit application to allow ongoing maintenance of the facility.

1.1 Purpose of this report

Invertebrate Solutions has been requested by Eco Logical on behalf of Synergy to undertake the following scope of works within the Albany wind farm project area, Albany, Western Australia:

- Undertake a desktop assessment for vertebrates in the survey area and surrounds
- Preliminary vertebrate fauna field assessment (Level 1 survey) at 15 wind turbine sites
- Record opportunistic observations of fauna, with a particular focus on conservation significant species (terrestrial vertebrates)
- Provide a written report (including maps) containing the above items.

1.2 Project area

The Albany Wind Farm is located at Sandpatch to the west of the Albany townsite, on the south coast of Western Australia and is shown in Figure 1. The survey area consists of 15 separate proposed clearing envelopes around existing wind turbines.

1.3 Conservation Legislation and Guidance Statements

Fauna are protected formally and informally by various legislative and non-legislative measures, which are outlined below:

- Legislative Protection:
  - Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)
  - Biodiversity Conservation Act 2016 (BC Act)
  - WA Environmental Protection Act 1986 (EP Act).
- Non-Legislative Protection:
  - WA Department of Biodiversity, Conservation and Attractions (DBCA) Priority lists for flora, ecological communities and fauna
  - Recognition of locally significant populations by DBCA.

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

The Biodiversity Conservation Act 2016 replaced both the Wildlife Conservation Act and the Sandalwood Act and came into effect on 1st January 2019. The aim of the new Act is to conserve and protect biodiversity and to promote the ecologically sustainable use of biodiversity components in the State, and will bring more activities within the scope of biodiversity laws.

Taxa listed as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1a, 1b, and 1c), or is a rediscovered species to be regarded as threatened species under section 26(2) of the Biodiversity Conservation Act 2016 (BC Act). Other categories include extinct or extinct in the wild and they are listed under section 23 (1) of the BC Act (Appendix 1).

If species meet one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection, they are covered under section 13(1) of the BC Act and are called specially protected species. Species that are listed as threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act can't also be listed as Specially Protected species (see Appendix 1 for a more detailed description of each threat category).

Threatened Ecological Communities (TECs) are also covered under the Biodiversity Conservation Act 2016 (BC Act) and are placed into three categories of critically endangered, endangered or vulnerable under section 27(1a, 1b, and 1c) of the BC Act depending on their threat status.

DBCA lists species that are possibly threatened but that do not meet criteria for listing under the BC Act, or are otherwise data deficient, and adds them to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora. Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring. Consideration of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations (see Appendix 1 for more detail of the priority codes).

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

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

Australia Migratory Bird Agreement (ROKAMBA) and the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention).

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

1.4 Survey Staff Qualifications

The field survey and observations for vertebrate fauna were undertaken by an experienced ecologist:

- Dr Timothy Moulds *BSc (Hons) Geol., PhD. Invert. Ecol.* (Invertebrate Solutions)

1.5 Report Limitations and Exclusions

This study was limited to the written scope provided to the client by Invertebrate Solutions (15th August 2019) and in Section 1.1. This study was limited to the extent of information made available to Invertebrate Solutions at the time of undertaking the work. Information not made available to this study, or which subsequently becomes available may alter the conclusions made herein. Assessment of potential impacts to SRE fauna was based on proposed development plans provided by the client.

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

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

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

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

Field surveys for invertebrates require multiple seasonal surveys to fully record all species that may be present in an area, and in varying weather conditions. The current survey was undertaken in a single season and additional surveys at different times of the year may record additional species.

Legend

- Level 1 Survey Area
- Cadastre
- Road
- Watercourse

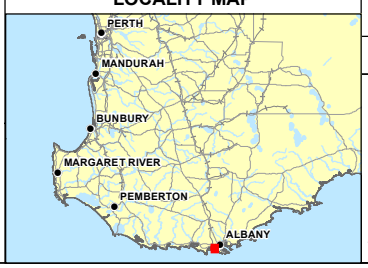
0 250 500 1,000 m

Scale: 1:30,000 @ A4

N

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS

LOCALITY MAP



- LOCALITY MAP SOURCED FROM LANDGATE 2006
- NATGEO WORLD MAP FROM OPEN SOURCE

Invertebrate Solutions
m +61 (0) 429 792 834
s +61 (0) 405 561 978
e tim@invertebratesolutions.com
w www.invertebratesolutions.com

PROJECT ID	DATE
Albany Wind Farm	28/02/2020

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
ENVIRONMAPS	TM	TM	0

Client: Synergy

Figure 1
Location of Level 1 Vertebrate Fauna Field Survey

C:\GIS\Jobs\Invertebrate Solutions\Albany Wind Farm - Synergy\Figures\AWF-LV1_F01 Location of Level 1 Vertebrate Fauna Field Survey_200228.mxd

2. Methods

Invertebrate Solutions undertook The fauna survey was completed in accordance with the following EPA and DAWE requirements for the environmental surveying and reporting of fauna surveys in WA, where relevant and practical, and as documented in:

- EPA Statement of Environmental Principles, Factors and Objectives (EPA 2018)
- EPA Environmental Factor Guideline: Terrestrial Fauna (EPA 2016)
- EPA Technical Guidance: Terrestrial Fauna Surveys (EPA 2016)
- EPBC Act referral guidelines for three threatened black cockatoo species (Department of Sustainability, Environment, Water, Population and Communities, 2012)

Revised draft referral guideline for three threatened black cockatoo species: Carnaby's Cockatoo, Baudin's Cockatoo and the Forest Red-tailed Black Cockatoo (Commonwealth of Australia, 2017).

Please note that the two EPA Technical Guidance documents (Sampling methods for Terrestrial vertebrate fauna and Terrestrial Fauna Surveys) above from 2016 have not been updated and are respectively the same as the following documents:

- Technical Guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment (EPA-DEC 2010)
- Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia. Guidance Statement No. 56 (EPA 2004).

In addition, the 2017 Black Cockatoo referral guidelines above are draft and currently under review following the public consultation period.

2.1 Desktop Assessment Methods

A desktop assessment was undertaken using a NatureMap search and the EPBC Protected Matters Search Tool (EPBC PMST) to identify fauna species of conservation significance potentially occurring in and near the survey area (DBCA 2020, DAWE 2020) (Appendix 2). The database searches were line searches with a buffer either side of 2.5 km, using the following co-ordinates:

- 35° 03' 48"S and 117°47' 50"E
- 35° 02' 50"S and 117°44' 55"E

A DBCA Threatened Fauna database, requested by Eco Logical was provided (NW corner: -35.044081° S, 117.749513° E, SE corner: -35.064923° S; 117.797106° E with a 7 km buffer [DBCA 2019]) (Appendix 2). Collectively, these sources were used to compile a list of species that have been previously recorded in the vicinity of the survey area. This list invariably includes some species that do not occur in the survey area, as some fauna have a limited or patchy distribution or a high level of habitat specificity for habitats which are not located in the survey area e.g. marine mammals and sea turtles which require ocean habitat. Some fauna may also have become locally extinct or were erroneously identified in previous surveys. This fauna was examined and then excluded from further consideration (Appendix 3).

2.2 Survey Effort and Timing

Invertebrate Solutions completed the level 1 Vertebrate fauna survey from 20-21st December 2019. The following survey methods very undertaken: (Table 1, Appendix 3). All coordinates in UTM are using datum GDA and located in Zone 50H.

Table 1 Locations of vertebrate fauna survey

Sample Site	UTM (GDA)	Habitat	Active search effort	Sample Date
WEC02	572690 6119659	*Agonis flexuosa* and coastal heath	75 minutes	20 Dec 2019
WEC04	572243 6119935	*Agonis flexuosa* and coastal heath	75 minutes	20 Dec 2019
WEC05	572112 6120063	*Agonis flexuosa* and coastal heath	75 minutes	20 Dec 2019
WEC06	571771 6120105	*Agonis flexuosa* and coastal heath	75 minutes	20 Dec 2019
WEC07	571559 6120162	*Agonis flexuosa* and coastal heath	75 minutes	20 Dec 2019
WEC08	571340 6120245	*Agonis flexuosa* and coastal heath	75 minutes	20 Dec 2019
WEC09	571205 6120467	*Agonis flexuosa* and coastal heath	75 minutes	20 Dec 2019
WEC10	570925 6120431	*Agonis flexuosa* and coastal heath	75 minutes	21 Dec 2019
WEC12	570688 6120710	*Agonis flexuosa* and coastal heath	75 minutes	21 Dec 2019
WEC13	570006 6120829	*Agonis flexuosa* and coastal heath	75 minutes	21 Dec 2019
WEC14	569639 6121083	*Agonis flexuosa* and coastal heath	75 minutes	21 Dec 2019
WEC15	569219 6121246	*Agonis flexuosa* and coastal heath	75 minutes	21 Dec 2019
WEC16	568942 6121282	*Agonis flexuosa* and coastal heath	75 minutes	21 Dec 2019
WEC17	568605 6121526	*Agonis flexuosa* and coastal heath	75 minutes	21 Dec 2019
WEC18	568301 6121482	*Agonis flexuosa* and coastal heath	75 minutes	21 Dec 2019

2.2.1 Habitat Assessment

Habitat assessments were undertaken at each of the 15 wind turbine sites. The fauna habitats were assessed for their potential to support species of conservation significance and the quality of habitat they provide to a wider suite of fauna. Fauna habitat assessments were undertaken to define and delineate the main broad fauna habitat types present. The habitat assessments were documented systematically for each habitat type on standardised field sheets. The habitat assessments consisted of the following:

- location of the broad habitat type within the Survey Area (GPS co-ordinate) and its relative percentage
- habitat condition was assessed at each assessment site as 'completely degraded' through to 'pristine', based on the scale given in Keighery (1994)
- landscape position
- dominant vegetation and structure (e.g. number of vegetation strata)
- hollow-bearing trees and dead stags (e.g. average size and abundance of hollows)
- description of any rock and rocky outcrops
- logs (e.g. abundance and size)
- substrate (e.g. leaf litter)
- wetlands, creeks, rivers, dams and other water bodies
- description of any observed nests and roosts (if present)

- subterranean roosts (e.g. caves, disused mineshafts and/or adits)
- associated fauna species observed using the habitat
- disturbance (e.g. cattle grazing, fire)
- photo showing a typical example of the broad habitat type.

A total of 15 habitat assessments were undertaken in the survey area. The location of the habitat assessments can be seen in Figure 1.

2.2.2 Opportunistic Searches

Fauna observations were recorded opportunistically during the survey. The survey included looking through leaf litter, overturning rocks, and looking under decorticating bark (where present). Other recordings included visual sightings of active fauna such as reptiles and birds, signs of species presence such as burrows and scats of mammals and reptiles, and aural observations of amphibian and bird species. Observation (visual or heard) of species considered of conservation significance were recorded by means of a hand-held GPS.

2.2.3 Opportunistic Searches

For species identified in the desktop assessment, where there is doubt to their true taxonomy (through subsequent name changes or taxonomic reviews), an effort was made to determine the current scientific name for each taxon. In some cases, old scientific names were presented where correct nomenclature could not be determined due to name changes. Some taxon names may be followed by 'sp.', meaning that the species name was not given in the data source or the identification is in doubt. Where there are previously recorded taxa such as this that have the potential to be a conservation significant species, they are discussed specifically in the results and discussion sections.

2.2.4 Taxonomy

Taxonomy and nomenclature in this report follows the accepted listing of published terrestrial vertebrate species, primarily the West Australian Museum (WAM 2019). In addition, the following are also considered where relevant; the listing for amphibians and reptiles is consistent with Wilson & Swan (2017) and (to a lesser extent) Cogger (2014); bird listings are consistent with Christidis & Boles (2008) and mammal listings are consistent with Woinarski *et. al*. (2014).

2.2.5 Limitations

The following specific comments are made with regard to project specific limitations for the Project:

- **Sampling effort** – The level 1 vertebrate fauna survey included a total of 1,125 minutes of active searching split amongst 75 different sites at 15 different proposed clearing locations. This survey effort provides a high degree of certainty that the majority of species would be recorded if present during the survey.
- **Timing** – The survey was undertaken in December when many reptile, mammal and bird species are active in the area.

- **Methods** – The use of visual inspection, active searching of habitats for potential vertebrate species and use of tracks, scats and diggings associated with specific species enables a wide variety of species and to be detected without direct observation in the field.
- **Habitats sampled** – All significant potential habitats within the Survey Area were sampled.
- **Access to areas** – No access issues were encountered in the survey with all areas able to be fully accessed.

3. Results

3.1 Database Search Results

Results of the databases searches outlined a total of 169 vertebrate species from 61 families (Appendix 2). These were comprised of seven reptile species from three families, 156 bird species from 47 families, and 17 mammal species from 11 families (Appendix 2).

A total of 67 conservation significant vertebrate species (including Priority species) from 23 families were identified during the desktop review of the database searches. These were comprised of 59 bird species from 17 families, and eight mammal species from six families (Appendix 3).

Waterbirds

A total of 51 wetland bird species were returned in the database searches. These were a combination of waders, waterbirds, seabirds and migratory marine birds. Wetland avifauna such as wading birds, including Plovers and Sandpipers, Stints and Shanks inhabit estuaries, mudflats, saltmarshes, sandflats and beaches, with shallow water edges, where they feed on invertebrates such as worms, molluscs, insects and crustaceans (Garnett *et al.* 2011). Although the coastline is approximately 300 m to the south of the survey area, suitable coastal or wetland habitat for these species is not present in the survey area itself and therefore, these species have been omitted from any further discussion.

The seabirds and migratory marine birds returned from the database searches, including Albatross, Petrels and Shearwaters are oceanic birds, some of which are capable of remaining at sea for years, or circumnavigating the globe. These seabirds feed at sea, generally nest on islands and so are rarely seen (Slater *et al*. 2009). Suitable habitat for these species is not present in the survey area and therefore, these species have been omitted from any further discussion.

Now regionally extinct

A number of species in the database searches were also known to be historical records of species now locally extinct, for example the Dibbler (*Parantechinus apicalis*). These species have therefore been omitted from any further discussion. In addition, those species with two or less DBCA records have also been omitted from further discussion.

Database errors and anomalies

Occasionally there are errors and/or anomalies in the database searches that are sourced from the various government departments, for example, the Grey Wagtail (*Motacilla cinerea*), which is a rare visitor (Johnstone & Storr 1998). These species have been omitted from any further discussion.

It is important to note, that the EPBC PMST is not entirely based on point records, but also on broader information, including bioclimatic distribution models, whereas NatureMap is. Consequently, the results of the EPBC PMST are in some cases less accurate, particularly at a local scale (e.g. the Woylie *Bettongia penicillata ogilbyi*). As a result, the EPBC PMST can include species that do not occur in the Survey Area because, for example, there is no habitat available or they are

now known to be locally extinct. These species have therefore been omitted from any further discussion.

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

Conservation Significant Fauna

With the aforementioned waterbirds and locally/regionally extinct and database errors species removed, a total of 11 conservation significant species retrieved from the database searches are considered as either likely, possibly or unlikely to occur in the Survey Area. Of these 11 conservation significant species, one species was recorded during the assessment, three species are considered Likely to occur in the Survey Area, two species are considered Possible and five species are considered Unlikely to occur (Table 2). All 11 conservation significant species will be discussed in section 4.1.

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

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

Table 2 Conservation significant fauna potentially occurring in the Survey Area

Common Name	Taxa	Conservation Status BC Act	Conservation Status EPBC Act	Likelihood of occurrence in Survey Area
Birds				
Osprey	*Pandion haliaetus*	-	MiMa	Unlikely
White-bellied Sea Eagle	*Haliaeetus leucogaster*	-	Ma	Unlikely
Fork-tailed Swift	*Apus pacificus*	-	MiMa	Unlikely
Rainbow Bee-eater	*Merops ornatus*	-	Ma	Unlikely
Forest Red-tailed Black Cockatoo	*Calyptorhynchus banksii naso*	Vu	Vu	Likely
Baudin's Black Cockatoo	*Calyptorhynchus baudinii*	En	En	Likely
Carnaby's Black Cockatoo	*Calyptorhynchus latirostris*	En	En	Likely
Western Bristlebird	*Dasyornis longirostris*	En	En	Unlikely
Mammals				
Southern Brown Bandicoot	*Isoodon fusciventer*	P4	-	Recorded
Western Ringtail Possum	*Pseudocheirus occidentalis*	CR	CR	Possible
Western Brush Wallaby	*Notamacropus irma*	P4	-	Possible

En = Listed as Endangered under the EBPC Act, Vu = Listed as Vulnerable under the EBPC Act, Mi = Listed as Migratory under the EBPC Act, Ma = Listed as Marine under the EBPC Act, MI = Migratory, OS = Other specially protected species, VU = Vulnerable, EN = Endangered, CR = Critically Endangered, CD = Conservation Dependent, NT = Near Threatened. IUCN Threat categories (BC Act) , P = Listed as Priority by the DBCA.

3.2 Field Assessment Results

Amphibians

From the database searches, no amphibian species have been recorded in the surrounding area and no amphibian species were recorded during the field assessment.

Reptiles

From the database searches, a total of seven reptile species from three families have been previously recorded in the surrounding area. During the field survey, three reptile species were recorded, the King Skink (*Egernia kingii*), Tiger Snake (*Notechis scutatus*) and Dugite (*Pseudonaja affinis*) were recorded (Appendix 3).

Birds

From the database searches, a total of 145 bird species from 47 families have been previously recorded in the surrounding area (including earlier dismissed species). During the field survey, 20 bird species from 14 families were recorded (Appendix 3).

Mammals

From the database searches, a total of 17 mammal species from 11 families have been previously recorded in the surrounding area. During the field survey three mammal species were recorded, the Southern Brown Bandicoot (*Isoodon fusciventer*), Western Grey Kangaroo (*Macropus fuliginosus*)

and a bat species, thought possibly to be the White-striped Freetail Bat (*Austronomus australis*) (Appendix 3).

3.3 Fauna Habitats

A total of 15 habitat assessments were undertaken in the Survey Area (Figure 1, Appendix 4). The entire Proposal Area (14.34 ha) consists of coastal heathland , consisting of species including scattered Bullich (*Eucalyptus megacarpa*), Peppermint, Banksia, Acacia and Allocasuarina (Plate 1).

With the exception of the cleared areas at each of the wind turbines, habitat condition was considered to be in Very Good to Excellent condition throughout the Survey Area.

Plate 1 Example of typical Coastal heathland in the survey area

4. Discussion

4.1 Fauna of Conservation Significance

A total of 11 conservation significant species retrieved from the database searches are considered as either Likely, Possibly or Unlikely to occur in the Survey Area. Of these nine conservation significant species, one species was recorded during the survey, three species are considered Likely to occur, two species are considered as Possibly occurring and five species are considered Unlikely to occur in the survey area. All 11 conservation significant species will be discussed below.

4.1.1 Species Recorded

A single species of conservation interest was recorded in the Survey Area during the fauna survey – the Southern Brown Bandicoot.

Southern Brown Bandicoot (Isoodon fusciventer)

The Bandicoot is listed as P4 under the DBCA Priority List. This species once occurred throughout south-west WA; it now occurs from Guilderton southwards on the Swan Coastal Plain, (including the Perth Metropolitan area), in Jarrah and Karri (*E. diversicolor*) forests and adjacent coastal vegetation complexes, east along the south coast to Cape arid National Park. The species inhabits scrubby, often swampy, vegetation with dense cover up to about 1 m high.

The Southern Brown Bandicoot is patchily distributed in suitable habitat, with populations inhabiting Jarrah and Wandoo forests usually associated with watercourses. The Southern Brown Bandicoot constructs nests under plants on the ground. They do not create burrows, but occasionally use the burrows of other species. It feeds in adjacent forest and woodland that is burnt on a regular basis and in areas of pasture and cropland lying close to dense cover. It is often associated with wetlands with dense vegetation where they feed on fruit, seeds and insects. They forage for food mainly by digging in the leaf-litter and soil to find insects, fungi, plant root nodules and bulbs (Woinarski *et al.* 2014).

Suitable habitat is present and diggings were recorded at various locations. In addition the DBCA threatened fauna database returned 28 records of the Southern Brown bandicoot in the vicinity of the survey area. The Southern Brown Bandicoot was also recorded in the fauna survey (via diggings) undertaken by Bio Diverse Solutions (BDS) in 2018, which addressed turbines 3 and 11 (BDS 2018).

It is important to note that although the survey area does provide potential habitat for the Southern Brown Bandicoot, the total proposal area is 14.34 ha, of which 11.1 ha comprises native vegetation that is required to be cleared on an as needs basis, for turbine maintenance will have little to near no impact on the species locally, but particularly not as a regional level.

4.1.2 Species Considered Likely to Occur

A total of three conservation significant species are considered Likely to occur in the survey area.

Black Cockatoos

All three species of Black Cockatoo (Carnaby's Cockatoo, Baudin's Cockatoo and FRTBC) could potentially occur in the survey area. The distribution of all three species can be seen in the 2017 DAWE distribution maps in Appendix 5.

Carnaby's Cockatoo

Carnaby's Cockatoo is listed as Endangered under the EPBC Act and the BC Act. is endemic to south-west WA, and is distributed from the Murchison River to Esperance and inland to Coorow, Kellerberrin and Lake Cronin (Cale 2003). The species was once common, but the population has declined significantly in the last half century, and is now locally extinct in some areas (Johnstone & Storr 1998; Shah 2006). In the last 45 years (prior to Cale 2003) the species has suffered a 50% reduction in its abundance (Cale 2003). More recent information suggests this decline has continued. This reduction is due to the clearing of core breeding habitat in the wheatbelt, the deterioration of nesting hollows, and clearing of food resources on the Swan Coastal Plain (SCP) (Cale 2003). The total population of Carnaby's Cockatoo was estimated to be 40,000 in 2008 (Johnstone & Kirkby 2008). Since then, trend analyses of the seven Great Cocky Counts 2010 – 2017 identified strong indications that the population of Carnaby's Black-Cockatoo inhabiting the Perth-Peel Coastal Plain continues to decline.

Carnaby's Cockatoos feed on seeds, nuts and flowers of a variety of native and exotic plants. Food plants include a variety of Eucalyptus species, such as Marri, Jarrah, Swan River Blackbutt (*Eucalyptus patens*), Coastal Blackbutt (*Eucalyptus todtiana*), Caesia (*Eucalyptus caesia*) and Salmon Gum, as well as Pine trees (Pinus sp.), Grevillea, Allocasuarina, and Hakea species (Shah 2006). Marri nuts that are damaged extensively, especially on the main body of the nut, are likely to have been chewed by Carnaby's Cockatoo. The 'levering' of Marri nuts by Carnaby's Cockatoos tends to leave different marks on the fruit casings, particularly in the location of indentations by the lower mandible and in the amount of damage caused to the rim of the fruit casing. Carnaby's Cockatoos also generally feed on green Marri nuts that are soft enough for their beaks to manipulate. The seeds from a variety of Banksia species and the cones of Pine trees provide the highest energetic yield (Cooper *et al*. 2002).

Breeding has been recorded from early July to mid-December, and primarily occurs in the wheatbelt in the semi-arid and subhumid interior (Johnstone & Storr 1998). However, this species is currently expanding its breeding range westward and south into the Jarrah-Marri forests of the Darling Scarp (e.g. Wungong Dam Catchment) and into the Tuart forests of the SCP including Yanchep, Baldivis, Lake Clifton and near Bunbury (Johnstone & Kirkby 2011).

Carnaby's Cockatoo display strong pair bonds and mate for life. They nest in hollows of smooth-barked eucalypts particularly Salmon Gum and Wandoo but nests have also been found in other Eucalypt species including York Gum (*Eucalyptus loxophleba*), Flooded Gum (*Eucalyptus rudis*), the rough-barked Marri and Tuart (Johnstone & Kirkby 2011). In most nests in Tuart, eggs are laid on a mat of wood chips at the bottom of a large hollow (mostly top entry hollows) ranging from a few cm's to five m deep (Johnstone & Kirkby 2011). Clutch size is 1–2 eggs, more typically two; only one

young is reared (Saunders 1986). Incubation lasts for 29 days and only the female incubates and broods. The nestling is brooded by the female during which time both rely on food from the male. Once brooding is complete, the female then leaves the nest each day at dawn, sometimes returning mid-morning (with the male) to feed the chick (Johnstone & Kirkby 2011). After approximately three weeks she ceases to brood and the chick is fed by one or both parents in the morning and in the late evening (Johnstone & Kirkby 2011).

Approximately 87% (525,732 ha) of potential Carnaby's Cockatoo habitat (i.e. areas of vegetation that contain flora species and vegetation types that could support the species' breeding, feeding and night roosting activities) has been cleared in the wheatbelt since European settlement. The south-west region is now a severely fragmented landscape and the further loss of foraging habitat, the lack of suitable breeding sites, climate change, alterations in the landscape, changing forest structure with almost every part of the Jarrah-Marri forest logged in the past and with most trees too young to form hollows, and competition with exotic species, exacerbate the future conservation of Carnaby's Cockatoo (Johnstone & Kirkby 2011).

Baudin's Cockatoo

Baudin's Cockatoo is listed as Endangered under the EPBC Act and the BC Act. This species is distributed through the south-western humid and subhumid zones, from the northern Darling Range and adjacent far east of the SCP (south of the Swan River), south to Bunbury and across to Albany (Johnstone & Kirkby 2011). Baudin's Cockatoo rarely occurs near the coast north of Mandurah, and rarely occurs north of the Swan River (Johnstone & Kirkby 2008, Johnstone & Storr 1998). Baudin's Cockatoo usually occur in small flocks of up to 30, or occasionally up to 50 and rarely in aggregations of up to 1200 (Johnstone & Kirkby 2008). Baudin's Cockatoo is distinguished from Carnaby's Cockatoo by its longer bill and slightly different call.

This species forages primarily in Eucalypt forest, where it feeds on Marri seeds, flowers, nectar and buds. They also feed on a wide range of seeds of Eucalyptus, Banksia, Hakea and Pines (*Pinus* sp.) as well as fruiting apples and pears and beetle larvae from under the bark of trees (Johnstone & Kirkby 2008, Johnstone & Storr 1998). Baudin's Cockatoo forages at all levels of the forest, from the canopy to the ground, often feeding in the understorey on proteaceous trees and shrubs, especially Banksia, and in orchards both in trees and on dropped or fallen fruit on the ground.

The breeding biology of this species is poorly known. It has been recorded breeding in the deep south-west, north to the Whicher Range and Lowden and also isolated records at Wungong Catchment, Serpentine (hills area) and east to Kojonup and near Albany (Johnstone & Kirkby 2008). They nest in large, mostly vertical, hollows of Karri, Marriand Wandoo. Baudin's Cockatoos display strong pair bonds are monogamous and most likely mate for life (Johnstone & Kirkby 2008). The pair remains together all year round except when the female is incubating and brooding. Both adults play a part in selecting the nest hollow, but only the female is responsible for renovation and preparing the hollow for breeding. Preparation of the hollow consists of chewing around the entrance of the hollow and down one part of the interior wall. Pairs have also been recorded prospecting for hollows in most months and outside the breeding range (Johnstone & Kirkby 2008).

Forest Red-tailed Black Cockatoo

The FRTBC is listed as Vulnerable under the EPBC Act and the BC Act. It is distributed through the humid and subhumid south-west of WA from Gingin through the Darling Ranges to the south-west from Bunbury to Albany (primarily in the hilly interior) (Johnstone & Storr 1998, Johnstone *et al.* 2013a). In these areas, the FRTBC inhabits dense Jarrah, Karri, and Marri forests that receive more than 600 mm average annual rainfall (Johnstone & Storr 1998). However, in recent years the FRTBC has moved on to the SCP to forage in the Perth metropolitan area (Johnstone & Kirkby 2011). The FRTBC occurs in pairs or small flocks, or occasionally large flocks of up to 200 birds (Johnstone & Storr 1998).

The FRTBC feeds primarily on Marri and Jarrah fruit, but also Tuart and to a lesser extent on Blackbutt, Albany Blackbutt (*Eucapyptus staeri*), Karri, Sheoak (*Allocasuarina fraseriana*) and Snottygobble (*Persoonia longifolia*) (Johnstone *et al*. 2013b). The FRTBC can obtain energy faster when feeding on Marri and Jarrah than other food sources (Cooper *et al*. 2002), and these two-plant species make up most of their diet (Johnstone *et al.* 2013b).

FRTBC shear the base of Marri nuts at a 45º angle to remove seeds (the 'bottom slice' method), while Baudin's Cockatoos use their elongated upper mandible to pry seeds out, leaving the nut intact (the 'lever') (Johnstone & Kirkby 1999, Cooper *et al*. 2002). Carnaby's Cockatoos may use either technique to feed on Marri nuts, but generally with some modification, e.g. the 'slicing' of fruits may occur along the side of the fruit casing.

The FRTBC is monogamous and pairs nest in tree hollows from 6.5 – 33 m above ground and most nests are in large and old mature Marri, and these trees are the most important nesting tree throughout the FRTBC range (Johnstone *et al.* 2013a). Nest trees of the FRTBC have a mean circumference at breast height of 2.79 m, a mean estimated age of 222 years and a mean overall height of 20.24 m (Johnstone *et al*. 2013a).

Breeding has been recorded in all months, with peaks in April-June and August-October. Only one egg is laid, which the female incubates for 29 to 31 days, before a nestling hatches and weighs between 27 and 32 g. The female remains in the hollow during incubation and only leaves for a short period in the evening to be fed by the male, usually at dusk (Johnstone *et al*. 2013b). Brooding is for up to 10 days, after which the female leaves the nest between dawn and dusk. Pairs of birds appear to recognise each other by calls, not responding to calls by others in the area. Chicks only respond when the parent is heard and are fully feathered at 48 days (Johnstone *et al.* 2013b).

The survey area consisted of Peppermint (*Agonis flexuosa*) and Parrot Bush (*Banksia sessillis*), both known foraging items of all three species of Black Cockatoo, however, no Black Cockatoos were observed (visually or audibly) during the survey and no foraging evidence was recorded. It is important to note, that although these are known dietary items for all three Black Cockatoo species, they are not their preferred foraging items (DSEPaC 2012).

The survey area is within the known distribution of all three Black Cockatoo species and suitable foraging habitat is present. Breeding habitat, however, was not present in the survey area. None of the species recorded were large Eucalyptus trees that are known breeding habitat for Black Cockatoos. The vegetation present is coastal heathland and as such does not form the necessary large hollows required by Black Cockatoos to breed in (DSEWPaC 2012).

The DBCA threatened fauna database returned six records of the FRTBC, 57 records of Baudin's Black Cockatoo, 92 records of Carnaby's Black Cockatoo (as well as 34 records of White-tailed Black Cockatoo, which could be Carnaby's or Baudin's because as they look very similar, they can be confused by those unfamiliar with the species). Consequently, all three Black Cockatoo species are considered as Likely to occur in the survey area.

It is important to note that although the survey area does provide some potential foraging habitat for all three species of Black Cockatoo, the clearing for the total proposal area is 14.34 ha, of which 11.1 ha comprises native vegetation, that is required to be cleared on an as needs basis, for turbine maintenance will have little to near no impact on the species locally, but particularly not as a regional level.

4.1.3 Species Considered as Possibly Occurring

A total of two conservation significant species are considered as Possibly occurring in the survey area.

Western Ringtail Possum (*Pseudocheirus occidentalis*)

Western Ringtail Possum is listed as Critically Endangered (CR) under the EPBC Act and the BC Act. Western Ringtail Possum (WRP) populations have declined or become locally extinct over much of their former range in the south-west as a result of clearing and fragmentation of habitat associated with agricultural development (Jones *et al.* 1994; Shedley & Williams 2014). However, even in the relatively intact forested regions of the south-west, populations have declined significantly, particularly since 1998 (Shedley & Williams 2014; Woinarski *et al*. 2014). Threatening processes include logging intensity, inappropriate fire regimes, dieback, and a drying climate may have all contributed to the degradation of WRP habitat, and increased the exposure of WRP to predation by foxes (*Vulpes vulpes*) and cats (*Felis catus*) or to heat stress (Jones *et al*. 1994; Wayne *et al*. 2005; Woinarski *et al*. 2014).

The highest population densities of WRP are now found around the Bunbury (Binningup) to Dunsborough coastal strip, which coincides with an area of urban development and loss of prime habitat (Shedley & Williams 2014). This coastal strip is considered to be a stronghold for the WRP and is therefore a focus for recovery and conservation of the species. High WRP population densities have been recorded in some urban areas, particularly where mature Peppermint trees (*Agonis flexuosa*) with large, dense and overlapping canopies have been retained (Harewood 2008). This habitat type is thought to provide high quality shelter and food. High population densities may indicate that WRP have benefited from some forms of urbanisation, or alternatively have been displaced from the broader setting by vegetation clearing and are confined to smaller pockets of remnant habitat.

The main component of suitable habitat for WRP is the Peppermint tree either as a dominant woodland species or as an understory component of Eucalypt woodland (Jones *et al*. 1994). In coastal areas, the WRP diet is largely dominated by Peppermint leaves (Jones *et al*. 1994; De Torres 2008). Additional woodland species known as WRP habitat include Jarrah, Marri, Tuart and various species of Melaleuca.

WRP populations in the south coast management zone (which stretches from [approximately 15 km] west of Walpole to [approximately 60 km] east of Albany) are associated with a diverse range of

habitats including coastal heath, Jarrah/Marri woodland and forest, peppermint woodlands, myrtaceous heaths and shrublands, Bullich dominated riparian zones and Karri forest. (DPaW 2017). In the vegetation associations mapped in the Albany urban area by Sandiford & Barrett (2010), most records were from coastal limestone heath vegetation (unit 5b). Little is known of the relative abundance of the WRP within and between vegetation types, including the vegetation types where they have been recorded in the broader Denmark to Mt Manypeaks area. As such the habitat critical to survival in the south coast management zone cannot currently be clearly defined so all remnant habitat is considered important. The milder climate of the South Coast is likely to become increasingly important or critical to the survival of the species in a warming and drying climate trend and the sensitivities this species has to drought and heat and the anticipated climate change effects on the forage and shelter quality of vegetation upon which this species depends (Molloy *et al*. 2014).

The survey area does contain suitable habitat in the way of scattered Bullich, as well as Peppermint, however, no dreys or scats were recorded in the survey area. The DBCA threatened fauna database returned 69 records of the WRP and consequently the WRP is considered as Possibly occurring in the vicinity of the survey area.

It is important to note that although the survey area does provide potential foraging habitat for the WRP, the very limited clearing that is due to take place at each of the 15 wind turbine sites (total area of 0.73 ha) will have little to near no impact on the species locally, but particularly not as a regional level.

Western Bush Wallaby (*Notamacropus irma*)

The Western Brush Wallaby is listed as Priority 4 under the DBCA priority list. The range of the Western Brush Wallaby has declined in the past due to land clearance and they are absent from developed areas around Perth; however, in much of its remaining extensive habitat, its numbers have increased following widespread fox control. The species is now considered relatively common, particularly where fox control is taking place (Woinarski *et al*. 2014). They are primarily grazers, but little is known of their food preferences.

