

RECONNAISSANCE FLORA, VEGETATION, BASIC FAUNA AND TARGETED BLACK COCKATOO HABITAT SURVEY REPORT



Horizon Power Hopetoun

Lot 11 (No. 74) Lechenaultia Drive, Hopetoun WA 6348

FINAL v. 1

03/03/2026



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Client: Horizon Power

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Executive Summary

Horizon Power (“the client”) commissioned Bio Diverse Solutions as Environmental Consultants to undertake a spring reconnaissance flora, vegetation and basic fauna survey of Lot 11 (No. 74) Lechenaultia Drive, Hopetoun, in the Shire of Ravensthorpe. This survey includes a targeted vegetation survey to assess presence/absence of the Threatened/Priority ecological community (TEC/PEC) Proteaceae Dominated Kwongan Shrublands of the South-east Coastal Floristic Province of Western Australia (Kwongan), and a targeted black cockatoo habitat assessment. The purpose of the survey is to provide environmental assessment data of flora, vegetation and fauna values, as required for environmental approvals for development on the lot. In addition to the aforementioned survey, any occurrence of moodjar trees (Western Australian Christmas trees/*Nuytsia floribunda*) within the survey area was recorded and mapped as per the clients request, due to their cultural significance to the traditional owners in the area.

The field survey detected 167 flora species, of which 50 were introduced species. No Threatened or Priority flora species were detected and the 86 Threatened or Priority species identified in the desktop assessment were evaluated as Unlikely or Highly Unlikely to occur following the field survey. Four vegetation units were identified in the survey; 1: *Banksia speciosa* Woodland (BspeWL), 2: *Acacia cyclops* Shrubland (AcycShL), 3: uninterpretable – parkland, and 4: paddock. The vegetation ranged from Good and Very Good in Vegetation Units 1: BspeWL and 2: AcycShL, to Degraded in Vegetation Unit 3: uninterpretable - parkland and Completely Degraded in Vegetation Unit 4: paddock. Condition in the survey area was closely aligned to disturbance, primarily historical clearing, and vegetation assemblages’ responses following these events. A total of 50 weed species were detected in the survey including bridal creeper (*Asparagus asparagoides*) and Paterson’s curse (*Ecium plantagineum*), species listed as ‘Declared Pest – s22(2)’ under the BAM Act. Bridal creeper is also recognized as a WoNS, whilst Paterson’s curse is considered a potential WoNS and was included in the nominated species to be assessed as part of the Australian Weeds Strategy (IPAC, 2017; CISS, 2024). Bridal creeper was most prevalent in Vegetation Unit 3: uninterpretable – parkland. Vegetation Unit 1: BspeWL resembled TEC/PEC Proteaceae Dominated Kwongan Shrublands of the Southeast Coastal Floristic Province of Western Australia (Kwongan; EN/P3). Quadrat analysis of this vegetation unit against TEC/PEC criteria confirmed that approximately 2.06 ha of Kwongan TEC/PEC was present within the survey area. One other PEC was identified in the desktop assessment; *Regelia velutina*/*Melaleuca lutea* shrubland of the Fitzgerald River National Park; and was assessed as Highly Unlikely to occur following the field survey.

Four fauna habitat units were identified in the survey, which correlated to the vegetation units described in the vegetation survey; 1: *Banksia speciosa* Woodland (BspeWL), 2: *Acacia cyclops* Shrubland (AcycShL), 3: uninterpretable – parkland, and 4: paddock. The field survey detected 38 fauna taxa of which three were conservation significant taxa: tammar wallaby (*Notamacropus eugenii derbianus*; - /P4); western brush wallaby (*Notamacropus irma*; - /P4); and *Zanda* sp. (EN/EN). For the purposes of this report, *Zanda* sp. refers to a collective of Baudin’s Cockatoo (*Zanda baudinii*; EN/EN) and Carnaby Cockatoo (*Zanda latirostris*; EN/EN) as both were considered possible to occur in the survey area, as it was not possible to differentiate between them with confidence. This is considered a minor limitation of the survey, however identification to genus level was considered sufficient as both species are listed as Endangered under the *Biodiversity Conservation Act* (BC Act) and *Environmental Protection and Biodiversity Conservation Act* (EPBC Act), as such they fall underneath the same EPBC protections and referral guidelines (DAWE, 2022). The majority of the fauna habitat values observed in the survey area were associated with Fauna Habitat Unit 1: BspeWL, it provided suitable habitat for six conservation significant species identified in the desktop assessment as Possible to occur post survey. There were high levels of fox (*Vulpes vulpes*) and European rabbit (*Oryctolagus cuniculus*) activity which is likely a limiting factor for the occupancy for some native species due to predation and/or being outcompeted for habitat and food resources.

No suitable breeding or night roosting habitat was present for Baudin’s Cockatoo (*Zanda baudinii*; EN/EN) or Carnaby’s Cockatoo (*Zanda latirostris*; EN/EN) in the survey area. Fauna Habitat Unit 1: BspeWL was identified as high-quality foraging habitat, scoring an 8 against the DAWE (2022) foraging quality scoring tool for both Black Cockatoo species. As per the guidelines, a score of 8 is considered High Quality foraging habitat and loss of greater than 1 ha of such habitat is likely to require a referral to the minister (DAWE, 2022).

1. Introduction, Scope and Background Information

Horizon Power, herein referred to as “the client” commissioned Bio Diverse Solutions as Environmental Consultants to undertake a spring reconnaissance flora, vegetation and basic fauna survey of Lot 11 (No. 74) Lechenaultia Drive, Hopetoun, in the Shire of Ravensthorpe. This survey includes a targeted vegetation survey on a portion of the lot to assess presence/absence of the Threatened/Priority ecological community (TEC/PEC) Proteaceae Dominated Kwongan Shrublands of the South-east Coastal Floristic Province of Western Australia (Kwongan), and a targeted black cockatoo habitat assessment. The purpose of the survey is to provide environmental assessment data of flora, vegetation and fauna values, as required for environmental approvals for a future development footprint on the lot.

In addition to the aforementioned survey components, any occurrence of moodjar trees (Western Australian Christmas tree/*Nuytsia floribunda*) within the survey area was recorded and mapped as per the clients request, due to their cultural significance to the traditional owners in the area.

The scope of works include:

- Desktop assessment of the survey area, including all publicly available database searches for Threatened and Priority flora, ecological communities and fauna. Undertake a Likelihood of Occurrence (LOO) analysis of species and communities identified in the desktop assessment;
- Prepare and undertake drone aerial imagery of subject site (with 10 m buffer) for accurate GIS mapping and georeferencing for project;
- A spring reconnaissance flora and vegetation survey across the survey area to identify vegetation units, condition, potential TEC/PEC and Threatened or Priority flora habitat;
 - GIS mapping of any populations of Threatened or Priority species (if applicable);
 - GIS mapping of any invasive species of concern, specifically Weeds of National Significance (WoNS; Invasive Plants and Animals Committee; IPAC, 2017) or Declared Pests under the *Biosecurity and Agriculture Management Act 2007* (WA; BAM Act);
 - GIS mapping of vegetation units present and their condition;
 - Data collection to characterise vegetation units, such as relevé or quadrats;
 - Identification of flora species, including herbarium identification if required;
- A targeted vegetation survey to assess the presence/absence of Kwongan TEC/PEC and/or any other identified TEC/PEC within the survey area (quadrat analysis required);
- Basic fauna survey to map boundaries of fauna habitat units, identify areas likely to provide habitat for conservation significant species and record opportunistic fauna observations;
 - GIS mapping of fauna habitat;
- Targeted black cockatoo habitat survey, including identification and mapping of Carnaby's Cockatoo (*Zanda latirostris*, EN/EN) and Baudin's Black Cockatoo (*Zanda baudinii*, EN/EN) foraging, roosting and breeding habitat (trees with suitable Diameter at Breast Height; DBH) as per Commonwealth guidelines (DAWE, 2022);
- Prepare a report on survey outcomes, consistent with Environment Protection Authority (EPA, 2016; 2020) Guidance's;
 - Preparation and submission of Threatened and Priority flora report forms, Threatened and Priority ecological community (TEC/PEC) occurrence report forms and/or Threatened and Priority fauna report forms to the Department of Biodiversity, Conservation and Attractions (DBCA) if required; and
- Provide the client with the ISA data package (as required to be submitted by the client).

1.1. Location and Development Proposal

The “survey area” consists of approximately 18.71 ha of land on a portion of Lot 11 (No. 74) Lechenaultia Drive, Hopetoun (Figure 1). The survey area is adjacent to Synergy's existing power station. The survey area is approximately 3.5 km north of the Hopetoun townsite.

The “study area” consists of a 20 km radius around the survey area, used for indications of LOO of Threatened or Priority flora, fauna and TEC/PEC. The search radius used to characterise the study area is determined by the sources of databases analysed; appropriate buffer size is selected based on the number of records in the general area and the range of local species. The study area provides a broader local context and assessment of the survey area.

1.2. Alignment to Legislation, Guidelines and Policies

This survey and subsequent report are aligned to the following legislation, guidelines and policies:

- *Environmental Protection and Biodiversity Conservation Act 1999* (Commonwealth; EPBC Act). Administered by the Federal Department of Climate Change, Energy, the Environment and Water (DCCEEW);
- *Biodiversity Conservation Act 2016* (WA; BC Act). Administered by the Western Australian Department of Biodiversity, Conservation and Attractions (DBCA);
- *Environmental Protection Act 1986* (WA; EP Act). Administered by the Western Australian Department of Water and Environmental Regulations (DWER);
- *Biosecurity and Agriculture Management Act 2007* (WA; BAM Act);
- EPA (2016) *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment*;
- Commonwealth of Australia (CoA, 2013) *Draft Survey Guidelines for Australia's Threatened Orchids*;
- Australian Weeds Strategy (IPAC, 2017) – register of Weeds of National Significance (WoNS);
- *Environmental Weed Strategy of Western Australia* (EWSWA; CALM, 1999);
- Department of Energy and the Environment (DoEE, 2017) - *Australian Vegetation Attribute Manual Version 7.0: National Vegetation Information System*;
- Keighery (1994) - *Bushland plant surveys: A guide to plant community surveys for the community*;
- EPA (2020) *Technical Guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact*;
- Department of the Environment, Water, Heritage and the Arts (DEWHA, 2010) *Survey guidelines for Australia's threatened birds*;
- Department of the Environment (DoE, 2015a) *Draft referral guideline for 14 birds listed as migratory species under the EPBC Act*;
- Department of Sustainability, Environment, Water, Population and Communities (DSEWPoC, 2011a) *Survey Guidelines for Australia's Threatened Mammals*;
- DSEWPoC (2011b) *Survey guidelines for Australia's threatened reptiles*; and
- DAWE (2022) *Referral guideline for 3 WA threatened black cockatoo species*.



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Overview Map Scale 1:3,000,000

Legend

- Survey Area
- Study Area (20 km)

Scale
1:160,000 @ A3
GDA MGA 2020 Zone 51

Data Sources:
Overview Map: World Topographic Map (SRTM, GEBCO, Garmin, © OpenStreetMap contributors, and the GIS User community)
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Figure 1: Survey Area.

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1.3. Geology and soils

Department of Primary Industries and Regional Development (DPIRD) database searches show the survey area lies within the Esperance Sandplain Zone, described as a “Level to gently undulating plain dissected by a number of short rivers flowing south. Formed on Eocene marine sediments overlying Proterozoic granitic and metamorphic rocks. Soils are grey fine sandy duplex soils and fine sands” (DPIRD, 2025a). Database searches show the survey area lies within the Gore System (245Go) and the Munglinup System (254Mu). The Gore System is described as “Discontinuous level to gently undulating coastal plain with subdued sand dunes, lakes and swamps. Unconsolidated Pleistocene sediments.” The Munglinup System is described as “Gently undulating plain and rises on Tertiary marine sediments wrapping around occasional highs of Proterozoic gneiss” (DPIRD, 2025b).

The soil type within the survey area is mapped as the Gore 1 subsystem (245Go_1) and Munglinup 5 subsystem (245Mu_5). The Gore 1 subsystem is described as “Poorly drained low lying coastal plain with very gently undulating sand dunes and some lakes and swamps. Alkaline grey sandy duplex soils and pale deep sands, minor calcareous deep sands and saline wet soils” and the Munglinup 5 subsystem is described as “Level and gently undulating plain of low relief (<9M) with occasional isolated hillocks. Grey deep sandy duplex (gravelly) soils with associated pale deep sands and minor duplex sandy gravels and saline wet soils” (DPIRD, 2025c).

1.4. Climate

The closest open Bureau of Meteorology (BoM) site is Hopetoun North (009961). The average annual temperature in Hopetoun North ranges from 7.8-25.5°C. The average summer temperature ranges between 14-25.5°C, whilst average winter temperatures range between 7.8-18.9°C (BoM, 2025a). The annual mean rainfall for Hopetoun North is 618.1 mm (BoM, 2025b). On average the months of June to September are the months with the highest rainfall (Figure 2). There was higher than average rainfall recorded in the months of April and July 2025, and lower than average rain recorded in every other month (Figure 2). The total rainfall in the year previous to the survey (October 2024 to September 2025) was 398.8 mm which is 77.1 mm below average and equates to 16.20% decrease compared to average rainfall.

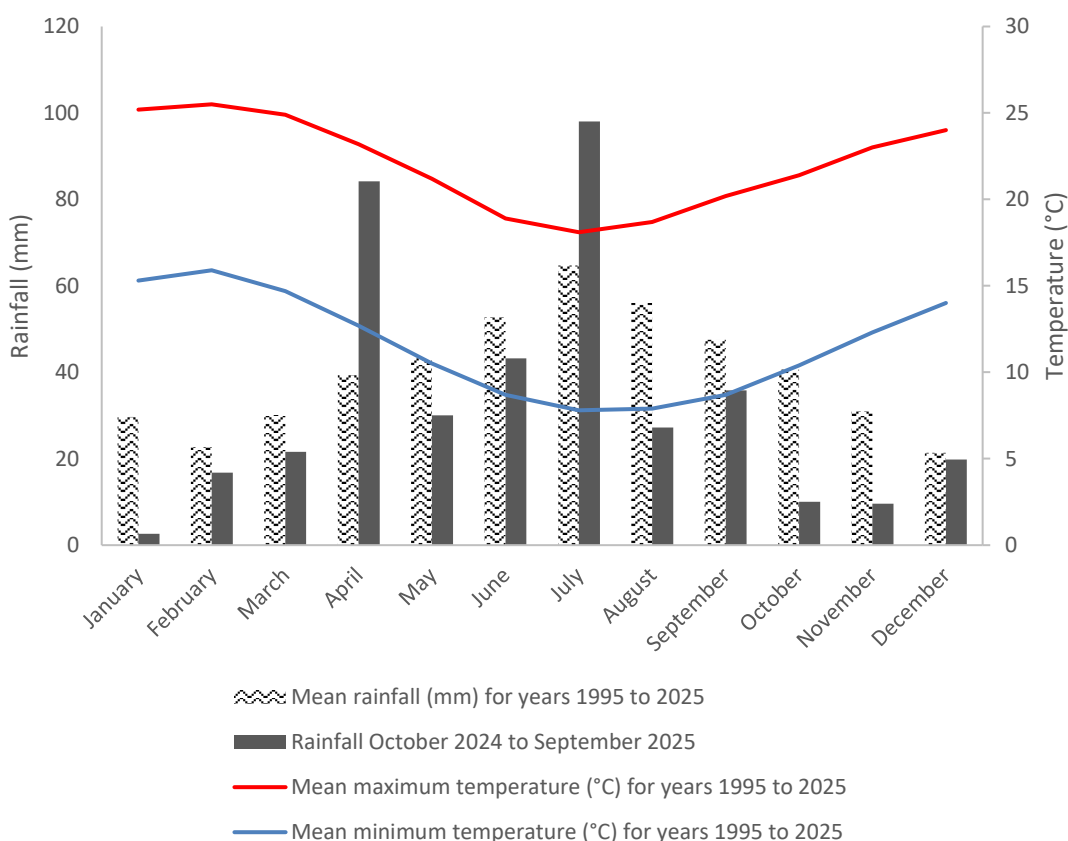


Figure 2: Temperature and Rainfall Data for Hopetoun BoM Weather Station No. 009961.

1.5. Habitat Connectivity

Habitat connectivity assessments rely on a bioregional and landscape-scale approach to evaluate habitat for fauna movement and ecological linkage across a region. Habitat connectivity is largely reliant on remnant vegetation, recognising it plays a very important role in developing corridors between protected areas to assist in achieving long-term biodiversity management outcomes (Wilkins et al., 2006).

The survey area lies within a highly modified landscape, the immediate vicinity of the survey area consisting of agricultural properties to the north and residential, private land and development areas to the south. There are multiple nature reserves and vegetation in private property adjacent to the survey area which act as important vegetation corridors and increase habitat connectivity to ecologically significant reserves and national parks in the broader landscape, including Fitzgerald River National Park, approximately 8.5 km west of the survey area, and Jerdacuttup Lakes Nature Reserve, approximately 11 km east of the survey area.

1.6. Water and Wetlands

The survey area does not lie within any public drinking water source areas (PDWSA), in the immediate vicinity there is a Hopetoun Water Reserve PDWSA less than 1 km to the south-west (DWER, 2025). The survey area lies within the Esperance Sandplain (HZ25_ES) Hydrological Zone (DPIRD, 2022). The Esperance Sandplain zone is described as “*Level to gently undulating plain dissected by a number of short rivers flowing south. Formed on Eocene marine sediments overlying Proterozoic granitic and metamorphic rocks. Soils are grey fine sandy duplex soils and fine sands*” (DPIRD, 2022). The survey area lies within the Esperance Coast Hydrographic Catchment (DWER, 2024a) and within the Jerdacuttup River Hydrographic Subcatchment (DWER, 2024b).

The survey area is located adjacent to the Steere River, a major and minor river approximately 3.5 km to the west, and Phillips River, a mainstream located approximately 5.5 km to the west. Steere River and Phillips River are upstream and associated with the Culham Inlet which lies approximately 3.5 km to the west of the survey area (DWER, 2018a). The Jerdacuttup River mainstreams are located approximately 8 km east of the survey area, this system is upstream of Jerdacuttup Lake, approximately 10 km west of the survey area (DWER, 2018a). No RAMSAR wetlands (DBCA, 2017a), or significant wetlands are located within the survey area, however there are multiple South Coast Significant Wetlands in the surrounding area related to the adjacent river systems, including; Culham Inlet approximately 3.5 km to the west, Dunns Swamp Suite 2 km to the south-east and Jerdacuttup Lakes Suite 7 km to the east (DBCA, 2017b).

1.7. Environmentally Sensitive Areas

The survey area does not contain any Environmentally Sensitive Areas (ESA), the nearest site is approximately 5 km to the west associated with Culham Inlet and Fitzgerald National Park (DWER, 2021).

1.8. Remnant Vegetation

The survey area lies within the Esperance Plains IBRA region and the Recherche (ESP02) subregion (DPIRD, 2020). Comer et al. (2001) describes the Esperance bioregion as “*characterised by proteaceous scrub and mallee heaths on sandplain overlying Eocene sediments; rich in endemics. Herbfields and heaths (rich in endemics) on abrupt granite and quartzite ranges that rise from the plain. Eucalypt woodlands occur in gullies and alluvial foot-slopes. ESP2 Subregion has variable relief, comprising the Quaternary coastal sandplains and dunes overlying Proterozoic gneiss and granite as well as Eocene and more recent coastal limestones. Numerous granitic islands occur in the near shore area of this subregion. Vegetation comprises heath, coastal dune scrub, mallee, mallee-heath and granite heath. Vegetation types are diverse. The climate is Temperate Mediterranean, with 400-700 mm annual rainfall and total area is 1,606,517 ha*”.

The vegetation has been mapped on a broad scale by J.S. Beard (Shepherd et al., 2002) in the 1970's, where a system was devised for state-wide mapping and vegetation classification based on geographic, geological, soil, climate structure, life form and vegetation characteristics (Sandiford and Barrett, 2010). Vegetation units were regarded as associations and were grouped into Vegetation Systems representing a particular pattern of association distribution within a given area. A GIS search of J.S. Beards (Beard et al., 2013) vegetation classification places the survey area within one Pre-European Vegetation Association (DPIRD, 2019) refer to Figure 3:

- **System Association Name:** Esperance.
- **Vegetation Association Number:** 47.

- **Structure Description:** Mallee-heath.
- **Floristic Description:** Mixed heath with scattered mallee e.g. tallerack *Eucalyptus tetragona*.
- **Remnant Vegetation by Beard Association Rarity in LGA:** 45.66% remaining (GoWA, 2019).
- **Remnant Vegetation by Beard Association Rarity in IBRA Region:** 47.69% remaining (GoWA, 2019).

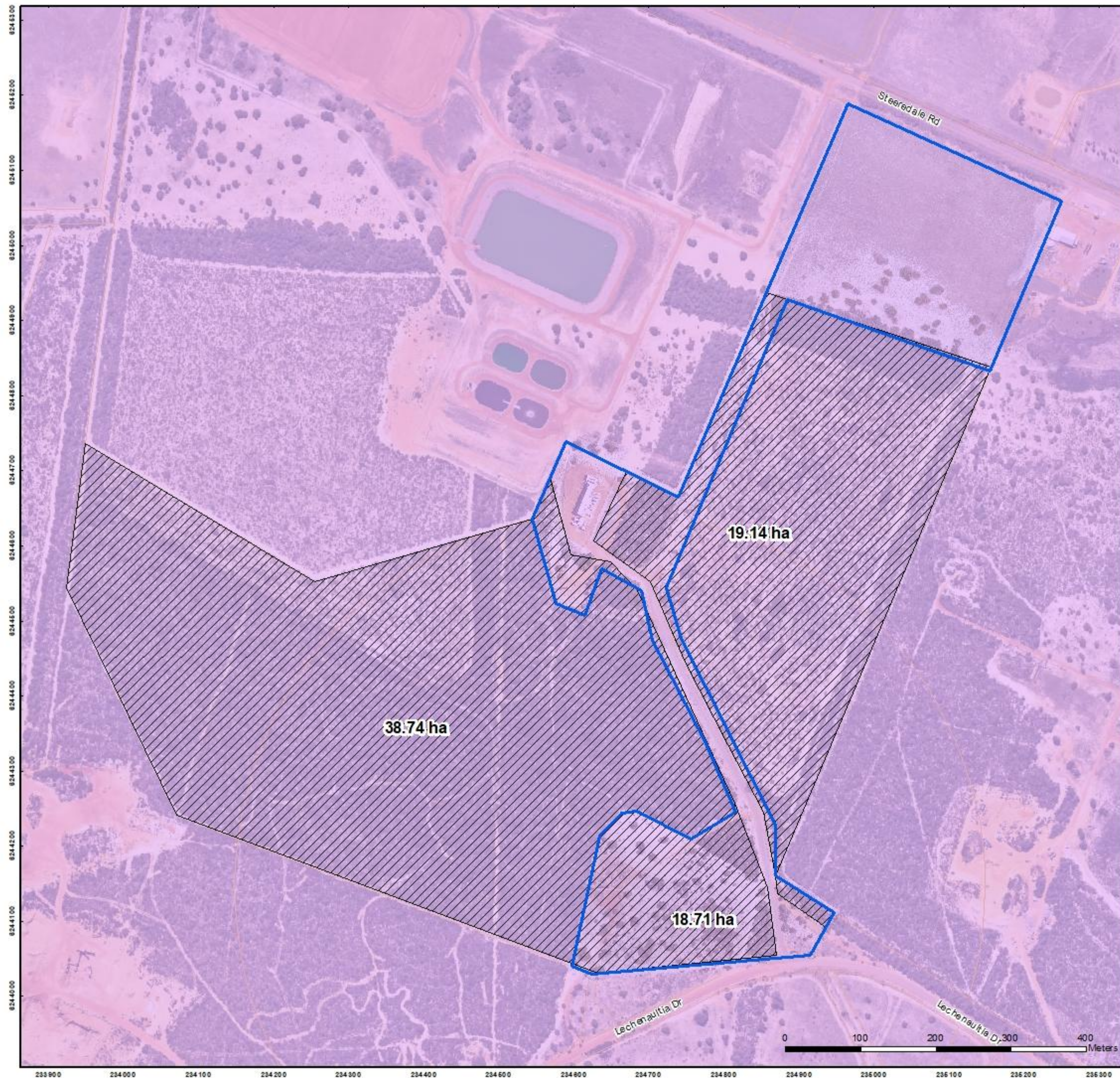
1.9. Heritage

The survey is located within the Wudjari Nyungar nation (Horton, 1996). The survey area is not located within any historic or lodged Aboriginal Cultural Heritage (ACH) sites or other sites recognized by the ACH register (DPLH, 2025a; 2025b; 2025c). In the broader region there is a lodged heritage site, approximately 10 km to the north at Kuliba swamp, and an ACH register site surrounding Jerdacuttup River, approximately 9 km east of the survey area (DPLH, 2025b; 2025c). It is recognised that there has been a large scale of loss of cultural knowledge and information, and the survey area may contain additional heritage values that are not recognised through DPLH (DPLH, 2025a; 2025b; 2025c). Further due diligence may be required in accordance with the *Aboriginal Cultural Heritage Act 2021* (ACH Act) and Aboriginal Cultural Heritage Guidelines.

1.10. Dieback

The Dieback Information Delivery and Management System (DIDMS; SCNRM, 2025) disease confidence mapping of *Phytophthora cinnamomi* indicates that mapping of *P. cinnamomi* infestation has not been conducted within the survey area or in the surrounding environs. It is important to note that the publicly available data provided in DIDMS is indicative only and it is stated by SCNRM that “the extent of infestations are underestimated, as not all areas have been surveyed and disease boundaries are likely to extend into mapped disease-free areas since surveys were conducted” (SCNRM, 2020).

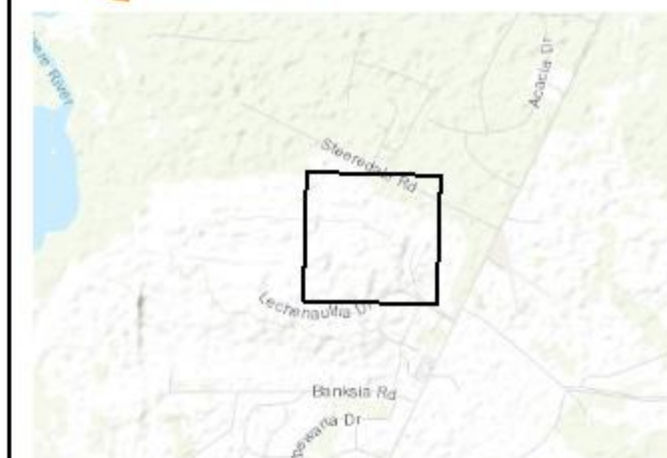
P. cinnamomi dieback infestation is recorded approximately 38 km to the east and 60 km to the west of the survey area (DBCA, 2025a). This dataset pertains to confirmed infestation areas on DBCA land only, however provides insight to occurrence of dieback in the broader landscape.