The Western Brush Wallaby inhabits a wide range of habitats, but favours open, grassy areas and are absent in Karri forests where there is dense understorey. The DBCA threatened fauna database returned a single record of the Western brush Wallaby from 1999 from the Albany Wind Farm. Consequently, the Western Brush Wallaby is considered as Possibly occurring in the survey area. The species would require a much larger home range than the small areas of vegetation surrounding the turbines and therefore would not be entirely dependent on these small areas. In addition, given the small amount of vegetation to be cleared at each of the 15 wind turbine sites, the impact on the species is considered to be little to no impact at a local scale, but particularly at a regional scale

4.1.4 Species Considered Unlikely to Occur

A total of five conservation significant species are considered as Unlikely to occur in the survey area.

Osprey (*Pandion haliaetus*) and White-bellied Sea Eagle (*Haliaeetus leucogaster*)

The Osprey is listed as Migratory and Marine under the EPBC Act and the White-bellied Sea-eagle is listed as Marine under the EPBC Act. Both these birds require coasts and near-coastal wetland habitat, where they feed mainly on fish, sea snakes and nesting seabirds (Johnstone & Storr 1998).

These two species were both present in the NatureMap and EPBC PMST databases. The DBCA threatened fauna database returned 14 records of the Osprey, however, the most recent record was from 2004. The White-bellied Sea-eagle was not present in the DBCA search.

Although both these species may fly overhead, all 15 sites are situated in coastal shrub habitat that is not suitable for foraging, roosting or breeding as there are no tall trees or rocky cliff faces where they can perch or build nests. As such the Osprey and the White-bellied Sea Eagle are both considered Unlikely to occur in the survey area.

Additionally the total proposal area is 14.34 ha, of which 11.1 ha comprises native vegetation that is required to be cleared on an as needs basis, for turbine maintenance will have little to near no impact on the species locally, but particularly regionally.

Fork-tailed Swift (*Apus pacificus*)

The Fork-tailed Swift is listed as migratory under the EPBC Act. It is a non-breeding visitor to all states and territories of Australia (Higgins 1999). The Fork-tailed Swift is a summer migrant to Australia usually during the months of October-April. The Fork-tailed Swift is an aerial species which forages high above the tree canopy and is independent of terrestrial habitats. It occurs in flocks of up to 2,000 birds and is often seen accompanying Tree Martins and Masked Wood swallows (Johnstone & Storr 1998).

The DBCA threatened fauna database returned just two records of the species and it was absent from the NatureMap search. Limited habitat and limited records result in the Fork-tailed Swift being considered as Unlikely to occur in the survey area.

Additionally, the total proposal area is 14.34 ha, of which 11.1 ha comprises native vegetation that is required to be cleared on an as needs basis, for turbine maintenance will have little to near no impact on the species locally, but particularly regionally.

Rainbow Bee-eater (*Merops ornatus*)

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

Suitable habitat in the way of open water, or lightly wooded areas, is not present in or near the survey area and consequently the species is considered as Unlikely to occur in the survey area.

Additionally, the total proposal area is 14.34 ha, of which 11.1 ha comprises native vegetation that is required to be cleared on an as needs basis, for turbine maintenance will have little to near no impact on the species locally, but particularly regionally

Western Bristlebird (*Dasyornis longirostris*)

The Western Bristlebird is listed as Endangered under the EPBC Act and the BC Act and was only present in the EPBC PMST. The species is found in coastal heaths on the south coast of WA, where it is a scarce resident in few suitable remaining coast heaths between Two People's Bay (approximately 35 km to the north east of the survey area) and Fitzgerald River National Park (approximately 200 km to the north east of the survey area). As such the Western Bristlebird is considered Unlikely to occur in the survey area.

Additionally, the total proposal area is 14.34 ha, of which 11.1 ha comprises native vegetation that is required to be cleared on an as needs basis, for turbine maintenance will have little to near no impact on the species locally, but particularly regionally

4.2 Fauna Habitat

A total of 15 fauna habitat assessments were undertaken (Appendix 4) and one broad fauna habitat type was defined and mapped for the survey area based on the results of the field assessment (Figure 1). This habitat is described as follows:

Coastal Heathland

The entire total proposal area 14.34 ha, consists of coastal heathland. This habitat consists of an overstorey of (scattered) Bullich and Peppermint, a midstorey *of Parrot Bush* and Acacia, over a groundstorey of sedges.

This habitat provides vegetation in multiple strata (canopy, midstorey and understorey) and so provides habitat for a suite of fauna, particularly for small reptiles, birds and mammals.

The Peppermint provides potential habitat for the WRP, while the Peppermint and *Banksia sessilis* also provide potential foraging habitat for all three species of Black Cockatoo. Again, it is important to note that these are not the preferred foraging items of the three species of Black Cockatoo (DSEWPaC 2012).

It is important to note however, that although the survey area does provide potential habitat for a number of species, including a number of conservation significant species (section 5.1), the total proposal area is 14.34 ha, of which 11.1 ha comprises native vegetation that is required to be cleared on an as needs basis, for turbine maintenance will have limited effect on these fauna species.

5. References

Barrett, GW., Silcocks, A., Barry, S., Cunningham, R., Poulter, R. (2003). The New Atlas of Australian Birds. Birds Australia, Hawthorn East.

Bio Diverse Solutions (BDS). (2018). Level 1 Flora, Fauna and Vegetation Survey Windmills 3 and 11 Albany Windfarm.

Cale, B. (2003). Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) Recovery Plan 2000-2009. Western Australian Wildlife Management Program No. 36. Perth, Department of Conservation and Land Management Western Australian Threatened Species and Communities Unit.

Cooper, C.E., Withers, P.C., Mawson, P.R., Bradshaw, S.D., Prince, J. & Robertson, H. (2002). Metabolic ecology of cockatoos in the south-west of Western Australia. Australian Journal of Zoology 50, 67–76.

Cogger, H. (2014). Reptiles and Amphibians of Australia. CSIRO Publishing.

Christidis, L. & Boles, W.E. (2008). Systematics and Taxonomy of Australian Birds. Victoria: CSIRO Publishing.

Currie, D. J. (2007). Disentangling the roles of environment and space in ecology. Journal of Biogeography 34, 2009-2011.

Department of Biodiversity, Conservation and Attractions (DBCA) (2019). Threatened Fauna Database custom search.

Department of Biodiversity, Conservation and Attractions (DBCA) (2020). NatureMap: Mapping Western Australia's Biodiversity. Retrieved from https://naturemap.dbca.wa.gov.au

Department of Energy and Environment (DEE) (2017). Revised draft referral guideline for three threatened black cockatoo species: Carnaby's Cockatoo, Baudin's Cockatoo and the Forest Red-tailed Black Cockatoo. Commonwealth of Australia.

Department of Agriculture, Water and the Environment (DAWE) (2020). Protected Matters Search Tool, Accessed from <http://www.environment.gov.au/epbc/pmst/index.html> Commonwealth of Australia.

Department of Parks and Wildlife (DPaW) (2017). Western Ringtail Possum (Pseu*docheirus occidentalis*) Recovery Plan. Wildlife Management Program No. 58. Department of Parks and Wildlife, Perth, WA.

Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) (2012). Environment Protection and Biodiversity Conservation Act 1999 referral guidelines for three black cockatoo species: Carnaby's cockatoo (*Calyptorhynchus latirostris*), Baudin's cockatoo (*Calyptorhynchus baudinii*), Forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*), Australian Government, Canberra.

De Torres, PJ (2008). 'Western Ringtail Possum' in S Van Dyck and R Strahan (ed.) The Mammals of Australia, 3rd Edition, Reed New Holland, Chatswood, New South Wales, pp. 253-254.

Garnett, S.T., Szabo, J.K. & Dutson, G. (2011). The Action Plan for Australian Birds 2010. Collingwood, Victoria: CSIRO Publishing and Birds Australia.

Harewood, G. (2008). An assessment of the distribution and abundance of Western Ringtail Possum (*Pseudocheirus occidentalis*) in Busselton urban public reserves. Unpublished report prepared for Geocatch

Higgins, P.J. (ed.) (1999). Handbook of Australia, New Zealand and Antarctic Birds. Volume Four – Parrots to Dollarbird. Melbourne: Oxford University Press.

Johnstone, R.E., Kirkby, T. & Sarti, K. (2013a). The breeding biology of the Forest Red-tailed Black Cockatoo *Calyptorhynchus banksii naso* Gould in south-western Australia. I. Characteristics of nest trees and nest hollows. Pacific Conservation Biology 19, 121-142.

Johnstone, R.E., Kirkby, T., & Sarti, K. (2013b). The breeding biology of the Forest Red-tailed Black Cockatoo *Calyptorhynchus banksii naso* Gould in south-western Australia. II. Breeding behaviour and diet. Pacific Conservation Biology 19, 143-155.

Johnstone, R.E. & Kirkby, T. (2008). Distribution, status, social organisation, movements and conservation of Baudin's Cockatoo (*Calyptorhynchus baudinii*) in South-west Western Australia. Records of the Western Australian Museum 25, 107-118.

Johnstone, R.E. & Kirkby, T. (2011). Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*), Baudin's Black Cockatoo (*Calyptorhynchus baudinii*) and the Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) on the Swan Coastal Plain (Lancelin–Dunsborough), Western Australia. Studies on distribution, status, breeding, food, movements and historical changes. Perth: Department of Planning.

Johnstone, R.E. & Kirkby, T. (1999). Food of the Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) in south-west Western Australia. Western Australian Naturalist 22, 167–177.

Johnstone, R.E. & Storr, G. M. (1998). Handbook of Western Australian Birds. Volume 1 - Non-Passerines (Emu to Dollarbird). Oxford University Press.

Jones, B.A., How, R.A. & Kitchener, D. J. (1994). A field study of *Pseudocheirus occidentalis* (Marsupialia: Petauridae). I. Distribution and habitat. Wildlife Research 21, 175-187.

Keighery, B.J. (1994). Bushland Plant Survey. A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc.), Western Australia.

Molloy, S.W., Davis, R.A. & Van Etten, E.J.B. (2013). Species distribution modelling using bioclimatic variables to determine the impacts of a changing climate on the Western Ringtail Possum (*Pseudocheirus occidentals*; Pseudocheiridae). Environmental Conservation 41 (2): 176-186.

Sandiford, E.M. & Barrett, S. (2010). Albany Regional Vegetation Survey: Extent, Type and Status. A project funded by the Western Australian Planning Commission, South Coast NRM and the City of Albany for the Department of Environment and Conservation. Unpublished report. Department of Environment and Conservation, Western Australia.

Saunders, D. A., Smith, G. T. & Rowley, I. (1986). The availability and dimensions of tree hollows that provide nest sites for cockatoos (Psittaciformes) in Western Australia. Australian Wildlife Research 9, 541-56.

Shah, B. (2006). Conservation of Carnaby's Black Cockatoo on the Swan Coastal Plain, WA. Perth: Birds Australia.

Shedley, E. & Williams, K. (2014). Western Ringtail Possum (*Pseudocheirus occidentalis*) on the southern Swan Coastal Plain (Binningup to Dunsborough). Department of Parks and Wildlife.

Wayne, A. (2005). The ecology of the koomal (Trichosurus vulpecula hypoleucus) and ngwayir (Pseudocheirus occidentalis) in the jarrah forests of south-western Australia. (Doctoral dissertation) Australian National University, Canberra.

West Australian (WA) Museum. (2018). Identification of Chewed Marri nuts eaten by cockatoos and parrots. Government of Western Australia.

West Australian (WA) Museum. (2019). Checklist of the Terrestrial Fauna of Western Australia. Government of Western Australia.

Wilson, S. & Swan, G. (2017). A Complete Guide to Reptiles of Australia.

Woinarski, J. C.Z. Burbidge, A. A. & Harrison, P. L. (2014). The action plan for Australian Mammals 2012. CSIRO Publishing.

Appendix 1

Conservation Categories

Categories of Threatened Fauna Species under the EPBC Act

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

Source: Environment Protection and Biodiversity Conservation Act 1999.

DBCA Fauna Priority Codes

Category	Code	Description
Poorly-known species	Priority 1 (P1)	Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.
Poorly-known species	Priority 2 (P2)	Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.
Poorly-known species	Priority 3 (P3)	Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.
Poorly-known species	Priority 4 (P4)	(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands. (b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for Vulnerable, but are not listed as Conservation Dependent. (c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

Department of **Biodiversity, Conservation and Attractions**

GOVERNMENT OF WESTERN AUSTRALIA

CONSERVATION CODES

For Western Australian Flora and Fauna

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

The *Wildlife Conservation (Specially Protected Fauna) Notice 2018* and the *Wildlife Conservation (Rare Flora) Notice 2018* have been transitioned under regulations 170, 171 and 172 of the *Biodiversity Conservation Regulations 2018* to be the lists of Threatened, Extinct and Specially Protected species under Part 2 of the *Biodiversity Conservation Act 2016.*

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

T **Threatened species**

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

Threatened fauna is that subset of 'Specially Protected Fauna' listed under schedules 1 to 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for Threatened Fauna.

Threatened flora is that subset of 'Rare Flora' listed under schedules 1 to 3 of the *Wildlife Conservation (Rare Flora) Notice 2018* for Threatened Flora.

The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.

CR **Critically endangered species**

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

Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines. Published under schedule 1 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for critically endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for critically endangered flora.

EN **Endangered species**

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

Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines. Published under schedule 2 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for endangered flora.

VU **Vulnerable species**

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

Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under schedule 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for vulnerable fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for vulnerable flora.

Extinct species

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

EX Extinct species

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

Published as presumed extinct under schedule 4 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for extinct fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for extinct flora.

EW Extinct in the wild species

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

Currently there are no threatened fauna or threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.

Specially protected species

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

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

MI Migratory species

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

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

Published as migratory birds protected under an international agreement under schedule 5 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

CD Species of special conservation interest (conservation dependent fauna)

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

Published as conservation dependent fauna under schedule 6 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

OS Other specially protected species

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

Published as other specially protected fauna under schedule 7 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

P Priority species

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora.

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

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

1 Priority 1: Poorly-known species

Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

2 Priority 2: Poorly-known species

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

3 Priority 3: Poorly-known species

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

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

(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands.
(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent.
(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

[1] The definition of flora includes algae, fungi and lichens
[2]Species includes all taxa (plural of taxon - a classificatory group of any taxonomic rank, e.g. a family, genus, species or any infraspecific category i.e. subspecies or variety, or a distinct population).

Appendix 2

Database Searches

NatureMap
Mapping Western Australia's biodiversity

NatureMap Species Report

Created By Guest user on 11/02/2020

Kingdom Animalia
Current Names Only Yes
Core Datasets Only Yes
Method 'By Line'
Vertices 35° 03' 48" S,117° 47' 50" E 35° 02' 50" S,117° 44' 55" E
Group By Family

Family	Species	Records
Acanthizidae	4	114
Accipitridae	8	55
Aegothelidae	1	4
Anapidae	1	1
Anatidae	8	110
Anhingidae	1	2
Araneidae	2	2
Archaeidae	1	15
Ardeidae	3	28
Artamidae	1	3
Atherinidae	1	1
Boidae	1	2
Cacatuidae	1	21
Campephagidae	1	19
Charadriidae	2	5
Chernetidae	1	2
Columbidae	2	31
Corvidae	1	29
Cracticidae	3	68
Cuculidae	1	21
Delphinidae	1	1
Desidae	1	2
Dicruridae	3	64
Diomedeidae	2	2
Estrildidae	1	25
Falconidae	1	10
Garypidae	1	1
Gobiidae	1	2
Haematopodidae	1	4
Halcyonidae	2	32
Hirundinidae	2	34
Laridae	4	24
Macropodidae	1	1
Maluridae	3	76
Meliphagidae	7	154
Mimetidae	1	1
Nannopercidae	1	1
Pachycephalidae	2	23
Paradoxosomatidae	1	5
Pardalotidae	2	24
Pelecanidae	1	20
Peramelidae	1	2
Petroicidae	2	34
Phalacrocoracidae	4	8
Phasianidae	2	2
Physeteridae	1	1
Podargidae	1	7
Podicipedidae	2	6
Poeciliidae	1	1
Pseudocheiridae	1	3
Psittacidae	8	125
Pygopodidae	1	2
Rallidae	4	25
Recurvirostridae	2	6
Scincidae	4	10
Scolopacidae	2	3
Scolopendridae	1	1
Sulidae	1	7
Threskiornithidae	2	35
Zodariidae	1	2
Zoridae	1	1
Zosteropidae	1	47
TOTAL	**126**	**1367**

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
Acanthizidae					
1.	24260	*Acanthiza apicalis (Broad-tailed Thornbill, Inland Thornbill)*			
2.	24261	*Acanthiza chrysorrhoa (Yellow-rumped Thornbill)*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
3.	25530	*Gerygone fusca (Western Gerygone)*			
4.	25534	*Sericornis frontalis (White-browed Scrubwren)*			
Accipitridae					
5.	25535	*Accipiter cirrocephalus (Collared Sparrowhawk)*			
6.	25536	*Accipiter fasciatus (Brown Goshawk)*			
7.	24285	*Aquila audax (Wedge-tailed Eagle)*			
8.	24288	*Circus approximans (Swamp Harrier)*			
9.		*Elanus axillaris*			
10.	24293	*Haliaeetus leucogaster (White-bellied Sea-Eagle)*			
11.	24295	*Haliastur sphenurus (Whistling Kite)*			
12.	47965	*Hieraaetus morphnoides (Little Eagle)*			
Aegothelidae					
13.	25544	*Aegotheles cristatus (Australian Owlet-nightjar)*			
Anapidae					
14.		*Taphiassa robertsi*			
Anatidae					
15.	24310	*Anas castanea (Chestnut Teal)*			
16.	24312	*Anas gracilis (Grey Teal)*			
17.	24316	*Anas superciliosa (Pacific Black Duck)*			
18.	24319	*Biziura lobata (Musk Duck)*			
19.	24321	*Chenonetta jubata (Australian Wood Duck, Wood Duck)*			
20.	24322	*Cygnus atratus (Black Swan)*			
21.	24326	*Malacorhynchus membranaceus (Pink-eared Duck)*			
22.	24331	*Tadorna tadornoides (Australian Shelduck, Mountain Duck)*			
Anhingidae					
23.	47414	*Anhinga novaehollandiae (Australasian Darter)*			
Araneidae					
24.		*Arachnura higginsi*			
25.		*Austracantha minax*			
Archaeidae					
26.	42361	*Zephyrarchaea mainae (Main's assasin spider)*		T	
Ardeidae					
27.	25558	*Ardea ibis (Cattle Egret)*			
28.	41324	*Ardea modesta (great egret, white egret)*			
29.		*Egretta novaehollandiae*			
Artamidae					
30.	24353	*Artamus cyanopterus (Dusky Woodswallow)*			
Atherinidae					
31.		*Atherinosoma sp.*			
Boidae					
32.	25240	*Morelia spilota subsp. imbricata (Carpet Python)*			
Cacatuidae					
33.		*Eolophus roseicapillus*			
Campephagidae					
34.	25568	*Coracina novaehollandiae (Black-faced Cuckoo-shrike)*			
Charadriidae					
35.	24377	*Charadrius ruficapillus (Red-capped Plover)*			
36.	47937	*Elseyornis melanops (Black-fronted Dotterel)*			
Chernetidae					
37.		*Nesidiochernes slateri*			
Columbidae					
38.	24407	*Ocyphaps lophotes (Crested Pigeon)*			
39.	24409	*Phaps chalcoptera (Common Bronzewing)*			
Corvidae					
40.	25592	*Corvus coronoides (Australian Raven)*			
Cracticidae					
41.	25595	*Cracticus tibicen (Australian Magpie)*			
42.	25596	*Cracticus torquatus (Grey Butcherbird)*			
43.	25597	*Strepera versicolor (Grey Currawong)*			
Cuculidae					
44.	25598	*Cacomantis flabelliformis (Fan-tailed Cuckoo)*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
Delphinidae					
45.	24052	*Delphinus delphis (Common Dolphin)*			
Desidae					
46.		*Baiami torbayensis*			
Dicruridae					
47.	24443	*Grallina cyanoleuca (Magpie-lark)*			
48.	48096	*Rhipidura albiscapa (Grey Fantail)*			
49.	25614	*Rhipidura leucophrys (Willie Wagtail)*			
Diomedeidae					
50.	34007	*Thalassarche chlororhynchos (Atlantic Yellow-nosed Albatross)*		T	
51.	44607	*Thalassarche melanophris (Black-browed Albatross)*		T	
Estrilidae					
52.	24645	*Stagonopleura oculata (Red-eared Firetail)*			
Falconidae					
53.	25622	*Falco cenchroides (Australian Kestrel, Nankeen Kestrel)*			
Garypidae					
54.		*Synsphyronus callus*			
Gobiidae					
55.		*Pseudogobius olorum*			
Haematopodidae					
56.	25627	*Haematopus fuliginosus (Sooty Oystercatcher)*			
Halcyonidae					
57.	30901	*Dacelo novaeguineae (Laughing Kookaburra)*	Y		
58.	25549	*Todiramphus sanctus (Sacred Kingfisher)*			
Hirundinidae					
59.	24491	*Hirundo neoxena (Welcome Swallow)*			
60.	48061	*Petrochelidon nigricans (Tree Martin)*			
Laridae					
61.		*Chroicocephalus novaehollandiae*			
62.	48587	*Hydroprogne caspia (Caspian Tern)*		IA	
63.	25638	*Larus pacificus (Pacific Gull)*			
64.	48597	*Thalasseus bergii (Crested Tern)*		IA	
Macropodidae					
65.	48022	*Notamacropus irma (Western Brush Wallaby)*		P4	
Maluridae					
66.	25650	*Malurus elegans (Red-winged Fairy-wren)*			
67.	25654	*Malurus splendens (Splendid Fairy-wren)*			
68.	25655	*Stipiturus malachurus (Southern Emu-wren)*			
Meliphagidae					
69.	24560	*Acanthorhynchus superciliosus (Western Spinebill)*			
70.	24561	*Anthochaera carunculata (Red Wattlebird)*			
71.	24562	*Anthochaera lunulata (Western Little Wattlebird)*			
72.	47962	*Glyciphila melanops (Tawny-crowned Honeyeater)*			
73.	25661	*Lichmera indistincta (Brown Honeyeater)*			
74.	48071	*Phylidonyris niger (White-cheeked Honeyeater)*			
75.	24596	*Phylidonyris novaehollandiae (New Holland Honeyeater)*			
Mimetidae					
76.		*Australomimetus diabolicus*			
Nannopercidae					
77.		*Edelia vittata*			
Pachycephalidae					
78.	25675	*Colluricincla harmonica (Grey Shrike-thrush)*			
79.	25677	*Falcunculus frontatus (Crested Shrike-tit)*			
Paradoxosomatidae					
80.		*Akamptogonus novarae*			
Pardalotidae					
81.	25681	*Pardalotus punctatus (Spotted Pardalote)*			
82.	25682	*Pardalotus striatus (Striated Pardalote)*			
Pelecanidae					
83.	24648	*Pelecanus conspicillatus (Australian Pelican)*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
Peramelidae					
84.	48588	*Isoodon fusciventer (Quenda, southwestern brown bandicoot)*		P4	
Petroicidae					
85.	24652	*Eopsaltria georgiana (White-breasted Robin)*			
86.	48066	*Petroica boodang (Scarlet Robin)*			
Phalacrocoracidae					
87.		*Microcarbo melanoleucos*			
88.	25697	*Phalacrocorax carbo (Great Cormorant)*			
89.	24667	*Phalacrocorax sulcirostris (Little Black Cormorant)*			
90.	25699	*Phalacrocorax varius (Pied Cormorant)*			
Phasianidae					
91.	24671	*Coturnix pectoralis (Stubble Quail)*			
92.	25701	*Coturnix ypsilophora (Brown Quail)*			
Physeteridae					
93.	24073	*Physeter macrocephalus (Sperm Whale)*		T	
Podargidae					
94.	25703	*Podargus strigoides (Tawny Frogmouth)*			
Podicipedidae					
95.	24681	*Poliocephalus poliocephalus (Hoary-headed Grebe)*			
96.	25705	*Tachybaptus novaehollandiae (Australasian Grebe, Black-throated Grebe)*			
Poeciliidae					
97.		*Gambusia affinis*			
Pseudocheiridae					
98.	24166	*Pseudocheirus occidentalis (Western Ringtail Possum, ngwayir)*		T	
Psittacidae					
99.		*Barnardius zonarius*			
100.	25717	*Calyptorhynchus banksii (Red-tailed Black-Cockatoo)*			
101.	24733	*Calyptorhynchus baudinii (Baudin's Cockatoo, White-tailed Long-billed Black Cockatoo)*		T	
102.	24734	*Calyptorhynchus latirostris (Carnaby's Cockatoo, White-tailed Short-billed Black Cockatoo)*		T	
103.	48400	*Calyptorhynchus sp. (white-tailed black cockatoo)*		T	
104.	24739	*Neophema petrophila (Rock Parrot)*			
105.	25720	*Platycercus icterotis (Western Rosella)*			
106.		*Purpureicephalus spurius*			
Pygopodidae					
107.	24994	*Aprasia striolata (Lined Worm-lizard)*			
Rallidae					
108.	25727	*Fulica atra (Eurasian Coot)*			
109.	25729	*Gallinula tenebrosa (Dusky Moorhen)*			
110.	25731	*Porphyrio porphyrio (Purple Swamphen)*			
111.	24771	*Porzana tabuensis (Spotless Crake)*			
Recurvirostridae					
112.	25734	*Himantopus himantopus (Black-winged Stilt)*			
113.	24776	*Recurvirostra novaehollandiae (Red-necked Avocet)*			
Scincidae					
114.	25031	*Ctenotus catenifer*			
115.	25049	*Ctenotus labillardieri*			
116.	30919	*Hemiergis gracilipes (skink)*			
117.	25192	*Morethia obscura*			
Scolopacidae					
118.	24788	*Calidris ruficollis (Red-necked Stint)*		IA	
119.	24808	*Tringa nebularia (Common Greenshank, greenshank)*		IA	
Scolopendridae					
120.		*Cormocephalus michaelseni*			
Sulidae					
121.	48008	*Morus serrator (Australasian Gannet)*			
Threskiornithidae					
122.	24841	*Platalea flavipes (Yellow-billed Spoonbill)*			
123.	24845	*Threskiornis spinicollis (Straw-necked Ibis)*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
Zodariidae					
124.		*Storosa tetrica*			
Zoridae					
125.		*Argoctenus bidentatus*			
Zosteropidae					
126.	25765	*Zosterops lateralis (Grey-breasted White-eye, Silvereye)*			

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

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

Australian Government
Department of the Environment and Energy

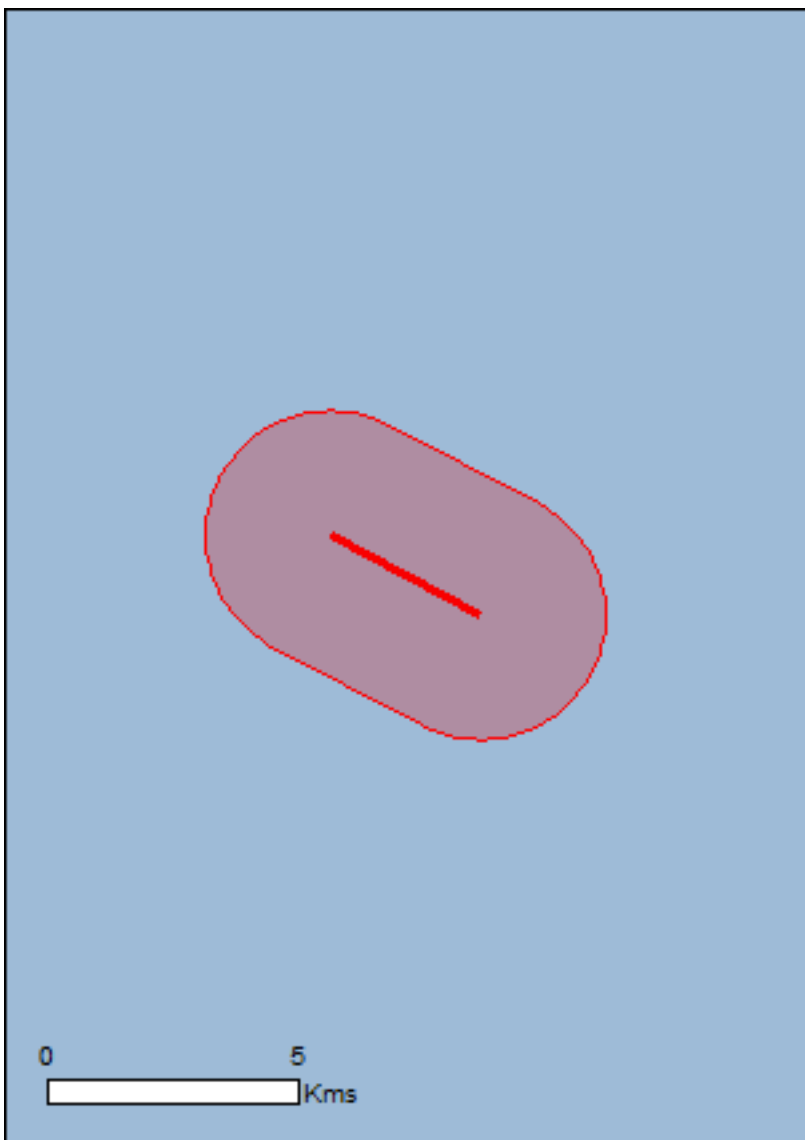
EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

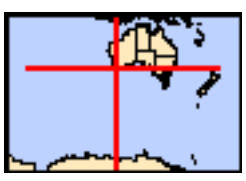
Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

Report created: 11/02/20 19:13:01



Coordinates
Buffer: 2.5Km



Summary

Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	47
Listed Migratory Species:	42

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	65
Whales and Other Cetaceans:	12
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	1
Regional Forest Agreements:	None
Invasive Species:	22
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat likely to occur within area
Calyptorhynchus baudinii Baudin's Cockatoo, Long-billed Black-Cockatoo [769]	Endangered	Breeding known to occur within area
Calyptorhynchus latirostris Carnaby's Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Breeding likely to occur within area
Cereopsis novaehollandiae grisea Cape Barren Goose (south-western), Recherche Cape Barren Goose [25978]	Vulnerable	Species or species habitat may occur within area
Dasyornis longirostris Western Bristlebird [515]	Endangered	Species or species habitat likely to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area

Name	Status	Type of Presence
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Breeding likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Thalassarche cauta cauta Shy Albatross [82345]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche cauta steadi White-capped Albatross [82344]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Insects		
Trioza barrettae Banksia brownii plant louse [87805]	Endangered	Species or species habitat may occur within area
Mammals		
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Eubalaena australis		
Southern Right Whale [40]	Endangered	Breeding known to occur within area
Megaptera novaeangliae		
Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Neophoca cinerea		
Australian Sea-lion, Australian Sea Lion [22]	Vulnerable	Species or species habitat may occur within area
Parantechinus apicalis		
Dibbler [313]	Endangered	Species or species habitat known to occur within area
Pseudocheirus occidentalis		
Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Critically Endangered	Species or species habitat may occur within area
Plants		
Banksia brownii		
Brown's Banksia, Feather-leaved Banksia [8277]	Endangered	Species or species habitat likely to occur within area
Banksia verticillata		
Granite Banksia, Albany Banksia, River Banksia [8333]	Vulnerable	Species or species habitat likely to occur within area
Calectasia cyanea		
Blue Tinsel Lily [7669]	Critically Endangered	Species or species habitat known to occur within area
Isopogon uncinatus		
Albany Cone Bush, Hook-leaf Isopogon [20871]	Endangered	Species or species habitat likely to occur within area
Kennedia glabrata		
Northcliffe Kennedia [16452]	Vulnerable	Species or species habitat likely to occur within area
Reptiles		
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Sharks		
Carcharias taurus (west coast population)		
Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat likely to occur within area
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

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

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardenna grisea Sooty Shearwater [82651]		Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Hydroprogne caspia Caspian Tern [808]		Foraging, feeding or related behaviour known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Thalassarche cauta Shy Albatross [89224]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Migratory Marine Species		
Balaena glacialis australis Southern Right Whale [75529]	Endangered*	Breeding known to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
Manta alfredi Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat known to occur within area
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species

Name	Threatened	Type of Presence
		habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Catharacta skua Great Skua [59472]		Species or species habitat may occur within area
Cereopsis novaehollandiae grisea Cape Barren Goose (south-western), Recherche Barren Goose [25978]	Vulnerable	Species or species habitat may occur within area

Name	Threatened	Type of Presence
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Larus pacificus Pacific Gull [811]		Foraging, feeding or related behaviour known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area

Name	Threatened	Type of Presence
[Puffinus assimilis](#) Little Shearwater [59363]		Foraging, feeding or related behaviour known to occur within area
[Puffinus carneipes](#) Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Foraging, feeding or related behaviour likely to occur within area
[Puffinus griseus](#) Sooty Shearwater [1024]		Species or species habitat may occur within area
[Sterna caspia](#) Caspian Tern [59467]		Foraging, feeding or related behaviour known to occur within area
[Thalassarche carteri](#) Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
[Thalassarche cauta](#) Shy Albatross [89224]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
[Thalassarche impavida](#) Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
[Thalassarche melanophris](#) Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
[Thalassarche steadi](#) White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
[Thinornis rubricollis](#) Hooded Plover [59510]		Species or species habitat may occur within area
[Tringa nebularia](#) Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area
Fish		
[Acentronura australe](#) Southern Pygmy Pipehorse [66185]		Species or species habitat may occur within area
[Campichthys galei](#) Gale's Pipefish [66191]		Species or species habitat may occur within area
[Heraldia nocturna](#) Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
[Hippocampus breviceps](#) Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
[Histiogamphelus cristatus](#) Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area
[Leptoichthys fistularius](#) Brushtail Pipefish [66248]		Species or species habitat may occur within area
[Lissocampus caudalis](#) Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Nannocampus subosseus Bonyhead Pipefish, Bony-headed Pipefish [66264]		Species or species habitat may occur within area
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area
Vanacampus poecilolaemus Longsnout Pipefish, Australian Long-snout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area
Mammals		
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat likely to occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area

Name	Threatened	Type of Presence
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area

Whales and other Cetaceans [Resource Information]

Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata		
Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Caperea marginata		
Pygmy Right Whale [39]		Species or species habitat may occur within area
Delphinus delphis		
Common Dophin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis		
Southern Right Whale [40]	Endangered	Breeding known to occur within area
Grampus griseus		
Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Lagenorhynchus obscurus		
Dusky Dolphin [43]		Species or species habitat may occur within area
Megaptera novaeangliae		
Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca		
Killer Whale, Orca [46]		Species or species habitat may occur within area
Tursiops aduncus		
Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str.		
Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves [Resource Information]

Name	State
Torndirrup	WA

Invasive Species [Resource Information]