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Overview Map Scale 1:100,000

Legend

- Survey Area
- Historical Native Vegetation Extent
- Cadastre
- Pre-European Vegetation (DPIRD-006)
- Esperance, 47

Scale
1:5,000 @ A3
GDA MGA2020 Zone 51

Data Sources
Overview Map: World Topographic Map (Cart. HERE, Garmin, © OpenStreetMap contributors, and the GIS user community)
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Figure 3: Historical Vegetation.

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2. Methodology – Desktop Assessment

2.1. Flora and Vegetation

A desktop assessment was conducted to compile and determine a desktop inventory and LOO analysis of potential Threatened or Priority flora species and TEC/PECs Likely or Possible to occur within the survey area. This was undertaken by compiling a register of species recorded within the study area, using the following databases:

- Protected Matters Search Tool (PMST; DCCEEW, 2025);
- Flora DBCA database records (DBCA, 2025b); and
- TEC/PEC DBCA database records (DBCA, 2025c).

The conservation significance of flora species has been assessed using data from the following sources:

- EPBC Act, administered by DCCEEW;
- BC Act, administered by the DBCA;
- DBCA Threatened and Priority Ecological Community lists (DBCA, 2025d; 2025e). Non-legislative lists maintained by DBCA for management purposes; and
- DBCA Priority flora list (DBCA, 2025f). A non-legislative list maintained by DBCA for management purposes.

2.2. Fauna

A desktop assessment was conducted to compile and determine a desktop inventory and LOO analysis of potential Threatened, Priority or conservation significant fauna species Likely or Possible to occur within the survey area. This was undertaken by compiling a register of species recorded within the study area, using the following databases:

- PMST (DCCEEW, 2025); and
- Fauna DBCA database records (DBCA, 2025g).

The conservation significance of fauna species has been assessed using data from the following sources:

- EPBC Act, administered by DCCEEW; and
- BC Act, administered by DBCA;

2.3. Black Cockatoo Habitat

Desktop assessment for the black cockatoo habitat consisted of reviewing DBCA locational records and a range of publicly available datasets relevant to black cockatoo breeding, roosting and foraging areas. These included:

- Distribution maps for Black Cockatoos within the *Referral Guideline for 3 WA threatened black cockatoo species* DAWE (2022).
- Carnaby's Cockatoo Confirmed (DBCA, 2018a) and Unconfirmed Roost Sites (DBCA, 2018b).
- Carnaby's Cockatoo Confirmed (DBCA, 2018c) and Unconfirmed Roost Sites Buffered 6 km (DBCA, 2018d).
- Black Cockatoo Breeding Sites - Buffered (DBCA, 2019a).
- Black Cockatoo Roosting Sites – Buffered (DBCA, 2019b).

3. Methodology – Field Survey

3.1. Flora and Vegetation

The reconnaissance flora and vegetation survey aimed to verify the desktop information obtained, characterise the flora and vegetation units present within the survey area and detect possible Threatened or Priority flora and TEC/PEC. It provides a basic level of floristic and ecological data, indicating whether further surveys or environmental approvals are required.

A spring reconnaissance flora and vegetation survey, including a targeted TEC/PEC survey, was undertaken by Dr. Ellen Hickman (Senior Botanist), and Mikayla Hollyock (Ecologist) of Bio Diverse Solutions on the 27th, 28th and 30th of October 2025. The survey area was surveyed on foot using traverses, relevés and quadrats to identify and map the different vegetation units, their condition category, capture the species of flora present and to undertake more intensive targeted surveys within associated habitat for Threatened or Priority species, TEC/PEC and to record moodjar tree occurrence. A total of 35.46 km of traverses were walked, and the random meandering traverse ensured that all areas within 5-10 m of each other were covered. Refer to survey effort mapping, Figure 23 in Appendix A.

The flora was systematically recorded within the relevés and quadrats, with collections of plant specimens made where further identification was required using Dr. Ellen Hickman's Regulation 62 Flora Taking Licence FB62000526. All species of flora were recorded within the survey area, both threatened and non-threatened. This provided a measure of species richness, to be used as a basic indicator of diversity. Where a new population of Threatened or Priority flora was detected, a specimen was submitted to the Western Australian Herbarium for verification. Where traverses detected Threatened or Priority flora, GIS mapping occurred to count and map the population. More intensive survey effort was employed in areas where a Threatened or Priority flora was detected. This similarly occurred for any Declared Pests (BAM Act) and/or WoNS (IPAC, 2017). For species that were not flowering and where foliage or fruit couldn't be used for identification, potential habitat was used as an indication of LOO post-field survey.

Vegetation units within the survey area were mapped using opportunistic traverses to capture community boundaries. One relevé and six quadrats were systematically surveyed across representative vegetation units to enable analysis and categorisation (Appendix E). Selection of location of relevé and quadrat sampling sites occurred at the discretion of expertise, were placed within the centre of mapped vegetation units and away from transitions/boundaries of vegetation units. The location of relevé and quadrats aimed to capture the floristic, structural and condition diversity within vegetation units. Vegetation units were distinguished through changes in structure, dominant taxa and cover characteristics, which is described in both Muir (1977) and NVIS Level 5 (sub-association; DoEE, 2017) description methods.

An assessment was conducted during the field survey as to whether any vegetation units bore similarity to Kwongan TEC/PEC or any other TEC/PEC identified on the LOO. In vegetation units that bore similarity, quadrat analysis was undertaken to provide further ecological data for analysis against TEC/PEC criteria, consistent with guidance on targeted vegetation surveys (EPA, 2016). Quadrats consisted of non-permanent 10x10 m plots, capturing the understorey and midstorey, the quadrat area was expanded to 20x20 m to capture overstorey, as per guidelines for assessing vegetation in the Esperance Sandplains IBRA region (EPA, 2016). Specifically, six quadrats were sampled within Vegetation Unit 1: BspeWL to assess against Kwongan TEC/PEC criteria (Table 8 & 9, Section 5.6; DoE, 2015b). Condition of vegetation was assessed and mapped using the Keighery (1994) condition scale rating (Table 20, Appendix D).

Information collected within each relevé included:

- Location: coordinates of the relevé using a handheld GPS unit;
- Date and site code;
- Site description: landform, slope, soil colour and type and hydrology;
- Vegetation description: dominant and non-dominant species present within the different growth forms and percentage cover;
- Vegetation condition; and
- Photographs.

Additional information collected within each quadrat included:

- Life form, height and whether flowering and/or fruiting recorded for each species;
- Location: coordinates marked at the south-west corner; and

- Photo taken at the south-west corner.

As per the scope of this survey, all occurrences and locations of moodjar trees were recorded. Where a tree appeared solitary or in a discrete location it was marked with a point, where the trees were multi-stemmed the boundary of the clump was recorded. Additional comments on each tree were recorded where relevant.

3.2. Flora and Vegetation Survey Limitations and Constraints

An assessment of potential survey limitations was undertaken as per the EPA (2016) document *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment* (Table 1). Limitations were primarily nil-minor in nature, and did not affect the validity of results presented in the reconnaissance survey.

Table 1: Assessment of potential survey limitations.

Limitation	Significance of limitation	Comment
Experience of personnel	Nil	Dr. Ellen Hickman has over 30 years' experience surveying and documenting flora, having previously worked with DBCA (then CALM) surveying, documenting and managing the threatened flora along the south coast of WA. She completed a PhD on the role of botanical illustration in uncovering new species in contemporary science. She has particular expertise in the flora of the south coast, and has previously undertaken surveys in the vicinity of the survey area. Mikayla Hollyock started at Bio Diverse Solutions in March 2023 and since has gained valuable experience and guidance working alongside senior botanists and experienced consultants. She has a BSc in Conservation Biology and Marine Science. She has previously assisted in surveys in the vicinity of the survey area.
Scope	Nil	The scope for this survey was to undertake a reconnaissance level flora and vegetation survey, including a targeted TEC/PEC survey. The survey methodology and effort employed fulfilled this.
Survey timing	Nil	The client requested a spring reconnaissance flora and vegetation survey including a targeted TEC/PEC survey. The survey was undertaken between the 27-30 th October 2025, within the recommended optimal survey timing for the South-West Botanical Province as per the EPA guidance (2016); and aligned with typical peak flowering times for the majority of species in the area. Therefore, survey timing does not present a limitation in this survey.
Access restrictions	Nil	The dense vegetation present, hindered mobility through the survey area, however this was not considered a significant limitation as survey effort was sufficient to compensate.
Availability of contextual information	Minor	Publicly available desktop and background information was available to give a broad contextual understanding of the survey area. Database searches were conducted through DBCA (DBCA, 2025b; 2025c) providing more comprehensive context. However, it is noted that the Esperance Plains bioregion and flora species endemic to the area are understudied and available datasets may not appropriately represent the population status or presence of Priority or Threatened flora or ecological communities across the South Coast. This is considered a minor limitation.
Survey effort and extent	Nil	167 species were identified during the survey, 35.46 km of traverses, one relevé and six quadrats were completed to gain a comprehensive inventory of flora species present and vegetation characteristics in the survey area (see Figure 22, Appendix A). The survey effort employed was considered sufficient for the purposes of this survey.

Table 1 continued.

Limitation	Significance of limitation	Comment
Disturbances that may affect results	Minor	The fire history of the environs was considered a form of disturbance in the survey area. The native vegetation showed indications of being long unburnt (density of leaf litter, age and height of obligate seeders). Fire history verification post-field confirmed the last known fire that affected the area occurred in 1957. Consequences of this disturbance was observed in the field via tree death of mature obligate seeders (eg. <i>Banksia</i> spp.), with no new recruitment of seedlings. The long unburnt nature of the survey area also impacts the detection of any fire responding ephemeral species present in the soil seed bank. This disturbance was assessed as minor as the unburnt nature is an enduring characteristic of the area, not just isolated to the survey period, thus will have minimal impacts on the validity of the survey findings. During the survey period slashing of the paddock area and access tracks occurred. Survey work was conducted in these areas prior to the slashing occurring thus species in these areas were captured in the survey and this disturbance is assessed as minor. There was a number of weeds, including bridal creeper, a WoNS, detected in the survey area. This weed presence can compete with and abet degradation of native vegetation. This disturbance was assessed as minor. Other disturbances observed in the survey area include historical clearing resulting in removal/loss of native species and associated native vegetation assemblages. There is also evidence of wind scour resulting in the removal of topsoil and the exposure of tree roots. This is considered minor as these are long-term characteristics, therefore will not significantly affect survey results.
Identification issues	Minor	The survey was undertaken between the 27-30th October 2025 during the peak flowering period for many south coast flora species to maximise identification success. Of the 167 species observed, the majority contained sufficient taxonomic information for identification to a species level (such as fruit, leaf structure or flowers). One species was tentatively identified to species level due to a lack of reproductive or other distinguishing features: <i>Cyrtostylis robusta</i>. One weedy herb specimen was not able to be identified to a family level. These identification limitations were assessed to be minor as the specimens did not bear any resemblance to any of the Threatened/Priority species identified in the desktop assessment.

3.3. Basic Fauna Survey Methodology

The basic fauna survey aimed to assess and map habitat for significant fauna species within the survey area, assess the LOO for conservation significant fauna species, record the presence of conservation significant taxa, and undertake an opportunistic inventory of fauna species within the survey area. In addition, opportunistic targeted searches for individuals, census of calls, and searches for indirect indicators of presence were undertaken within suitable habitat for threatened species. It provides a basic level of ecological data, indicating whether further targeted surveys or environmental approvals are required.

The basic fauna survey and targeted black cockatoo habitat survey was undertaken by Kelly Debono (Senior Wildlife Ecologist) of Bio Diverse Solutions on the 27th, 28th, 30th and 31st of October 2025. A total of 22.49 km of traverses were walked in a manner that ensured the variety of fauna habitat units onsite were encountered and habitats and micro-niches likely to be important to conservation significant taxa were targeted. Refer to survey effort mapping, Figure 23 in Appendix A. The overall type, quantity, and quality of habitat suitable for threatened species was assessed and mapped. Survey techniques include:

- Particular emphasis was placed on habitat requirements and indicators of presence for conservation significant species identified in the desktop assessment (Table 14, Appendix B);
- Diurnal searches for signs of activity, such as scats, latrines, tracks, scratches on tree trunks, diggings, burrows, log hollows, earth burrows, active dens, incubation mounds, breeding hollows, characteristic nests or feeding debris;
- Opportunistic survey of birds and census of calls;

- Calls opportunistically recorded for birds and frogs and included a dawn survey, night survey and two dusk surveys as well as diurnal detections.
- Searches for important elements of habitat and potentially suitable habitat resources such as rock refuges, areas of deep leaf litter, active and potential breeding hollows, hollow logs, feeding resources and evidence of feeding (e.g. chewed nuts or cones), den resources, incubation mounds, termite galleries, shelter sites, wetland resources;
- All areas of suitable habitat, important habitat resources and detections of species presence were mapped; and
- Identification and mapping of Carnaby's Cockatoo (*Zanda latirostris*, EN/EN) and Baudin's Cockatoo (*Zanda baudinii*, EN/EN) foraging, roosting and breeding habitat (trees with suitable DBH), see Section 3.4 for more detailed information on the targeted black cockatoo habitat assessment methodology.

Survey techniques applied were consistent with recommendations within species recovery plans, species profiles, listing advice, referral guidelines and guidance statements, as well as survey guidelines developed by the EPA, DAWE and DEWHA. Survey methodology complied with the following formal guidelines and guidance's:

- DEWHA (2010) *Survey guidelines for Australia's threatened birds*;
- DSEWPaC (2011a) *Survey guidelines for Australia's threatened mammals*;
- DSEWPaC (2011b) *Survey guidelines for Australia's threatened reptiles*;
- DoE (2015a) *Draft referral guideline for 14 birds listed as migratory species under the EPBC Act*;
- EPA (2020) *Technical Guidance Terrestrial vertebrate fauna surveys for environmental impact assessment*; and
- DAWE (2022) *Referral guideline for 3 WA threatened black cockatoo species*.