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

Name	Status	Type of Presence
Birds		

Name	Status	Type of Presence
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Streptopelia senegalensis Laughing Turtle-dove, Laughing Dove [781]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Mammals		
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Asparagus scandens Asparagus Fern, Climbing Asparagus Fern [23255]		Species or species habitat likely to occur within area
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Sagittaria platyphylla Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		Species or species habitat likely to occur within area
Ulex europaeus Gorse, Furze [7693]		Species or species habitat likely to occur within area

Caveat

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

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

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

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

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

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

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

- migratory and
- marine

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

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

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

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

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

Coordinates

-35.065683 117.802361,-35.054021 117.775239,-35.054021 117.775239

Acknowledgements

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

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

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

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

Department of the Environment
GPO Box 787
Canberra ACT 2601 Australia
+61 2 6274 1111

Appendix 3

Fauna Species List

NAM SCI	NAME COM	CLASS	CONS CODE	Date	YEAR	SOURCE	CERTAINTY	METHOD	TYPE	COUNT	LOCALITY	SITE	ACCURACY M	GDA_LONG	GDA_LAT	NAME_ID	FAMILY	GENUS	SPECIES	KINGDOM
Actitis hypoleucos	Common Sandpiper	BIRD	IA	11/11/1999	1999	BIRDATLAS2				0		Bibbulman Track, Albany	100	117.85820000000	-35.02690000000	41323	Scolopacidae	Actitis	hypoleucos	Animalia
Actitis hypoleucos	Common Sandpiper	BIRD	IA	31/08/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	41323	Scolopacidae	Actitis	hypoleucos	Animalia
Actitis hypoleucos	Common Sandpiper	BIRD	IA	30/09/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	41323	Scolopacidae	Actitis	hypoleucos	Animalia
Apus pacificus	fork-tailed swift	BIRD	IA	10/03/2003	2003	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Riverslea' creek, Lot 2734 Elleker Road, Grasmere	100	117.72850000000	-35.02690000000	25554	Apodidae	Apus	pacificus	Animalia
Apus pacificus	fork-tailed swift	BIRD	IA	23/03/2005	2005	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	'Riverslea' creek, Lot 2734 Elleker Road, Grasmere	100	117.72850000000	-35.02690000000	25554	Apodidae	Apus	pacificus	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	1/01/1981	1981	BIRDATLAS1	Moderately certain	Observational	Sighting	1	MCKAIL	MCKAIL	36000	117.83480000000	-34.99880000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	27/04/1999	1999	BIRDATLAS2				0		Mutton Bird	100	117.69370000000	-35.04710000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	3/12/2011	2011	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, ShelterIsland	100	117.69100000000	-35.04990000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	3/12/2011	2011	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, ShelterIsland	100	117.69100000000	-35.04990000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	3/12/2011	2011	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, ShelterIsland	100	117.69100000000	-35.04990000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	6/12/2011	2011	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	6/12/2011	2011	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	6/12/2011	2011	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	6/12/2011	2011	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	22/01/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	22/01/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	22/01/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	22/01/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	22/01/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	22/01/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	22/01/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	22/01/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	22/01/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	22/01/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	14/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	14/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	14/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	14/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	14/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	14/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	14/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	14/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	14/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	14/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	14/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	14/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	14/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	14/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	14/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	14/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	14/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	14/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	14/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	14/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	15/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	15/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	15/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	15/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	15/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	15/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	15/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	15/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	15/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	15/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	15/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	15/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	15/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	15/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	15/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	15/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	15/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	15/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	15/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	16/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	16/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	16/04/2012	2012	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Is	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	1/01/2014	2014	FAUNASURVEY	Certain	Survey	Unknown	4	ELLEKER	Shelter Island, 2792R2	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	4/01/2014	2014	FAUNASURVEY	Certain	Survey	Unknown	5	ELLEKER	Shelter Island, 2792R2	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	7/01/2014	2014	FAUNASURVEY	Certain	Survey	Unknown	4	ELLEKER	Shelter Island, 2792R2	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	9/01/2014	2014	FAUNASURVEY	Certain	Survey	Unknown	3	ELLEKER	Shelter Island, 2792R2	100	117.69100000000	-35.05000000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	8/12/2015	2015	FAUNASURVEY	Certain	Survey	Unknown	8	ELLEKER	2792R2, Shelter Island	100	117.69100000000	-35.04990000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	10/12/2015	2015	FAUNASURVEY	Certain	Survey	Unknown	5	ELLEKER	2792R2, Shelter Island	100	117.69100000000	-35.04990000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	12/12/2015	2015	FAUNASURVEY	Certain	Survey	Unknown	2	ELLEKER	2792R2, Shelter Island	100	117.69100000000	-35.04990000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	14/12/2015	2015	FAUNASURVEY	Certain	Survey	Unknown	0	ELLEKER	2792R2, Shelter Island	100	117.69100000000	-35.04990000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	17/12/2015	2015	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Island	100	117.69100000000	-35.04990000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU	18/12/2015	2015	FAUNASURVEY	Certain	Survey	Unknown	1	ELLEKER	2792R2, Shelter Island	100	117.69100000000	-35.04990000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Ardenna carneipes	flesh-footed shearwater	BIRD	VU		0	SEABIRDS				0		Shelter (= Mutton Bird)	0	117.69290000000	-35.05080000000	41326	Procellariidae	Ardenna	carneipes	Animalia
Arenaria interpres	Ruddy Turnstone	BIRD	IA	31/08/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	25736	Scolopacidae	Arenaria	interpres	Animalia
Arenaria interpres	Ruddy Turnstone	BIRD	IA	31/10/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	25736	Scolopacidae	Arenaria	interpres	Animalia
Bettongia penicillata ogilby	brush-tailed bettong	MAMMAL	CR		0	WAM_MAMMALS	WAM Vouchered	Collection	Specimen	1	ELLEKER	ELLEKER	10000	117.73330000000	-35.00000000000	24162	Potoroidae	Bettongia	penicillata	Animalia
Bettongia penicillata ogilby	brush-tailed bettong	MAMMAL	CR		0	WAM_MAMMALS	WAM Vouchered	Collection	Specimen	1	ELLEKER	ELLEKER	10000	117.73330000000	-35.00000000000	24162	Potoroidae	Bettongia	penicillata	Animalia
Bettongia penicillata ogilby	brush-tailed bettong	MAMMAL	CR		0	WAM_MAMMALS				0			10000	117.73330000000	-35.00000000000	24162	Potoroidae	Bettongia	penicillata	Animalia
Bettongia penicillata ogilby	brush-tailed bettong	MAMMAL	CR		0	WAM_MAMMALS				0			10000	117.73330000000	-35.00000000000	24162	Potoroidae	Bettongia	penicillata	Animalia
Botaurus poiciloptilus	Australasian Bittern	BIRD	EN	26/11/1978	1978	BIRDATLAS1				0			18000	117.75150000000	-35.08210000000	24345	Ardeidae	Botaurus	poiciloptilus	Animalia
Botaurus poiciloptilus	Australasian bittern	BIRD	EN	1/01/2002	2002	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Powell, Elleker	100	117.74860000000	-35.01970000000	24345	Ardeidae	Botaurus	poiciloptilus	Animalia

Botaurus poiciloptilus	Australasian bittern	BIRD	EN	13/01/2004	2004	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Powell	100	117.74620000000	-35.01990000000	24345	Ardeidae	Botaurus	poiciloptilus	Animalia
Botaurus poiciloptilus	Australasian bittern	BIRD	EN	1/01/2002	2002	TFAUNA	Certain	Community surv	Sighting	1	Elleker		1000	117.74330000000	-35.01670000000	24345	Ardeidae	Botaurus	poiciloptilus	Animalia
Botaurus poiciloptilus	Australasian bittern	BIRD	EN		0	TFAUNA	Certain	Historical (writte	Sighting	0	Lake Powell	Nature Reserve	1000	117.74200000000	-35.01730000000	24345	Ardeidae	Botaurus	poiciloptilus	Animalia
Calidris acuminata	Sharp-tailed Sandpiper	BIRD	IA	30/09/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	24779	Scolopacidae	Calidris	acuminata	Animalia
Calidris acuminata	Sharp-tailed Sandpiper	BIRD	IA	31/10/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	24779	Scolopacidae	Calidris	acuminata	Animalia
Calidris canutus	red knot	BIRD	EN	27/12/1998	1998	BIRDATLAS2				0		Bibbulman Track	100	117.84480000000	-35.06350000000	25738	Scolopacidae	Calidris	canutus	Animalia
Calidris canutus	red knot	BIRD	EN	11/11/1999	1999	BIRDATLAS2	Moderately certain	Observational	Sighting	1	MOUNT ELPHI	Bibbulman Track, Albany	100	117.85820000000	-35.02690000000	25738	Scolopacidae	Calidris	canutus	Animalia
Calidris canutus	red knot	BIRD	EN	21/11/1999	1999	BIRDATLAS2	Moderately certain	Observational	Sighting	1	MOUNT ELPHI	Bibbulman Track, Albany	100	117.85820000000	-35.02690000000	25738	Scolopacidae	Calidris	canutus	Animalia
Calidris canutus	red knot	BIRD	EN	26/01/2001	2001	BIRDATLAS2				0		Rushy Point, Albany	500	117.85150000000	-35.04880000000	25738	Scolopacidae	Calidris	canutus	Animalia
Calidris ferruginea	curlew sandpiper	BIRD	CR	18/07/2004	2004	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Powell	100	117.74620000000	-35.01990000000	24784	Scolopacidae	Calidris	ferruginea	Animalia
Calidris ferruginea	Curlew Sandpiper	BIRD	CR	31/10/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	24784	Scolopacidae	Calidris	ferruginea	Animalia
Calidris ruficollis	red-necked stint	BIRD	IA	15/10/1977	1977	BIRDATLAS1	Moderately certain	Observational	Sighting	1	MCKAIL	MCKAIL	36000	117.83480000000	-34.99880000000	24788	Scolopacidae	Calidris	ruficollis	Animalia
Calidris ruficollis	Red-necked Stint	BIRD	IA	27/12/1998	1998	BIRDATLAS2				0		Bibbulman Track	100	117.84480000000	-35.06350000000	24788	Scolopacidae	Calidris	ruficollis	Animalia
Calidris ruficollis	red-necked stint	BIRD	IA	11/11/1999	1999	BIRDATLAS2	Moderately certain	Observational	Sighting	1	MOUNT ELPHI	Bibbulman Track, Albany	100	117.85820000000	-35.02690000000	24788	Scolopacidae	Calidris	ruficollis	Animalia
Calidris ruficollis	red-necked stint	BIRD	IA	21/11/1999	1999	BIRDATLAS2	Moderately certain	Observational	Sighting	1	MOUNT ELPHI	Bibbulman Track, Albany	100	117.85820000000	-35.02690000000	24788	Scolopacidae	Calidris	ruficollis	Animalia
Calidris ruficollis	Red-necked Stint	BIRD	IA	26/01/2001	2001	BIRDATLAS2				0		Rushy Point, Albany	500	117.85150000000	-35.04880000000	24788	Scolopacidae	Calidris	ruficollis	Animalia
Calidris ruficollis	red-necked stint	BIRD	IA	13/02/2003	2003	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Powell	500	117.74740000000	-35.02660000000	24788	Scolopacidae	Calidris	ruficollis	Animalia
Calidris ruficollis	red-necked stint	BIRD	IA	13/02/2003	2003	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Powell	500	117.74740000000	-35.02660000000	24788	Scolopacidae	Calidris	ruficollis	Animalia
Calidris ruficollis	red-necked stint	BIRD	IA	18/07/2004	2004	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Powell	100	117.74620000000	-35.01990000000	24788	Scolopacidae	Calidris	ruficollis	Animalia
Calidris ruficollis	Red-necked Stint	BIRD	IA	31/08/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	24788	Scolopacidae	Calidris	ruficollis	Animalia
Calidris ruficollis	Red-necked Stint	BIRD	IA	30/09/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	24788	Scolopacidae	Calidris	ruficollis	Animalia
Calidris ruficollis	Red-necked Stint	BIRD	IA	31/10/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	24788	Scolopacidae	Calidris	ruficollis	Animalia
Calidris tenuirostris	Great Knot	BIRD	CR	27/12/1998	1998	BIRDATLAS2				0		Bibbulman Track	100	117.84480000000	-35.06350000000	24790	Scolopacidae	Calidris	tenuirostris	Animalia
Calidris tenuirostris	great knot	BIRD	CR	11/11/1999	1999	BIRDATLAS2	Moderately certain	Observational	Sighting	1	MOUNT ELPHI	Bibbulman Track, Albany	100	117.85820000000	-35.02690000000	24790	Scolopacidae	Calidris	tenuirostris	Animalia
Calidris tenuirostris	great knot	BIRD	CR	21/11/1999	1999	BIRDATLAS2	Moderately certain	Observational	Sighting	1	MOUNT ELPHI	Bibbulman Track, Albany	100	117.85820000000	-35.02690000000	24790	Scolopacidae	Calidris	tenuirostris	Animalia
Calidris tenuirostris	Great Knot	BIRD	CR	26/01/2001	2001	BIRDATLAS2				0		Rushy Point, Albany	500	117.85150000000	-35.04880000000	24790	Scolopacidae	Calidris	tenuirostris	Animalia
Calidris tenuirostris	Great Knot	BIRD	CR	31/10/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	24790	Scolopacidae	Calidris	tenuirostris	Animalia
Calyptorhynchus banksii na	forest red-tailed black cockatoo	BIRD	VU	1/01/2005	2005	TFAUNA	Certain	Survey	Day sighting	0	Elleker		1000	117.73680000000	-35.01310000000	24731	Cacatuidae	Calyptorhync	banksii	Animalia
Calyptorhynchus banksii na	forest red-tailed black cockatoo	BIRD	VU	12/01/2007	2007	TFAUNA	Certain	Opportunistic sig	Day sighting	7	Albany		1000	117.80560000000	-35.02310000000	24731	Cacatuidae	Calyptorhync	banksii	Animalia
Calyptorhynchus banksii na	forest red-tailed black cockatoo	BIRD	VU		0	TFAUNA	Certain	Historical (writte	Sighting	0	MARBELUP		10000	117.78330000000	-35.00000000000	24731	Cacatuidae	Calyptorhync	banksii	Animalia
Calyptorhynchus banksii na	forest red-tailed black cockatoo	BIRD	VU	12/04/2015	2015	TFAUNA	Certain	Community surv	Day sighting	5	Torbay		1000	117.70940000000	-35.00320000000	24731	Cacatuidae	Calyptorhync	banksii	Animalia
Calyptorhynchus banksii na	forest red-tailed black cockatoo	BIRD	VU	1/03/2017	2017	TFAUNA	Certain	Opportunistic sig	Day sighting	20	Gledhow		1000	117.82720000000	-35.00960000000	24731	Cacatuidae	Calyptorhync	banksii	Animalia
Calyptorhynchus banksii na	forest red-tailed black cockatoo	BIRD	VU	9/04/2017	2017	TFAUNA	Moderately certain	Community surv	Sighting	10	MCKAIL		1000	117.82940000000	-34.99470000000	24731	Cacatuidae	Calyptorhync	banksii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	14/03/1999	1999	TFAUNA	Moderately certain	Survey	Day sighting	1	Albany Wind Farm		10000	117.77400000000	-35.05020000000	24733	Cacatuidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	5/09/1977	1977	BIRDATLAS1				0			18000	117.75150000000	-35.08210000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	30/09/1977	1977	BIRDATLAS1				0			18000	117.75150000000	-35.08210000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	28/02/1978	1978	BIRDATLAS1				0			18000	117.75150000000	-35.08210000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	31/12/1999	1999	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85760000000	-35.07270000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	6/01/2000	2000	BIRDATLAS2				0		North Road	100	117.70790000000	-35.03070000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	29/02/2000	2000	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	29/02/2000	2000	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72730000000	-35.02990000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	29/02/2000	2000	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85760000000	-35.07270000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	31/03/2000	2000	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72730000000	-35.02990000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	30/04/2000	2000	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	30/04/2000	2000	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72730000000	-35.02990000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	27/05/2000	2000	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	31/05/2000	2000	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72730000000	-35.02990000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	19/06/2000	2000	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72730000000	-35.02990000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	30/06/2000	2000	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	31/07/2000	2000	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	30/09/2000	2000	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	20/10/2000	2000	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72730000000	-35.02990000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	30/11/2000	2000	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72730000000	-35.02990000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	30/11/2000	2000	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	31/12/2000	2000	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72730000000	-35.02990000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	31/12/2000	2000	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85850000000	-35.07240000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	31/12/2000	2000	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	31/01/2001	2001	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	31/01/2001	2001	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72730000000	-35.02990000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	28/02/2001	2001	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85850000000	-35.07240000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	28/02/2001	2001	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72790000000	-35.02990000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	31/03/2001	2001	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72790000000	-35.02990000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	31/03/2001	2001	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	30/04/2001	2001	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Creekside, 'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72850000000	-35.02690000000	24733	Cacatuidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	3/05/2001	2001	BIRDATLAS2				0		Grasmere	100	117.71400000000	-35.04320000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	31/05/2001	2001	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	31/05/2001	2001	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72790000000	-35.02990000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	30/06/2001	2001	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	31/07/2001	2001	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	30/09/2001	2001	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72790000000	-35.02990000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	31/10/2001	2001	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72790000000	-35.02990000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	30/11/2001	2001	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	30/11/2001	2001	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72790000000	-35.02990000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia

Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	31/12/2001	2001	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	31/12/2001	2001	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72790000000	-35.02990000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	31/01/2002	2002	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72790000000	-35.02990000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	28/02/2002	2002	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72790000000	-35.02990000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	28/02/2002	2002	BIRDATLAS2				0		Elleker Rd	100	117.73260000000	-35.03160000000	24733	Psittacidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	31/03/2002	2002	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	'Riverslea' creek, Lot 2734 Elleker Road, Grasmere	100	117.72850000000	-35.02690000000	24733	Cacatuidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	31/01/2004	2004	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	'Riverslea' creek, Lot 2734 Elleker Road, Grasmere	100	117.72850000000	-35.02690000000	24733	Cacatuidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	31/05/2004	2004	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	'Riverslea' creek, Lot 2734 Elleker Road, Grasmere	100	117.72850000000	-35.02690000000	24733	Cacatuidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	3/03/2005	2005	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Powell	100	117.74760000000	-35.02020000000	24733	Cacatuidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	7/11/2007	2007	TFAUNA	Certain	Survey	Day sighting	3	Sandpatch		1000	117.77190000000	-35.05290000000	24733	Cacatuidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	7/11/2007	2007	TFAUNA	Certain	Survey	Day sighting	7	Sandpatch		1000	117.76610000000	-35.05210000000	24733	Cacatuidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	7/11/2007	2007	TFAUNA	Certain	Survey	Day sighting	5	Sandpatch		1000	117.76080000000	-35.05150000000	24733	Cacatuidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	7/11/2007	2007	TFAUNA	Certain	Survey	Day sighting	2	Sandpatch		1000	117.75830000000	-35.04900000000	24733	Cacatuidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	7/11/2007	2007	TFAUNA	Certain	Survey	Day sighting	3	Sandpatch		1000	117.75500000000	-35.04960000000	24733	Cacatuidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	7/11/2007	2007	TFAUNA	Certain	Survey	Day sighting	6	Sandpatch		1000	117.75080000000	-35.04900000000	24733	Cacatuidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	7/11/2007	2007	TFAUNA	Certain	Survey	Day sighting	4	Sandpatch		1000	117.74440000000	-35.04770000000	24733	Cacatuidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	1/08/2007	2007	TFAUNA	Certain	Monitoring	Secondary sign	0	ELLEKER		1000	117.69670000000	-35.03190000000	24733	Cacatuidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus baudinii	Baudin's cockatoo	BIRD	EN	14/09/2013	2013	TFAUNA	Not Sure	Survey	Day sighting	25	SANDPATCH		1000	117.79910000000	-35.06600000000	24733	Cacatuidae	Calyptorhync	baudinii	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/08/1998	1998	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85760000000	-35.07270000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	30/09/1998	1998	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85760000000	-35.07270000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/10/1998	1998	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85760000000	-35.07270000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	30/11/1998	1998	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85760000000	-35.07270000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/01/1999	1999	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85760000000	-35.07270000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/03/1999	1999	BIRDATLAS2				0		Opal St, Little Grove	100	117.85760000000	-35.07270000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	8/04/1999	1999	BIRDATLAS2				0		Grove Hill no 2	100	117.85540000000	-35.08850000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	30/04/1999	1999	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85760000000	-35.07270000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/05/1999	1999	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85760000000	-35.07270000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	30/06/1999	1999	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85760000000	-35.07270000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/07/1999	1999	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85760000000	-35.07270000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/08/1999	1999	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85760000000	-35.07270000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	30/09/1999	1999	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85760000000	-35.07270000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/10/1999	1999	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85760000000	-35.07270000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	5/11/1999	1999	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72730000000	-35.03020000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	30/11/1999	1999	BIRDATLAS2				0		King George Street, Little Grove	100	117.70150000000	-35.06240000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	30/11/1999	1999	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85740000000	-35.07270000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/12/1999	1999	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85760000000	-35.07270000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	6/01/2000	2000	BIRDATLAS2	Moderately certain	Observational	Sighting	1	TORBAY	Rutherhill Road	100	117.69850000000	-35.00710000000	24734	Cacatuidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	6/01/2000	2000	BIRDATLAS2				0		North Road	100	117.70790000000	-35.03070000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/01/2000	2000	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72730000000	-35.02990000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/01/2000	2000	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Grasmere	100	117.75320000000	-35.01770000000	24734	Cacatuidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/01/2000	2000	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85760000000	-35.07270000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	1/02/2000	2000	BIRDATLAS2				0		Bibbulman Track	100	117.72320000000	-35.04490000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	1/02/2000	2000	BIRDATLAS2				0		Bibbulman Track	100	117.74180000000	-35.04710000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	29/02/2000	2000	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	29/02/2000	2000	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72730000000	-35.02990000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	29/02/2000	2000	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85760000000	-35.07270000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	29/02/2000	2000	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Grasmere	100	117.75290000000	-35.01990000000	24734	Cacatuidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	2/03/2000	2000	BIRDATLAS2				0		Sand Patch Road, via Albany	100	117.81400000000	-35.05440000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/03/2000	2000	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72730000000	-35.02990000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/03/2000	2000	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85760000000	-35.07270000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/03/2000	2000	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Grasmere	100	117.75290000000	-35.01990000000	24734	Cacatuidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	30/04/2000	2000	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	30/04/2000	2000	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85760000000	-35.07270000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	30/04/2000	2000	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72730000000	-35.02990000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	5/05/2000	2000	BIRDATLAS2				0		Grasmere Hill	100	117.70930000000	-35.04160000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	5/05/2000	2000	BIRDATLAS2				0		Grasmere Hill	100	117.73240000000	-35.04190000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	26/05/2000	2000	BIRDATLAS2				0		140 Opal Street, Little Grove, Albany	100	117.85760000000	-35.07270000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	27/05/2000	2000	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	30/06/2000	2000	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/07/2000	2000	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/07/2000	2000	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85850000000	-35.07240000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	26/08/2000	2000	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85850000000	-35.07240000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/08/2000	2000	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Grasmere	100	117.75290000000	-35.01990000000	24734	Cacatuidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	30/09/2000	2000	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85850000000	-35.07240000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	30/09/2000	2000	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	30/09/2000	2000	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Grasmere	100	117.75290000000	-35.01990000000	24734	Cacatuidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	20/10/2000	2000	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72730000000	-35.02990000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/10/2000	2000	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Grasmere	100	117.75290000000	-35.01990000000	24734	Cacatuidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/10/2000	2000	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/10/2000	2000	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85850000000	-35.07240000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	30/11/2000	2000	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	30/11/2000	2000	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85850000000	-35.07240000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	26/12/2000	2000	BIRDATLAS2				0		Water Authority track, Albany	100	117.85070000000	-35.06270000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/12/2000	2000	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85850000000	-35.07240000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/12/2000	2000	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/01/2001	2001	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/01/2001	2001	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85850000000	-35.07240000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia

Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	28/02/2001	2001	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85850000000	-35.07240000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	28/02/2001	2001	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72790000000	-35.02990000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	28/02/2001	2001	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/03/2001	2001	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72790000000	-35.02990000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/03/2001	2001	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Grasmere	100	117.75290000000	-35.01990000000	24734	Cacatuidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	30/04/2001	2001	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	30/04/2001	2001	BIRDATLAS2				0		140 Opal Street, Little Grove, via Albany	100	117.85850000000	-35.07240000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/05/2001	2001	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/05/2001	2001	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Grasmere	100	117.75290000000	-35.01990000000	24734	Cacatuidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	30/06/2001	2001	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	30/06/2001	2001	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Grasmere	100	117.75290000000	-35.01990000000	24734	Cacatuidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	9/07/2001	2001	BIRDATLAS2				0		Torndirrup NP	100	117.82230000000	-35.09380000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	29/07/2001	2001	BIRDATLAS2				0		Torndirrup NP	100	117.79980000000	-35.06800000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	29/07/2001	2001	BIRDATLAS2				0		Torndirrup NP	100	117.80790000000	-35.07190000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/07/2001	2001	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/07/2001	2001	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Grasmere	100	117.75290000000	-35.01990000000	24734	Cacatuidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	28/12/2001	2001	BIRDATLAS2				0		Torndirrup NP	100	117.82960000000	-35.07160000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	31/12/2001	2001	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	28/02/2002	2002	BIRDATLAS2				0		Elleker Rd	100	117.73260000000	-35.03160000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	24/03/2002	2002	BIRDATLAS2				0		Windfarm	5000	117.80150000000	-35.04880000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	27/01/2003	2003	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Manarup	100	117.69820000000	-35.02940000000	24734	Cacatuidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	27/01/2003	2003	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Manarup	100	117.69820000000	-35.02940000000	24734	Cacatuidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	29/06/2004	2004	BIRDATLAS2				0		Evers	100	117.77360000000	-35.02830000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	4/07/2007	2007	TFAUNA	Certain	Community surv	Day sighting	12	CUTHBERT		1000	117.78330000000	-35.01670000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	15/04/2012	2012	TFAUNA	Certain	Community surv	Day sighting	33	Mckail		1000	117.82940000000	-34.99470000000	24734	Cacatuidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	7/04/2013	2013	TFAUNA	Certain	Community surv	Day sighting	43	Robinson		1000	117.80670000000	-35.02890000000	24734	Cacatuidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	17/09/2013	2013	TFAUNA	Moderately certain	Survey	Day sighting	30	ROBINSON		1000	117.83490000000	-35.04090000000	24734	Cacatuidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	6/04/2014	2014	TFAUNA	Moderately certain	Community surv	Day sighting	18	McKail		1000	117.82940000000	-34.99460000000	24734	Cacatuidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	9/03/2017	2017	TFAUNA	Very Certain (photo, s	Regular monitori	Remote sensing	0	GLEDHOW		1000	117.82160000000	-35.00490000000	24734	Cacatuidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	9/03/2017	2017	TFAUNA	Certain	Monitoring	Released	1	Albany		30	117.82540000000	-34.99260000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	9/03/2017	2017	TFAUNA	Certain	Monitoring	Released	1	Albany		30	117.82540000000	-34.99260000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	13/08/2018	2018	TFAUNA	Certain	Community surv	Sighting	0	McKail		1000	117.81440000000	-34.98610000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus latirostris	Carnaby's cockatoo	BIRD	EN	13/08/2018	2018	TFAUNA	Certain	Community surv	Sighting	40	Robinson		1000	117.80310000000	-35.02030000000	24734	Psittacidae	Calyptorhync	latirostris	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	15/10/1977	1977	BIRDATLAS1	Moderately certain	Observational	Sighting	1	MCKAIL	MCKAIL	36000	117.83480000000	-34.99880000000	48400	Cacatuidae	Calyptorhync	sp. 'white-tailed	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	27/12/1998	1998	BIRDATLAS2				0		Bibbulman Track	100	117.84480000000	-35.06350000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	31/01/1999	1999	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85760000000	-35.07270000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	25/02/1999	1999	BIRDATLAS2				0		Grasmere	100	117.75320000000	-35.01770000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	28/02/1999	1999	BIRDATLAS2				0		Lot 140 Opal Street, Little Grove, Albany	100	117.85760000000	-35.07270000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	31/03/1999	1999	BIRDATLAS2				0		Grasmere	100	117.75290000000	-35.01990000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	30/04/1999	1999	BIRDATLAS2				0		Grasmere	100	117.75290000000	-35.01990000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	30/04/1999	1999	BIRDATLAS2				0		Cuthbert, via Albany	100	117.77990000000	-35.01820000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	31/05/1999	1999	BIRDATLAS2				0		Grasmere	100	117.75290000000	-35.01990000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	31/05/1999	1999	BIRDATLAS2				0		Cuthbert, via Albany	100	117.77990000000	-35.01820000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	30/06/1999	1999	BIRDATLAS2				0		Grasmere	100	117.75290000000	-35.01990000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	30/06/1999	1999	BIRDATLAS2				0		Cuthbert, via Albany	100	117.77990000000	-35.01820000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	31/08/1999	1999	BIRDATLAS2				0		Grasmere	100	117.75320000000	-35.01770000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	30/09/1999	1999	BIRDATLAS2				0		Grasmere	100	117.75320000000	-35.01770000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	19/11/1999	1999	BIRDATLAS2				0		45 Ware Road, Albany	100	117.85430000000	-35.02300000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	31/12/1999	1999	BIRDATLAS2				0		Grasmere	100	117.75290000000	-35.01990000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	30/04/2000	2000	BIRDATLAS2				0		Grasmere	100	117.75290000000	-35.01990000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	31/05/2000	2000	BIRDATLAS2				0		Grasmere	100	117.75290000000	-35.01990000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	30/06/2000	2000	BIRDATLAS2				0		Grasmere	100	117.75290000000	-35.01990000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	31/07/2000	2000	BIRDATLAS2				0		Grasmere	100	117.75290000000	-35.01990000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	31/12/2000	2000	BIRDATLAS2				0		Grasmere	100	117.75290000000	-35.01990000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	31/01/2001	2001	BIRDATLAS2				0		Grasmere	100	117.75290000000	-35.01990000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	28/02/2001	2001	BIRDATLAS2				0		Grasmere	100	117.75290000000	-35.01990000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	31/03/2001	2001	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	30/04/2001	2001	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	31/05/2001	2001	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	30/06/2001	2001	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	31/07/2001	2001	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	30/09/2001	2001	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	31/10/2001	2001	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	30/11/2001	2001	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	28/02/2002	2002	BIRDATLAS2				0		Elleker Rd	100	117.73260000000	-35.03160000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	31/03/2002	2002	BIRDATLAS2				0		Home	100	117.73260000000	-35.03160000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Calyptorhynchus sp. 'white	white-tailed black cockatoo	BIRD	EN	31/01/2005	2005	BIRDATLAS2				0		Lake Powell	100	117.74620000000	-35.01990000000	48400	Psittacidae	Calyptorhync	sp.	Animalia
Charadrius leschenaultii	greater sand plover	BIRD	VU	31/08/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	25575	Charadriidae	Charadrius	leschenaultii	Animalia
Charadrius leschenaultii	greater sand plover	BIRD	VU	30/09/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	25575	Charadriidae	Charadrius	leschenaultii	Animalia
Charadrius leschenaultii	greater sand plover	BIRD	VU	31/10/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	25575	Charadriidae	Charadrius	leschenaultii	Animalia
Dasyurus geoffroii	western quoll	MAMMAL	VU	1/01/1974	1974	TFAUNA	Certain	Survey	Caught or trapped	1	Albany		10000	117.83330000000	-35.00000000000	24092	Dasyuridae	Dasyurus	geoffroii	Animalia
Falco peregrinus	peregrine falcon	BIRD	OS	16/10/2007	2007	BIRDATA				0		521 Robsinson Road	0	117.81980000000	-35.01320000000	25624	Falconidae	Falco	peregrinus	Animalia
Falco peregrinus	peregrine falcon	BIRD	OS	3/01/2012	2012	BIRDATA				0		Albany Racecourse-Robinson	0	117.82610000000	-35.02330000000	25624	Falconidae	Falco	peregrinus	Animalia
Falco peregrinus	peregrine falcon	BIRD	OS	31/05/2000	2000	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72730000000	-35.02990000000	25624	Falconidae	Falco	peregrinus	Animalia
Falco peregrinus	peregrine falcon	BIRD	OS	31/12/2000	2000	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72730000000	-35.02990000000	25624	Falconidae	Falco	peregrinus	Animalia
Falco peregrinus	peregrine falcon	BIRD	OS	31/01/2001	2001	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72730000000	-35.02990000000	25624	Falconidae	Falco	peregrinus	Animalia
Falco peregrinus	peregrine falcon	BIRD	OS	10/02/2001	2001	BIRDATLAS2	Moderately certain	Observational	Sighting	1	TORBAY	Torbay Inlet	100	117.68900000000	-35.03070000000	25624	Falconidae	Falco	peregrinus	Animalia
Falco peregrinus	peregrine falcon	BIRD	OS	28/02/2001	2001	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72790000000	-35.02990000000	25624	Falconidae	Falco	peregrinus	Animalia
Falco peregrinus	peregrine falcon	BIRD	OS	31/03/2001	2001	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72790000000	-35.02990000000	25624	Falconidae	Falco	peregrinus	Animalia
Falco peregrinus	peregrine falcon	BIRD	OS	31/05/2001	2001	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72790000000	-35.02990000000	25624	Falconidae	Falco	peregrinus	Animalia