3.4. Black Cockatoo Habitat Assessment Methodology

The aim of the targeted black cockatoo habitat assessment was to identify and assess potential breeding, foraging and roosting habitat for Carnaby's Cockatoos (*Zanda latirostris*; EN/EN) and Baudin's Cockatoos (*Zanda baudinii*; EN/EN). The DAWE (2022) referral guideline outlines advice for three black cockatoo species. Only Carnaby's Cockatoos (*Zanda latirostris*; EN/EN) modelled distribution occurs within the survey area, however database records indicate that Baudin's Cockatoo (*Zanda baudinii*; EN/EN) have previously been recorded in the 20 km study area, therefore suitable habitat was assessed based on both species habitat preferences.

3.5. Breeding Habitat

The aim of the black cockatoo breeding habitat assessment was to identify all potential nesting trees with a diameter (DBH) measured at 1.3 metres from the base of the tree, of 300 mm or greater. These trees are hereafter referred to as significant trees. The DAWE (2022) referral guideline define several categories of breeding habitat: habitat that contains known, suitable or potential nesting trees, these full definitions are presented in Appendix C. Definitions used within this report are based on the DAWE (2022) guidelines, however, include some modifications to account for the purposes of this report, and are presented in Table 2 below.

Table 2: Significant tree definitions.

Terminology	Definition
Known nesting trees	Trees (live or dead but still standing) which contain a hollow where black cockatoo breeding has been recorded or that demonstrate evidence of breeding (i.e. showing evidence of use through scratches, chew marks or feathers).
Suitable nesting trees	The definition within the guidelines (DAWE, 2022) states that for most species of trees, suitable nest hollows are only found in live trees with a DBH of >500 mm. However previous guidelines (DSEWPaC, 2012a), state that for some tree species a DBH of >300 mm is sufficient for a tree to contain suitable hollows. Black cockatoos are known to utilise dead trees and suitable hollows have been detected in trees with DBH <500 mm. Thus, for the purposes of this report suitable nesting trees are defined as trees >300 mm DBH that contain a suitably sized hollow and are either alive or dead.

Table 2 continued.

Terminology	Definition
Potential - contains hollows	Potential nesting trees in this report are defined as trees with a DBH of >300 mm, that may develop hollows suitable for use by cockatoos in the future. Potential nesting trees fall within one of the following categories:
Potential - no hollows	Potential - contains hollows: >300 mm DBH and contains hollows currently too small for black cockatoo use, includes dead trees; and Potential - no hollows: >300 mm DBH with no hollows present, includes dead trees.

Where significant trees were identified in the survey area the following information was collected:

- DGPS location (<30 cm accuracy);
- DBH measured with a diameter tape;
- A photograph of the tree;
- Crown senescence; and
- The presence/absence of hollow(s).

When hollows were present additional information was recorded, including:

- Photographs of the hollow(s);
- Hollow location (trunk or branch);
- Entrance type (chimney, side or elbow);
- Dimensions of the hollow;
- The height of the hollow from the ground; and
- Any evidence of cockatoo use (eg. chewing or scratching around the hollow entrance, activity at the base of the tree, feathers, faecal material, and feeding debris).

If hollow bearing trees were detected with a DBH <300 mm, these were also assessed as potential habitat and recorded as above. Where these trees contained a hollow of suitable size for use by cockatoos, they were treated as suitable nesting trees.

Long term studies on Carnaby's Cockatoos (*Zanda latirostris*) have shown that they utilise tree hollows ranging from 100 mm–650 mm (average 260 mm) in diameter (Saunders et al., 2014a; 2014b). Baudin's Cockatoos (*Zanda baudinii*; EN/EN) have been documented to use hollows 300–400 mm in diameter and more than 300 mm deep, especially karri, marri and wandoo (Saunders, 1974; 1979; Johnstone, 1997; Chapman, 2008; Johnstone and Kirkby, 2008). In all instances, these species also require a hollow with significant depth, and hollow entrances can be smaller than the hollow diameter. Based on the published information, hollows with an entrance diameter larger than 100x100 mm that occurred in branches or trunks with a large enough girth and depth to contain a suitable sized hollow were recorded as suitable cockatoo hollows. Smaller hollows with the potential to develop into suitable nesting hollows were also recorded as potential hollows.

3.5.1. Foraging Habitat and Feeding Activity

The DAWE guideline (2022) outlines general criteria for identifying foraging habitat for black cockatoos (Table 3) and criteria for assessing quality (Appendix C). This has been used to assess foraging habitat quality in the survey area. Fauna habitat units that do not contain known foraging species were not considered to contain foraging habitat.

Assessment of foraging habitat was based on published foraging preferences for the two target species. Carnaby's Cockatoo (*Zanda latirostris*; EN/EN) is known to prefer kwongan heathland, shrublands and woodlands dominated by Proteaceous species as foraging habitat but will feed on individual eucalypts and small stands of eucalypt woodland or forest (Table 3). Baudin's Cockatoo (*Zanda baudinii*; EN/EN) feed mostly on seeds of marri and jarrah and other eucalypts within their range (Table 3). The presence of foraging habitat, if present, was mapped in the field, and individual locations where feeding activity was observed were GPS recorded.

3.5.2. Surveys for Roosting Habitat and Activity

In this survey, the presence of cockatoo feathers and faecal material were used as indicators of roosting activity, with tall trees of any species within close proximity to water being assessed as a potential roosting tree, see Table 3. The presence of

roosting habitat suitable for Carnaby's Cockatoo (*Zanda latirostris*; EN/EN) and Baudin's Cockatoos (*Zanda baudinii*; EN/EN), if present, was mapped in the field, and individual locations where roosting activity was encountered were GPS recorded.

Table 3: Habitats used by Carnaby's Cockatoo (DAWE, 2022).

Habitat	Baudin's Cockatoo	Carnaby's Cockatoo
Breeding	Generally in woodland or forest, but may also breed in partially cleared woodland or forest, including isolated trees. Nest in hollows in live or dead trees (many eucalypt species may provide suitable hollows), particularly karri (<i>Eucalyptus diversicolor</i>), marri, jarrah, wandoo, bullich (<i>E. megacarpa</i>) and Tuart.	Generally, in woodland or forest, but also breeds in partially cleared woodland or forest, including isolated trees. Nest in hollows in live or dead trees (many eucalypt species may provide suitable hollows), particularly salmon gum, wandoo, tuart, jarrah, flooded gum (<i>E. rudis</i>), York gum, powderbark (<i>E. accedens</i>), karri and marri.
Night Roosting	Generally in or near riparian environments or other permanent water sources. Any tall trees may provide roosting habitat, but particularly jarrah, flooded gum, blackbutt, tuart and introduced eucalypts (blue gum (<i>E. globulus</i>), lemon scented gum (<i>Corymbia citriodora</i>)).	Generally, in or near riparian environments or natural and artificial permanent water sources. Any tall trees may provide roosting habitat, but particularly flat-topped yate (<i>E. occidentalis</i>), salmon gum, wandoo, marri, karri, blackbutt, tuart, introduced eucalypts and introduced pines.
Foraging and common food items	Primarily seeds of marri, rarely jarrah, in woodlands and forest, and seeds of native proteaceous plant species (for example, <i>Banksia</i> spp. (includes <i>Dryandra</i> spp.) and <i>Hakea</i> spp.). During the breeding season feed primarily on native vegetation, particularly marri (seeds, flowers, nectar and grubs). Also insects and insect larvae; pith of kangaroo paw (<i>Anigozanthos flavidus</i>); tips of <i>Pinus</i> spp.; <i>Macadamia</i> spp., almonds and pecans; seeds of apples and pears; and persimmons.	Native shrubland, kwongkan heathland and woodland on seeds, flowers and nectar of native proteaceous plant species (<i>Banksia</i> spp., <i>Hakea</i> spp. and <i>Grevillea</i> spp.), as well as <i>Callistemon</i> spp. and marri. Also seeds of introduced species including <i>Pinus</i> spp., <i>Erodium</i> spp., wild radish, canola, almonds, macadamia and pecan nuts; insects and insect larvae; occasionally apples and persimmons; and liquidambar.

3.6. Remote Cameras

Two remote camera traps were deployed in the survey area in kwongkan vegetation, one near woody debris and the other within the vegetation. Both cameras were deployed between the 27th-31st October with scent lures. No baits or edible items were used. Placement of cameras considered indication of species presence, such as scats, scratchings, feeding debris, and habitat features such as rocks and logs. The cameras were set to take consecutive pictures when triggered and set in inconspicuous places, so as to ensure safety from the general public that may enter the area.

3.7. Fauna Survey Limitations and Constraints

An assessment of potential survey limitations was undertaken as per the EPA (2020) document *Technical Guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment* (Table 4). Limitations were primarily nil-minor in nature, and did not affect the validity of results presented in the survey.

Table 4: Assessment of potential survey limitations.

Limitation	Significance of limitation	Comment
Experience of personnel	Nil	Kelly Debono has over 27 years of experience undertaking and supporting a range of wildlife research at The Australian National University and the CSIRO, as well as volunteering on long term projects monitoring native birds where she has been mentored by a number of senior scientists and ornithologists.

Table 4 continued.

Limitation	Significance of limitation	Comment
Scope	Minor	The scope was to undertake basic and targeted components, as described in the above sections, across distinct potential disturbance areas; the survey area. Restricting focus to the small patches of planned disturbance is likely to have reduced detection probability and fails to account for possible disturbance that development activities could have on wildlife in adjacent areas. However, in context to the surrounding fragmented landscape and lack of continuous habitat corridors present this limitation is assessed as minor.
Access restrictions	Nil	The dense vegetation present, hindered mobility through the survey area, however this was not considered a significant limitation as survey effort was sufficient to compensate.
Availability of contextual information	Minor	Publicly available desktop and background information was available to give a broad contextual understanding of the site. Database searches were conducted through DBCA (DBCA, 2025g) providing more comprehensive context. However, it is noted that the Esperance Plains bioregion and fauna species endemic to the area are understudied and available datasets may not appropriately represent the population status or presence of conservation significant fauna species across the South Coast. This is considered a minor limitation.
Survey effort	Nil	A total of 22.49 km of traverses were completed to gain a comprehensive inventory of fauna habitat value and fauna species present (see Figure 22, Appendix A). In addition, two camera traps were deployed between 27 th -31 st October to capture additional taxa observations. The survey effort was deemed appropriate given the scope.
Species detection probability	Nil	One dawn, one night and two dusk surveys were conducted to mitigate survey limitations related to detection of crepuscular and nocturnal species. Specifically, targeted dawn surveys for the western wheatbelt whipbird (<i>Psophodes nigrogularis</i> subsp. <i>oberon</i> ; P4), the western bristlebird (<i>Dasyornis longirostris</i> ; EN) and heath mouse (<i>Pseudomys shortridgei</i> ; VU/EN) were conducted.
	Minor	A number of species identified as possible to occur in the survey area in the LOO were considered to have low detection probability. Specifically; chuditch (<i>Dasyurus geoffroii</i> ; VU), dibbler (<i>Parantechinus apicalis</i> ; EN), malleefowl (<i>Leipoa ocellata</i> ; VU) and heath mouse. In lieu of direct species detection the availability of suitable habitat was assessed.
Species identification	Minor	<i>Zanda</i> sp. were detected in the survey area, however identification to a species level was not possible. Baudin's Cockatoo and Carnaby's Cockatoo closely resemble each other in appearance and have similar calls. Typically, the survey area is only considered within the modelled range of Carnaby's Cockatoo (DAWE, 2022), however records of Baudin's Cockatoo were identified in the desktop assessment, so both species are considered to potentially occur in the survey area. Based on the observations made and the available information, distinction and identification to the species level could not be made with confidence, thus this species detection has been recorded as <i>Zanda</i> sp. (as a collective refers to Baudin's Cockatoo and Carnaby Cockatoo) in this report. This is considered a minor limitation as both species are listed as EN under the BC Act and EPBC Act, and fall under the same EPBC protections and referral process.
	Minor	A number of taxa detected were only able to be identified to genus level due to lack of distinctive characteristics. For example, a macropod species and goanna species were detected via tracks which lacked distinctive characteristics for identification to species level. Similarly, a skink species was captured via a camera trap however insufficient resolution prevented identification to species level. This presented a minor limitation as the above taxa were not considered to resemble any conservation significant species identified in the LOO as possible to occur.

4. Results – Desktop Assessment

4.1. Threatened and Priority Flora

The desktop assessment identified a total of 86 Threatened or Priority flora species within the study area (Figure 4 and Table 12 in Appendix B). Of these species, 67 are Priority (under the BC act) and 19 are Threatened (under the EPBC act); consisting of three Critically Endangered (CR), ten Endangered (EN) and six Vulnerable (VU).

Of these species, 31 Priority or Threatened flora species was assessed as Possible to occur within the survey area in the pre survey LOO. The post survey LOO identified all 86 species as Unlikely or Highly Unlikely to occur in the survey area due to a lack of suitable habitat. See Figure 4 for mapping of previously recorded Threatened and Priority flora within the study area. No Threatened or Priority flora species have previously been recorded within the survey area.

The full desktop species list compiled from all available data (Table 12 in Appendix B) is based on observations from a broader area than the survey area and is likely to include species that would not occur in the actual survey area due to a lack of suitable habitat. The data also includes very old records and in some cases the species in question may have become locally or regionally extinct. Conservation categories for Threatened and Priority flora are presented in Table 16 and 17 in Appendix D. PMST database searches (DCCEEW, 2025) are provided in Appendix G.

4.2. Threatened and Priority Ecological Communities

As a result of the database searches conducted, two TEC/PECs were identified within the study area (Figure 4 and Table 13 in Appendix B). The TEC/PEC Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia (Kwongkan) was assessed as Known/Recorded in the survey area in the pre survey LOO, as the database records indicate previous records of it occurring in the survey area. The PEC *Regelia velutina/Melaleuca lutea* shrubland of the Fitzgerald River National Park was also identified in the desktop assessment. The PEC was assessed as Highly Unlikely to occur in the pre survey and post survey LOO due to unsuitable habitat. See Figure 4 for mapping of previously recorded TEC/PEC within the study area. Further information and details on these ecological communities are presented below.

The full desktop TEC/PEC list compiled from all available data (Table 13 in Appendix B) is based on observations from a broader area than the survey area and includes a buffer surrounding ecological communities, therefore it is likely to include ecological communities that would not occur in the actual survey area due to a lack of suitable habitat. The data also includes very old records and in some cases the vegetation is too degraded to support TEC/PECs now. Conservation categories for TEC/PECs are presented in Table 18 and 19 in Appendix D. PMST database searches (DCCEEW, 2025) are provided in Appendix G.

Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia (Kwongkan)

Kwongkan is listed as Priority 3 (P3) PEC within WA under the BC Act and as an Endangered (EN) TEC under the EPBC Act. The survey area lies within the southeast botanical province of Western Australia (Hopper and Gioia, 2004), which is the geographical range of Kwongkan. It is defined and assessed in the conservation advice as generally Kwongkan shrubland, ranging from sparse to dense, thicket-forming, where Proteaceous species form a significant component (DoE, 2015b). It is confined to the southeast botanical province of Western Australia (Hopper and Gioia, 2004) and primarily occurs on sandplains and marine plains and lower to upper slopes and ridges, as well as uplands across this region. Multiple other ecological communities are listed under the BC Act that also meet criteria of Kwongkan TEC and should be considered when assessing whether Kwongkan is present.

Kwongkan is recognised by the below key diagnostic features and minimum condition thresholds outlined in Approved Conservation Advice Guidelines (DoE, 2015b):

- 1) Occurs within the South Coastal Floristic Province (Hopper and Gioia, 2004); relating to south west phytogeographic boundaries. Includes Islands of the Recherche Archipelago.
 - 2) a) Characterised by Proteaceae species having 30% or greater cover of Proteaceae species across all layers of where shrubs occur (crowns measured as if opaque)
- OR;

b) Two or more diagnostic Proteaceae species are present that are likely to form a significant vegetative component when regenerated. The use of diagnostic species is for situations in which the cover or Proteaceae species is reduced due to recent disturbance (e.g. fire).

Condition thresholds for the ecological community are described in Table 5.

Table 5: Condition thresholds and minimum patch size analysis for Kwongkan TEC/PEC diagnostic criteria.

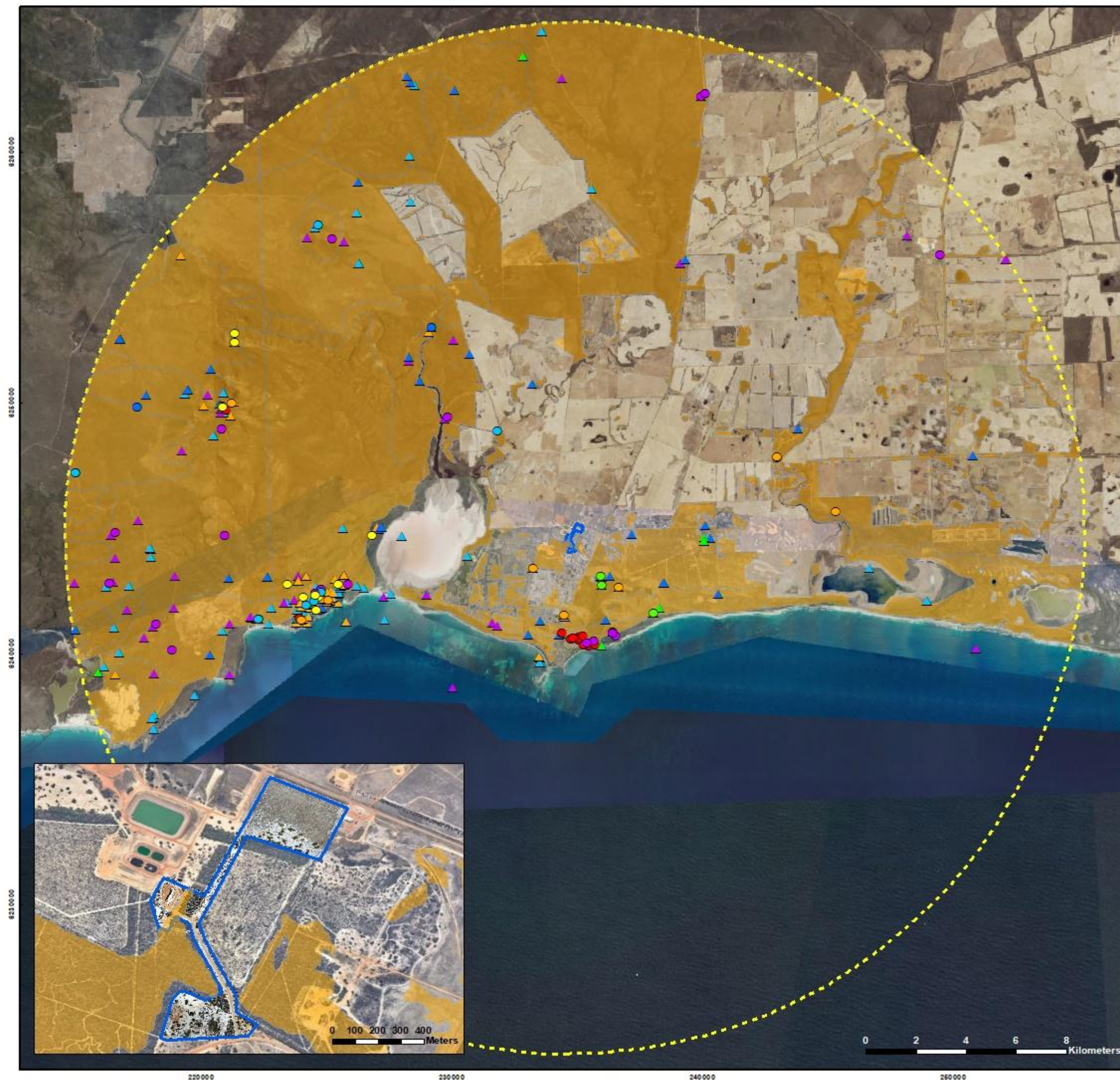
Condition category	Minimum patch size	Weeds	Dieback
High	1 ha	<30% perennial weed cover	No known Dieback infestation
Moderate	0.5 ha	<70% perennial weed cover	May be present or unknown

The approved conservation advice, available spatial mapping for the ecological community, and description above indicates that this TEC/PEC is previously Known/Recorded within the survey area, and thus is Highly Likely to be present in the survey area in this survey.

Regelia velutina/Melaleuca lutea shrubland of the Fitzgerald River National Park

Regelia velutina/Melaleuca lutea shrubland of the Fitzgerald River National Park is listed as a Priority 2 (P2) PEC under the BC Act. It is described as a shrubland dominated by members of the Myrtaceae family occurring on areas of exposed quartzite bedrock with shallow loamy sand soils on mountain ridges, large quartzite hillocks and a wave cut bench. Threats to this community include climate change/drought, Phytophthora dieback and altered fire regimes (DBCA, 2023).

The available spatial mapping for the ecological community and description above indicates that this PEC is Highly Unlikely to be present within the survey area.



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Overview Map Scale 1:3,000,000

Legend

Survey Area

Study Area (20 km)

Threatened & Priority Flora (TPFL; BC Act)

- T - CR
- T - EN
- T - VU
- P1
- P2
- P3
- P4

Threatened & Priority Flora (WAHerb; BC Act)

- T
- P1
- P2
- P3
- P4

Threatened & Priority Ecological Communities (EPBC Act, BC Act)

- , P2
- T - EN, P3

Scale
 1:150,000 @ A3
 GDA MGA 2020 Zone 51

Data Sources
 Overview Map: World Topographic Map (Cart. MDE, Garmin), OpenStreetMap contributors, and the GIS user community.
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Figure 4: Desktop Flora & Vegetation.

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STATUS FINAL	FILE HP002	DATE 10/02/2026

4.3. Fauna

The desktop assessment identified 80 conservation significant fauna species within the study area (Figure 5 and Table 14 in Appendix B). Of these, 56 are Threatened taxa under the BC Act and/or EPBC Act (CR, EN, VU), 12 are Priority listed or specially protected taxa (P4, CD or OS) and 45 are migratory species protected under international agreements (MI). Note that some species fall into multiple categories, or are classified differently based on State (BC Act) or Commonwealth (EPBC Act) legislation. No conservation significant fauna species have previously been recorded within the survey area.

Of these 80 species, pre survey LOO analysis of the desktop assessment list assessed two species as Likely, nine species as Possible, 19 species as Unlikely and 34 species as Highly Unlikely to occur in the survey areas. 16 species were not assessed as they are marine species and would not occur in the survey area. Refer to Table 14, Appendix B for more detail.

Post survey, three taxa were identified as Known/Recorded in the survey area. Including *Zanda* spp., these taxa were detected in the survey area at the time of the survey, however were unable to be identified to species level, thus for the purposes of the desktop assessment both Carnaby's Cockatoo (*Zanda latirostris*; EN/EN) and Baudin's Cockatoo (*Zanda baudinii*; EN/EN) were considered Known/Recorded* (note that * denotes this in the LOO). Post survey LOO analysis identified five species in the desktop assessment as Possible to occur, as potential habitat for these species was observed in the survey area (Table 14 in Appendix B). One additional species; quenda (*Isodon fusciventer*; P4), was also identified as Possible to occur despite not being identified in the desktop assessment. Species and their conservation status (EPBC Act/BC Act) assessed as Known/Recorded in the survey area were:

- tammar wallaby (*Notamacropus eugenii derbianus*; - /P4);
- western brush wallaby (*Notamacropus irma*; - /P4); and
- *Zanda* sp. (EN/EN).

Species and their conservation status (EPBC Act/BC Act) assessed as Possible to occur in the survey area were:

- chuditch (*Dasyurus geoffroyi*; VU/VU);
- peregrine falcon (*Falco peregrinus*; - /OS);
- malleefowl (*Leipoa ocellata*; VU/VU);
- dibbler (*Parantechinus apicalis*; EN/EN);
- heath mouse (*Pseudomys shortridgei*; EN/VU); and
- quenda (*Isodon fusciventer*; - /P4).

The full desktop species list compiled from all available data (Table 14 in Appendix B) is based on observations from a broader area than the survey area and is likely to include species that would not occur in the actual survey area due to a lack of suitable habitat. The data also includes very old records and in some cases the species in question may have become locally or regionally extinct. Conservation categories for conservation significant fauna are presented in Table 16 and 17 in Appendix D. PMST database searches (DCCEEW, 2025) are provided in Appendix G.

4.4. Black Cockatoo Habitat

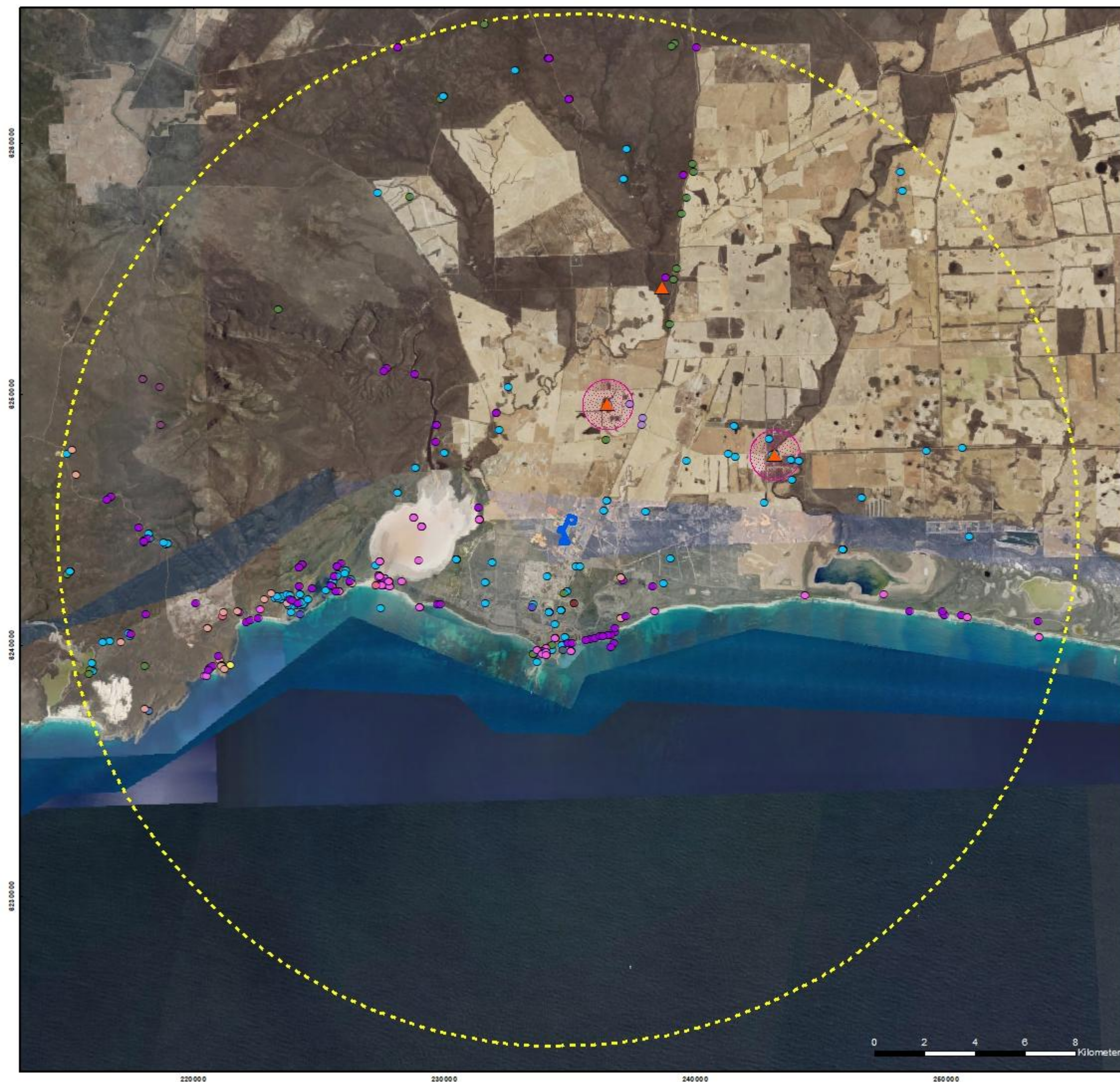
The desktop assessment identified occurrence records of Baudin's Cockatoo (*Zanda baudinii*; EN/EN) and Carnaby's Cockatoo (*Zanda latirostris*; EN/EN) within the 20 km study area; four records for Baudin's Cockatoo (*Zanda baudinii*; EN/EN) and 137 records for Carnaby's Cockatoo (*Zanda latirostris*; EN/EN) (DBCA, 2025g). There are three known Black Cockatoo roosting sites within the 20 km study area (see Figure 5), publicly available database records also contain two of those confirmed roosting sites (DBCA, 2019b).