Falco peregrinus	peregrine falcon	BIRD	OS	31/12/2001	2001	BIRDATLAS2				0		'Riverslea', Lot 2734 Elleker Road, Grasmere	100	117.72790000000	-35.02990000000	25624	Falconidae	Falco	peregrinus	Animalia
Hydromys chrysogaster	water-rat, rakali	MAMMAL	P4		0	TFAUNA	Certain	Historical (writte	Dead	1	Grasmere		1000	117.75000000000	-35.01670000000	24215	Muridae	Hydromys	chrysogaster	Animalia
Hydromys chrysogaster	water-rat, rakali	MAMMAL	P4	1/01/1929	1929	TFAUNA	Certain	Historical (writte	Caught or trapped	1	Elleker		10000	117.73330000000	-35.00000000000	24215	Muridae	Hydromys	chrysogaster	Animalia
Hydromys chrysogaster	water-rat, rakali	MAMMAL	P4		0	WAM_MAMMALS	WAM Vouchered	Collection	Specimen	1	ELLEKER	ELLEKER	10000	117.73330000000	-35.00000000000	24215	Muridae	Hydromys	chrysogaster	Animalia
Hydromys chrysogaster	water-rat, rakali	MAMMAL	P4		0	WAM_MAMMALS	WAM Vouchered	Collection	Specimen	1	ELLEKER	ELLEKER	10000	117.75000000000	-35.01670000000	24215	Muridae	Hydromys	chrysogaster	Animalia
Hydromys chrysogaster	water-rat, rakali	MAMMAL	P4		0	WAM_MAMMALS				0			10000	117.73330000000	-35.00000000000	24215	Muridae	Hydromys	chrysogaster	Animalia
Hydromys chrysogaster	water-rat, rakali	MAMMAL	P4		0	WAM_MAMMALS				0			10000	117.75000000000	-35.01670000000	24215	Muridae	Hydromys	chrysogaster	Animalia
Hydromys chrysogaster	water-rat, rakali	MAMMAL	P4	19/05/1964	1964	TFAUNA	Certain	Survey	Caught or trapped	2	Gledhow		10000	117.83330000000	-35.00000000000	24215	Muridae	Hydromys	chrysogaster	Animalia
Hydroprogne caspia	Caspian Tern	BIRD	IA	16/09/1977	1977	BIRDATLAS1				0			54000	117.83480000000	-34.99880000000	48587	Laridae	Hydroprogne	caspia	Animalia
Hydroprogne caspia	Caspian Tern	BIRD	IA	30/09/1977	1977	BIRDATLAS1				0			18000	117.75150000000	-35.08210000000	48587	Laridae	Hydroprogne	caspia	Animalia
Hydroprogne caspia	Caspian Tern	BIRD	IA	15/10/1977	1977	BIRDATLAS1				0			36000	117.83480000000	-34.99880000000	48587	Laridae	Hydroprogne	caspia	Animalia
Hydroprogne caspia	Caspian Tern	BIRD	IA	23/12/1978	1978	BIRDATLAS1				0			108000	117.83480000000	-34.99880000000	48587	Laridae	Hydroprogne	caspia	Animalia
Hydroprogne caspia	Caspian Tern	BIRD	IA	1/01/1981	1981	BIRDATLAS1				0			36000	117.83480000000	-34.99880000000	48587	Laridae	Hydroprogne	caspia	Animalia
Hydroprogne caspia	Caspian Tern	BIRD	IA	21/08/1999	1999	BIRDATLAS2				0		Robinson Drain, Albany	500	117.85480000000	-35.03210000000	48587	Laridae	Hydroprogne	caspia	Animalia
Hydroprogne caspia	Caspian Tern	BIRD	IA	11/11/1999	1999	BIRDATLAS2				0		Bibbulman Track, Albany	100	117.85820000000	-35.02690000000	48587	Laridae	Hydroprogne	caspia	Animalia
Hydroprogne caspia	Caspian Tern	BIRD	IA	21/11/1999	1999	BIRDATLAS2				0		Bibbulman Track, Albany	100	117.85820000000	-35.02690000000	48587	Laridae	Hydroprogne	caspia	Animalia
Hydroprogne caspia	Caspian Tern	BIRD	IA	24/04/2000	2000	BIRDATLAS2				0		Little Grove, Albany	0	117.85150000000	-35.03210000000	48587	Laridae	Hydroprogne	caspia	Animalia
Hydroprogne caspia	Caspian Tern	BIRD	IA	31/10/2000	2000	BIRDATLAS2				0		Elleker Road, Elleker	100	117.73260000000	-35.03160000000	48587	Laridae	Hydroprogne	caspia	Animalia
Hydroprogne caspia	Caspian Tern	BIRD	IA	26/01/2001	2001	BIRDATLAS2				0		Rushy Point, Albany	500	117.85150000000	-35.04880000000	48587	Laridae	Hydroprogne	caspia	Animalia
Hydroprogne caspia	Caspian Tern	BIRD	IA	26/01/2001	2001	BIRDATLAS2				0		North Road	100	117.69570000000	-35.02990000000	48587	Laridae	Hydroprogne	caspia	Animalia
Hydroprogne caspia	Caspian Tern	BIRD	IA	26/01/2001	2001	BIRDATLAS2				0		East Torbay Inlet	100	117.69500000000	-35.02890000000	48587	Laridae	Hydroprogne	caspia	Animalia
Hydroprogne caspia	Caspian Tern	BIRD	IA	9/05/2003	2003	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	48587	Laridae	Hydroprogne	caspia	Animalia
Hydroprogne caspia	Caspian Tern	BIRD	IA	23/10/2003	2003	BIRDATLAS2				0		Lake Powell	100	117.74620000000	-35.01990000000	48587	Laridae	Hydroprogne	caspia	Animalia
Hydroprogne caspia	Caspian Tern	BIRD	IA	25/05/2004	2004	BIRDATLAS2				0		Rushy Point	100	117.85150000000	-35.05770000000	48587	Laridae	Hydroprogne	caspia	Animalia
Hydroprogne caspia	Caspian Tern	BIRD	IA	18/07/2004	2004	BIRDATLAS2				0		Lake Powell	100	117.74620000000	-35.01990000000	48587	Laridae	Hydroprogne	caspia	Animalia
Hydroprogne caspia	Caspian Tern	BIRD	IA	30/06/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	48587	Laridae	Hydroprogne	caspia	Animalia
Hydroprogne caspia	Caspian Tern	BIRD	IA	31/08/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	48587	Laridae	Hydroprogne	caspia	Animalia
Hydroprogne caspia	Caspian Tern	BIRD	IA	30/09/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	48587	Laridae	Hydroprogne	caspia	Animalia
Hydroprogne caspia	Caspian Tern	BIRD	IA	31/10/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	48587	Laridae	Hydroprogne	caspia	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	14/03/1999	1999	TFAUNA	Certain	Survey	Caught or trapped	1	Albany Wind Farm		10000	117.77400000000	-35.05020000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	1/10/1984	1984	TFAUNA	Certain	Opportunistic sig	Day sighting	1	Elleker		1000	117.73700000000	-35.03060000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	1/02/1984	1984	TFAUNA	Certain	Opportunistic sig	Dead	1	Elleker		10000	117.72100000000	-34.98680000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	1/07/1982	1982	TFAUNA	Certain	Opportunistic sig	Dead	1	Gledhow		1000	117.83000000000	-35.00730000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	1/01/2005	2005	TFAUNA	Moderately certain	Survey	Secondary sign	0	Cuthbert		1000	117.80600000000	-35.01220000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	1/01/2005	2005	TFAUNA	Moderately certain	Survey	Secondary sign	0	Gledhow		1000	117.83320000000	-35.01260000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	1/01/2005	2005	TFAUNA	Moderately certain	Survey	Secondary sign	0	Elleker		1000	117.73680000000	-35.01310000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	1/01/1984	1984	TFAUNA	Moderately certain	Opportunistic sig	Secondary sign	0	Marbelup Nature Reserve		1000	117.73000000000	-34.99050000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	4/11/2005	2005	TFAUNA	Certain	Survey	Day sighting	1	Gledhow		1000	117.80750000000	-35.01100000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	9/11/2005	2005	TFAUNA	Certain	Survey	Caught or trapped	1	Gledhow		1000	117.83470000000	-35.01100000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	10/11/2005	2005	TFAUNA	Certain	Survey	Caught or trapped	1	Gledhow		1000	117.83470000000	-35.00140000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	11/11/2005	2005	TFAUNA	Certain	Survey	Caught or trapped	2	Gledhow		1000	117.83470000000	-35.01140000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	12/11/2005	2005	TFAUNA	Certain	Survey	Caught or trapped	1	Gledhow		1000	117.83470000000	-35.01140000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	13/11/2005	2005	TFAUNA	Certain	Survey	Caught or trapped	1	Gledhow		1000	117.80750000000	-35.01100000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	14/11/2005	2005	TFAUNA	Certain	Survey	Caught or trapped	1	Gledhow		1000	117.83470000000	-35.01140000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	15/11/2005	2005	TFAUNA	Certain	Survey	Caught or trapped	1	Gledhow		1000	117.83400000000	-35.01140000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	15/11/2005	2005	TFAUNA	Certain	Survey	Caught or trapped	1	Gledhow		1000	117.80750000000	-35.01100000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	16/11/2005	2005	TFAUNA	Certain	Survey	Caught or trapped	1	Gledhow		1000	117.83470000000	-35.01140000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4		0	QUENDASURVEY				0		Little Grove	10	117.86080000000	-35.06490000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4		0	QUENDASURVEY				0		Albany	10	117.82970000000	-35.00640000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	14/05/2012	2012	TFAUNA	Moderately certain	Community surv	Day sighting	2	LITTLE GROVE		1000	117.86080000000	-35.06480000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	18991125	1899	WAM_MAMMALS	WAM Vouchered	Collection	Specimen	1	ELLEKER	ELLEKER	10000	117.73330000000	-35.00000000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	18991125	1899	WAM_MAMMALS	WAM Vouchered	Collection	Specimen	1	ELLEKER	ELLEKER	10000	117.75000000000	-35.01670000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4		0	WAM_MAMMALS	WAM Vouchered	Collection	Specimen	1	ELLEKER	ELLEKER	10000	117.73330000000	-35.00000000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	18991125	1899	WAM_MAMMALS				0			10000	117.73330000000	-35.00000000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	18991125	1899	WAM_MAMMALS				0			10000	117.75000000000	-35.01670000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4		0	WAM_MAMMALS				0			10000	117.73330000000	-35.00000000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Isoodon fusciventer	southwestern brown bandicoot	MAMMAL	P4	15/07/2012	2012	TFAUNA	Certain	Community surv	Day sighting	2	GLEDHOW		1000	117.82970000000	-35.00630000000	48588	Peramelidae	Isoodon	fusciventer	Animalia
Lepidogalaxias salamandro	salamanderfish	FISH	EN	21/11/1976	1976	WAM_FISH	Very certain	Collection	Specimen	1	ELLEKER	near river mouth at lake	100000	117.75000000000	-35.01670000000	47983	Lepidogalaxiidae	Lepidogalaxia	salamandroides	Animalia
Lepidogalaxias salamandro	salamanderfish	FISH	EN	21/11/1976	1976	WAM_FISH				0		near river mouth at lake	100000	117.75000000000	-35.01670000000	47983	Lepidogalaxiidae	Lepidogalaxia	salamandroides	Animalia
Limosa lapponica	bar-tailed godwit	BIRD	IA	27/12/1998	1998	BIRDATLAS2				0		Bibbulman Track	100	117.84480000000	-35.06350000000	30932	Scolopacidae	Limosa	lapponica	Animalia
Limosa lapponica	bar-tailed godwit	BIRD	IA	11/11/1999	1999	BIRDATLAS2	Moderately certain	Observational	Sighting	1	MOUNT ELPHIN	Bibbulman Track, Albany	100	117.85820000000	-35.02690000000	30932	Scolopacidae	Limosa	lapponica	Animalia
Limosa lapponica	bar-tailed godwit	BIRD	IA	24/04/2000	2000	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ROBINSON	Little Grove, Albany	0	117.85150000000	-35.03210000000	30932	Scolopacidae	Limosa	lapponica	Animalia
Limosa lapponica	bar-tailed godwit	BIRD	IA	26/01/2001	2001	BIRDATLAS2				0		Rushy Point, Albany	500	117.85150000000	-35.04880000000	30932	Scolopacidae	Limosa	lapponica	Animalia
Limosa lapponica	bar-tailed godwit	BIRD	IA	31/10/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	30932	Scolopacidae	Limosa	lapponica	Animalia
Macronectes giganteus	southern giant petrel	BIRD	IA		0	WAM_BIRDS				0		Elleker	10000	117.73330000000	-35.00000000000	24690	Procellariidae	Macronectes	giganteus	Animalia
Neophoca cinerea	Australian sea-lion	MAMMAL	VU	1/08/1983	1983	TFAUNA	Certain	Opportunistic sig	Dead	1	Mutton Bird Island		50	117.69700000000	-35.05180000000	24210	Otariinae	Neophoca	cinerea	Animalia
Notamacropus irma	western brush wallaby	MAMMAL	P4	14/03/1999	1999	TFAUNA	Certain	Survey	Day sighting	2	Albany Wind Farm		10000	117.77400000000	-35.05020000000	48022	Macropodidae	Notamacrop	irma	Animalia
Numenius phaeopus	whimbrel	BIRD	IA	9/05/2003	2003	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	25742	Scolopacidae	Numenius	phaeopus	Animalia
Oxyura australis	blue-billed duck	BIRD	P4	26/01/2012	2012	BIRDATA				0		Lake Powell	0	117.74920000000	-35.01940000000	24328	Anatidae	Oxyura	australis	Animalia
Oxyura australis	blue-billed duck	BIRD	P4	1/04/2001	2001	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Powell, Elleker	100	117.74820000000	-35.01960000000	24328	Anatidae	Oxyura	australis	Animalia
Oxyura australis	blue-billed duck	BIRD	P4	7/04/2001	2001	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Powell, Elleker	100	117.74830000000	-35.01970000000	24328	Anatidae	Oxyura	australis	Animalia
Oxyura australis	blue-billed duck	BIRD	P4	27/11/2001	2001	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Powell, Elleker	100	117.74810000000	-35.02000000000	24328	Anatidae	Oxyura	australis	Animalia
Oxyura australis	blue-billed duck	BIRD	P4	23/10/2003	2003	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Powell	100	117.74620000000	-35.01990000000	24328	Anatidae	Oxyura	australis	Animalia
Oxyura australis	blue-billed duck	BIRD	P4	30/11/2003	2003	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Powell	100	117.74620000000	-35.01990000000	24328	Anatidae	Oxyura	australis	Animalia
Oxyura australis	blue-billed duck	BIRD	P4	13/01/2004	2004	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Powell	100	117.74620000000	-35.01990000000	24328	Anatidae	Oxyura	australis	Animalia
Oxyura australis	blue-billed duck	BIRD	P4	3/03/2005	2005	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Powell	100	117.74760000000	-35.02020000000	24328	Anatidae	Oxyura	australis	Animalia
Oxyura australis	blue-billed duck	BIRD	P4	29/03/2006	2006	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Powell	100	117.74620000000	-35.01990000000	24328	Anatidae	Oxyura	australis	Animalia
Oxyura australis	blue-billed duck	BIRD	P4	26/01/2012	2012	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Powell	100	117.74920000000	-35.01940000000	24328	Anatidae	Oxyura	australis	Animalia
Pandion cristatus	eastern osprey	BIRD	IA	24/07/1976	1976	BIRDATLAS1				0			18000	117.75150000000	-35.08210000000	48591	Accipitridae	Pandion	cristatus	Animalia
Pandion cristatus	eastern osprey	BIRD	IA	11/04/1977	1977	BIRDATLAS1				0			18000	117.75150000000	-35.08210000000	48591	Accipitridae	Pandion	cristatus	Animalia
Pandion cristatus	eastern osprey	BIRD	IA	30/09/1977	1977	BIRDATLAS1				0			18000	117.75150000000	-35.08210000000	48591	Accipitridae	Pandion	cristatus	Animalia
Pandion cristatus	eastern osprey	BIRD	IA	15/10/1977	1977	BIRDATLAS1				0			36000	117.83480000000	-34.99880000000	48591	Accipitridae	Pandion	cristatus	Animalia
Pandion cristatus	eastern osprey	BIRD	IA	30/11/1979	1979	BIRDATLAS1				0			18000	117.75150000000	-35.08210000000	48591	Accipitridae	Pandion	cristatus	Animalia
Pandion cristatus	eastern osprey	BIRD	IA	27/12/1998	1998	BIRDATLAS2				0		Bibbulman Track	100	117.84480000000	-35.06350000000	48591	Accipitridae	Pandion	cristatus	Animalia
Pandion cristatus	eastern osprey	BIRD	IA	19/11/1999	1999	BIRDATLAS2				0		45 Ware Road, Albany	100	117.85430000000	-35.02300000000	48591	Accipitridae	Pandion	cristatus	Animalia
Pandion cristatus	eastern osprey	BIRD	IA	26/01/2001	2001	BIRDATLAS2				0		North Road farm, Torbay	100	117.69900000000	-35.02990000000	48591	Accipitridae	Pandion	cristatus	Animalia
Pandion cristatus	eastern osprey	BIRD	IA	26/01/2001	2001	BIRDATLAS2				0		North Road	100	117.69570000000	-35.02990000000	48591	Accipitridae	Pandion	cristatus	Animalia
Pandion cristatus	eastern osprey	BIRD	IA	26/01/2001	2001	BIRDATLAS2				0		East Torbay Inlet	100	117.69500000000	-35.02890000000	48591	Accipitridae	Pandion	cristatus	Animalia

Pandion cristatus	eastern osprey	BIRD	IA	29/01/2001	2001	BIRDATLAS2				0		laoke Poeell, Elleker	500	117.75180000000	-35.01880000000	48591	Accipitridae	Pandion	cristatus	Animalia
Pandion cristatus	eastern osprey	BIRD	IA	27/01/2003	2003	BIRDATLAS2				0		Lake Manarup	100	117.69820000000	-35.02940000000	48591	Accipitridae	Pandion	cristatus	Animalia
Pandion cristatus	eastern osprey	BIRD	IA	27/01/2003	2003	BIRDATLAS2				0		Lake Manarup	100	117.69820000000	-35.02940000000	48591	Accipitridae	Pandion	cristatus	Animalia
Pandion cristatus	eastern osprey	BIRD	IA	25/05/2004	2004	BIRDATLAS2				0		Rushy Point	100	117.85150000000	-35.05770000000	48591	Accipitridae	Pandion	cristatus	Animalia
Phycodurus eques	leafy sea dragon	FISH	P2	17/11/2006	2006	WAM_FISH				0			100000	117.70000000000	-35.05000000000	34039	Syngnathidae	Phycodurus	eques	Animalia
Physeter macrocephalus	sperm whale	MAMMAL	VU	10/09/1985	1985	TFAUNA	Certain	Opportunistic sig	Dead	1	Elleker/Sand Patch		10000	117.76670000000	-35.05000000000	24073	Physeteridae	Physeter	macrocephalus	Animalia
Plegadis falcinellus	glossy ibis	BIRD	IA	9/12/2004	2004	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Powell	100	117.74620000000	-35.01990000000	24843	Threskiornithidae	Plegadis	falcinellus	Animalia
Pluvialis fulva	Pacific golden plover	BIRD	IA	7/10/2011	2011	BIRDATA				0		Frenchman Bay / Bramwall Rd	0	117.84810000000	-35.04690000000	24382	Charadriidae	Pluvialis	fulva	Animalia
Pluvialis fulva	Pacific golden plover	BIRD	IA	26/01/2001	2001	BIRDATLAS2				0		Rushy Point, Albany	500	117.85150000000	-35.04880000000	24382	Charadriidae	Pluvialis	fulva	Animalia
Pluvialis fulva	Pacific golden plover	BIRD	IA	30/09/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	24382	Charadriidae	Pluvialis	fulva	Animalia
Pluvialis fulva	Pacific golden plover	BIRD	IA	31/10/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	24382	Charadriidae	Pluvialis	fulva	Animalia
Pluvialis squatarola	grey plover	BIRD	IA	23/12/1978	1978	BIRDATLAS1	Moderately certain	Observational	Sighting	1	MCKAIL	MCKAIL	108000	117.83480000000	-34.99880000000	24383	Charadriidae	Pluvialis	squatarola	Animalia
Pluvialis squatarola	grey plover	BIRD	IA	27/12/1998	1998	BIRDATLAS2				0		Bibbulman Track	100	117.84480000000	-35.06350000000	24383	Charadriidae	Pluvialis	squatarola	Animalia
Pluvialis squatarola	grey plover	BIRD	IA	18/04/1999	1999	BIRDATLAS2	Moderately certain	Observational	Sighting	1	MOUNT ELPHIN	Woolstores, Albany	100	117.85820000000	-35.02690000000	24383	Charadriidae	Pluvialis	squatarola	Animalia
Pluvialis squatarola	grey plover	BIRD	IA	11/11/1999	1999	BIRDATLAS2	Moderately certain	Observational	Sighting	1	MOUNT ELPHIN	Bibbulman Track, Albany	100	117.85820000000	-35.02690000000	24383	Charadriidae	Pluvialis	squatarola	Animalia
Pluvialis squatarola	grey plover	BIRD	IA	21/11/1999	1999	BIRDATLAS2	Moderately certain	Observational	Sighting	1	MOUNT ELPHIN	Bibbulman Track, Albany	100	117.85820000000	-35.02690000000	24383	Charadriidae	Pluvialis	squatarola	Animalia
Pluvialis squatarola	grey plover	BIRD	IA	26/01/2001	2001	BIRDATLAS2				0		Rushy Point, Albany	500	117.85150000000	-35.04880000000	24383	Charadriidae	Pluvialis	squatarola	Animalia
Pluvialis squatarola	grey plover	BIRD	IA	9/05/2003	2003	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	24383	Charadriidae	Pluvialis	squatarola	Animalia
Pluvialis squatarola	grey plover	BIRD	IA	30/06/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	24383	Charadriidae	Pluvialis	squatarola	Animalia
Pluvialis squatarola	grey plover	BIRD	IA	31/08/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	24383	Charadriidae	Pluvialis	squatarola	Animalia
Pluvialis squatarola	grey plover	BIRD	IA	30/09/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	24383	Charadriidae	Pluvialis	squatarola	Animalia
Pluvialis squatarola	grey plover	BIRD	IA	31/10/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	24383	Charadriidae	Pluvialis	squatarola	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	14/03/1999	1999	TFAUNA	Certain	Survey	Day sighting	1	Albany Wind Farm		10000	117.77400000000	-35.05020000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	1/01/2005	2005	TFAUNA	Certain	Survey	Day sighting	2	Cuthbert		1000	117.80600000000	-35.01220000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	25/08/2005	2005	TFAUNA	Certain	Opportunistic sig	Dead	1	Marbelup		500	117.72800000000	-35.00800000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	13/11/2005	2005	TFAUNA	Certain	Survey	Night sighting	1	Gledhow		1000	117.80750000000	-35.01100000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	1/01/1990	1990	TFAUNA	Certain	Survey	Sighting	1	ELLEKER		1000	117.73530000000	-35.00560000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	14/03/1999	1999	TFAUNA	Certain	Survey	Sighting	1	Albany Wind Farm		10000	117.77250000000	-35.05130000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	1/01/1997	1997	TFAUNA	Certain	Survey	Dead	1	Albany		500	117.84870000000	-35.04030000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	12/12/1990	1990	TFAUNA	Certain	Survey	Dead	1	Gledhow		500	117.84490000000	-35.01950000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	1/01/1992	1992	TFAUNA	Certain	Survey	Sighting	1	Elleker		1000	117.73480000000	-35.00850000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR		0	TFAUNA	Certain	Historical (writte	Sighting	1	Lake Powell Nature Reserve		1000	117.73490000000	-35.01530000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR		0	TFAUNA	Certain	Historical (writte	Day sighting	1	SANDPATCH		1000	117.78330000000	-35.04430000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	5/05/2008	2008	TFAUNA	Certain	Survey	Dead	1	Albany		500	117.85000000000	-35.03400000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	30/05/2008	2008	TFAUNA	Certain	Opportunistic sig	Dead	1	Albany		500	117.84890000000	-35.03160000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	9/07/2008	2008	TFAUNA	Certain	Opportunistic sig	Dead	1	Albany		500	117.84810000000	-35.04890000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	27/04/2008	2008	TFAUNA	Certain	Survey	Night sighting	2	Elleker		500	117.72950000000	-35.00980000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	23/06/2008	2008	TFAUNA	Certain	Opportunistic sig	Sighting	0	Robinson		1000	117.82450000000	-35.02190000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	29/05/2008	2008	TFAUNA	Certain	Survey	Sighting	1	Gledhow		500	117.84600000000	-35.00300000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	14/08/2008	2008	TFAUNA	Certain	Opportunistic sig	Sighting	3	Albany		500	117.84280000000	-35.04240000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	14/07/2008	2008	TFAUNA	Certain	Opportunistic sig	Sighting	1	Albany		50	117.82450000000	-35.02190000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	22/05/2008	2008	TFAUNA	Certain	Opportunistic sig	Sighting	1	Albany		500	117.85450000000	-35.05450000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	1/01/1963	1963	TFAUNA	Very Certain (photo, sp	Survey	Dead	1	Grasmere Hill		10000	117.75000000000	-35.01670000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	19/06/2017	2017	TFAUNA	Certain	Opportunistic sig	Dead	1	Robinson		500	117.82650000000	-35.01540000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	26/02/2018	2018	TFAUNA	Certain	Opportunistic sig	Dead	1	Cuthbert		50	117.78690000000	-35.01650000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	25/06/2018	2018	TFAUNA	Very Certain (photo, sp	Opportunistic sig	Dead	0	Torndirrup		1000	117.84730000000	-35.04890000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	1/01/1974	1974	TFAUNA	Certain	Survey	Caught or trapped	4	Albany		10000	117.83330000000	-35.00000000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	28/01/2017	2017	TFAUNA	Certain	Survey		1	Marbellup reserve		1000	117.74150000000	-34.98850000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	29/07/2010	2010	TFAUNA	Certain	Survey		1	Lower Denmark Road		1000	117.78900000000	-35.01650000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	2/10/2017	2017	TFAUNA	Certain	Survey	Spotlighting	2	Muttonbird rd		1000	117.70740000000	-35.03790000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	2/10/2017	2017	TFAUNA	Certain	Survey	Spotlighting	1	Muttonbird Rd		1000	117.71000000000	-35.03540000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	13/11/2017	2017	TFAUNA	Certain	Survey	Released	1	Elleker		1000	117.72040000000	-35.01970000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	13/11/2017	2017	TFAUNA	Certain	Survey	Spotlighting	1	Elleker		1000	117.72020000000	-35.02020000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	13/11/2017	2017	TFAUNA	Certain	Survey	Spotlighting	1	Elleker		1000	117.72060000000	-35.01820000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	28/11/2017	2017	TFAUNA	Certain	Survey	Spotlighting	1	Elleker		1000	117.70940000000	-35.00300000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	28/11/2017	2017	TFAUNA	Certain	Survey	Spotlighting	2	Elleker		1000	117.71010000000	-35.00340000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	28/11/2017	2017	TFAUNA	Certain	Survey	Spotlighting	2	Elleker		1000	117.71060000000	-35.00190000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	28/11/2017	2017	TFAUNA	Certain	Survey	Spotlighting	1	Elleker		1000	117.71150000000	-35.00210000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	28/11/2017	2017	TFAUNA	Certain	Survey	Spotlighting	1	Elleker		1000	117.70980000000	-34.99740000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	28/11/2017	2017	TFAUNA	Certain	Survey	Spotlighting	1	Elleker		1000	117.70980000000	-34.99730000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	28/11/2017	2017	TFAUNA	Certain	Survey	Spotlighting	1	Elleker		1000	117.70900000000	-34.99870000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	21/05/2018	2018	TFAUNA	Certain	Survey	Spotlighting	1	Elleker		1000	117.73250000000	-35.03410000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	21/05/2018	2018	TFAUNA	Certain	Survey	Spotlighting	1	Elleker		1000	117.73310000000	-35.03230000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	24/04/2018	2018	TFAUNA	Certain	Survey	Sighting	2	Elleker Torbay Rail Trail		1000	117.70940000000	-35.00300000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	24/04/2019	2019	TFAUNA	Certain	Survey	Sighting	2	Elleker Torbay Rail Trail		1000	117.71390000000	-35.00730000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	24/04/2018	2018	TFAUNA	Certain	Survey	Sighting	2	Elleker Torbay Rail Trail		1000	117.72090000000	-35.00710000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	24/04/2018	2018	TFAUNA	Certain	Survey	Sighting	1	Elleker Torbay Rail Trail		1000	117.72090000000	-35.00710000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	24/04/2018	2018	TFAUNA	Certain	Survey	Sighting	1	Elleker Torbay Rail Trail		1000	117.72480000000	-35.00660000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	24/04/2018	2018	TFAUNA	Certain	Survey	Sighting	1	Elleker Torbay Rail Trail		1000	117.72480000000	-35.00680000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	24/04/2018	2018	TFAUNA	Certain	Survey	Sighting	1	Elleker Torbay Rail Trail		1000	117.69460000000	-35.01300000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	24/04/2018	2018	TFAUNA	Certain	Survey	Sighting	3	Elleker Torbay Rail Trail		1000	117.70050000000	-35.00830000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	24/04/2018	2018	TFAUNA	Certain	Survey	Sighting	2	Elleker Torbay Rail Trail		1000	117.70350000000	-35.00700000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	28/01/2017	2017	TFAUNA	Certain	Survey	Sighting	1	Marbellup Reserve		1000	117.72440000000	-34.99290000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	28/01/2017	2017	TFAUNA	Certain	Survey	Sighting	1	Marbellup Reserve		1000	117.72230000000	-34.98890000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	28/01/2017	2017	TFAUNA	Certain	Survey	Sighting	1	Marbellup Reserve		1000	117.72750000000	-34.98760000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	28/01/2017	2017	TFAUNA	Certain	Survey	Sighting	1	Marbellup Reserve		1000	117.72780000000	-34.98760000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	24/04/2017	2017	TFAUNA	Certain	Survey	Sighting	2	Lowanna drive		1000	117.80890000000	-35.00960000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	5/05/2017	2017	TFAUNA	Certain	Survey	Sighting	1	Moortown Road Remnant		1000	117.83770000000	-35.00720000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	9/09/2019	2019	TFAUNA	Certain	Opportunistic sig	Night sighting	1	Albany		30	117.81310000000	-35.01160000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	26/08/2019	2019	TFAUNA	Certain	Opportunistic sig	Sighting	2	Elleker		30	117.72480000000	-35.01180000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	18/09/2019	2019	TFAUNA	Certain	Opportunistic sig	Sighting	1	South Coast Highway		30	117.75670000000	-34.99120000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	21/10/2005	2005	WAM_MAMMALS	WAM Vouchered	Collection	Specimen	1	ELLEKER	ELLEKER	10000	117.73330000000	-35.00000000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	21/10/2005	2005	WAM_MAMMALS				0		ELLEKER	10000	117.73330000000	-35.00000000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	18991125	1899	WAM_MAMMALS				0			0	117.71690000000	-35.08280000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR		0	WAM_MAMMALS	WAM Vouchered	Collection	Specimen	1	ELLEKER	ELLEKER	10000	117.75000000000	-35.01670000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR		0	WAM_MAMMALS				0			10000	117.75000000000	-35.01670000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	12/07/2018	2018	WL_REG17		Survey		0		Pseudocheirus occidentalis|117.823760821|-35.0139706911|12/07/2018	10	117.82380000000	-35.01400000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia

Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	16/07/2018	2018	WL_REG17		Survey		0		Pseudocheirus occidentalis|117.840146553|-35.017126333|16/07/2018	10	117.84010000000	-35.01710000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	13/07/2018	2018	WL_REG17		Survey		0		Pseudocheirus occidentalis|117.810889434|-34.9995616315|13/07/2018	10	117.81090000000	-34.99960000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	25/06/2018	2018	TFAUNA	Certain	Opportunistic sig	Dead	2	Albany		30	117.84730000000	-35.04900000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Pseudocheirus occidentalis	western ringtail possum	MAMMAL	CR	26/02/2018	2018	TFAUNA	Certain	Opportunistic sig	Dead	1	Albany		1000	117.78690000000	-35.01660000000	24166	Pseudocheiridae	Pseudocheir	occidentalis	Animalia
Setonix brachyurus	quokka	MAMMAL	VU	25/03/1905	1905	TFAUNA	Certain	Survey	Caught or trapped	1	Gledhow		10000	117.83330000000	-35.00000000000	24145	Macropodidae	Setonix	brachyurus	Animalia
Setonix brachyurus	quokka	MAMMAL	VU	25/03/1905	1905	WAM_MAMMALS				0		BIG GROVE	10000	117.85000000000	-35.05000000000	24145	Macropodidae	Setonix	brachyurus	Animalia
Stercorarius antarcticus lor	Brown Skua, Subantarctic skua	BIRD	P4	15/10/1977	1977	BIRDATLAS1				0			36000	117.83480000000	-34.99880000000	48116	Laridae	Stercorarius	antarcticus	Animalia
Thalassarche chlororhynch	Atlantic yellow-nosed albatross	BIRD	VU	27/04/1999	1999	BIRDATLAS2				0		Mutton Bird	100	117.69370000000	-35.04710000000	34007	Diomedeidae	Thalassarche	chlororhynchos	Animalia
Thalassarche chlororhynch	Atlantic yellow-nosed albatross	BIRD	VU	29/07/2001	2001	BIRDATLAS2				0		Torndirrup NP	100	117.79980000000	-35.06800000000	34007	Diomedeidae	Thalassarche	chlororhynchos	Animalia
Thalassarche melanophris	black-browed albatross	BIRD	EN	26/11/2013	2013	BIRDATA				0		Albany Wind Farm	0	117.79920000000	-35.06640000000	44607	Diomedeidae	Thalassarche	melanophris	Animalia
Thalasseus bergii	crested tern	BIRD	IA	26/09/2012	2012	BIRDATA				0		Albany Wind Farm	0	117.79920000000	-35.06640000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	26/11/2013	2013	BIRDATA				0		Albany Wind Farm	0	117.79920000000	-35.06640000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	10/12/2014	2014	BIRDATA				0		Princess Royal Harbour Albany	0	117.85170000000	-35.03190000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	15/10/1977	1977	BIRDATLAS1	Moderately certain	Observational	Sighting	1	MCKAIL	MCKAIL	36000	117.83480000000	-34.99880000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	28/02/1978	1978	BIRDATLAS1	Moderately certain	Observational	Sighting	1	SANDPATCH	SANDPATCH	18000	117.75150000000	-35.08210000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	30/11/1979	1979	BIRDATLAS1	Moderately certain	Observational	Sighting	1	SANDPATCH	SANDPATCH	18000	117.75150000000	-35.08210000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	1/01/1981	1981	BIRDATLAS1	Moderately certain	Observational	Sighting	1	MCKAIL	MCKAIL	36000	117.83480000000	-34.99880000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	27/12/1998	1998	BIRDATLAS2	Moderately certain	Observational	Sighting	1	TORNDIRRUP	Bibbulman Track	100	117.84480000000	-35.06350000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	18/04/1999	1999	BIRDATLAS2	Moderately certain	Observational	Sighting	1	MOUNT ELPHI	Woolstores, Albany	100	117.85820000000	-35.02690000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	29/04/1999	1999	BIRDATLAS2	Moderately certain	Observational	Sighting	1	SANDPATCH	Wind farm reserve, via Albany	100	117.79760000000	-35.06660000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	29/04/1999	1999	BIRDATLAS2	Moderately certain	Observational	Sighting	1	SANDPATCH	Wind farm reserve, via Albany	100	117.78960000000	-35.06270000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	11/11/1999	1999	BIRDATLAS2	Moderately certain	Observational	Sighting	1	MOUNT ELPHI	Bibbulman Track, Albany	100	117.85820000000	-35.02690000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	21/11/1999	1999	BIRDATLAS2	Moderately certain	Observational	Sighting	1	MOUNT ELPHI	Bibbulman Track, Albany	100	117.85820000000	-35.02690000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	24/04/2000	2000	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ROBINSON	Little Grove, Albany	1000	117.85150000000	-35.03210000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	9/07/2000	2000	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Mutton Bird Road	100	117.69790000000	-35.04990000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	9/07/2000	2000	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Mutton Bird Road	100	117.70260000000	-35.04990000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	26/01/2001	2001	BIRDATLAS2	Moderately certain	Observational	Sighting	1	TORBAY	East Torbay Inlet	100	117.69500000000	-35.02890000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	29/07/2001	2001	BIRDATLAS2	Moderately certain	Observational	Sighting	1	SANDPATCH	Torndirrup NP	100	117.79980000000	-35.06800000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	3/05/2002	2002	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ROBINSON	Frenchman Bay Road	100	117.84810000000	-35.04390000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	9/05/2003	2003	BIRDATLAS2	Moderately certain	Observational	Sighting	1	TORNDIRRUP	Rushy Point	100	117.85040000000	-35.05770000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	25/05/2004	2004	BIRDATLAS2	Moderately certain	Observational	Sighting	1	TORNDIRRUP	Rushy Point	100	117.85150000000	-35.05770000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	30/06/2005	2005	BIRDATLAS2	Moderately certain	Observational	Sighting	1	TORNDIRRUP	Rushy Point	100	117.85040000000	-35.05770000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	31/08/2005	2005	BIRDATLAS2	Moderately certain	Observational	Sighting	1	TORNDIRRUP	Rushy Point	100	117.85040000000	-35.05770000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	30/09/2005	2005	BIRDATLAS2	Moderately certain	Observational	Sighting	1	TORNDIRRUP	Rushy Point	100	117.85040000000	-35.05770000000	48597	Laridae	Thalasseus	bergii	Animalia
Thalasseus bergii	crested tern	BIRD	IA	31/10/2005	2005	BIRDATLAS2	Moderately certain	Observational	Sighting	1	TORNDIRRUP	Rushy Point	100	117.85040000000	-35.05770000000	48597	Laridae	Thalasseus	bergii	Animalia
Thinornis rubricollis	hooded plover	BIRD	P4	22/02/2003	2003	TFAUNA	Certain	Targeted survey	Day sighting	1	Mutton Bird Beach		1000	117.69220000000	-35.04560000000	48135	Charadriidae	Thinornis	rubricollis	Animalia
Thinornis rubricollis	hooded plover	BIRD	P4	15/10/1977	1977	BIRDATLAS1				0			36000	117.83480000000	-34.99880000000	48135	Charadriidae	Thinornis	rubricollis	Animalia
Thinornis rubricollis	hooded plover	BIRD	P4	30/11/1979	1979	BIRDATLAS1				0			18000	117.75150000000	-35.08210000000	48135	Charadriidae	Thinornis	rubricollis	Animalia
Thinornis rubricollis	hooded plover	BIRD	P4	17/12/2000	2000	BIRDATLAS2				0		Mutton-bird Beach	500	117.69320000000	-35.04050000000	48135	Charadriidae	Thinornis	rubricollis	Animalia
Thinornis rubricollis	hooded plover	BIRD	P4	22/02/2003	2003	BIRDATLAS2				0		Mutton Bird Beach	100	117.68760000000	-35.04440000000	48135	Charadriidae	Thinornis	rubricollis	Animalia
Thinornis rubricollis	hooded plover	BIRD	P4	31/10/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	48135	Charadriidae	Thinornis	rubricollis	Animalia
Tringa glareola	wood sandpiper	BIRD	IA	10/04/2005	2005	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	'Riverslea' creek, Lot 2734 Elleker Road, Grasmere	100	117.72850000000	-35.02690000000	24806	Scolopacidae	Tringa	glareola	Animalia
Tringa nebularia	common greenshank	BIRD	IA	16/10/2007	2007	BIRDATA				0		Torbay Inlet	100	117.68720000000	-35.03440000000	24808	Scolopacidae	Tringa	nebularia	Animalia
Tringa nebularia	common greenshank	BIRD	IA	24/07/1976	1976	BIRDATLAS1				0			18000	117.75150000000	-35.08210000000	24808	Scolopacidae	Tringa	nebularia	Animalia
Tringa nebularia	common greenshank	BIRD	IA	2/05/1977	1977	BIRDATLAS1				0			18000	117.75150000000	-35.08210000000	24808	Scolopacidae	Tringa	nebularia	Animalia
Tringa nebularia	common greenshank	BIRD	IA	15/10/1977	1977	BIRDATLAS1	Moderately certain	Observational	Sighting	1	MCKAIL	MCKAIL	36000	117.83480000000	-34.99880000000	24808	Scolopacidae	Tringa	nebularia	Animalia
Tringa nebularia	common greenshank	BIRD	IA	31/05/1978	1978	BIRDATLAS1				0			18000	117.75150000000	-35.08210000000	24808	Scolopacidae	Tringa	nebularia	Animalia
Tringa nebularia	common greenshank	BIRD	IA	27/12/1998	1998	BIRDATLAS2				0		Bibbulman Track	100	117.84480000000	-35.06350000000	24808	Scolopacidae	Tringa	nebularia	Animalia
Tringa nebularia	common greenshank	BIRD	IA	11/11/1999	1999	BIRDATLAS2	Moderately certain	Observational	Sighting	1	MOUNT ELPHI	Bibbulman Track, Albany	100	117.85820000000	-35.02690000000	24808	Scolopacidae	Tringa	nebularia	Animalia
Tringa nebularia	common greenshank	BIRD	IA	21/11/1999	1999	BIRDATLAS2	Moderately certain	Observational	Sighting	1	MOUNT ELPHI	Bibbulman Track, Albany	100	117.85820000000	-35.02690000000	24808	Scolopacidae	Tringa	nebularia	Animalia
Tringa nebularia	common greenshank	BIRD	IA	26/01/2001	2001	BIRDATLAS2				0		Rushy Point, Albany	500	117.85150000000	-35.04880000000	24808	Scolopacidae	Tringa	nebularia	Animalia
Tringa nebularia	common greenshank	BIRD	IA	29/01/2001	2001	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	laoke Poeell, Elleker	500	117.75180000000	-35.01880000000	24808	Scolopacidae	Tringa	nebularia	Animalia
Tringa nebularia	common greenshank	BIRD	IA	10/02/2001	2001	BIRDATLAS2	Moderately certain	Observational	Sighting	1	TORBAY	Torbay Inlet	100	117.68900000000	-35.03070000000	24808	Scolopacidae	Tringa	nebularia	Animalia
Tringa nebularia	common greenshank	BIRD	IA	25/02/2001	2001	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Powell Nature Reserve	100	117.74830000000	-35.01970000000	24808	Scolopacidae	Tringa	nebularia	Animalia
Tringa nebularia	common greenshank	BIRD	IA	27/01/2003	2003	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Manarup	100	117.69820000000	-35.02940000000	24808	Scolopacidae	Tringa	nebularia	Animalia
Tringa nebularia	common greenshank	BIRD	IA	27/01/2003	2003	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Manarup	100	117.69820000000	-35.02940000000	24808	Scolopacidae	Tringa	nebularia	Animalia
Tringa nebularia	common greenshank	BIRD	IA	9/05/2003	2003	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	24808	Scolopacidae	Tringa	nebularia	Animalia
Tringa nebularia	common greenshank	BIRD	IA	25/05/2004	2004	BIRDATLAS2				0		Rushy Point	100	117.85150000000	-35.05770000000	24808	Scolopacidae	Tringa	nebularia	Animalia
Tringa nebularia	common greenshank	BIRD	IA	31/05/2004	2004	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	'Riverslea' creek, Lot 2734 Elleker Road, Grasmere	100	117.72850000000	-35.02690000000	24808	Scolopacidae	Tringa	nebularia	Animalia
Tringa nebularia	common greenshank	BIRD	IA	3/03/2005	2005	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Powell	100	117.74760000000	-35.02020000000	24808	Scolopacidae	Tringa	nebularia	Animalia
Tringa nebularia	common greenshank	BIRD	IA	10/04/2005	2005	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	'Riverslea' creek, Lot 2734 Elleker Road, Grasmere	100	117.72850000000	-35.02690000000	24808	Scolopacidae	Tringa	nebularia	Animalia
Tringa nebularia	common greenshank	BIRD	IA	30/09/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	24808	Scolopacidae	Tringa	nebularia	Animalia
Tringa nebularia	common greenshank	BIRD	IA	31/10/2005	2005	BIRDATLAS2				0		Rushy Point	100	117.85040000000	-35.05770000000	24808	Scolopacidae	Tringa	nebularia	Animalia
Tringa nebularia	common greenshank	BIRD	IA	13/03/2008	2008	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Lake Powell	500	117.74730000000	-35.02660000000	24808	Scolopacidae	Tringa	nebularia	Animalia
Tringa nebularia	common greenshank	BIRD	IA	23/01/2010	2010	BIRDATLAS2	Moderately certain	Observational	Sighting	1	ELLEKER	Torbay Inlet	100	117.68870000000	-35.03320000000	24808	Scolopacidae	Tringa	nebularia	Animalia

REPTILIAN SPECIES RECORDED IN THE REGION

Key: EPBC = Environmental Protection and Biodiversity Conservation Act 1999, BC = Biodiversity Conservation Act 2016, DBCA = Department of Biodiversity, Conservation and Attractions Priority Code, A = Listed in Naturemap, B = EPBC Protected Matters search, C = DBCA Threatened Fauna Search, D = Invertebrate Solutions Fauna Survey (2019)

Note: For Definitions of Conservation Codes see Appendix A.

		Conservation Codes						
Scientific Name	**Common Name**	**EPBC**	**BC**	**DBCA**	**A**	**B**	**C**	**D**
PYGOPODIDAE								
Aprasia striolata	Lined Worm-lizard				X			
SCINCIDAE								
Acritoscincus trilineatus	Chain-striped Heath Ctenotus				X			
Ctenotus catenifer					X			
Ctenotus labillardieri	Red-legged Ctenotus				X			
Egernia kingii	King Skink							X
Hemiergis gracilipes					X			
Morethia obscura	Shrubland Morethia Skink				X			
BOIDAE								
Morelia spilota imbricata	Carpet Python				X			
ELAPIDAE								
Notechis scutatus	Tiger Snake							X
Pseudonaja affinis	Dugite							X

AVIAN SPECIES RECORDED IN THE REGION

Key: EPBC = Environmental Protection and Biodiversity Conservation Act 1999, BC = Biodiversity Conservation Act 2016, DBCA = Department of Biodiversity, Conservation and Attractions Priority Code, A = Listed in Naturemap, B = EPBC Protected Matters search, C = DBCA Threatened Fauna Search, D = Invertebrate Solutions Fauna Survey (2019)

Note: For Definitions of Conservation Codes see Appendix A.

		Conservation Codes						
Scientific Name	**Common Name**	**EPBC**	**BC**	**DBCA**	**A**	**B**	**C**	**D**
ANATIDAE								
Cereopsis novaehollandiae grisea	Cape Barren Goose	Vu. Ma	Vu			X		
Cygnus atratus	Black Swan				X			
Tadorna tadornoides	Australian Shelduck				X			
Malacorhynchus membranaceus	Pink-eared Duck				X			
Oxyura australis	Blue-billed Duck			P4			X	
Chenonetta jubata	Australian Wood Duck				X			
Anas superciliosa	Pacific Black Duck				X			
Anas gracillis	Grey Teal				X			
Anas castanea	Chestnut Teal				X			
Anas platyrhynchos	Mallard					X		
Biziura lobata	Musk Duck				X			
PHASIANIDAE								
Coturnix pectoralis	Stubble Quail				X			
Coturnix ypsilophora	Brown Quail				X			
DIOMEDEIDAE								
Diomedea exulans	Wandering Albatross	Vu, MiMa	Vu			X		
Diomedea dabbenena	Tristan Albatross	En, MiMa	CR			X		
Diomedea epomophora	Southern Royal Albatross	Vu, MiMa	Vu			X		
Diomedea sanfordi	Northern Royal Albatross	En, MiMa	En			X		
Phoebetria fusca	Sooty Albatross	Vu, MIiMa	En			X		
Thalassarche melanophris	Black-browed Albatross	Vu, MiMa	En		X	X	X	
Thalassarche impavida	Campbell Albatross,	Vu, MiMa	Vu			X		
Thalassarche cauta cauta	Shy Albatross	Vu, MiMa	Vu			X		
Thalassarche cauta steadi	White-capped Albatross	Vu, MiMa	Vu			X		
Thalassarche chlororhynchos	Atlantic yellow-nosed albatross	MiMa	Vu		X		X	
Thalassarche carteri	Indian Yellow-nosed Albatross	Vu, MiMa	En			X		
Diomedea antipodensis	Antipodean Albatross	Vu, MiMa				X		
PROCELLARIIDAE								
Macronectes giganteus	Southern Giant-Petrel,	En, MiMa		P4		X	X	
Macronectes halli	Northern Giant Petrel	Vu, MiMa				X		

Scientific Name	Common Name	EPBC	BC	DBCA	A	B	C	D
Halobaena caerulea	Blue Petrel	Vu, Ma				X		
Pachyptila turtur subantarctica	Fairy Prion (southern)	Vu				X		
Pterodroma mollis	Soft-plumaged Petrel	Vu, Ma				X		
Ardenna grisea	Sooty Shearwater	MiMa				**X**		
Ardenna carneipes	Flesh-footed Shearwater,	MiMa	Vu	P4		**X**	**X**	
Arenaria interpres	Ruddy Turnstone	MiMa						
PODICIPEDIDAE								
Tachybaptus novaehollandiae	Australian Grebe				X			
Poliocephalus poliocephalus	Hoary-headed Grebe				X			
THRESKIORNITHIDAE								
Plegadis falcinellus	Glossy Ibis	MiMa					X	
Threskiornis spinicollis	Straw-necked Ibis				X			
Platalea flavipes	Yellow-billed Spoonbill				X			
ARDEIDAE								
Botaurus poiciloptilus	Australasian Bittern	En	En			X	X	
Ardea ibis	Cattle Egret	Ma			X	X		
Ardea modesta	Great Egret	Ma			X	X		
Ardea novaehollandiae	White-faced Heron				X			
PELECANIDAE								
Pelecanus conspicillatus	Australian Pelican				X			
SULIDAE								
Morus serrator	Australasian Gannet				X			
PHALALACROCORACIDAE								
Microcarbo melanoleucos	Little Pied Cormorant				X			
Phalacrocorax sulcirostris	Little Black Cormorant				X			
Phalacrocorax varius	Pied Cormorant				X			
Phalacrocorax carbo	Great Cormorant				X			
PANDIONIDAE								
Pandion haliaetus	Osprey	MiMa				X	X	
ACCIPITRIDAE								
Elanus axillaris	Black-shouldered Kite				X			
Haliaeetus morphnoides	Little Eagle				X			
Aquila audax	Wedge-tailed Eagle				X			
Accipiter fasciatus didimus	Brown Goshawk				X			
Accipiter cirrocephalus	Collared Sparrowhawk				X			
Circis approximans	Swamp Harrier				X			
Milvus sphenurus	Whistling Kite				X			
Haliaeetus leucogaster	White-bellied Sea Eagle	Ma			X	X		
RALLIDAE								
Porzana tabuensis	Spotless Crake				X			
Porphyrio porphyrio	Purple Swamphen				X			

Scientific Name	Common Name	EPBC	BC	DBCA	A	B	C	D
Gallinula tenebrosa	Dusky Moorhen				X			
Fulica atra	Eurasian Coot				X			
HAEMATOPODIDAE								
Haematopus fuliginosus	Sooty Oystercatcher				X			
RECURVIROSTRIDAE								
Himantopus himantopus	Black-winged Stilt				X			
Recurvirostra novaehollandiae	Red-necked Avocet				X			
CHARADRIIDAE								
Charadrius ruficapillus	Red-capped Plover	Ma			X			
Charadrius leschenaultii	Greater Sand Plover	Vu, MiMa	Vu				X	
Thinornis rubricollis	Hooded Plover	Vu, Ma		P4		X	X	
Pluvialis fulva	Pacific Golden Plover	MiMa					X	
Pluvialis squatarola	Grey Plover	MiMa					X	
Elseyornis melanops	Black-fronted Dotterel				X			
SCOLOPACIDAE								
Limosa lapponica	Bar-tailed Godwit	MiMa	Vu			X	X	
Limosa lapponica menzbieri	Northern Siberian Bar-tailed Godwit	CR	CR			X		
Numenius madagascariensis	Eastern Curlew	CR, MiMa	CR			X		
Numenius phaeopus	Whimbrel	MiMa	MiMa				X	
Tringa glareola	Wood Sandpiper	MiMa					X	
Tringa nebularia	Common Greenshank	MiMa			X	X	X	
Actitis hypoleucos	Common Sandpiper	MiMa				X	X	
Calidris acuminata	Sharp-tailed Sandpiper	MiMa				X	X	
Calidris canutus	Red Knot	En				X	X	
Calidris ferruginea	Curlew Sandpiper	CR, MiMa	CR			X	X	
Calidris melanotos	Pectoral Sandpiper	MiMa				X		
Calidris ruficollis	Red-necked Stint	MiMa			X		X	
Calidris tenuirostris	Great Knot	CR, MiMa	CR				X	
LARIDAE								
Chroicocephalus novaehollandiae	Silver Gull				X			
Larus pacificus	Pacific Gull	Ma			X	X		
Hydroprogne caspia	Caspian Tern	MiMa			X		X	
Thalasseus bergii	Crested Tern				X		X	
Sternula nereis neris	Australian Fairy Tern	Vu				X		
STERCORARIIDAE								
Catharacta skua	Great Skua	Ma				X		
Subantarctic skua	Brown Skua			P4			X	
COLUMBIDAE								
Columba livia	Domestic Pigeon					X		
Spilopelia senegalensis	Laughing Dove					X		
Phaps chalcoptera	Common Bronzewing				X			X

Scientific Name	Common Name	EPBC	BC	DBCA	A	B	C	D
Ocyphaps lophotes	Crested Pigeon				X			
CUCULIDAE								
Cacomantis flabelliformis	Fan-tailed Cockoo				X			
PODARGIDAE								
Podargus strigoides	Tawny Frogmouth				X			
AEGOTHELIDAE								
Aegotheles cristatus	Australian Owlet-nightjar				X			
APODIDAE								
Apus pacificus	Fork-tailed Swift	MiMa				X	X	
ALCEDINIDAE								
Dacelo novaeguineae	Laughing Kookaburra				X			
Todiramphus sanctus sanctus	Sacred Kingfisher				X			
MEROPIDAE								
Merops ornatus	Rainbow Bee-eater	Ma				X		
FALCONIDAE								
Falco cenchroides	Australian Kestrel				X			X
Falco peregrinus	Peregrine Falcon	OS					X	
CACATUIDAE								
Calyptorhynchus banksii naso	Forest red-tailed Black Cockatoo	Vu	Vu		X	X	X	
Calyptorhynchus baudinii	Baudin's Cockatoo	En	En		X	X	X	
Calyptorhynchus latirostris	Carnaby's Cockatoo	En	En		X	X	X	
Cacatua roseicapilla	Galah				X			
PSITTACIDAE								
Platycercus spurius	Red-capped Parrot				X			
Platycercus zonarius	Australian Ringneck				X			X
Platycercus icterotis	Western Rosella				X			
Neophema petrophila	Rock Parrot				X			
MALURIDAE								
Malurus elegans	Red-winged Fairy-wren				X			
Malurus splendens	Splendid Fairy-wren				X			X
Stipiturus malachurus	Southern Emu-wren				X			
MELIPHAGIDAE								
Glyciphila melanops	Tawny-crowned Honeyeater				X			
Acanthorhynchus superciliosus	Western Spinebill				X			
Lichmera indistincta	Brown Honeyeater				X			X
Phylidonyris novaehollandiae	New Holland Honeyeater				X			X
Phylidonyris niger	White-cheeked Honeyeater				X			X
Anthochaera lunulata	Western Little Wattlebird				X			
Anthochaera carunculata	Red Wattlebird				X			X
DASYORNITHIDAE								
Dasyornis longirostris	Western Bristlebird	En	En			X		
PARDALOTIDAE								

Scientific Name	Common Name	EPBC	BC	DBCA	A	B	C	D
Pardalotus punctatus	Spotted Pardalote				X			
Pardalotus striatus	Striated Pardalote				X			X
ACANTHIZIDAE								
Sericornis frontalis	White-browed Scrubwren				X			
Gerygone fusca	Western Gerygone				X			
Acanthiza apicalis	Inland Thornbill				X			X
Acanthiza chrysorrhoa	Yellow-rumped Thornbill				X			
ARTAMIDAE								
Artamus cyanopterus	Dusky Woodswallow				X			
CRACTICIDAE								
Cracticus torquatus	Grey Butcherbird				X			X
Cracticus tibicen	Australian Magpie				X			X
Strepera versicolour	Grey Currawong				X			
CAMPEPHAGIDAE								
Coracina novaehollandiae	Black-faced Cuckoo-shrike				X			
PACHYCEPHALIDAE								
Falcunculus frontatus	Crested Shrike-tit				X			
Colluricincla harmonica	Grey Shrike-thrush				X			X
RHIPIDURIDAE								
Rhipidura leucophrys	Willie Wagtail				X			X
Rhipidura albiscapa	Grey Fantail				X			X
MONARCHIDAE								
Grallina cyanoleuca	Magpie-lark				X			X
CORVIDAE								
Corvus coronoides	Australian Raven				X			X
PETROICIDAE								
Eopsaltria georgiana	White-breasted Robin				X			
Petroica boodang	Scarlet Robin				X			
HIRUNDINIDAE								
Hirundo neoxena	Welcome Swallow				X			X
Petrochelidon nigricans	Tree Martin				X			X
ZOSTEROPIDAE								
Zosterops lateralis	Silvereye				X			X
STURNIDAE								
Sturnus vulgaris	Common Starling					X		
ESTRILDIDAE								
Stagonopleura oculata	Red-eared Firetail				X			
MOTACILLIDAE								
Motacilla cinerea	Grey Wagtail	MiMa				X		

MAMMALIAN SPECIES RECORDED IN THE REGION

Key: EPBC = Environmental Protection and Biodiversity Conservation Act 1999, BC = Biodiversity Conservation Act 2016, DBCA = Department of Biodiversity, Conservation and Attractions Priority Code, A = Listed in Naturemap, B = EPBC Protected Matters search, C = DBCA Threatened Fauna Search, D = Invertebrate Solutions Fauna Survey (2019)

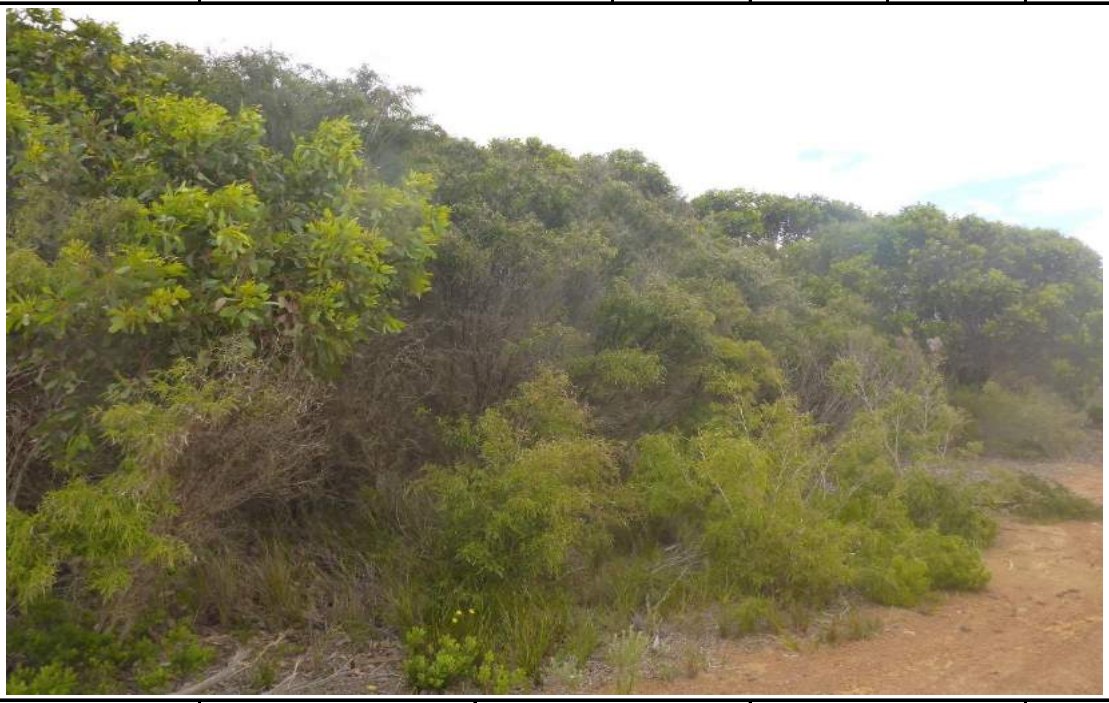
Note: For Definitions of Conservation Codes see Appendix A.

		Conservation Codes						
Scientific Name	**Common Name**	**EPBC**	**BC**	**DBCA**	**A**	**B**	**C**	**D**
DASYURIDAE								
Dasyurus geoffroii	Western Quoll	Vu	Vu			X	X	
Parantechinus apicalis	Dibbler	En	En			X		
PERAMELIDAE								
Isoodon fusciventer	Southern Brown Bandicoot			P4	X		X	X
PSEUDOCHEIRIDAE								
Pseudocheirus occidentalis	Western Ringtail Posusm	En	En		X	X	X	
POTOROIDAE								
Bettongia penicillata	Woylie	En	CR				X	
MACROPODIDAE								
Macropus fuliginosus	Western Grey Kangaroo							X
Notamacropus irma	Western Brush Wallaby			P4	X		X	
Setonix brachyurus	Quokka	Vu	Vu				X	
MURIDAE								
Hydromys chrysogaster	Water Rat			P4			X	
Mus musculus	House Mouse					X		
Rattus rattus	Black Rat					X		
MOLOSSIDAE								
*Austronomus australis**	White-striped Freetail Bat							X
CANIDAE								
Canis familiaris	Domestic Dog					X		
Vulpes vulpes	Red Fox					X		
FELIDAE								
Felis catus	Cat					X		
LEPORIDAE								
Oryctolagus cuniculus	European Rabbit					X		
SUIDAE								
Sus scrofa	Pig					X		

Appendix 4

Fauna Habitat Assessments

FAUNA HABITAT ASSESSMENT SHEET						
(South West)						
Location: Albany			**Site Number: HA WEC02**			
Project Name/No: Albany Wind Farm		**Aspect**	N	NE	NW	
Date: 20 December 2019	**Easting: 572695**		S	SE	**SW**	
Quadrat Size: 25 x 25 M	**Northing: 6119654**		E	W	N/A	



Soil Texture	**sand**	sandy-loam	loam	cracking clay	clay

VEGETATION

Vegetation				**Average Height (M)**	**Cover**				
	Hummock Grassland	Other: Coastal Heathland							
	Acacia Shrubland	**Stratum**			**Scattered Plants**	**Sparse**	**Moderate**	**Thick**	
	Riverine Woodland	**Overstorey**	*Agonis Flexuosa*	6	0 <5%	1 <20%	**2 20-60%**	3 60-100%	
	Other Grassland	**Midstorey**	*Acacia, B. sessillis*	2.5	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
	Euc Woodland	**Ground Cover**	Sedges,mixed grasses	<1	**0 <5%**	1 <20%	2 20-60%	3 60-100%	

CONDITION						**LAST FIRE**				
5 Pristine	4 Excellent	**3 Very Good**	2 Good	1 Degraded		0 Completely Degraded	0 <1 year	1 1 -3 Yrs	2 3 5 Yrs	**3 + 5 Yrs**
Notes						**Notes**				

(general)			**DISTURBANCE**			**(cattle)**			
	0 heavy	1 medium	**2 mild***	3 none		0 heavy	1 medium	2 mild	**3 none**
Notes					**Notes**				
*previous clearing for wind turbine									

GROUND COVER

Bare Ground	0 <5%	**1 <20%**	2 20-60%	3 60-100%	**Hummock Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Rock	**0 <5%**	1 <20%	2 20-60%	3 60-100%	**Other Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Leaf Litter	0 <5%	1 <20%	**2 20-60%**	3 60-100%	**Herbs**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	**0 <5%**	1 <20%	2 20-60%	3 60-100%						

MICROHABITATS									
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	**3 Sand**	**Peeling Bark**	0 none	1 rare	**2 moderate**	3 common
Pebbles Stones	0 none	**1 0-30%**	2 30-70%	3 70-100%	**Large Hollows**	**0 none**	1 rare	2 moderate	3 common
Exfoliating Slabs	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Small Hollows**	0 none	**1 rare**	2 moderate	3 common
Rock Crevices	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Water Prescence**	**0 none**	1 rare	2 moderate	3 common
Boulders	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Distance to Fresh Water**	0 >5km	**1 2-5km**	2 500m - 2km	3 <500m
Suitability for Bats	**YES**		NO		**Termite Mounds**	**0 none**	1 rare	2 moderate	3 common
Caves	**Absent**	Present			**Woody Debris**	**0 none**	1 rare	2 moderate	3 common

BLACK COCKATOOS					
Foraging Habitat		**Breeding Habitat**			
Species:	**% cover**	**Species:**	**No. > 500 mm DBH**		**Hollows (>100mm)**
Agonis flexuosa	50				
Banksia sessillis	<5				
No foraging evidence					

FAUNA RECORDED		
Birds	**Mammals**	**Reptiles**
New Holland Honeyeater	Quenda diggings	Tiger Snake
Common Bronzewing		

FAUNA HABITAT ASSESSMENT SHEET						
(South West)						
Location: Albany			Site Number: HA WEC04			
Project Name/No: Albany Wind Farm		Aspect	N	NE	NW	
Date: 20 December 2019	Easting: 572159		S	SE	**SW**	
Quadrat Size: 25 x 25 M	Northing: 6119865		E	W	N/A	

Soil Texture	**sand**	sandy-loam	loam	cracking clay	clay

VEGETATION									
Vegetation	Hummock Grassland	Other: Coastal Heathland		Average Height (M)	Cover				
	Acacia Shrubland	**Stratum**			**Scattered Plants**	**Sparse**	**Moderate**	**Thick**	
	Riverine Woodland	**Overstorey**	*Agonis Flexuosa*	5	0 <5%	1 <20%	**2 20-60%**	3 60-100%	
	Other Grassland	**Midstorey**	*Acacia, B. sessillis*	2.5	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
	Euc Woodland	**Ground Cover**	Sedges,mixed grasses	<1	**0 <5%**	1 <20%	2 20-60%	3 60-100%	

CONDITION						LAST FIRE				
5 Pristine	4 Excellent	**3 Very Good**	2 Good	1 Degraded		0 Completely Degraded	0 <1 year	1 1 -3 Yrs	2 3 - 5 Yrs	**3 + 5 Yrs**
Notes					**Notes**					

(general) DISTURBANCE						(cattle)				
	0 heavy	1 medium	**2 mild***	3 none		0 heavy	1 medium	2 mild	**3 none**	
Notes					**Notes**					
*previous clearing for wind turbine										

GROUND COVER

Bare Ground	0 <5%	1 <20%	**2 20-60%**	3 60-100%	**Hummock Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Rock	**0 <5%**	1 <20%	2 20-60%	3 60-100%	**Other Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Leaf Litter	0 <5%	1 <20%	**2 20-60%**	3 60-100%	Herbs	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	**0 <5%**	1 <20%	2 20-60%	3 60-100%						

MICROHABITATS									
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	**3 Sand**	**Peeling Bark**	0 none	1 rare	**2 moderate**	3 common
Pebbles Stones	0 none	**1 0-30%**	2 30-70%	3 70-100%	**Large Hollows**	**0 none**	1 rare	2 moderate	3 common
Exfoliating Slabs	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Small Hollows**	0 none	**1 rare**	2 moderate	3 common
Rock Crevices	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Water Prescence**	**0 none**	1 rare	2 moderate	3 common
Boulders	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Distance to Fresh Water**	0 >5km	**1 2-5km**	2 500m - 2km	3 <500m
Suitability for Bats	**YES**		NO		**Termite Mounds**	**0 none**	1 rare	2 moderate	3 common
Caves	**Absent**	Present			**Woody Debris**	**0 none**	1 rare	2 moderate	3 common

BLACK COCKATOOS				
Foraging Habitat		**Breeding Habitat**		
Species:	**% cover**	**Species:**	**No. > 500 mm DBH**	**Hollows (>100mm)**
Agonis flexuosa	30			
Banksia sessillis	<5			
No foraging evidence				

FAUNA RECORDED		
Birds	**Mammals**	**Reptiles**
Grey Fantail	Quenda diggings	Dugite
Brown Honeyeater		

FAUNA HABITAT ASSESSMENT SHEET						
(South West)						
Location: Albany			**Site Number: HA WEC05**			
Project Name/No: Albany Wind Farm		**Aspect**	N	NE	NW	
Date: 20 December 2019	**Easting: 572116**		S	SE	**SW**	
Quadrat Size: 25 x 25 M	**Northing: 6120072**		E	W	N/A	

Soil Texture	**sand**	sandy-loam	loam	cracking clay	clay

VEGETATION

Vegetation				**Average Height (M)**	**Cover**				
Hummock Grassland	Other: Coastal Heathland								
Acacia Shrubland	**Stratum**				**Scattered Plants**	**Sparse**	**Moderate**	**Thick**	
Riverine Woodland	**Overstorey**	*Agonis Flexuosa*		6	0 <5%	1 <20%	**2 20-60%**	3 60-100%	
Other Grassland	**Midstorey**	*Acacia, B. sessillis*		3	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Euc Woodland	**Ground Cover**	Sedges,mixed grasses		<1	**0 <5%**	1 <20%	2 20-60%	3 60-100%	

CONDITION						**LAST FIRE**				
5 Pristine	4 Excellent	**3 Very Good**	2 Good	1 Degraded		0 Completely Degraded	0 <1 year	1 1 -3 Yrs	2 3 - 5 Yrs	**3 + 5 Yrs**

Notes	**Notes**

(general)					**DISTURBANCE**	**(cattle)**				
	0 heavy	1 medium	**2 mild***	3 none		0 heavy	1 medium	2 mild	**3 none**	

Notes	**Notes**
*previous clearing for wind turbine	

GROUND COVER

Bare Ground	0 <5%	1 <20%	**2 20-60%**	3 60-100%	**Hummock Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Rock	**0 <5%**	1 <20%	2 20-60%	3 60-100%	**Other Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Leaf Litter	0 <5%	1 <20%	**2 20-60%**	3 60-100%	**Herbs**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	**0 <5%**	1 <20%	2 20-60%	3 60-100%						