Carnaby's Cockatoo (*Zanda latirostris*; EN/EN) has a wide-spread distribution across Western Australia, which extends from Kalbarri and Geraldton in the northwest of the state, inland to Morawa, Dowerin and Merredin and to the east of Esperance (DAWE, 2022). Carnaby's Cockatoo (*Zanda latirostris*; EN/EN) breed within the inland parts of its distribution, in areas with 300-750 mm annual average rainfall (DPaW, 2013). This breeding range has expanded in recent years to extend further south into Jarrah-Marri forests and the coastal tuart forests south of Perth (Johnstone and Storr 1998; Johnstone et al., 2011). The survey area lies within their known distribution, but does not lie within the known breeding range for the Carnaby's Cockatoo (*Zanda latirostris*; EN/EN) (Rycken, 2019; DAWE, 2022).

Baudin's Cockatoo (*Zanda baudinii*; EN/EN) is most commonly found in forested areas but is also found in the open agricultural areas within the southwest (DEC, 2008). The survey area falls outside of the known foraging and breeding range for Baudin's

Cockatoo (*Zanda baudinii*; EN/EN) (DEC, 2008; Rycken, 2019; DAWE, 2022). The breeding ecology for this species is not well known outside of the southwest forests where it is known to breed within the jarrah, marri and karri forest of the far southwest of WA.

The survey area is located outside the known modelled range for Baudin's Cockatoo (*Zanda baudinii*; EN/EN) (DAWE, 2022); however, database searches indicate 'Certainty: certain' records of Baudin's Cockatoo (*Zanda baudinii*; EN/EN) sightings within the 20 km study area (DBCA, 2025g). Thus, Carnaby's Cockatoo (*Zanda latirostris*; EN/EN) and Baudin's Cockatoo (*Zanda baudinii*; EN/EN) are considered to potentially be present within the survey area, whilst Forest Red-tailed Black Cockatoos (*Calyptorhynchus banksii naso*, VU/VU) are not considered to potentially be present.



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Overview Map Scale 1:1,500,000

Legend

- Survey Area
- Study Area (20 km)
- Black Cockatoo Roosting Sites Buffered (DBCA, 2019b)
- Black Cockatoo Known Roosting Site (DBCA, 2025g)

Threatened & Priority Fauna (EPBC Act, BC Act)

- CR, CR
- CR & MI, CR
- EN, EN
- EN & MI, EN
- EN & MI, VU
- VU & MI, EN
- VU & MI, VU
- VU, VU
- MI, CD & MI
- MI, VU
- MI, P4 & MI
- MI, MI
- , EN or P4
- , VU
- , P4
- , OS

Scale
1:150,000 @ A3
GDA MGA 2020 Zone 51

Data Sources
Overview Map: World Topographic Map (Sant, M&P), Garmin, © OpenStreetMap contributors, and the GIS user community
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Figure 5: Desktop Fauna & Black Cockatoo Habitat

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STATUS FINAL	FILE HP002	DATE 10/02/2026

5. Results – Field Survey

5.1. Flora Diversity

During the survey, 167 flora species, consisting of 40 families and 124 genera were recorded. The most commonly occurring families were Proteaceae (10.78%), Poaceae (10.78%), Myrtaceae (8.38%), Asteraceae (8.38%), Cyperaceae (7.78%) and Fabaceae (7.78%). The flora species list includes 117 native species and 50 introduced species, meaning that 70.06% of the species detected are native. Refer to Table 21, Appendix E for the full species list. The survey area is considered to have variable species richness within vegetation units (alpha diversity), incidental observations and collection of data indicate that a high level of beta diversity is also present, with change of species between vegetation units and across the landscape occurring to a high level. It is noted that species richness is the simplest measure of diversity, and only provides a broad indication of diversity within a community. No formal analysis, such as the Shannon-Weiner diversity index or Simpson's index, has been conducted to factor in abundance, structural diversity or change in species composition.

Identification was undertaken through the most relevant, current and available taxonomic literature, keys and herbarium reference specimens available (Bell, 2018; Blackall and Greive, 1974; 1978; 1980; 1981; 1982; 1988; DEC, 2011; Euclid, n.d.; French and Nicolle, 2019; George, 1996; Grieve, 1998; Hoffman et al., 2019; Hollister and Theile, 2021; Hollister et al., n.d.; Hussey et al., 2007; Maslin, 2018-; Meney and Pate, 1999; WAH, 1998-; Wheeler, 2004a; Wheeler, 2004b; Young, 2021). All resources used were the most current to knowledge. Nomenclature used through this report follows the most recent scientific names as adopted in the Census of Plants of Western Australia curated by the Western Australian Herbarium (WAH, 1998-).

During the survey a total of 173 moodjar (*Nuytsia floribunda*) tree occurrences were recorded (Figure 23, Appendix A). 65 (38%) of the trees recorded were single-stemmed, whilst 46 (27%) had ten or more stems. Majority of the trees occurred near or in previously disturbed areas; in the northern paddock, along the access roads and in the southern portion of the survey area. In the southern area there are also multiple trees whose roots are exposed, likely due to top soil erosion in bare areas. Additionally, 88 (51%) of the trees were accompanied by occurrences of WoNS bridal creeper (*Asparagus asparagoides*).

5.2. Vegetation Units

Four vegetation units were identified during the survey period, vegetation descriptions can be found in the following sections, with relevé and quadrat data presented in Appendix E. Figures 6-9 present photographs of vegetation units and Figure 10 shows the mapped extent of the vegetation units.

A total of 2.26 ha (12.08%) of cleared area was present within the survey area, occurring as hardened bare ground, roads or access tracks including and surrounding the clients existing infrastructure at the site. Minor, invasive herbs or agricultural grasses were sometimes present at the periphery of the access roads. It is also noted that historical clearing has occurred within the survey area, however sufficient remnant vegetation and regeneration is present that these areas are included within the vegetation units described.

1. Vegetation Unit 1: *Banksia speciosa* Woodland (BspeWL)

Vegetation Unit 1: BspeWL consisted of a Proteaceae dominated shrubland community characterised by *B. speciosa* (or *B. coccinea* in Q5), *Adenanthos cuneatus*, *Melaleuca striata* and *Anarthria scabra*. Six quadrats were recorded in this vegetation unit. Species richness among quadrats was variable with between nine and 31 species detected. *B. speciosa* and/or *Hakea corymbosa* death was patchy and widespread (in all quadrats excepting Q5); the death of mature obligate seeders was attributed natural age senescence and the long unburnt nature of the landscape (>50 years) resulting in a subsequent lack of new recruitment of these species. *B. speciosa* was absent in Q5, but the vegetation sampled was structurally and floristically similar and thus was included within this vegetation unit. Bridal creeper (*A. asparagoides*) was detected in Q2 and Q6. No Priority or Threatened flora were identified within this vegetation unit. This vegetation unit bore similarity to Kwongan TEC/PEC criteria, see Section 5.6 for TEC/PEC analysis. Note that the below vegetation descriptions characterise Q1, see Appendix D for vegetation descriptions of each quadrat. Refer to Figure 10 for mapped boundaries of this unit and Figure 6 for photographs

Vegetation Description (NVIS; DoEE, 2017): **M** ^*Banksia speciosa*, ^*Melaleuca striata*, *Adenanthos cuneatus*^shrub\3;c;**G** ^*Anarthria scabra*^sedge\2\i.

Vegetation Description (Muir's, 1977): *Banksia speciosa* Dense Thicket, over *Melaleuca striata* and *Adenanthos cuneatus* Low Scrub, over *Anarthria scabra* Open Tall Sedges.

Area: 2.07 ha.

Site description: Lower, middle to upper slope, with light brown to light grey sandy soil and good drainage.

Condition: Good – Very Good

Represented in Q1, Q2, Q3, Q4, Q5, Q6 (refer to Appendix D).



Figure 6: Vegetation Unit 1: BspsWL present within the survey area.

2. Vegetation Unit 2: *Acacia cyclops* Shrubland (AcycShL)

Vegetation Unit 2: AcycShL consisted of a dense shrubland of *A. cyclops*, over low shrubs and sedges. One relevé was recorded in this vegetation unit, it had relatively low diversity and was present throughout the survey area in small scattered pockets. This vegetation unit occurs in areas associated with disturbance and historical clearing, likely due to *A. cyclops* nature as an opportunistic coloniser. No Priority or Threatened flora were identified within vegetation Unit 2 and it did not bear any similarity to any TEC/PEC criteria. Refer to Figure 10 for mapped boundaries of this unit and Figure 7 for photographs

Vegetation Description (NVIS; DoEE, 2017): **M** ^*Acacia cyclops*, *Hibbertia mucronata*^shrub\4\d: **G** ^^*Caustis dioica*, *Ficinia nodosa*, *Tricostularia neesii*^^sedge\2\i.

Vegetation Description (Muir's, 1977): *Acacia cyclops* Thicket, over *Hibbertia mucronata* Open Dwarf Scrub, over *Caustis dioica*, *Ficinia nodosa*, *Tricostularia neesii* Very Open Low Sedges.

Area: 0.43 ha.

Site description: Middle slope, with light grey sandy soil and good drainage.

Condition: Good to Very Good.

Represented in R1 (refer to Appendix D).



Figure 7: Vegetation Unit 2: AcycShL present within the survey area.

3. Vegetation Unit 3: Uninterpretable – Parkland

Vegetation Unit 3: uninterpretable - parkland is sparsely vegetated as a result of historical clearing; the regenerated vegetation is characterised by the presence of scattered remnant moodjar (*N. floribunda*) trees. A number of weeds were also observed in this area; including bridal creeper (*A. asparagoides*), which was often associated with stands of moodjar; and Paterson's curse (*Echium plantagineum*) which was recorded on the border of the survey area adjacent to recent development works outside of the survey area. Vegetation Unit 3 is devoid of the large shrubs of *B. speciosa* characteristic of Vegetation Unit 1 or *A. cyclops* characteristic of Vegetation Unit 2, so could not be allocated to these vegetation units, as such it has been assigned its own classification. Due to the degradation observed no relevés or quadrats were recorded, instead the condition and characteristics of this vegetation unit were captured via traverse. No Priority or Threatened flora were identified within Vegetation Unit 3 and it did not bear any similarity to any TEC/PEC criteria. Refer to Figure 10 for mapped boundaries of this unit and Figure 8 for photographs

Area: 7.76 ha.

Site description: Lower, middle to upper slope, with white to light grey sandy soil and good drainage.

Condition: Degraded.



Figure 8: Vegetation Unit 3: uninterpretable – parkland present within the survey area.

4. Vegetation Unit 4: Paddock

Vegetation Unit 4: paddock primarily consisted of a sparse grassland, characterised by a cover of grass and agricultural weeds and scattered shrubs towards the southern edge of the paddock. This area has historically been used as a paddock and exhibited extensive degradation. No Priority or Threatened flora were identified within Vegetation Unit 4 and it did not bear any similarity to any TEC/PEC criteria. Refer to Figure 10 for mapped boundaries of this unit and Figure 9 for photographs.

Area: 6.20 ha.

Site description: Lower to middle slope, with light brown to light grey sandy soil and good drainage.

Condition: Completely Degraded.



Figure 9: Vegetation Unit 4: paddock present within the survey area.

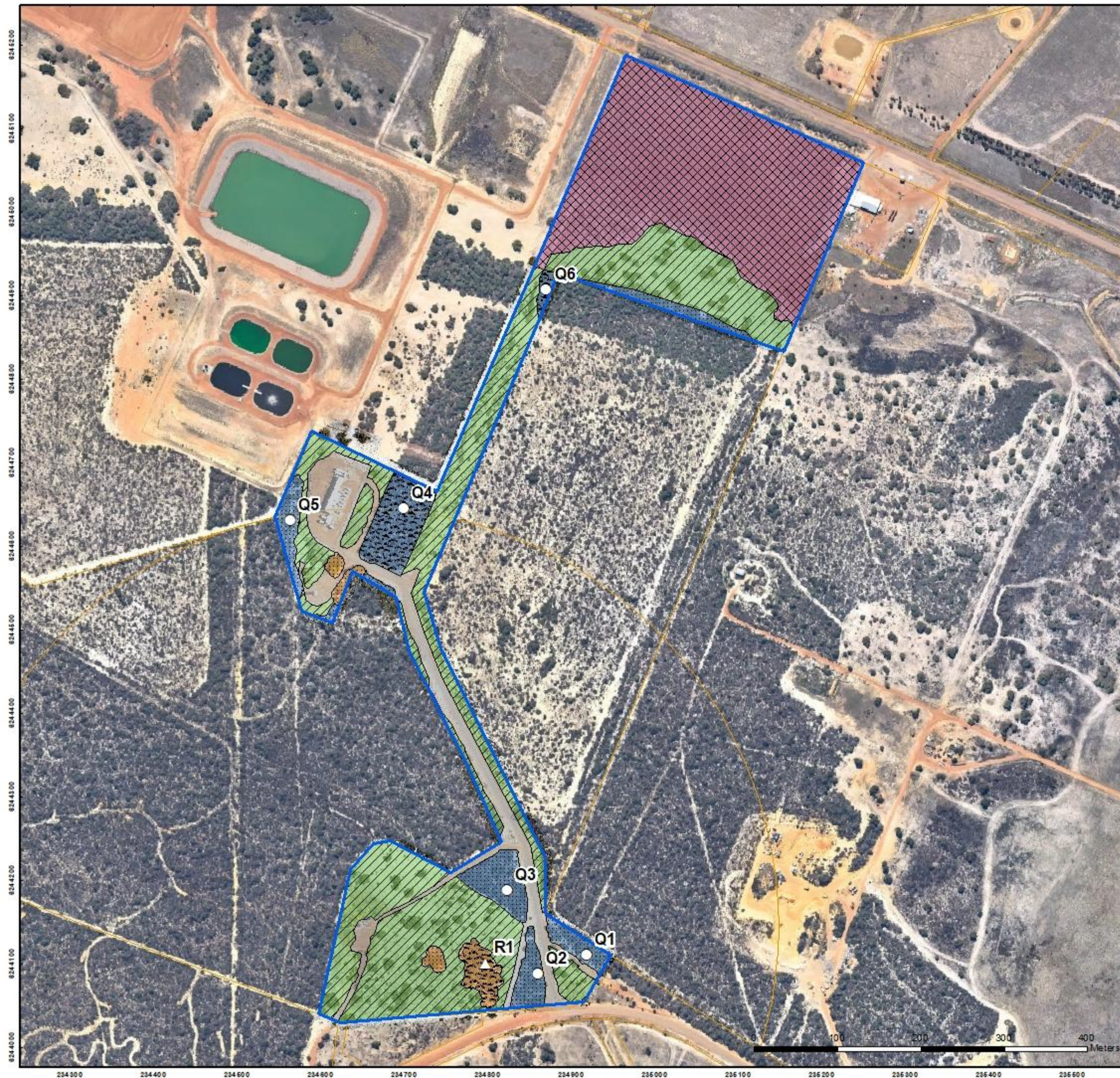
5.3. Vegetation Condition

The vegetation condition for the survey has been mapped using the condition rating scale (see Figure 10; adapted from Keighery, 1994) outlined in the EPA (2016) document *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment*.

The vegetation condition was assessed as Completely Degraded to Very Good throughout the survey area, see Table 6. The classification of Completely Degraded and Degraded in this survey is related to the high weed-burden present and historical clearing resulting in the loss of key native species in these areas. See Section 5.4 for more information on the weeds and disturbance observed in the survey area.

Table 6: Vegetation condition rating.

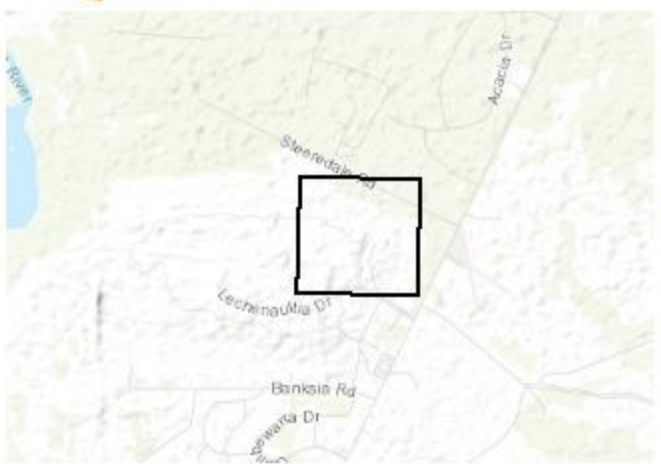
Vegetation unit	Condition rating	Area (ha)
1: <i>Banksia speciosa</i> Woodland (BspeWL)	Very Good	0.70
	Good	1.36
2: <i>Acacia cyclops</i> Shrubland (AcycShL)	Very Good	0.26
	Good	0.17
3: Uninterpretable - Parkland	Degraded	7.76
4: Paddock	Completely Degraded	6.20
Cleared		2.26
Total		18.71



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Overview Map Scale 1:100,000

Legend

Survey Area

Cadastre

Sample Sites

Quadrat

Releve

Vegetation Units

1: *Banksia speciosa* Woodland [BspeWL]

2: *Acacia cyclops* Shrubland [AcycShL]

3: Uninterpretable - Parkland

4: Paddock

Cleared

Vegetation Condition

Completely Degraded

Degraded

Good

Very Good

Scale
1:4,500 @ A3
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Data Sources
Overview Map: World Topographic Map (ESRI, HERE, Garmin, © OpenStreetMap contributors, and the GIS User community)
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Figure 10: Vegetation Units & Condition

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5.4. Weeds and disturbance

Of the 167 flora species recorded within the survey area, 50 species are introduced. The full suite of weed species recorded is listed below in Table 7, with their corresponding ratings under the Australian Weeds Strategy (IPAC, 2017), EWSWA (CALM, 1999) and the BAM Act. The ratings given under the EWSWA relate to determining the significance of a weed based on the criteria of invasiveness, impacts, potential for spread and socioeconomic and environmental values, and can be either High, Moderate, Mild, or Low, some species are awaiting ratings and are labelled 'to be advised' (TBA; CALM, 1999).

Of the weed species identified in the survey, six are rated High, 19 are Moderate, five are Mild, three are Low, four are TBA and 13 are unlisted under the EWSWA. Bridal creeper (*A. asparagoides*) and Paterson's curse (*E. plantagineum*) are classified as 'Declared Pest – s22(2)' under the BAM Act. Bridal creeper is also recognized as a WoNS, whilst Paterson's curse is considered a potential WoNS and was included in the nominated species to be assessed as part of the Australian Weeds Strategy (IPAC, 2017; CISS, 2024). The remainder of the weed species identified in the survey are considered 'Permitted – s11' or are unlisted under the BAM Act and are not listed as WoNS.

The level of weed infestation is variable throughout the survey area and contributes to the condition rating of vegetation units identified in this survey (see Section 5.3 for more information on vegetation condition). The occurrence of bridal creeper in the survey area is in some areas widespread, in general associated with disturbance; primarily found in Vegetation Unit 3: uninterpretable - parkland. Paterson's curse was found on the border of the survey area, along access tracks to development areas with evidence of recent earthworks. Multiple weed introduction vectors to the survey area are present; including historical use of the paddock for livestock, proximity to roads, access roads/tracks throughout the survey area, proximity to development works and location within an agricultural landscape. In historically cleared/disturbed areas, weed species likely outcompeted native species and hindered the regeneration of native vegetation.

Other disturbances observed in the survey area include historical clearing resulting in removal/loss of native species and associated native vegetation assemblages. In Vegetation Unit 3, there is also evidence of wind scour resulting in the removal of topsoil and the exposure of tree roots. See Figure 11 for photos of bridal creeper (*A. asparagoides*) and Paterson's curse (*E. plantagineum*) presence in the survey area.

Table 7: Weed species recorded from the survey area.

Family	Species	EWSWA (CALM, 1999)	BAM Act	WoNS (IPAC, 2017)
Aizoaceae	<i>Mesembryanthemum aitonis</i> (angled iceplant)	Moderate	Permitted - s11	-
Asparagaceae	<i>Asparagus asparagoides</i> (bridal creeper)	High	Declared Pest - s22(2) (Exempt)	X
Asphodelaceae	<i>Asphodelus fistulosus</i> (onion weed)	Mild	Permitted - s11	-
Asteraceae	<i>Arctotheca calendula</i> (cape weed)	Moderate	Permitted - s11	-
Asteraceae	<i>Cirsium vulgare</i> (spear thistle)	Moderate	Permitted - s11	-
Asteraceae	<i>Cotula australis</i> (common cotula)	-	Permitted - s11	-
Asteraceae	<i>Erigeron bonariensis</i>	-	-	-
Asteraceae	<i>Gamochaeta calviceps</i>	-	Permitted - s11	-
Asteraceae	<i>Hypochaeris glabra</i> (smooth cats-ear)	-	Permitted - s11	-
Asteraceae	<i>Sonchus asper</i> (rough sowthistle)	Moderate	Permitted - s11	-
Asteraceae	<i>Sonchus oleraceus</i> (common sowthistle)	Moderate	Permitted - s11	-
Asteraceae	<i>Vellereophyton dealbatum</i> (white cudweed)	Moderate	Permitted - s11	-
Boraginaceae	<i>Echium plantagineum</i> (Paterson's curse)	TBA	Declared Pest - s22(2)	Potential
Brassicaceae	<i>Brassica tournefortii</i> (Mediterranean turnip)	High	Permitted - s11	-
Campanulaceae	<i>Wahlenbergia capensis</i> (cape bluebell)	Moderate	Permitted - s11	-
Fabaceae	<i>Lupinus albus</i> (white lupin)	Low	Permitted - s11	-
Fabaceae	<i>Ornithopus compressus</i> (yellow serradella)	Mild	Permitted - s11	-

Table 7 continued.

Family	Species	EWSWA (CALM, 1999)	BAM Act	WoNS (IPAC, 2017)
Fabaceae	<i>Psoralea pinnata</i> (African scurfpea)	Mild	Permitted - s11	-
Fabaceae	<i>Trifolium arvense</i> (hare's foot clover)	Moderate	Permitted - s11	-
Fabaceae	<i>Trifolium glomeratum</i> (cluster clover)	Moderate	Permitted - s11	-
Geraniaceae	<i>Erodium botrys</i> (long storksbill)	Low	Permitted - s11	-
Geraniaceae	<i>Pelargonium capitatum</i> (rose pelargonium)	High	Permitted - s11	-
Iridaceae	<i>Romulea rosea</i> (Guildford grass)	TBA	Permitted - s11	-
Myrtaceae	<i>Melaleuca lanceolata</i> (Rottneest teatree)	-	Permitted - s11	-
Myrtaceae	<i>Melaleuca nesophila</i> (mindiyed)	-	Permitted - s11	-
Onagraceae	<i>Oenothera stricta</i> (common evening primrose)	Low	Permitted - s11	-
Orchidaceae	<i>Disa bracteata</i> (South African orchid)	-	-	-
Orobanchaceae	<i>Orobanche minor</i> (lesser broomrape)	Moderate	Permitted - s11	-
Poaceae	<i>Aira cupaniana</i> (silvery hairgrass)	Moderate	Permitted - s11	-
Poaceae	<i>Avena barbata</i> (bearded oat)	Moderate	Permitted - s11	-
Poaceae	<i>Briza maxima</i> (blowfly grass)	Moderate	Permitted - s11	-
Poaceae	<i>Briza minor</i> (shivery grass)	Moderate	Permitted - s11	-
Poaceae	<i>Bromus diandrus</i> (great brome)	High	Permitted - s11	-
Poaceae	<i>Bromus hordeaceus</i> (soft brome)	TBA	Permitted - s11	-
Poaceae	<i>Cenchrus clandestinus</i> (Kikuyu grass)	-	-	-
Poaceae	<i>Ehrharta calycina</i> (perennial veldt grass)	-	-	-
Poaceae	<i>Eragrostis curvula</i> (African lovegrass)	High	Permitted - s11	-
Poaceae	<i>Hordeum leporinum</i> (barley grass)	Moderate	Permitted - s11	-
Poaceae	<i>Lagurus ovatus</i> (hare's tail grass)	High	Permitted - s11	-
Poaceae	<i>Lolium rigidum</i> (Wimmera ryegrass)	Moderate	Permitted - s11	-
Poaceae	<i>Parapholis incurva</i> (coast barbgrass)	Mild	Permitted - s11	-
Poaceae	<i>Polypogon monspeliensis</i> (annual beardgrass)	Moderate	Permitted - s11	-
Poaceae	<i>Ursinia anthemoides</i> (ursinia)	Moderate	Permitted - s11	-
Poaceae	<i>Vulpia myorus</i> (rat's tail fescue)	Moderate	Permitted - s11	-
Polygonaceae	<i>Rumex acetosella</i> (sorrel)	TBA	-	-
Polygonaceae	<i>Rumex crispus</i> (curled dock)	-	Permitted - s11	-
Primulaceae	<i>Lysimachia arvensis</i> (pimpernel)	-	Permitted - s11	-
Solanaceae	<i>Solanum hoplopetalum</i> (thorny solanum)	-	Permitted - s11	-
Solanaceae	<i>Solanum laciniatum</i> (kangaroo apple)	Mild	Permitted - s11	-
Solanaceae	<i>Solanum nigrum</i> (black berry nightshade)	-	-	-

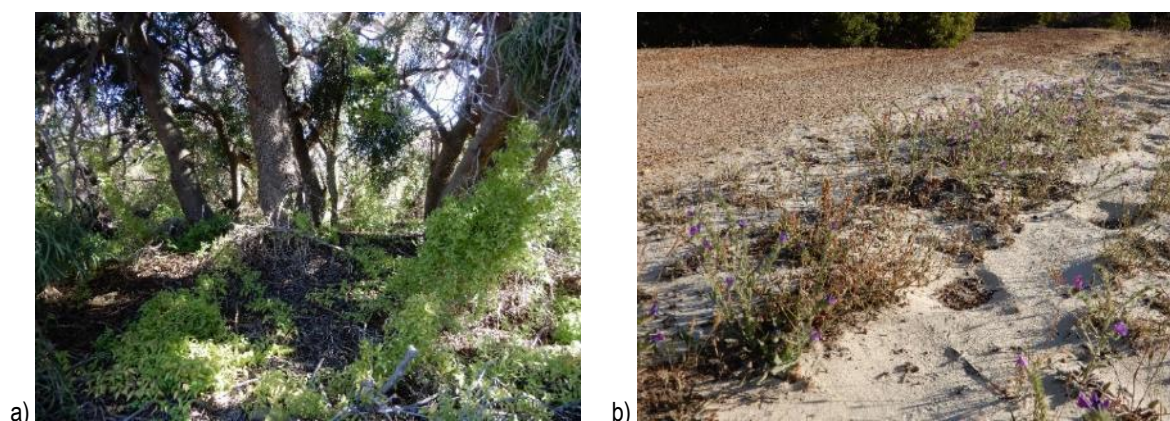


Figure 11: Weed presence in the survey area.

a) Bridal creeper; and b) Paterson's curse.