MICROHABITATS									
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	**3 Sand**	**Peeling Bark**	0 none	1 rare	**2 moderate**	3 common
Pebbles Stones	0 none	**1 0-30%**	2 30-70%	3 70-100%	**Large Hollows**	**0 none**	1 rare	2 moderate	3 common
Exfoliating Slabs	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Small Hollows**	0 none	**1 rare**	2 moderate	3 common
Rock Crevices	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Water Prescence**	**0 none**	1 rare	2 moderate	3 common
Boulders	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Distance to Fresh Water**	0 >5km	**1 2-5km**	2 500m - 2km	3 <500m
Suitability for Bats	**YES**		NO		**Termite Mounds**	**0 none**	1 rare	2 moderate	3 common
Caves	**Absent**	Present			**Woody Debris**	**0 none**	1 rare	2 moderate	3 common

BLACK COCKATOOS				
Foraging Habitat		**Breeding Habitat**		
Species:	**% cover**	**Species:**	**No. > 500 mm DBH**	**Hollows (>100mm)**
Agonis flexuosa	50			
Banksia sessillis	<10			
No foraging evidence				

FAUNA RECORDED		
Birds	**Mammals**	**Reptiles**
Magpie	Wester Grey Kangaroo/Wallaby scats	
Australian Raven		

FAUNA HABITAT ASSESSMENT SHEET						
(South West)						
Location: Albany			**Site Number: HA WEC06**			
Project Name/No: Albany Wind Farm		**Aspect**	N	NE	NW	
Date: 20 December 2019	**Easting: 571767**		S	SE	**SW**	
Quadrat Size: 25 x 25 M	**Northing: 6120111**		E	W	N/A	

Soil Texture	**sand**	sandy-loam	loam	cracking clay	clay

VEGETATION

Vegetation				**Average Height (M)**	**Cover**				
Hummock Grassland	Other: Coastal Heathland								
Acacia Shrubland	**Stratum**				**Scattered Plants**	**Sparse**	**Moderate**	**Thick**	
Riverine Woodland	**Overstorey**	*Agonis Flexuosa*		5	0 <5%	1 <20%	**2 20-60%**	3 60-100%	
Other Grassland	**Midstorey**	*Acacia, B. sessillis*		3	0 <5%	**1 <20%**	2 20-60%	3 60-100%	
Euc Woodland	**Ground Cover**	Sedges,mixed grasses		<1	**0 <5%**	1 <20%	2 20-60%	3 60-100%	

CONDITION						**LAST FIRE**				
5 Pristine	**4 Excellent**	3 Very Good	2 Good	1 Degraded		0 Completely Degraded	0 <1 year	1 1 -3 Yrs	2 3 - 5 Yrs	**3 + 5 Yrs**

Notes	**Notes**

(general)			**DISTURBANCE**		**(cattle)**				
0 heavy	1 medium	**2 mild***	3 none		0 heavy	1 medium	2 mild	**3 none**	

Notes	**Notes**
*previous clearing for wind turbine	

GROUND COVER

Bare Ground	0 <5%	1 <20%	**2 20-60%**	3 60-100%	**Hummock Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Rock	**0 <5%**	1 <20%	2 20-60%	3 60-100%	**Other Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Leaf Litter	0 <5%	1 <20%	**2 20-60%**	3 60-100%	**Herbs**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	**0 <5%**	1 <20%	2 20-60%	3 60-100%						

MICROHABITATS									
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	**3 Sand**	**Peeling Bark**	0 none	1 rare	**2 moderate**	3 common
Pebbles Stones	0 none	**1 0-30%**	2 30-70%	3 70-100%	**Large Hollows**	**0 none**	1 rare	2 moderate	3 common
Exfoliating Slabs	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Small Hollows**	0 none	**1 rare**	2 moderate	3 common
Rock Crevices	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Water Prescence**	**0 none**	1 rare	2 moderate	3 common
Boulders	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Distance to Fresh Water**	0 >5km	**1 2-5km**	2 500m - 2km	3 <500m
Suitability for Bats	**YES**		NO		**Termite Mounds**	**0 none**	1 rare	2 moderate	3 common
Caves	**Absent**	Present			**Woody Debris**	**0 none**	1 rare	2 moderate	3 common

BLACK COCKATOOS				
Foraging Habitat		**Breeding Habitat**		
Species:	**% cover**	**Species:**	**No. > 500 mm DBH**	**Hollows (>100mm)**
Agonis flexuosa	50			
Banksia sessillis	<10			
No foraging evidence				

FAUNA RECORDED		
Birds	**Mammals**	**Reptiles**
New Holland Honeyeater	Quenda diggings	

FAUNA HABITAT ASSESSMENT SHEET

(South West)

Location: Albany		**Site Number: HA WEC07**				
Project Name/No: Albany Wind Farm		**Aspect**	N	NE	NW	
Date: 20 December 2019	**Easting: 571566**		S	SE	**SW**	
Quadrat Size: 25 x 25 M	**Northing: 6120206**		E	W	N/A	

Soil Texture	**sand**	sandy-loam	loam	cracking clay	clay

VEGETATION

Vegetation				**Average Height (M)**	**Cover**				
Hummock Grassland	Other: Coastal Heathland								
Acacia Shrubland	**Stratum**				**Scattered Plants**	**Sparse**	**Moderate**	**Thick**	
Riverine Woodland	**Overstorey**	*Agonis Flexuosa*		4	0 <5%	1 <20%	**2 20-60%**	3 60-100%	
Other Grassland	**Midstorey**	*Acacia, B. sessillis*		2	0 <5%	**1 <20%**	2 20-60%	3 60-100%	
Euc Woodland	**Ground Cover**	Sedges,mixed grasses		<1	**0 <5%**	1 <20%	2 20-60%	3 60-100%	

CONDITION						**LAST FIRE**				
5 Pristine	**4 Excellent**	3 Very Good	2 Good	1 Degraded		0 Completely Degraded	0 <1 year	1 1 -3 Yrs	2 3 - 5 Yrs	**3 + 5 Yrs**

Notes	**Notes**

(general)			**DISTURBANCE**		**(cattle)**			
0 heavy	1 medium	**2 mild***	3 none		0 heavy	1 medium	2 mild	**3 none**

Notes	**Notes**
*previous clearing for wind turbine	

GROUND COVER

Bare Ground	0 <5%	1 <20%	**2 20-60%**	3 60-100%	**Hummock Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Rock	**0 <5%**	1 <20%	2 20-60%	3 60-100%	**Other Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Leaf Litter	0 <5%	1 <20%	**2 20-60%**	3 60-100%	**Herbs**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	**0 <5%**	1 <20%	2 20-60%	3 60-100%						

MICROHABITATS									
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	**3 Sand**	**Peeling Bark**	0 none	1 rare	**2 moderate**	3 common
Pebbles Stones	0 none	**1 0-30%**	2 30-70%	3 70-100%	**Large Hollows**	**0 none**	1 rare	2 moderate	3 common
Exfoliating Slabs	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Small Hollows**	0 none	**1 rare**	2 moderate	3 common
Rock Crevices	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Water Prescence**	**0 none**	1 rare	2 moderate	3 common
Boulders	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Distance to Fresh Water**	0 >5km	**1 2-5km**	2 500m - 2km	3 <500m
Suitability for Bats	**YES**		NO		**Termite Mounds**	**0 none**	1 rare	2 moderate	3 common
Caves	**Absent**	Present			**Woody Debris**	**0 none**	1 rare	2 moderate	3 common

BLACK COCKATOOS				
Foraging Habitat		**Breeding Habitat**		
Species:	**% cover**	**Species:**	**No. > 500 mm DBH**	**Hollows (>100mm)**
Agonis flexuosa	50			
Banksia sessillis	<10			
No foraging evidence				

FAUNA RECORDED		
Birds	**Mammals**	**Reptiles**
Australian Ringneck	Wester Grey Kangaroo/Wallaby scats	

FAUNA HABITAT ASSESSMENT SHEET

(South West)

Location: Albany		**Site Number: HA WEC08**			
Project Name/No: Albany Wind Farm		**Aspect**	N	NE	NW
Date: 20 December 2019	**Easting: 571327**		S	SE	**SW**
Quadrat Size: 25 x 25 M	**Northing: 6120238**		E	W	N/A

Soil Texture	**sand**	sandy-loam	loam	cracking clay	clay

VEGETATION

Vegetation				**Average Height (M)**	**Cover**				
Hummock Grassland	Other: Coastal Heathland								
Acacia Shrubland	**Stratum**				**Scattered Plants**	**Sparse**	**Moderate**	**Thick**	
Riverine Woodland	**Overstorey**	*Agonis Flexuosa*		4	0 <5%	1 <20%	**2 20-60%**	3 60-100%	
Other Grassland	**Midstorey**	*Acacia, B. sessillis*		2	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Euc Woodland	**Ground Cover**	Sedges,mixed grasses		<1	**0 <5%**	1 <20%	2 20-60%	3 60-100%	

CONDITION						**LAST FIRE**				
5 Pristine	**4 Excellent**	3 Very Good	2 Good	1 Degraded		0 Completely Degraded	0 <1 year	1 1 -3 Yrs	2 3 - 5 Yrs	**3 + 5 Yrs**

Notes	**Notes**

(general)			**DISTURBANCE**		**(cattle)**			
0 heavy	1 medium	**2 mild***	3 none		0 heavy	1 medium	2 mild	**3 none**

Notes	**Notes**
*previous clearing for wind turbine	

GROUND COVER

Bare Ground	0 <5%	**1 <20%**	2 20-60%	3 60-100%	**Hummock Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Rock	**0 <5%**	1 <20%	2 20-60%	3 60-100%	**Other Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Leaf Litter	0 <5%	1 <20%	**2 20-60%**	3 60-100%	**Herbs**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	**0 <5%**	1 <20%	2 20-60%	3 60-100%						

MICROHABITATS									
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	**3 Sand**	**Peeling Bark**	0 none	1 rare	**2 moderate**	3 common
Pebbles Stones	0 none	**1 0-30%**	2 30-70%	3 70-100%	**Large Hollows**	**0 none**	1 rare	2 moderate	3 common
Exfoliating Slabs	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Small Hollows**	0 none	**1 rare**	2 moderate	3 common
Rock Crevices	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Water Prescence**	**0 none**	1 rare	2 moderate	3 common
Boulders	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Distance to Fresh Water**	0 >5km	**1 2-5km**	2 500m - 2km	3 <500m
Suitability for Bats	**YES**		NO		**Termite Mounds**	**0 none**	1 rare	2 moderate	3 common
Caves	**Absent**	Present			**Woody Debris**	**0 none**	1 rare	2 moderate	3 common

BLACK COCKATOOS				
Foraging Habitat		**Breeding Habitat**		
Species:	**% cover**	**Species:**	**No. > 500 mm DBH**	**Hollows (>100mm)**
Agonis flexuosa	60			
Banksia sessillis	1			
No foraging evidence				

FAUNA RECORDED		
Birds	**Mammals**	**Reptiles**
Australian Kestrel		

FAUNA HABITAT ASSESSMENT SHEET

(South West)

Location: Albany		**Site Number: HA WEC09**			
Project Name/No: Albany Wind Farm		**Aspect**	N	NE	NW
Date: 20 December 2019	**Easting: 571219**		S	SE	**SW**
Quadrat Size: 25 x 25 M	**Northing: 6120426**		E	W	N/A

Soil Texture	**sand**	sandy-loam	loam	cracking clay	clay

VEGETATION

Vegetation				**Average Height (M)**	**Cover**				
Hummock Grassland	Other: Coastal Heathland								
Acacia Shrubland	**Stratum**				**Scattered Plants**	**Sparse**	**Moderate**	**Thick**	
Riverine Woodland	**Overstorey**	*Agonis Flexuosa*		4	0 <5%	1 <20%	2 20-60%	**3 60-100%**	
Other Grassland	**Midstorey**	*Acacia, B. sessillis*		2	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Euc Woodland	**Ground Cover**	Sedges,mixed grasses		<1	**0 <5%**	1 <20%	2 20-60%	3 60-100%	

CONDITION						**LAST FIRE**				
5 Pristine	**4 Excellent**	3 Very Good	2 Good	1 Degraded		0 Completely Degraded	0 <1 year	1 1 -3 Yrs	2 3 - 5 Yrs	**3 + 5 Yrs**

Notes	**Notes**

(general)			**DISTURBANCE**		**(cattle)**			
0 heavy	1 medium	**2 mild***	3 none		0 heavy	1 medium	2 mild	**3 none**

Notes	**Notes**
*previous clearing for wind turbine	

GROUND COVER

Bare Ground	0 <5%	**1 <20%**	2 20-60%	3 60-100%	**Hummock Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Rock	**0 <5%**	1 <20%	2 20-60%	3 60-100%	**Other Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Leaf Litter	0 <5%	1 <20%	**2 20-60%**	3 60-100%	**Herbs**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	**0 <5%**	1 <20%	2 20-60%	3 60-100%						

MICROHABITATS									
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	**3 Sand**	**Peeling Bark**	0 none	1 rare	**2 moderate**	3 common
Pebbles Stones	0 none	**1 0-30%**	2 30-70%	3 70-100%	**Large Hollows**	**0 none**	1 rare	2 moderate	3 common
Exfoliating Slabs	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Small Hollows**	0 none	**1 rare**	2 moderate	3 common
Rock Crevices	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Water Prescence**	**0 none**	1 rare	2 moderate	3 common
Boulders	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Distance to Fresh Water**	0 >5km	**1 2-5km**	2 500m - 2km	3 <500m
Suitability for Bats	**YES**		NO		**Termite Mounds**	**0 none**	1 rare	2 moderate	3 common
Caves	**Absent**	Present			**Woody Debris**	**0 none**	1 rare	2 moderate	3 common

BLACK COCKATOOS				
Foraging Habitat		**Breeding Habitat**		
Species:	**% cover**	**Species:**	**No. > 500 mm DBH**	**Hollows (>100mm)**
Agonis flexuosa	60			
Banksia sessillis	1			
No foraging evidence				

FAUNA RECORDED		
Birds	**Mammals**	**Reptiles**
	Wester Grey Kangaroo/Wallaby scats	

FAUNA HABITAT ASSESSMENT SHEET						
(South West)						
Location: Albany			**Site Number: HA WEC10**			
Project Name/No: Albany Wind Farm		**Aspect**	N	NE	NW	
Date: 20 December 2019	**Easting: 570913**		S	SE	**SW**	
Quadrat Size: 25 x 25 M	**Northing: 6120466**		E	W	N/A	

Soil Texture	**sand**	sandy-loam	loam	cracking clay	clay

VEGETATION

Vegetation				**Average Height (M)**	**Cover**				
					Scattered Plants	**Sparse**	**Moderate**	**Thick**	
	Hummock Grassland	Other: Coastal Heathland							
	Acacia Shrubland	**Stratum**							
	Riverine Woodland	**Overstorey**	*Agonis Flexuosa*	5	0 <5%	1 <20%	**2 20-60%**	3 60-100%	
	Other Grassland	**Midstorey**	*Acacia, B. sessillis*	2.5	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
	Euc Woodland	**Ground Cover**	Sedges,mixed grasses	<1	**0 <5%**	1 <20%	2 20-60%	3 60-100%	

CONDITION						**LAST FIRE**				
5 Pristine	**4 Excellent**	3 Very Good	2 Good	1 Degraded		0 Completely Degraded	0 <1 year	1 1 -3 Yrs	2 3 - 5 Yrs	**3 + 5 Yrs**
Notes						**Notes**				

(general)			**DISTURBANCE**		**(cattle)**			
0 heavy	1 medium	**2 mild***	3 none		0 heavy	1 medium	2 mild	**3 none**
Notes				**Notes**				
*previous clearing for wind turbine								

GROUND COVER

Bare Ground	0 <5%	**1 <20%**	2 20-60%	3 60-100%	**Hummock Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Rock	**0 <5%**	1 <20%	2 20-60%	3 60-100%	**Other Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Leaf Litter	0 <5%	1 <20%	**2 20-60%**	3 60-100%	**Herbs**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	**0 <5%**	1 <20%	2 20-60%	3 60-100%						

MICROHABITATS									
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	**3 Sand**	**Peeling Bark**	0 none	1 rare	**2 moderate**	3 common
Pebbles Stones	0 none	**1 0-30%**	2 30-70%	3 70-100%	**Large Hollows**	**0 none**	1 rare	2 moderate	3 common
Exfoliating Slabs	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Small Hollows**	0 none	**1 rare**	2 moderate	3 common
Rock Crevices	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Water Prescence**	**0 none**	1 rare	2 moderate	3 common
Boulders	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Distance to Fresh Water**	0 >5km	**1 2-5km**	2 500m - 2km	3 <500m
Suitability for Bats	**YES**		NO		**Termite Mounds**	**0 none**	1 rare	2 moderate	3 common
Caves	**Absent**	Present			**Woody Debris**	**0 none**	1 rare	2 moderate	3 common

BLACK COCKATOOS				
Foraging Habitat		**Breeding Habitat**		
Species:	**% cover**	**Species:**	**No. > 500 mm DBH**	**Hollows (>100mm)**
Agonis flexuosa	20 - 30			
Banksia sessillis	20 - 30			
No foraging evidence				

FAUNA RECORDED		
Birds	**Mammals**	**Reptiles**
Silvereye		King Skink

FAUNA HABITAT ASSESSMENT SHEET									
(South West)									
Location: Albany					**Site Number: HA WEC12**				
Project Name/No: Albany Wind Farm					**Aspect**	N	NE	NW	
Date: 20 December 2019	**Easting: 570715**					S	SE	**SW**	
Quadrat Size: 25 x 25 M	**Northing: 6120705**					E	W	N/A	

Soil Texture	**sand**	sandy-loam	loam	cracking clay	clay

VEGETATION									
Vegetation	Hummock Grassland	Other: Coastal Heathland		**Average Height (M)**	**Cover**				
	Acacia Shrubland	**Stratum**			**Scattered Plants**	**Sparse**	**Moderate**	**Thick**	
	Riverine Woodland	**Overstorey**	*Agonis Flexuosa*	5	0 <5%	1 <20%	2 20-60%	**3 60-100%**	
	Other Grassland	**Midstorey**			0 <5%	1 <20%	2 20-60%	3 60-100%	
	Euc Woodland	**Ground Cover**			0 <5%	1 <20%	2 20-60%	3 60-100%	

CONDITION						LAST FIRE				
5 Pristine	**4 Excellent**	3 Very Good	2 Good	1 Degraded		0 Completely Degraded	0 <1 year	1 1 -3 Yrs	2 3 - 5 Yrs	**3 + 5 Yrs**
Notes					**Notes**					

DISTURBANCE										
(general)						**(cattle)**				
	0 heavy	1 medium	**2 mild***	3 none		0 heavy	1 medium	2 mild	**3 none**	
Notes					**Notes**					
*previous clearing for wind turbine										

GROUND COVER

Bare Ground	0 <5%	**1 <20%**	2 20-60%	3 60-100%	**Hummock Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Rock	**0 <5%**	1 <20%	2 20-60%	3 60-100%	**Other Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Leaf Litter	0 <5%	1 <20%	**2 20-60%**	3 60-100%	**Herbs**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	**0 <5%**	1 <20%	2 20-60%	3 60-100%						

MICROHABITATS									
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	**3 Sand**	**Peeling Bark**	0 none	1 rare	**2 moderate**	3 common
Pebbles Stones	0 none	**1 0-30%**	2 30-70%	3 70-100%	**Large Hollows**	**0 none**	1 rare	2 moderate	3 common
Exfoliating Slabs	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Small Hollows**	0 none	**1 rare**	2 moderate	3 common
Rock Crevices	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Water Prescence**	**0 none**	1 rare	2 moderate	3 common
Boulders	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Distance to Fresh Water**	0 >5km	**1 2-5km**	2 500m - 2km	3 <500m
Suitability for Bats	**YES**		NO		**Termite Mounds**	**0 none**	1 rare	2 moderate	3 common
Caves	**Absent**	Present			**Woody Debris**	**0 none**	1 rare	2 moderate	3 common

BLACK COCKATOOS

Foraging Habitat		**Breeding Habitat**		
Species:	**% cover**	**Species:**	**No. > 500 mm DBH**	**Hollows (>100mm)**
Agonis flexuosa	20 - 30			
Banksia sessillis	20 - 30			
No foraging evidence				

FAUNA RECORDED

Birds	**Mammals**	**Reptiles**
New Holland Honeyeater	Wester Grey Kangaroo/Wallaby scats	
Striated Pardalote		

FAUNA HABITAT ASSESSMENT SHEET										
(South West)										
Location: Albany						Site Number: HA WEC13				
Project Name/No: Albany Wind Farm					Aspect	N	NE	NW		
Date: 20 December 2019	Easting: 570042					S	SE	**SW**		
Quadrat Size: 25 x 25 M	Northing: 6120817					E	W	N/A		

Soil Texture	**sand**	sandy-loam	loam	cracking clay	clay

VEGETATION									
Vegetation	Hummock Grassland	Other: Coastal Heathland		Average Height (M)	Cover				
	Acacia Shrubland	**Stratum**			**Scattered Plants**	**Sparse**	**Moderate**	**Thick**	
	Riverine Woodland	**Overstorey**	Agonis Flexuosa	5	0 <5%	1 <20%	2 20-60%	**3 60-100%**	
	Other Grassland	**Midstorey**			0 <5%	1 <20%	2 20-60%	3 60-100%	
	Euc Woodland	**Ground Cover**			0 <5%	1 <20%	2 20-60%	3 60-100%	

CONDITION						LAST FIRE				
5 Pristine	**4 Excellent**	3 Very Good	2 Good	1 Degraded		0 Completely Degraded	0 <1 year	1 1 -3 Yrs	2 3 - 5 Yrs	**3 + 5 Yrs**

Notes	Notes

(general) DISTURBANCE (cattle)										
	0 heavy	1 medium	**2 mild***	3 none		0 heavy	1 medium	2 mild	**3 none**	

Notes	Notes
*previous clearing for wind turbine	

GROUND COVER

Bare Ground	0 <5%	**1 <20%**	2 20-60%	3 60-100%	**Hummock Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Rock	**0 <5%**	1 <20%	2 20-60%	3 60-100%	**Other Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Leaf Litter	0 <5%	1 <20%	**2 20-60%**	3 60-100%	**Herbs**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	**0 <5%**	1 <20%	2 20-60%	3 60-100%						

MICROHABITATS									
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	**3 Sand**	**Peeling Bark**	0 none	1 rare	**2 moderate**	3 common
Pebbles Stones	0 none	**1 0-30%**	2 30-70%	3 70-100%	**Large Hollows**	**0 none**	1 rare	2 moderate	3 common
Exfoliating Slabs	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Small Hollows**	0 none	**1 rare**	2 moderate	3 common
Rock Crevices	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Water Prescence**	**0 none**	1 rare	2 moderate	3 common
Boulders	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Distance to Fresh Water**	0 >5km	**1 2-5km**	2 500m - 2km	3 <500m
Suitability for Bats	**YES**		NO		**Termite Mounds**	**0 none**	1 rare	2 moderate	3 common
Caves	**Absent**	Present			**Woody Debris**	**0 none**	1 rare	2 moderate	3 common

BLACK COCKATOOS				
Foraging Habitat		**Breeding Habitat**		
Species:	**% cover**	**Species:**	**No. > 500 mm DBH**	**Hollows (>100mm)**
Agonis flexuosa	20 - 30			
Banksia sessillis	20 - 30			
No foraging evidence				

FAUNA RECORDED		
Birds	**Mammals**	**Reptiles**
New Holland Honeyeater		
Inland Thornbill		

FAUNA HABITAT ASSESSMENT SHEET						
(South West)						
Location: Albany			**Site Number: HA WEC14**			
Project Name/No: Albany Wind Farm		**Aspect**	N	NE	NW	
Date: 20 December 2019	**Easting: 569632**		S	SE	**SW**	
Quadrat Size: 25 x 25 M	**Northing: 6121081**		E	W	N/A	

Soil Texture	**sand**	sandy-loam	loam	cracking clay	clay

VEGETATION

Vegetation				**Average Height (M)**	**Cover**				
	Hummock Grassland	Other: Coastal Heathland							
	Acacia Shrubland	**Stratum**			**Scattered Plants**	**Sparse**	**Moderate**	**Thick**	
	Riverine Woodland	**Overstorey**	*Agonis Flexuosa*	5	0 <5%	1 <20%	2 20-60%	**3 60-100%**	
	Other Grassland	**Midstorey**	*Acacia*	3	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
	Euc Woodland	**Ground Cover**			0 <5%	1 <20%	2 20-60%	3 60-100%	

CONDITION						**LAST FIRE**				
5 Pristine	**4 Excellent**	3 Very Good	2 Good	1 Degraded		0 Completely Degraded	0 <1 year	1 1 -3 Yrs	2 3 - 5 Yrs	**3 + 5 Yrs**

Notes	**Notes**

(general)			**DISTURBANCE**		**(cattle)**			
0 heavy	1 medium	**2 mild***	3 none		0 heavy	1 medium	2 mild	**3 none**

Notes	**Notes**
*previous clearing for wind turbine	

GROUND COVER

Bare Ground	0 <5%	**1 <20%**	2 20-60%	3 60-100%	**Hummock Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Rock	**0 <5%**	1 <20%	2 20-60%	3 60-100%	**Other Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Leaf Litter	0 <5%	1 <20%	**2 20-60%**	3 60-100%	**Herbs**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	**0 <5%**	1 <20%	2 20-60%	3 60-100%						

MICROHABITATS									
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	**3 Sand**	**Peeling Bark**	0 none	1 rare	**2 moderate**	3 common
Pebbles Stones	0 none	**1 0-30%**	2 30-70%	3 70-100%	**Large Hollows**	**0 none**	1 rare	2 moderate	3 common
Exfoliating Slabs	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Small Hollows**	0 none	**1 rare**	2 moderate	3 common
Rock Crevices	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Water Prescence**	**0 none**	1 rare	2 moderate	3 common
Boulders	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Distance to Fresh Water**	0 >5km	**1 2-5km**	2 500m - 2km	3 <500m
Suitability for Bats	**YES**		NO		**Termite Mounds**	**0 none**	1 rare	2 moderate	3 common
Caves	**Absent**	Present			**Woody Debris**	**0 none**	1 rare	2 moderate	3 common

BLACK COCKATOOS				
Foraging Habitat		**Breeding Habitat**		
Species:	**% cover**	**Species:**	**No. > 500 mm DBH**	**Hollows (>100mm)**
Agonis flexuosa	20 - 30			
No foraging evidence				

FAUNA RECORDED		
Birds	**Mammals**	**Reptiles**
New Holland Honeyeater		

FAUNA HABITAT ASSESSMENT SHEET

(South West)

Location: Albany		**Site Number: HA WEC15**				
Project Name/No: Albany Wind Farm		**Aspect**	N	NE	NW	
Date: 20 December 2019	**Easting: 569217**		S	SE	**SW**	
Quadrat Size: 25 x 25 M	**Northing: 6121272**		E	W	N/A	

Soil Texture	**sand**	sandy-loam	loam	cracking clay	clay

VEGETATION

Vegetation				**Average Height (M)**	**Cover**				
Hummock Grassland	Other: Coastal Heathland								
Acacia Shrubland	**Stratum**				**Scattered Plants**	**Sparse**	**Moderate**	**Thick**	
Riverine Woodland	**Overstorey**	Agonis Flexuosa		4	0 <5%	1 <20%	**2 20-60%**	3 60-100%	
Other Grassland	**Midstorey**	*Acacia, B. sessillis*		2	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Euc Woodland	**Ground Cover**	Sedges,mixed grasses		<1	**0 <5%**	1 <20%	2 20-60%	3 60-100%	

CONDITION						**LAST FIRE**				
5 Pristine	**4 Excellent**	3 Very Good	2 Good	1 Degraded		0 Completely Degraded	0 <1 year	1 1 -3 Yrs	2 3 - 5 Yrs	**3 + 5 Yrs**

Notes	**Notes**

(general)			**DISTURBANCE**		**(cattle)**			
0 heavy	1 medium	**2 mild***	3 none		0 heavy	1 medium	2 mild	**3 none**

Notes	**Notes**
*previous clearing for wind turbine	

GROUND COVER

Bare Ground	0 <5%	**1 <20%**	2 20-60%	3 60-100%	**Hummock Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Rock	**0 <5%**	1 <20%	2 20-60%	3 60-100%	**Other Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Leaf Litter	0 <5%	1 <20%	**2 20-60%**	3 60-100%	**Herbs**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	**0 <5%**	1 <20%	2 20-60%	3 60-100%						

MICROHABITATS									
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	**3 Sand**	**Peeling Bark**	0 none	1 rare	**2 moderate**	3 common
Pebbles Stones	0 none	**1 0-30%**	2 30-70%	3 70-100%	**Large Hollows**	**0 none**	1 rare	2 moderate	3 common
Exfoliating Slabs	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Small Hollows**	0 none	**1 rare**	2 moderate	3 common
Rock Crevices	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Water Prescence**	**0 none**	1 rare	2 moderate	3 common
Boulders	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Distance to Fresh Water**	0 >5km	**1 2-5km**	2 500m - 2km	3 <500m
Suitability for Bats	**YES**		NO		**Termite Mounds**	**0 none**	1 rare	2 moderate	3 common
Caves	**Absent**	Present			**Woody Debris**	**0 none**	1 rare	2 moderate	3 common

BLACK COCKATOOS				
Foraging Habitat		**Breeding Habitat**		
Species:	**% cover**	**Species:**	**No. > 500 mm DBH**	**Hollows (>100mm)**
Agonis flexuosa	60			
Banksia sessillis	1			
No foraging evidence				

FAUNA RECORDED		
Birds	**Mammals**	**Reptiles**
Grey Fantail		
White-cheeked Honeyeater		

FAUNA HABITAT ASSESSMENT SHEET						
(South West)						
Location: Albany			**Site Number: HA WEC16**			
Project Name/No: Albany Wind Farm		**Aspect**	N	NE	NW	
Date: 20 December 2019	**Easting: 568942**		S	SE	**SW**	
Quadrat Size: 25 x 25 M	**Northing: 6121320**		E	W	N/A	

Soil Texture	**sand**	sandy-loam	loam	cracking clay	clay

VEGETATION

Vegetation				**Average Height (M)**	**Cover**				
Hummock Grassland	Other: Coastal Heathland								
Acacia Shrubland	**Stratum**				**Scattered Plants**	**Sparse**	**Moderate**	**Thick**	
Riverine Woodland	**Overstorey**	Agonis Flexuosa		3	0 <5%	1 <20%	**2 20-60%**	3 60-100%	
Other Grassland	**Midstorey**				0 <5%	1 <20%	2 20-60%	3 60-100%	
Euc Woodland	**Ground Cover**	Sedges,mixed grasses		<1	**0 <5%**	1 <20%	2 20-60%	3 60-100%	

CONDITION						**LAST FIRE**				
5 Pristine	**4 Excellent**	3 Very Good	2 Good	1 Degraded		0 Completely Degraded	0 <1 year	1 1 -3 Yrs	2 3 - 5 Yrs	**3 + 5 Yrs**

Notes	**Notes**

(general)			**DISTURBANCE**		**(cattle)**				
	0 heavy	1 medium	**2 mild***	3 none		0 heavy	1 medium	2 mild	**3 none**

Notes	**Notes**
*previous clearing for wind turbine	

GROUND COVER

Bare Ground	0 <5%	**1 <20%**	2 20-60%	3 60-100%	**Hummock Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Rock	**0 <5%**	1 <20%	2 20-60%	3 60-100%	**Other Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Leaf Litter	0 <5%	1 <20%	**2 20-60%**	3 60-100%	**Herbs**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	**0 <5%**	1 <20%	2 20-60%	3 60-100%						

MICROHABITATS									
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	**3 Sand**	**Peeling Bark**	0 none	1 rare	**2 moderate**	3 common
Pebbles Stones	0 none	**1 0-30%**	2 30-70%	3 70-100%	**Large Hollows**	**0 none**	1 rare	2 moderate	3 common
Exfoliating Slabs	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Small Hollows**	0 none	**1 rare**	2 moderate	3 common
Rock Crevices	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Water Prescence**	**0 none**	1 rare	2 moderate	3 common
Boulders	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Distance to Fresh Water**	0 >5km	**1 2-5km**	2 500m - 2km	3 <500m
Suitability for Bats	**YES**		NO		**Termite Mounds**	**0 none**	1 rare	2 moderate	3 common
Caves	**Absent**	Present			**Woody Debris**	**0 none**	1 rare	2 moderate	3 common

BLACK COCKATOOS				
Foraging Habitat		**Breeding Habitat**		
Species:	**% cover**	**Species:**	**No. > 500 mm DBH**	**Hollows (>100mm)**
Agonis flexuosa	60			
No foraging evidence				

FAUNA RECORDED		
Birds	**Mammals**	**Reptiles**
New Holland Honeyeater	Wester Grey Kangaroo/Wallaby scats	
White-cheeked Honey-eater		

FAUNA HABITAT ASSESSMENT SHEET						
(South West)						
Location: Albany			**Site Number: HA WEC17**			
Project Name/No: Albany Wind Farm		**Aspect**	N	NE	NW	
Date: 20 December 2019	**Easting: 568590**		S	SE	**SW**	
Quadrat Size: 25 x 25 M	**Northing: 6121530**		E	W	N/A	

Soil Texture	**sand**	sandy-loam	loam	cracking clay	clay

VEGETATION

Vegetation				**Average Height (M)**	**Cover**				
Hummock Grassland	Other: Coastal Heathland								
Acacia Shrubland	**Stratum**				**Scattered Plants**	**Sparse**	**Moderate**	**Thick**	
Riverine Woodland	**Overstorey**	*Agonis Flexuosa*		5	0 <5%	1 <20%	2 20-60%	**3 60-100%**	
Other Grassland	**Midstorey**				0 <5%	1 <20%	2 20-60%	3 60-100%	
Euc Woodland	**Ground Cover**				0 <5%	1 <20%	2 20-60%	3 60-100%	

CONDITION						**LAST FIRE**				
5 Pristine	**4 Excellent**	3 Very Good	2 Good	1 Degraded		0 Completely Degraded	0 <1 year	1 1 -3 Yrs	2 3 - 5 Yrs	**3 + 5 Yrs**

Notes	**Notes**

(general)			**DISTURBANCE**		**(cattle)**				
0 heavy	1 medium	**2 mild***	3 none		0 heavy	1 medium	2 mild	**3 none**	

Notes	**Notes**
*previous clearing for wind turbine	

GROUND COVER

Bare Ground	0 <5%	**1 <20%**	2 20-60%	3 60-100%	**Hummock Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Rock	**0 <5%**	1 <20%	2 20-60%	3 60-100%	**Other Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Leaf Litter	0 <5%	1 <20%	**2 20-60%**	3 60-100%	**Herbs**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	**0 <5%**	1 <20%	2 20-60%	3 60-100%						

MICROHABITATS									
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	**3 Sand**	**Peeling Bark**	0 none	1 rare	**2 moderate**	3 common
Pebbles Stones	0 none	**1 0-30%**	2 30-70%	3 70-100%	**Large Hollows**	**0 none**	1 rare	2 moderate	3 common
Exfoliating Slabs	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Small Hollows**	0 none	**1 rare**	2 moderate	3 common
Rock Crevices	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Water Prescence**	**0 none**	1 rare	2 moderate	3 common
Boulders	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Distance to Fresh Water**	0 >5km	**1 2-5km**	2 500m - 2km	3 <500m
Suitability for Bats	**YES**		NO		**Termite Mounds**	**0 none**	1 rare	2 moderate	3 common
Caves	**Absent**	Present			**Woody Debris**	**0 none**	1 rare	2 moderate	3 common

BLACK COCKATOOS				
Foraging Habitat		**Breeding Habitat**		
Species:	**% cover**	**Species:**	**No. > 500 mm DBH**	**Hollows (>100mm)**
Agonis flexuosa	60			
No foraging evidence				

FAUNA RECORDED		
Birds	**Mammals**	**Reptiles**
New Holland Honeyeater	Wester Grey Kangaroo/Wallaby scats	

FAUNA HABITAT ASSESSMENT SHEET										
(South West)										
Location: Albany						**Site Number: HA WEC18**				
Project Name/No: Albany Wind Farm					**Aspect**	N	NE	NW		
Date: 20 December 2019		**Easting: 568266**				S	SE	**SW**		
Quadrat Size: 25 x 25 M		**Northing: 6121445**				E	W	N/A		

Soil Texture	**sand**	sandy-loam	loam	cracking clay	clay

VEGETATION									
Vegetation	Hummock Grassland	Other: Coastal Heathland		**Average Height (M)**	**Cover**				
	Acacia Shrubland	**Stratum**			**Scattered Plants**	**Sparse**	**Moderate**	**Thick**	
	Riverine Woodland	**Overstorey**	*Agonis Flexuosa*	5	0 <5%	1 <20%	2 20-60%	**3 60-100%**	
	Other Grassland	**Midstorey**			0 <5%	1 <20%	2 20-60%	3 60-100%	
	Euc Woodland	**Ground Cover**			0 <5%	1 <20%	2 20-60%	3 60-100%	

CONDITION						LAST FIRE				
5 Pristine	**4 Excellent**	3 Very Good	2 Good	1 Degraded		0 Completely Degraded	0 <1 year	1 1 -3 Yrs	2 3 - 5 Yrs	**3 + 5 Yrs**

Notes	Notes

DISTURBANCE										
	(general)					(cattle)				
	0 heavy	1 medium	**2 mild***	3 none		0 heavy	1 medium	2 mild	**3 none**	

Notes	Notes
*previous clearing for wind turbine	

GROUND COVER

Bare Ground	0 <5%	**1 <20%**	2 20-60%	3 60-100%	**Hummock Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Rock	**0 <5%**	1 <20%	2 20-60%	3 60-100%	**Other Grass**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Leaf Litter	0 <5%	1 <20%	**2 20-60%**	3 60-100%	**Herbs**	**0 <5%**	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	**0 <5%**	1 <20%	2 20-60%	3 60-100%						

MICROHABITATS									
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	**3 Sand**	**Peeling Bark**	0 none	1 rare	**2 moderate**	3 common
Pebbles Stones	0 none	**1 0-30%**	2 30-70%	3 70-100%	**Large Hollows**	**0 none**	1 rare	2 moderate	3 common
Exfoliating Slabs	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Small Hollows**	0 none	**1 rare**	2 moderate	3 common
Rock Crevices	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Water Prescence**	**0 none**	1 rare	2 moderate	3 common
Boulders	**0 none**	1 0-30%	2 30-70%	3 70-100%	**Distance to Fresh Water**	0 >5km	**1 2-5km**	2 500m - 2km	3 <500m
Suitability for Bats	**YES**		NO		**Termite Mounds**	**0 none**	1 rare	2 moderate	3 common
Caves	**Absent**	Present			**Woody Debris**	**0 none**	1 rare	2 moderate	3 common

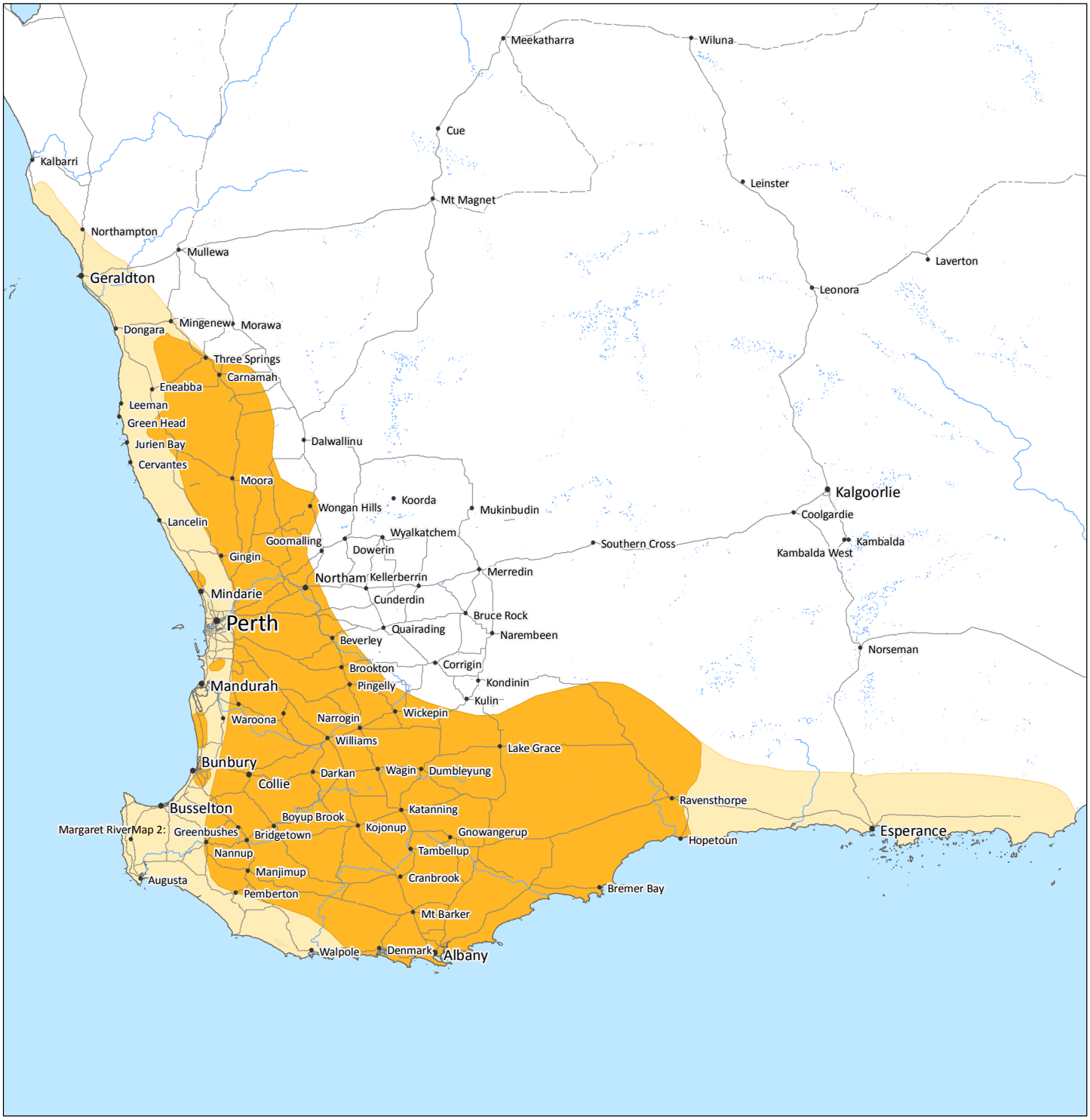
BLACK COCKATOOS				
Foraging Habitat		**Breeding Habitat**		
Species:	**% cover**	**Species:**	**No. > 500 mm DBH**	**Hollows (>100mm)**
Agonis flexuosa	60			
No foraging evidence				

FAUNA RECORDED		
Birds	**Mammals**	**Reptiles**

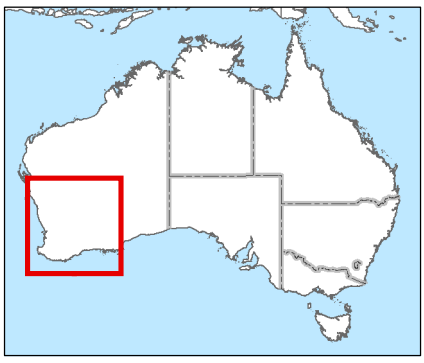
Appendix 5

DEE Black Cockatoo Distribution Maps

Map 2: Modelled distribution of Carnaby's black cockatoo (*Calyptorhynchus latirostris*)



INDICATIVE MAP ONLY: For the latest departmental information, please refer to the Protected Matters Search Tool at www.environment.gov.au/epbc/index.html



0 50 100 150 200 250 km

Australian Government

Department of Sustainability, Environment, Water, Population and Communities

Produced by: Environmental Resources Information Network (ERIN)

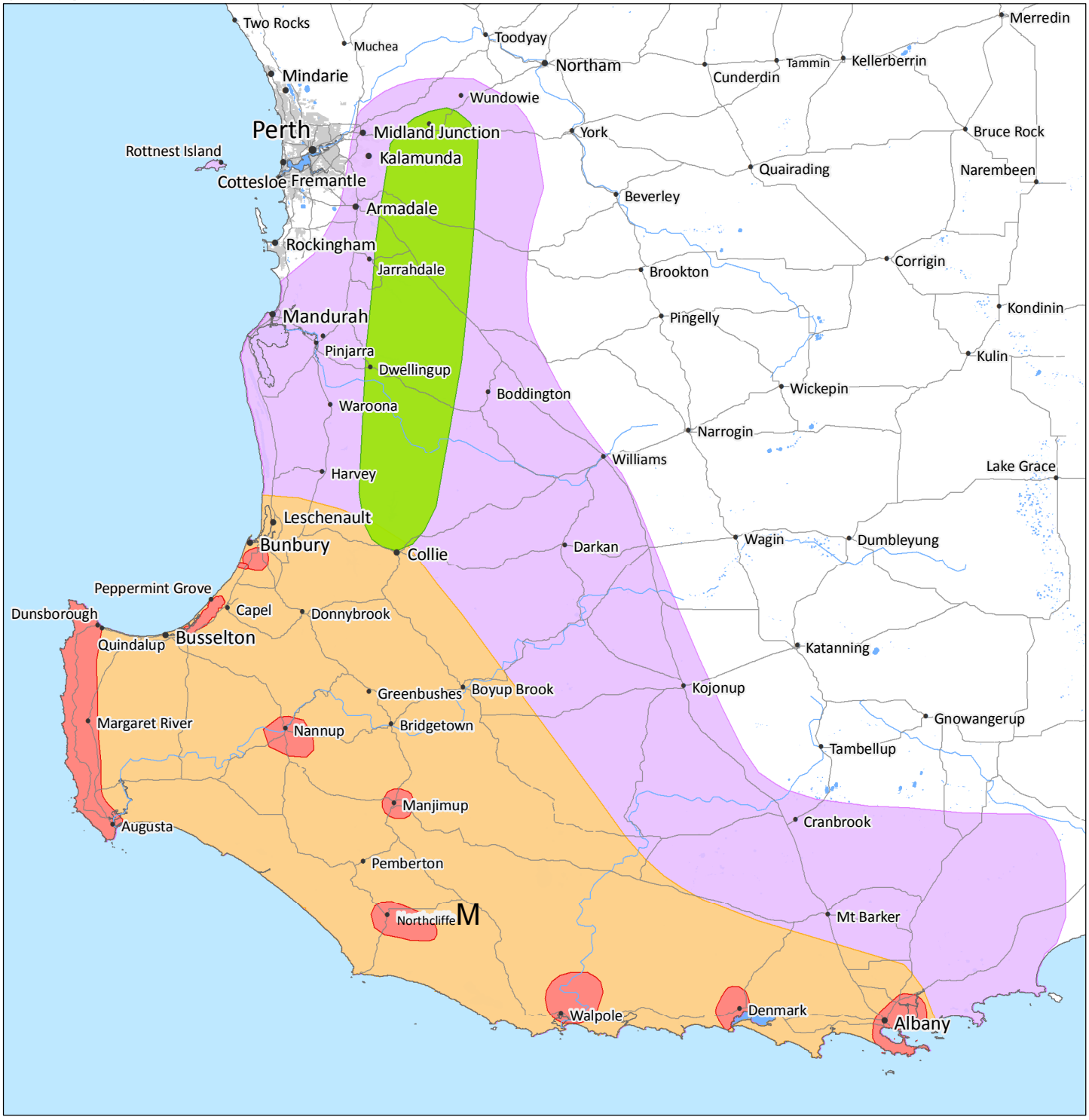
Contextual data sources:
DEWHA (2006), Collaborative Australian Protected Areas Database
Geoscience Australia (2006), Geodata Topo 250K Topographic Data

Legend

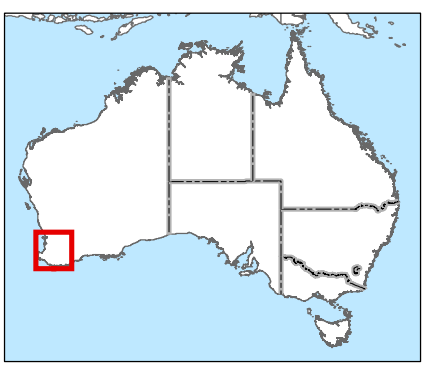
- Breeding Range
- Non-breeding Range
- Cities & Towns
- Roads
- Major Rivers
- Lakes

Please Note: The breeding range represents the areas known to be used by birds for breeding as at December 2009. As habitat has been lost in traditional breeding areas, birds have begun breeding at new locations.

Map 1: Modelled distribution of Baudin's black cockatoo (*Calyptorhynchus baudinii*)



INDICATIVE MAP ONLY: For the latest departmental information, please refer to the Protected Matters Search Tool at www.environment.gov.au/epbc/index.html



0 20 40 60 80 100 km

Australian Government

Department of Sustainability, Environment, Water, Population and Communities

Produced by: Environmental Resources Information Network (ERIN)

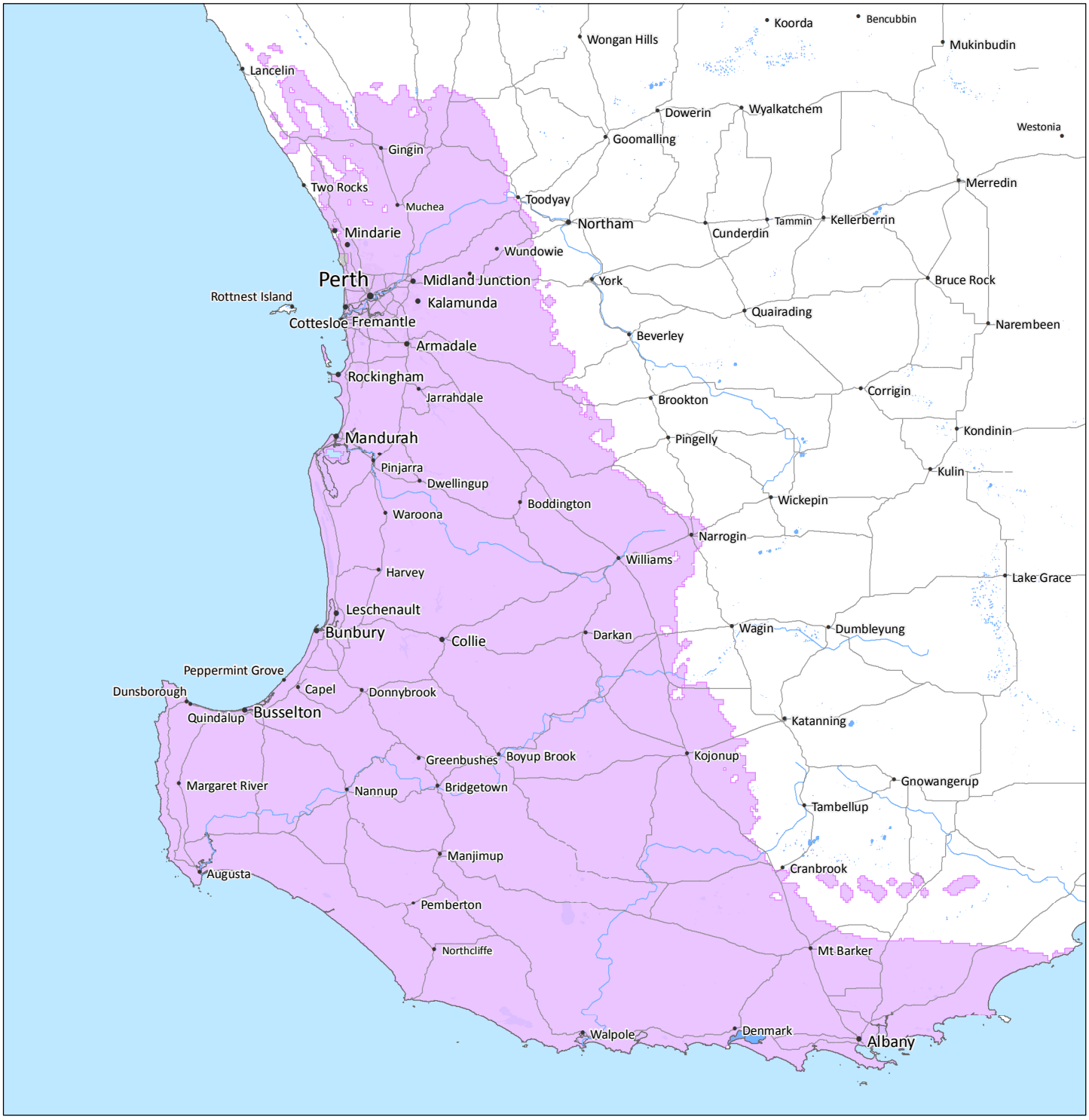
Contextual data sources:
DEWHA (2006), Collaborative Australian Protected Areas Database
Geoscience Australia (2006), Geodata Topo 250K Topographic Data

Legend

- Known Breeding Areas
- Predicted Breeding Range
- Main Wintering Area
- Species May Occur
- Cities & Towns
- Roads
- Major Rivers
- Lakes

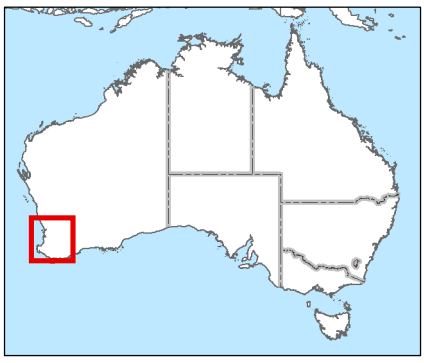
Please Note: Known breeding areas represent locations known to be used by birds for breeding as at December 2009. As habitat has been lost in traditional breeding areas, birds have begun breeding at new locations.

Map 3: Modelled distribution of forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*)



INDICATIVE MAP ONLY: For the latest departmental information, please refer to the Protected Matters Search Tool at www.environment.gov.au/epbc/index.html

0 20 40 60 80 100 km



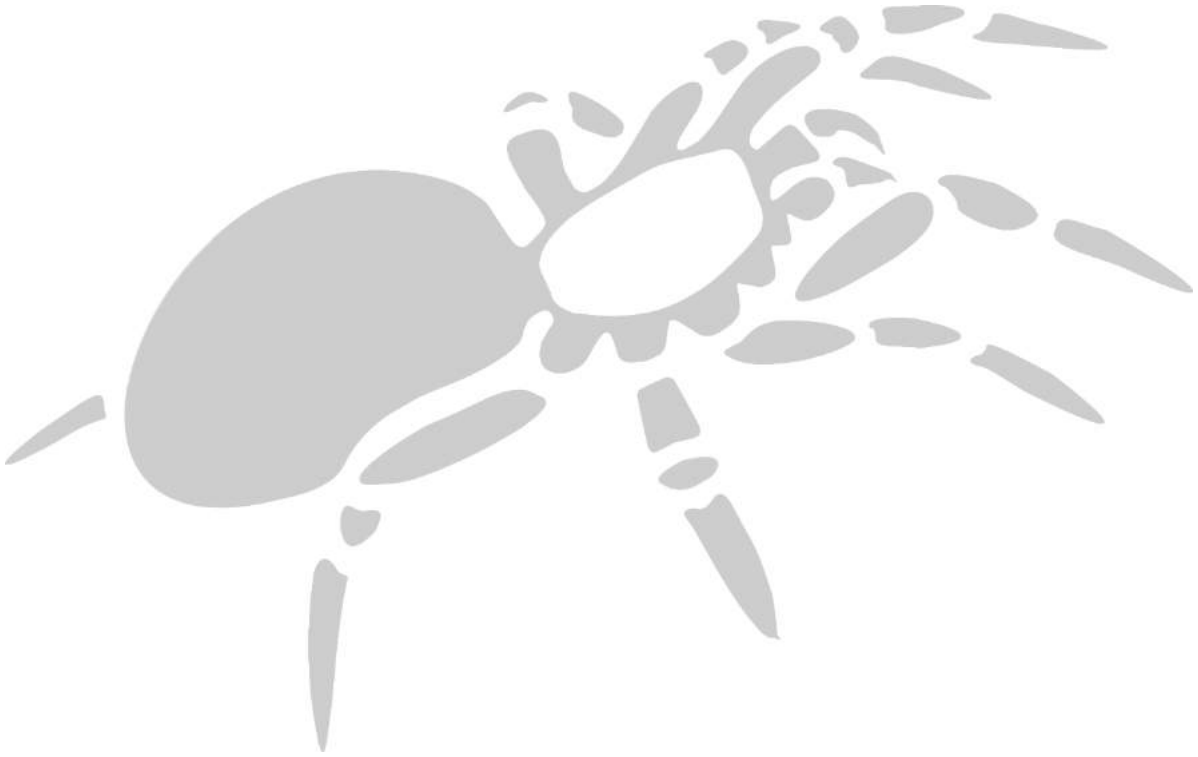
Australian Government

Department of Sustainability, Environment, Water, Population and Communities

Legend

- Species May Occur
- Cities & Towns
- Roads
- Major Rivers
- Lakes

Contextual data sources:
DEWHA (2006), Collaborative Australian Protected Areas Database
Geoscience Australia (2006), Geodata Topo 250K Topographic Data



Targeted Survey for Main's Assassin Spider (Zehyrarchaea mainae) for the Albany Wind Farm, Albany, Western Australia.

Report by Invertebrate Solutions Pty Ltd for Eco Logical Australia Pty Ltd on behalf of Synergy Pty Ltd

February 2020

Dr Timothy Moulds
Director and Principal Ecologist
Invertebrate Solutions Pty Ltd
PO Box 14
Victoria Park, WA 6979
Australia
tim@invertebratesolutions.com
www.invertebratesolutions.com

Invertebrate Solutions. (2020). Targeted Survey for Main's Assassin Spider (*Zehyrarchaea mainae*) for the Albany Wind Farm, Albany, Western Australia. Unpublished report to Eco Logical Australia Pty Ltd on behalf of Synergy Pty Ltd, February 2020.

Report Number 2020ISJ12_F01_20200228

Prepared for: Eco Logical Australia Pty Ltd on behalf of Synergy

Frontispiece: Albany Wind Farm Turbine.

Table of Contents

List of Figures

List of Tables

List of Plates

Executive Summary

Synergy plans to undertake clearing surrounding wind turbines at the Albany Wind Farm, west of Albany in the south west of Western Australia, to enable ongoing maintenance of turbines. The Albany Wind Farm is situated in coastal peppermint (*Agonis sp*.) and heathland that is known to provide habitat for Main's Assassin Spider (*Zephyrarchaea mainae)* that is classified as Vulnerable under the Biodiversity Conservation Act 2016.

Invertebrate Solutions Pty Ltd (invertebrate Solutions) has been requested by Eco Logical Australia Pty Ltd (Eco Logical) on behalf of Synergy to undertake a targeted field survey for the Albany wind farm project area. The results of the targeted survey will be used to support a native vegetation clearing permit application to allow ongoing maintenance of the facility.

The targeted field survey was undertaken in December 2019 at 15 existing wind turbine sites recorded no *Z. mainae* individuals within any of proposed clearing areas. Many of the survey sites were situated on geographic rises in the landscape and exposed to strong winds making them unsuitable habitat for *Z. mainae*. The previous records of *Z. mainae* from the Albany Wind Farm area (Figure 1) are situated in protected gullies providing better microhabitat for the formation of an elevated leaf-litter layer which collects amongst the crowns of the understorey plants.

No direct impacts to *Z. mainae* are anticipated form the proposed clearing around the existing wind turbines.

The following recommendation is made with regard to the Project:

- No further surveys for Main's Assassin Spider (*Z. mainae)* are required for the Albany wind farm project area.

1. Introduction

Synergy plans to expand the cleared area surrounding wind turbines at the Albany Wind Farm, west of Albany in the south west of Western Australia. The Albany Wind Farm is situated in coastal peppermint (*Agonis sp*.) and heathland that is known to provide habitat for Main's Assassin Spider (*Zephyrarchaea mainae)* that is classified as Vulnerable under the Biodiversity Conservation Act 2016.

Invertebrate Solutions Pty Ltd (invertebrate Solutions) has been requested by Eco Logical Australia Pty Ltd (Eco Logical) on behalf of Synergy to undertake a targeted field survey for the Albany wind farm project area. The results of the targeted survey will be used to support a native vegetation clearing permit application to allow ongoing maintenance of the facility.

1.1 Purpose of this report

Invertebrate Solutions has been requested by Eco Logical on behalf of Synergy to undertake the following scope of works within the Albany wind farm project area, Albany, Western Australia:

- Undertake a targeted field survey for Main's Assassin Spider (*Z. mainae*) at 15 sites at the Albany Wind Farm
- Determine the presence or absence of *Z. mainae* within each of the 15 sites surveyed.
- Provide recommendations and any suggested requirements for further work to comply with relevant legislation.
- Provide a written report (including maps) containing the above items.

1.2 Project area

The Albany Wind Farm is located at Sandpatch to the west of the Albany townsite, on the south coast of Western Australia and is shown in Figure 1. The survey area consists of 15 separate proposed clearing envelopes around existing wind turbines.

1.3 *Zephyrarchaea mainae* Distribution, Ecology and Habitat

Main's Assassin Spider (*Z. mainae*) is known from the greater Albany region and occurs along the south coast of Western Australia from the Walpole-Nornalup National Park (near Walpole) east to Bremer Bay and north to the Porongurup National Park, with a range centred on the Torndirrup Peninsula south of Albany (Rix and Harvey 2012). The species has previously been collected by beating sedges (*Lepidosperma* sp.), curly grass (*Empodisma gracillimum*) and low shrubs in dense coastal or near-coastal groves of Peppermint (*Agonis* sp.) (Rix and Harvey 2012). There are also isolated records from wet Karri forests (*Eucalyptus diversicolor*) (Rix and Harvey 2012). The specific microhabitat required by *Z. mainae* is the elevated leaf-litter layer which collects amongst the crowns of the understorey plants as this forms protected, shaded habitats in in an otherwise exposed landscape (Framenau et al. 2008).

All *Zephyarchaea* species are known to be specialist predators on other spiders using their highly modified cephalothorax and chelicerae to 'spear' their prey (Plate 1) (Platnick 1991, Framenau 2008, Rix and Harvey 2012).

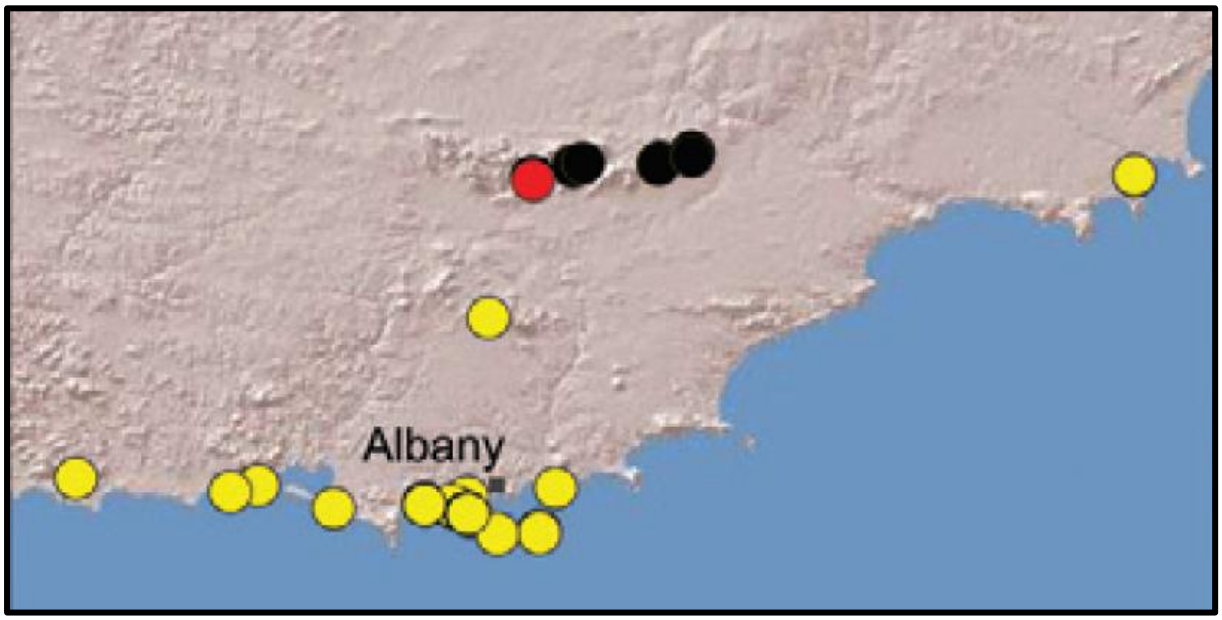


Plate 1 Distribution of *Zephyrarchaea* mainae (yellow circles) along the south coast of Western Australia from Walpole to Bremer Bay (After Rix and Harvey 2012).

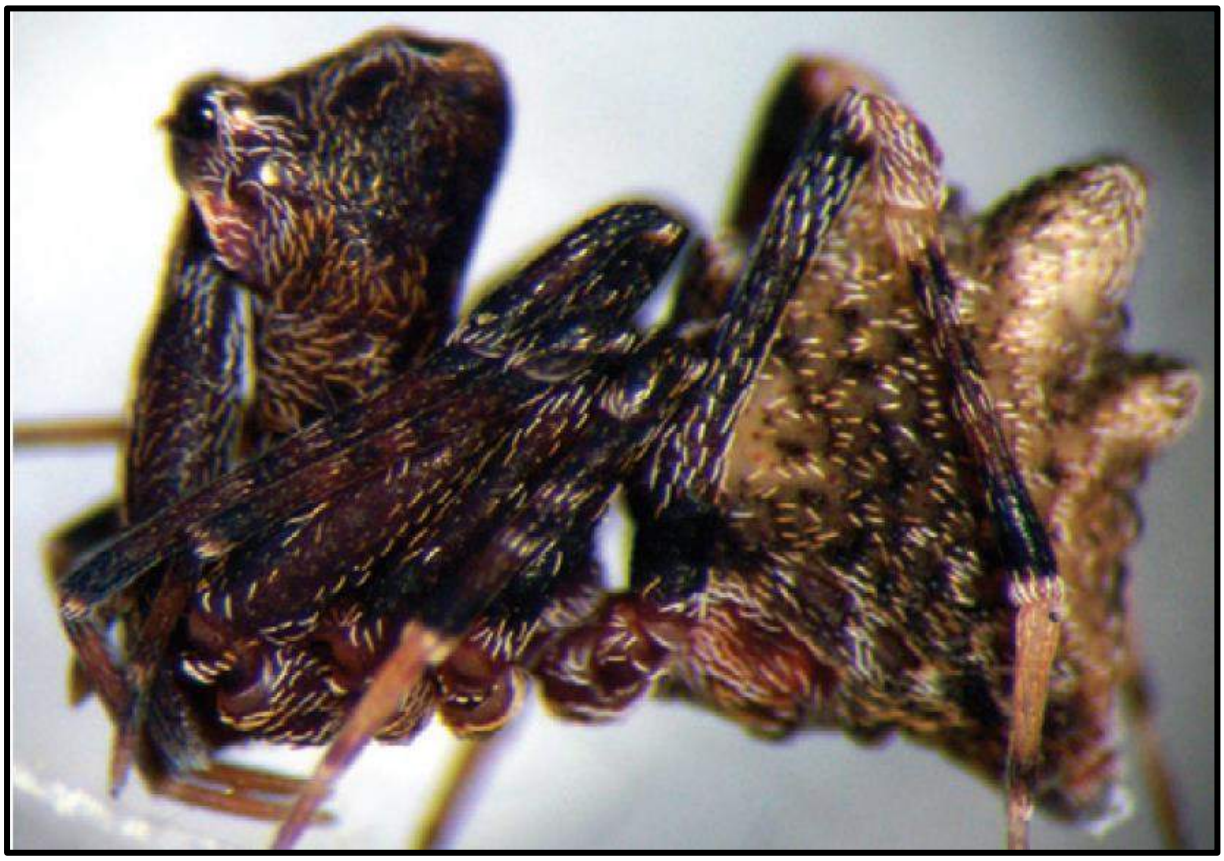
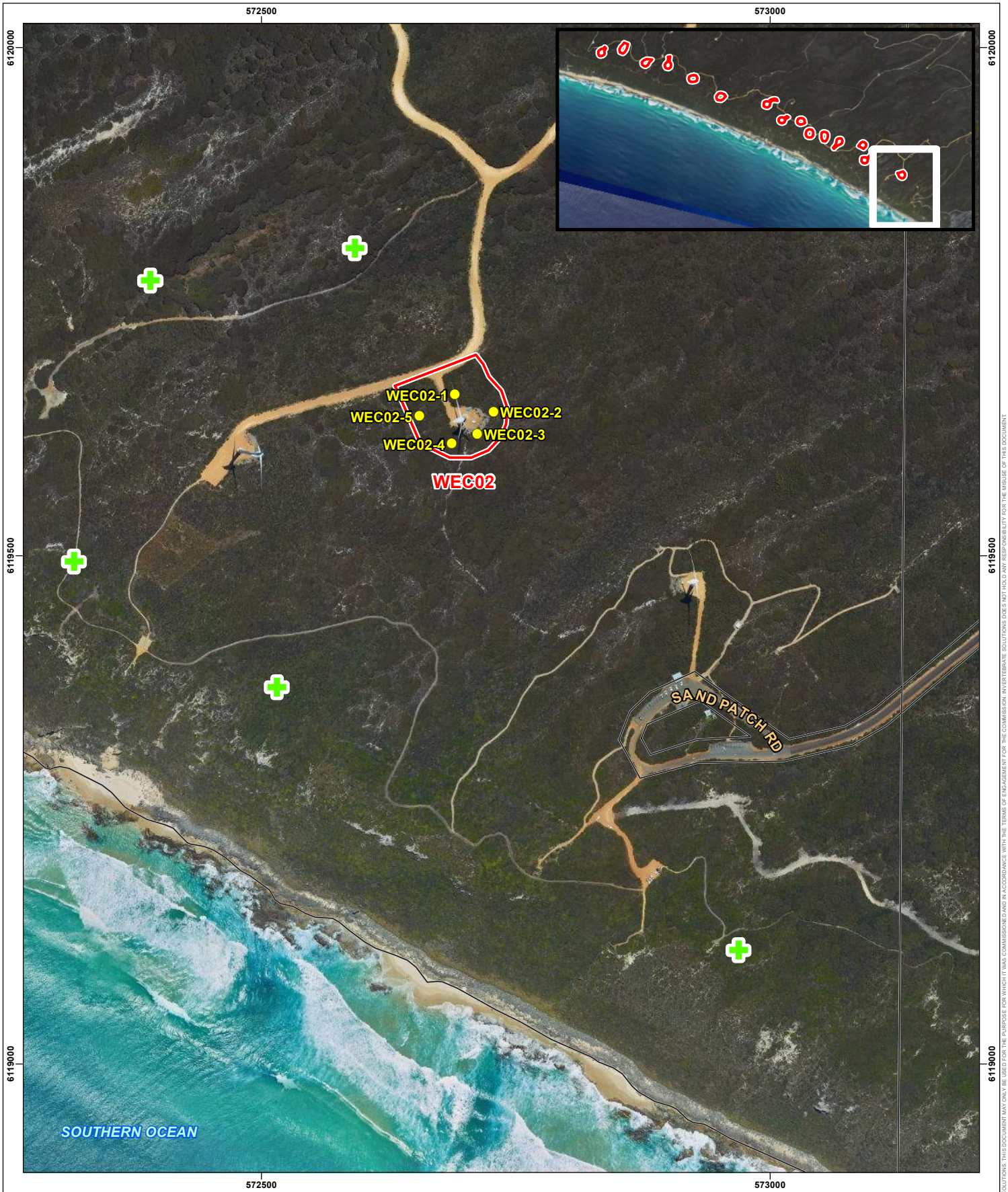


Plate 2 Adult female *Zephyrarchaea mainae,* noting the modified cephalothorax (After Rix and Harvey 2012)



Legend

- Survey Area
- Field Survey Location
- Historical Records of Main's Assassin Spider *(Zephyrarchaea mainae)*

0 37.5 75 150 m

Scale: 1:5,000 @ A4

N

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS

LOCALITY MAP

- LOCALITY MAP SOURCED FROM LANDGATE 2006
- NATGEO WORLD MAP FROM OPEN SOURCE

Invertebrate Solutions
m +61 (0) 429 792 834
s +61 (0) 405 561 978
e tim@invertebratesolutions.com
w www.invertebratesolutions.com

PROJECT ID	DATE
Albany Wind Farm	28/02/2020

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
ENVIRONMAPS	TM	TM	0

Client: Synergy

Figure 1a

Location of Targeted Field Survey for Main's Assassin Spider *(Zephyrarchaea mainae)*

ENVIRONMAPS t: 0406 590 006
Environmental Mapping Solutions www.environmaps.com.au

C:\GIS\Jobs\Invertebrate Solutions\Albany Wind Farm - Synergy\Figures\AWF_F01A Location of targeted field survey for Main's Assassin Spider (Zephyrarchaea mainae)_200228.mxd

Legend

- Survey Area
- Field Survey Location
- Historical Records of Main's Assassin Spider *(Zephyrarchaea mainae)*

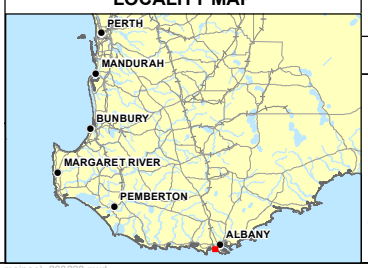
0 37.5 75 150 m

Scale: 1:5,000 @ A4

N

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS

LOCALITY MAP



- LOCALITY MAP SOURCED FROM LANDGATE 2006
- NATGEO WORLD MAP FROM OPEN SOURCE

Invertebrate Solutions
m +61 (0) 429 792 834
s +61 (0) 405 561 978
e tim@invertebratesolutions.com
w www.invertebratesolutions.com

PROJECT ID	DATE
Albany Wind Farm	28/02/2020

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
ENVIRONMAPS	TM	TM	0

Client: Synergy

Figure 1b

Location of Targeted Field Survey for Main's Assassin Spider *(Zephyrarchaea mainae)*

ENVIRONMAPS t: 0406 590 006
Environmental Mapping Solutions www.environmaps.com.au

C:\GIS\Jobs\Invertebrate Solutions\Albany Wind Farm - Synergy\Figures\AWF_F01B Location of targeted field survey for Main's Assassin Spider (Zephyrarchaea mainae)_200228.mxd

Legend

- Survey Area
- Field Survey Location
- Historical Records of Main's Assassin Spider *(Zephyrarchaea mainae)*

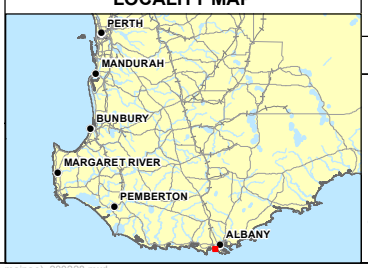
0 37.5 75 150 m

Scale: 1:5,000 @ A4

N

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS

LOCALITY MAP



- LOCALITY MAP SOURCED FROM LANDGATE 2006
- NATGEO WORLD MAP FROM OPEN SOURCE

Invertebrate Solutions
m +61 (0) 429 792 834
s +61 (0) 405 561 978
e tim@invertebratesolutions.com
w www.invertebratesolutions.com

PROJECT ID	DATE
Albany Wind Farm	28/02/2020

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
ENVIRONMAPS	TM	TM	0

Client: Synergy

Figure 1c

Location of Targeted Field Survey for Main's Assassin Spider *(Zephyrarchaea mainae)*

ENVIRONMAPS t: 0406 590 006
Environmental Mapping Solutions www.environmaps.com.au

C:\GIS\Jobs\Invertebrate Solutions\Albany Wind Farm - Synergy\Figures\AWF_F01C Location of targeted field survey for Main's Assassin Spider (Zephyrarchaea mainae)_200228.mxd

Legend

- Survey Area
- Field Survey Location
- Historical Records of Main's Assassin Spider *(Zephyrarchaea mainae)*

0 37.5 75 150 m

Scale: 1:5,000 @ A4

N

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS

LOCALITY MAP

- LOCALITY MAP SOURCED FROM LANDGATE 2006
- NATGEO WORLD MAP FROM OPEN SOURCE

Invertebrate Solutions
m +61 (0) 429 792 834
s +61 (0) 405 561 978
e tim@invertebratesolutions.com
w www.invertebratesolutions.com

PROJECT ID	DATE
Albany Wind Farm	28/02/2020

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
ENVIRONMAPS	TM	TM	0

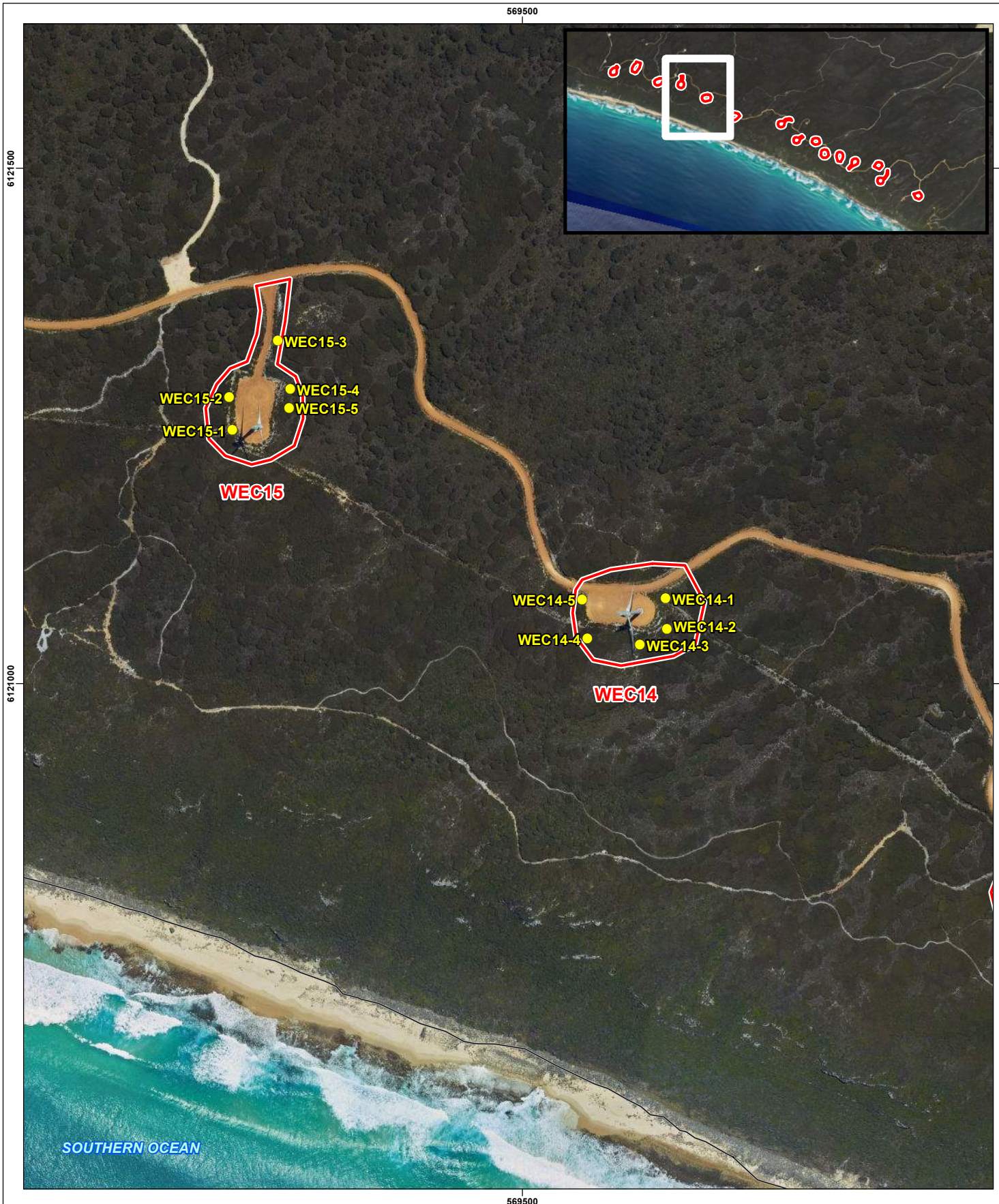
Client: Synergy

Figure 1d

Location of Targeted Field Survey for Main's Assassin Spider *(Zephyrarchaea mainae)*

ENVIRONMAPS t: 0406 590 006
Environmental Mapping Solutions www.environmaps.com.au

C:\GIS\Jobs\Invertebrate Solutions\Albany Wind Farm - Synergy\Figures\AWF_F01D Location of targeted field survey for Main's Assassin Spider (Zephyrarchaea mainae)_200228.mxd



Legend

- Survey Area
- Field Survey Location
- Historical Records of Main's Assassin Spider *(Zephyrarchaea mainae)*

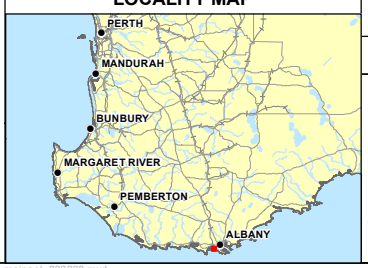
0 37.5 75 150 m

Scale: 1:5,000 @ A4

N

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS

LOCALITY MAP



- LOCALITY MAP SOURCED FROM LANDGATE 2006
- NATGEO WORLD MAP FROM OPEN SOURCE

Invertebrate Solutions
m +61 (0) 429 792 834
s +61 (0) 405 561 978
e tim@invertebratesolutions.com
w www.invertebratesolutions.com

PROJECT ID	DATE
Albany Wind Farm	28/02/2020

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
ENVIRONMAPS	TM	TM	0

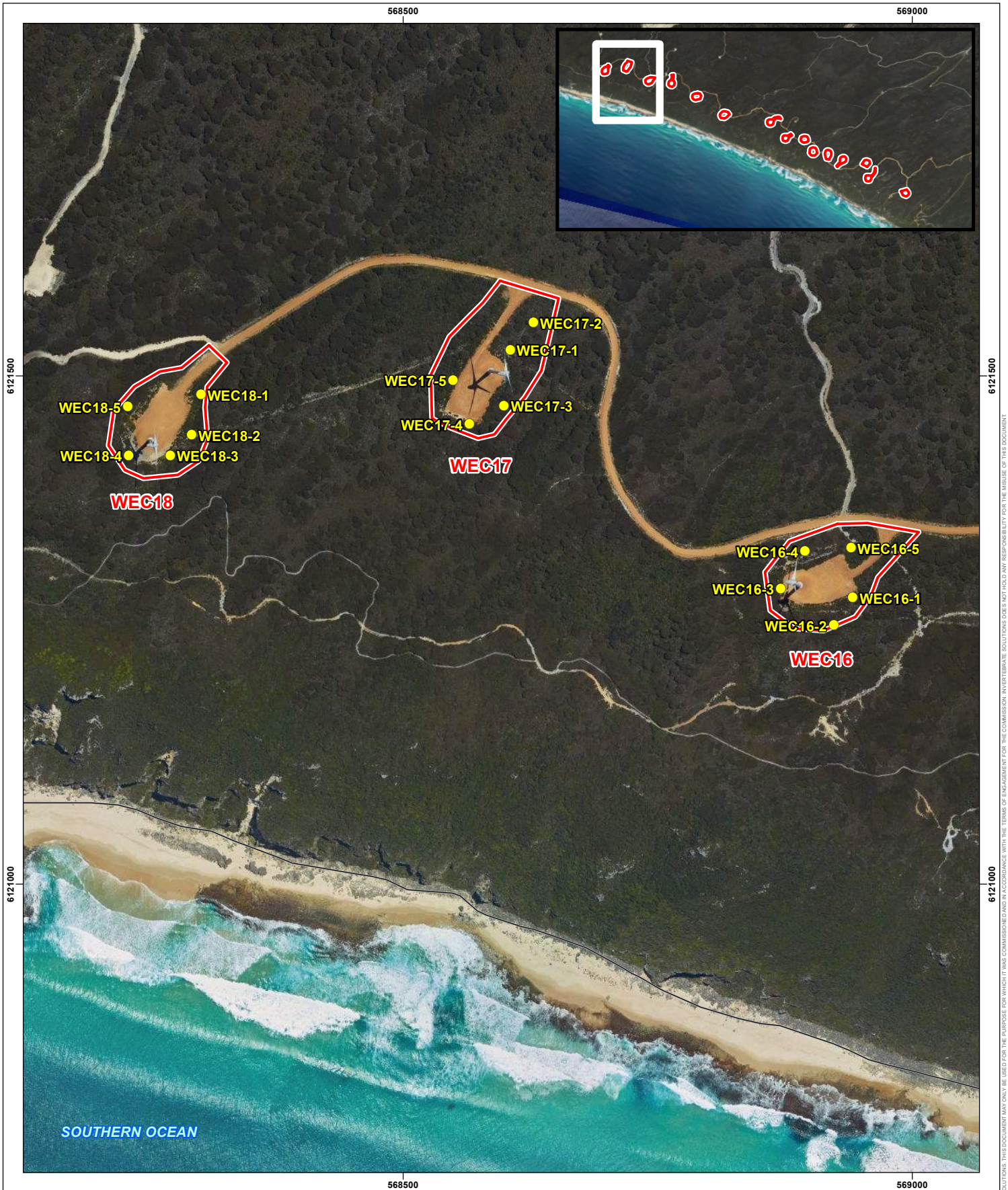
Client: Synergy

Figure 1e

Location of Targeted Field Survey for Main's Assassin Spider *(Zephyrarchaea mainae)*

ENVIRONMAPS t: 0406 590 006
Environmental Mapping Solutions www.environmaps.com.au

C:\GIS\Jobs\Invertebrate Solutions\Albany Wind Farm - Synergy\Figures\AWF_F01E Location of targeted field survey for Main's Assassin Spider (Zephyrarchaea mainae)_200228.mxd



Legend

- Survey Area
- Field Survey Location
- Historical Records of Main's Assassin Spider *(Zephyrarchaea mainae)*

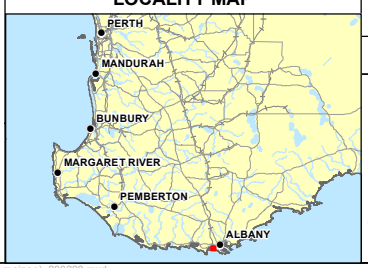
0 37.5 75 150 m

Scale: 1:5,000 @ A4

N

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS

LOCALITY MAP



- LOCALITY MAP SOURCED FROM LANDGATE 2006
- NATGEO WORLD MAP FROM OPEN SOURCE

Invertebrate Solutions
m +61 (0) 429 792 834
s +61 (0) 405 561 978
e tim@invertebratesolutions.com
w www.invertebratesolutions.com

PROJECT ID	DATE
Albany Wind Farm	28/02/2020

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
ENVIRONMAPS	TM	TM	0

Client: Synergy

Figure 1f

Location of Targeted Field Survey for Main's Assassin Spider *(Zephyrarchaea mainae)*

ENVIRONMAPS t: 0406 590 006
Environmental Mapping Solutions www.environmaps.com.au

C:\GIS\Jobs\Invertebrate Solutions\Albany Wind Farm - Synergy\Figures\AWF_F01F Location of targeted field survey for Main's Assassin Spider (Zephyrarchaea mainae)_200228.mxd

1.4 Survey Staff Qualifications

Field sampling for *Z. mainae* was undertaken by an experienced ecologist:

- Dr Timothy Moulds *BSc (Hons) Geol., PhD. Invert. Ecol.* (Invertebrate Solutions)

Targeted sampling for *Z. mainae* was undertaken by Dr Tim Moulds under the collection licences issued by the Department of Parks and Wildlife:

- TFA 2019-0121; Licensee Dr Timothy Moulds (Invertebrate Solutions); Valid until 30/11/2020.

1.5 Report Limitations and Exclusions

This study was limited to the written scope provided to the client by Invertebrate Solutions (15th August 2019) and in Section 1.1. This study was limited to the extent of information made available to Invertebrate Solutions at the time of undertaking the work. Information not made available to this study, or which subsequently becomes available may alter the conclusions made herein. Assessment of potential impacts to SRE fauna was based on proposed development plans provided by the client.

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

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

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

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

Field surveys for invertebrates require multiple seasonal surveys to fully record all species that may be present in an area, and in varying weather conditions. The current survey was undertaken in a single season and additional surveys at different times of the year may record additional species.

2. Methods

Invertebrate Solutions undertook the following tasks for the targeted survey of the Synergy Wind Farm Project area :

- Each site was sampled using bush beating onto a tray of thick *Agonis flexuosa* growth that is core habitat for *Z. mainae.*
- At each site five plots (~10 x 10 m) were be selected of the best available habitat whilst providing spatial distribution throughout the site.
- Each plot was beaten for 15 minutes to determine the presence of *Z. mainae*

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

2.1 Targeted *Zephyrarchaea mainae* Survey Methodology

The targeted field survey was undertaken using bush beating onto a tray to determine the presence of a *Z. mainae.* The preferred habitat of *Z. mainae* is dense stands of peppermint tree (*Agonis flexuosa*) and areas of these within each wind turbine site was targeted for sampling. A total of five plots of approximately 10 m x 10 m were beaten for 15 minutes at each wind turbine site. The plots were selected to survey the best available habitat for *Z. mainae* and also provide spatial distribution at each wind turbine site. In total 75 minutes targeted searching at each of the 15 proposed clearing sites was undertaken.

Adults of *Z. mainae* are quite confidently identified in the field, however, to ensure accurate species identification a single adult male (or female if no males were recorded) from each site they were recorded was collected for voucher purposes. In the Invertebrate Solutions laboratory using a dissecting microscope, these specimens were curated and preserved in 100% ethanol and formally identified. Each specimen was kept in a separate labelled vial and assigned a specimen tracking code. Specimen and site collection data was recorded in an Excel spreadsheet. At the conclusion of the study, all specimens will be lodged at the Western Australian Museum in accordance with the permit conditions.

2.2 Survey Effort and Timing

Invertebrate Solutions completed a single season targeted SRE survey at the Albany Wind Farm Project area in December 2019. This comprised 15 sites that were surveyed in conjunction with a level 1 vertebrate fauna survey (Table 1, Appendix 1, 2). All coordinates in UTM are using datum GDA and located in Zone 50H.

Table 1 Locations of targeted field survey for Main's Assassin Spider (*Z. mainae*)

Sample Site	UTM (GDA)	Habitat	Active search effort	Sample Date
WEC02	572690 6119659	*Agonis flexuosa* and coastal heath	75 minutes	20 Dec 2019
WEC04	572243 6119935	*Agonis flexuosa* and coastal heath	75 minutes	20 Dec 2019
WEC05	572112 6120063	*Agonis flexuosa* and coastal heath	75 minutes	20 Dec 2019
WEC06	571771 6120105	*Agonis flexuosa* and coastal heath	75 minutes	20 Dec 2019
WEC07	571559 6120162	*Agonis flexuosa* and coastal heath	75 minutes	20 Dec 2019
WEC08	571340 6120245	*Agonis flexuosa* and coastal heath	75 minutes	20 Dec 2019
WEC09	571205 6120467	*Agonis flexuosa* and coastal heath	75 minutes	20 Dec 2019
WEC10	570925 6120431	*Agonis flexuosa* and coastal heath	75 minutes	21 Dec 2019
WEC12	570688 6120710	*Agonis flexuosa* and coastal heath	75 minutes	21 Dec 2019
WEC13	570006 6120829	*Agonis flexuosa* and coastal heath	75 minutes	21 Dec 2019
WEC14	569639 6121083	*Agonis flexuosa* and coastal heath	75 minutes	21 Dec 2019
WEC15	569219 6121246	*Agonis flexuosa* and coastal heath	75 minutes	21 Dec 2019
WEC16	568942 6121282	*Agonis flexuosa* and coastal heath	75 minutes	21 Dec 2019
WEC17	568605 6121526	*Agonis flexuosa* and coastal heath	75 minutes	21 Dec 2019
WEC18	568301 6121482	*Agonis flexuosa* and coastal heath	75 minutes	21 Dec 2019

The following specific comments are made with regard to project specific limitations for the Project:

- **Sampling effort** – The single phase survey included a total of 1,125 minutes of active searching split amongst 75 different sites at 15 different proposed clearing locations. This survey effort provides a high degree of certainty that individuals of *Z. maine* would be detected if present during the survey.
- **Timing** – The survey was undertaken in December when the species has been readily recorded in previous surveys in the area.
- **Methods** – the method of bush beating dense stands of *Agonis flexuosa* is a recognised technique for detecting *Z. mainae* and has previously been approved as an accepted method by staff of the Western Australian Museum.
- **Habitats sampled** – All significant potential habitats for *Z. mainae* within the Survey Area were sampled.
- **Access to areas** – No access issues were encountered in the survey with all areas able to be fully accessed.

3. Results

3.1 3.2 Habitat in Project Area

The vegetation units and condition mapping identified in the biological assessment (Eco Logical 2019) were used to assess the Project area for potential *Z. mainae* habitat. The Project area comprises a mosaic of Peppermint low forest (*Agonis flexuosa)*, coastal heath/limestone heath and fringing *Eucalyptus angulosa* low forest along clearing boundaries. The vegetation was observed to be in pristine to very good condition.

The majority of sites surveyed were found to have large areas of *Agonis* sp. present but mostly lacking the specific microhabitat required by *Z. mainae* of an elevated leaf-litter layer which collects amongst the crowns of the understorey plants. Sites that did provide the specific microhabitat were observed at WEC09, WEC12 and WEC14 (Figure 1, Appendix 1).

3.3 Targeted Survey Results

No individuals of *Z. mainae* were recorded from any of the 15 sites surveyed within the Albany Wind Farm Project area.

4. Discussion and Conclusions

No individuals of *Z. mainae* were recorded from any of the 15 sites surveyed within the Albany Wind Farm Project area.

Many of the survey sites were situated on geographic rises in the landscape and exposed to strong winds making them unsuitable habitat for *Z. mainae*. The previous records of *Z. mainae* from the Albany Wind Farm area (Figure 1) are situated in protected gullies providing better microhabitat for the formation of an elevated leaf-litter layer which collects amongst the crowns of the understorey plants.

No direct impacts to *Z. mainae* are anticipated form the proposed clearing around the existing wind turbines.

The following recommendation is made with regard to construction of the Project:

- No additional surveys are required to meet the EPA Technical guidance, sampling of short range endemic invertebrate fauna (EPA 2016).

5. References

EPA (2016). Technical guidance. Sampling of short range endemic invertebrate fauna. Environmental Protection Authority: Perth. 35 pp.

Framenau, V.W., Moir, M.L. & Harvey, M.S. (2008) Terrestrial Invertebrates of the south coast NRM region of Western Australia: short-range endemics in Gondwanan relictual habitats. Unpublished Report to the Southcoast Natural Resource Management Inc.

Platnick, N.I. (1991). On Western Australian *Austrarchaea* (Araneae, Archaeidae). Bulletin of the British Arachnology Society 8: 259-261.

Rix, M.G. and Harvey, M.S. (2012). Australian Assassins, Part II: A review of the new assassin spider genus Zephyrarchaea (Araneae, Archaeidae) from southern Australia. ZooKeys 191: 1–62. doi: 10.3897/zookeys.191.3070

Appendix 1

Targeted search quadrat locations

Site	UTM (GDA)	Lat/Long Decimal	Lat/Long
WEC02-1	50 H 572690 6119659	S35.06319 E117.79719	S35 03 47.5 E117 47 49.9
WEC02-2	50 H 572728 6119642	S35.06334 E117.79761	S35 03 48.0 E117 47 51.4
WEC02-3	50 H 572712 6119620	S35.06354 E117.79744	S35 03 48.7 E117 47 50.8
WEC02-4	50 H 572687 6119611	S35.06362 E117.79717	S35 03 49.0 E117 47 49.8
WEC02-5	50 H 572655 6119638	S35.06338 E117.79681	S35 03 48.2 E117 47 48.5
WEC04-1	50 H 572243 6119935	S35.06073 E117.79227	S35 03 38.6 E117 47 32.2
WEC04-2	50 H 572169 6119858	S35.06143 E117.79146	S35 03 41.1 E117 47 29.3
WEC04-3	50 H 572146 6119839	S35.06161 E117.79121	S35 03 41.8 E117 47 28.4
WEC04-4	50 H 572118 6119838	S35.06162 E117.79090	S35 03 41.8 E117 47 27.3
WEC04-5	50 H 572131 6119889	S35.06115 E117.79104	S35 03 40.2 E117 47 27.8
WEC05-1	50 H 572112 6120063	S35.05959 E117.79082	S35 03 34.5 E117 47 26.9
WEC05-2	50 H 572139 6120066	S35.05956 E117.79111	S35 03 34.4 E117 47 28.0
WEC05-3	50 H 572158 6120108	S35.05917 E117.79132	S35 03 33.0 E117 47 28.8
WEC05-4	50 H 572124 6120120	S35.05907 E117.79094	S35 03 32.7 E117 47 27.4
WEC05-5	50 H 572101 6120099	S35.05926 E117.79069	S35 03 33.3 E117 47 26.5
WEC06-1	50 H 571771 6120105	S35.05923 E117.78708	S35 03 33.2 E117 47 13.5
WEC06-2	50 H 571738 6120160	S35.05874 E117.78671	S35 03 31.5 E117 47 12.2
WEC06-3	50 H 571767 6120175	S35.05860 E117.78702	S35 03 31.0 E117 47 13.3
WEC06-4	50 H 571788 6120167	S35.05867 E117.78726	S35 03 31.2 E117 47 14.1
WEC06-5	50 H 571794 6120146	S35.05887 E117.78733	S35 03 31.9 E117 47 14.4
WEC07-1	50 H 571559 6120162	S35.05873 E117.78474	S35 03 31.4 E117 47 05.1
WEC07-2	50 H 571565 6120192	S35.05846 E117.78482	S35 03 30.5 E117 47 05.3
WEC07-3	50 H 571575 6120232	S35.05810 E117.78492	S35 03 29.2 E117 47 05.7
WEC07-4	50 H 571569 6120267	S35.05779 E117.78484	S35 03 28.0 E117 47 05.4
WEC07-5	50 H 571526 6120238	S35.05805 E117.78437	S35 03 29.0 E117 47 03.7
WEC08-1	50 H 571340 6120245	S35.05800 E117.78234	S35 03 28.8 E117 46 56.4
WEC08-2	50 H 571360 6120257	S35.05789 E117.78256	S35 03 28.4 E117 46 57.2
WEC08-3	50 H 571349 6120289	S35.05761 E117.78243	S35 03 27.4 E117 46 56.8
WEC08-4	50 H 571300 6120293	S35.05757 E117.78189	S35 03 27.2 E117 46 54.8
WEC08-5	50 H 571285 6120244	S35.05801 E117.78174	S35 03 28.9 E117 46 54.3
WEC09-1	50 H 571205 6120467	S35.05601 E117.78084	S35 03 21.6 E117 46 51.0
WEC09-2	50 H 571217 6120423	S35.05641 E117.78098	S35 03 23.1 E117 46 51.5
WEC09-3	50 H 571232 6120418	S35.05645 E117.78114	S35 03 23.2 E117 46 52.1
WEC09-4	50 H 571181 6120418	S35.05646 E117.78058	S35 03 23.2 E117 46 50.1
WEC09-5	50 H 571156 6120450	S35.05616 E117.78030	S35 03 22.2 E117 46 49.1
WEC10-1	50 H 570925 6120431	S35.05635 E117.77777	S35 03 22.9 E117 46 40.0
WEC10-2	50 H 570949 6120441	S35.05626 E117.77803	S35 03 22.5 E117 46 40.9
WEC10-3	50 H 570891 6120472	S35.05599 E117.77739	S35 03 21.6 E117 46 38.6
WEC10-4	50 H 570979 6120499	S35.05573 E117.77835	S35 03 20.6 E117 46 42.1
WEC10-5	50 H 570985 6120479	S35.05592 E117.77843	S35 03 21.3 E117 46 42.3
WEC12-1	50 H 570688 6120710	S35.05386 E117.77514	S35 03 13.9 E117 46 30.5
WEC12-2	50 H 570702 6120666	S35.05425 E117.77531	S35 03 15.3 E117 46 31.1
WEC12-3	50 H 570723 6120686	S35.05406 E117.77554	S35 03 14.6 E117 46 31.9
WEC12-4	50 H 570721 6120717	S35.05379 E117.77551	S35 03 13.6 E117 46 31.8
WEC12-5	50 H 570752 6120718	S35.05378 E117.77585	S35 03 13.6 E117 46 33.1

Site	UTM (GDA)	Lat/Long Decimal	Lat/Long
WEC13-1	50 H 570006 6120829	S35.05283 E117.76766	S35 03 10.2 E117 46 03.6
WEC13-2	50 H 569985 6120815	S35.05296 E117.76743	S35 03 10.6 E117 46 02.8
WEC13-3	50 H 569991 6120758	S35.05347 E117.76751	S35 03 12.5 E117 46 03.0
WEC13-4	50 H 570015 6120776	S35.05331 E117.76777	S35 03 11.9 E117 46 04.0
WEC13-5	50 H 570055 6120808	S35.05302 E117.76820	S35 03 10.9 E117 46 05.5
WEC14-1	50 H 569639 6121083	S35.05056 E117.76362	S35 03 02.0 E117 45 49.0
WEC14-2	50 H 569640 6121053	S35.05083 E117.76363	S35 03 03.0 E117 45 49.1
WEC14-3	50 H 569614 6121038	S35.05097 E117.76335	S35 03 03.5 E117 45 48.0
WEC14-4	50 H 569563 6121044	S35.05092 E117.76278	S35 03 03.3 E117 45 46.0
WEC14-5	50 H 569558 6121082	S35.05058 E117.76273	S35 03 02.1 E117 45 45.8
WEC15-1	50 H 569219 6121246	S35.04912 E117.75899	S35 02 56.8 E117 45 32.4
WEC15-2	50 H 569216 6121278	S35.04883 E117.75896	S35 02 55.8 E117 45 32.3
WEC15-3	50 H 569263 6121333	S35.04834 E117.75948	S35 02 54.0 E117 45 34.1
WEC15-4	50 H 569275 6121286	S35.04876 E117.75960	S35 02 55.5 E117 45 34.6
WEC15-5	50 H 569274 6121268	S35.04892 E117.75960	S35 02 56.1 E117 45 34.5
WEC16-1	50 H 568942 6121282	S35.04882 E117.75595	S35 02 55.7 E117 45 21.4
WEC16-2	50 H 568923 6121255	S35.04906 E117.75575	S35 02 56.6 E117 45 20.7
WEC16-3	50 H 568871 6121291	S35.04874 E117.75518	S35 02 55.5 E117 45 18.6
WEC16-4	50 H 568895 6121328	S35.04840 E117.75544	S35 02 54.3 E117 45 19.6
WEC16-5	50 H 568940 6121331	S35.04837 E117.75594	S35 02 54.1 E117 45 21.4
WEC17-1	50 H 568605 6121526	S35.04664 E117.75225	S35 02 47.9 E117 45 08.1
WEC17-2	50 H 568628 6121553	S35.04640 E117.75250	S35 02 47.0 E117 45 09.0
WEC17-3	50 H 568599 6121471	S35.04714 E117.75217	S35 02 49.7 E117 45 07.8
WEC17-4	50 H 568565 6121453	S35.04730 E117.75181	S35 02 50.3 E117 45 06.5
WEC17-5	50 H 568549 6121496	S35.04691 E117.75163	S35 02 48.9 E117 45 05.9
WEC18-1	50 H 568301 6121482	S35.04705 E117.74891	S35 02 49.4 E117 44 56.1
WEC18-2	50 H 568292 6121442	S35.04742 E117.74881	S35 02 50.7 E117 44 55.7
WEC18-3	50 H 568271 6121422	S35.04760 E117.74859	S35 02 51.4 E117 44 54.9
WEC18-4	50 H 568230 6121422	S35.04761 E117.74814	S35 02 51.4 E117 44 53.3
WEC18-5	50 H 568229 6121470	S35.04717 E117.74813	S35 02 49.8 E117 44 53.3

Appendix 2

Targeted Search Site Habitats

WEC02 50 H 572690 6119659	
WEC04 50 H 572243 6119935	

WEC05 50 H 572112 6120063	
WEC06 50 H 571771 6120105	

WEC07 50 H 571559 6120162	
WEC08 50 H 571340 6120245	

WEC09 50 H 571205 6120467	
WEC10 50 H 570925 6120431	

WEC12 50 H 570688 6120710	
WEC13 50 H 570006 6120829	

WEC14 50 H 569639 6121083	
WEC15 50 H 569219 6121246	

WEC16 50 H 568942 6121282	
WEC17 50 H 568605 6121526	

WEC18 50 H 568301 6121482