5.5. Presence of Threatened and Priority Flora

No Threatened or Priority flora species were identified within the survey area. Furthermore, none of the species observed bore resemblance to any Threatened or Priority flora identified in the desktop assessment. All of the species identified in the desktop assessment were assessed to Unlikely or Highly Unlikely to occur in the survey area in the post survey LOO.

5.6. Threatened and Priority Ecological Communities

The TEC/PEC Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia (Kwongkan) was detected in the survey area. A summary of the vegetation unit measured against the criteria for the TEC/PEC within the survey area is provided in Table 8. A *Threatened and Priority Ecological Community Occurrence Report Form* was submitted to the Communities Branch of DBCA for Kwongkan TEC/PEC on the 16/02/2026 (Appendix F).

Vegetation Unit 1: BspeWL met criteria for Kwongkan TEC/PEC, due to it containing a Proteaceae dominated shrubland that exceeded the required 30% Proteaceous cover threshold. It is noted that Kwongkan covers a wide variety of shrubland associations, which is also demonstrated in the variation of Vegetation Unit 1: BspeWL. Detailed analysis of data captured in quadrats and comparison to Kwongkan TEC/PEC criteria is presented in Table 9.

Table 8: Vegetation Units identified within the survey area that met Kwongkan TEC/PEC criteria.

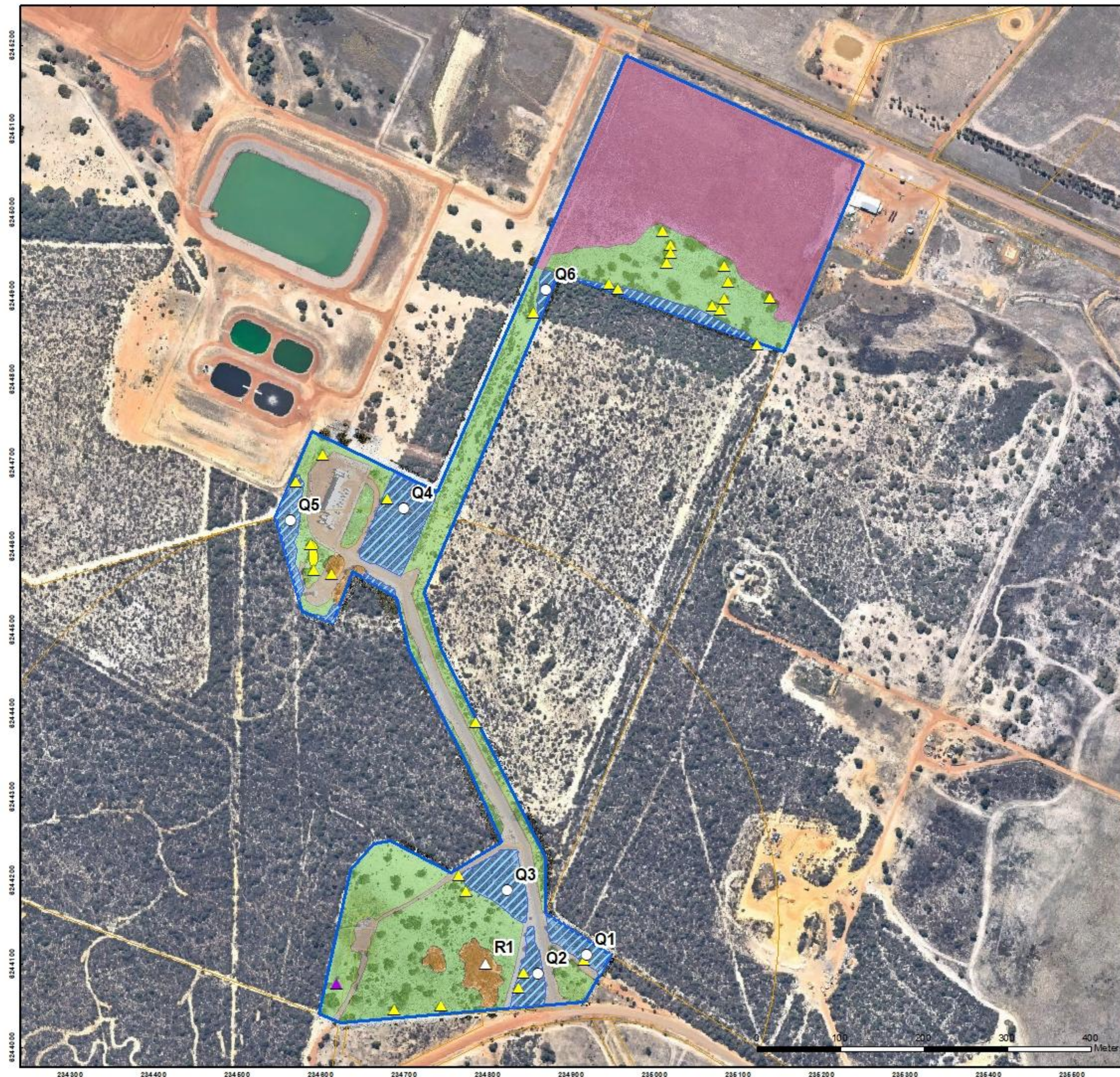
Vegetation unit	Condition	Area (ha)	Area (%)	Meet Patch Size Criteria?	Meet criteria for Kwongkan TEC/PEC
1: <i>Banksia speciosa</i> Woodland (BspeWL)	Very Good	0.70	33.98	Yes	Yes
	Good	1.36	66.02		
Total		2.06	100		

Table 9: Quadrat analysis of Vegetation Unit 1: BspeWL to determine the presence of Kwongkan TEC/PEC.

Criterion	Description	Discussion	Meet Criteria
1)	Occurs within the South Coastal Floristic Province (Hopper and Gioia, 2004).	Survey area is located within the South Coast Floristic province.	Yes All quadrats
2a)	Characterised by Proteaceae species having 30% or greater cover of Proteaceae species across all layers of where shrubs occur (crowns measured as if opaque).	All quadrats analysed had a total cover exceeding 30% of Proteaceous species. <i>B. speciosa</i> alone was sufficient to satisfy this criterion in Q1, Q2, Q3, Q4 and Q6. In Q5 <i>A. cuneatus</i> and <i>B. coccinea</i> cumulatively satisfy this cover criterion.	Yes All quadrats
2b)	Two or more diagnostic Proteaceae species are present that are likely to form a significant vegetative component when regenerated. The use of diagnostic species is for situations in which the cover or Proteaceae species is reduced due to recent disturbance (e.g., fire).	The site had not been recently burnt, which is the basis for this criterion, however it does provide an indication of keystone species present within the community. Proteaceous species make up the dominant feature of 1: BspeWL, specifically diagnostic species; <i>A. cuneatus</i> , <i>B. speciosa</i> , <i>B. coccinea</i> , and <i>H. corymbosa</i> are present throughout the vegetation unit. Therefore, two or more diagnostic Proteaceous species form a key ecological marker and are likely to be significant in the event of the ecological community regenerating following fire.	Yes All quadrats
Qualitative	Approved conservation advice guidelines – form and structure of vegetation. Qualitative description of Kwongkan as below: - Structure of shrubland, ranging from high to low and varying density; - Mallee Eucalypt often scattered and present, forming independent stratum layer; and - High floristic richness and localised endemism.	Muir's descriptions classify the vegetation into a range between Dense Thicket, Thicket to Scrub structure (see Appendix E). This range of classifications indicate a variation in density and height among the quadrats sampled, which is within the bounds of this criterion. Mallee Eucalypt species were identified in Q1 and Q3, however Proteaceous species still account for the dominant feature in these quadrats. Floristic richness ranged between 9 and 31 species identified in the quadrats.	Yes All quadrats
Qualitative	Approved conservation advice guidelines – key diagnostic species.	The diagnostic species; <i>A. cuneatus</i> , <i>B. speciosa</i> , <i>B. coccinea</i> , and <i>H. corymbosa</i> are present throughout the vegetation unit.	Yes All quadrats

Table 9 continued.

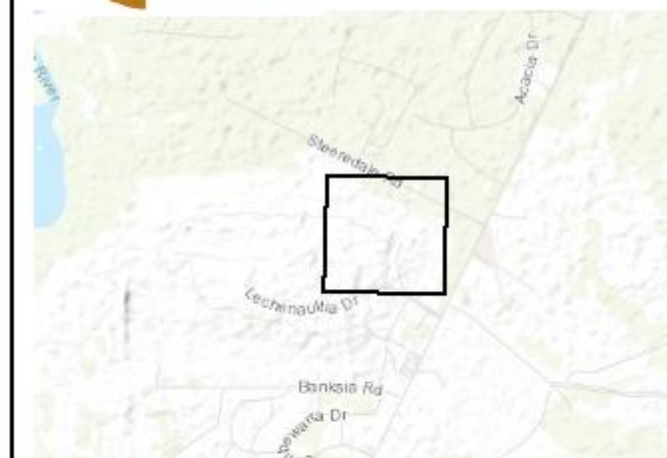
Criterion	Description	Discussion	Meet Criteria
Qualitative	Condition category for minimum patch size (Table 5, Section 4.2.)	Patch size criteria refers to the size of a discrete and continuous area of the ecological community, opposed to the vegetation within the survey area exclusively. The surrounding vegetation beyond the survey area was not formally surveyed in this survey and the complete extent of the ecological community is uncertain, however incidental observations and database searches indicate Kwongkan TEC/PEC extent across the survey and in the adjoining vegetation. 1: BspeWL occurs in multiple patches throughout the survey area, characterised by the quadrats sampled. All the patches satisfy the weed and dieback thresholds to be considered of High condition, however patch size varies. When patch size of areas of 1: BspeWL in the survey area are considered in context to adjacent and continuous vegetation: The patch characterised by Q1 adjoins to vegetation in the north (separated by a firebreak), which incidental observations and database searches indicate is Kwongkan TEC/PEC. Thus, this patch meets the thresholds to be considered within the High condition category (minimum patch size 1 ha). Q2 is functionally isolated as it is separated from other areas of TEC/PEC by degraded vegetation and bituminized roads, therefore is considered of Moderate condition category due to patch size >0.05 ha and <1 ha. Q3 adjoins to vegetation considered Kwongkan TEC/PEC to the north, therefore is of High condition category. Q4, Q5 and smaller patches of 1: BspeWL are considered to be continuous and adjoined to vegetation to the north and south, therefore are considered as High condition category. Q6 and the adjacent strip of 1: BspeWL (in Good condition) at the southern border of the paddock area, adjoin to the vegetation between them and thus are considered of High condition category. All the areas of 1: BspeWL considered in this analysis meet either Medium or High condition: the minimum threshold of the ecological community to be subject to the referral, assessment and compliance provisions of the EPBC Act (DoE, 2015b).	Yes Q1, Q3, Q4, Q5, Q6 High Q2 Moderate



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Overview Map Scale 1:100,000

Legend

Survey Area

Cadastre

Sample Sites

○ Quadrat

△ Releve

Vegetation Units

1: *Banksia speciosa* Woodland [BspeWL]

2: *Acacia cyclops* Shrubland [AcycShL]

3: Uninterpretable - Parkland

4: Paddock

Cleared

Threatened & Priority Ecological Communities (EPBC Act, BC Act)

Kwongkan (T-EN, P3)

Declared Pests (BAM Act)

△ *Echium plantagineum*

△ *Asparagus asparagoides* (WoNS; IPAC, 2017)

■ *Asparagus asparagoides* (WoNS; IPAC, 2017)

Scale
 1:4,500 @ A3
 GDA MGA 2020 Zone 51

Data Sources
 Overview Map: World Topographic Map (Cart.HERF, Garmin, © OpenStreetMap contributors, and the GIS User community)
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Figure 12: Flora & Vegetation Findings.

STATUS	QA Check	Drawn by
	BMT	MJH
FINAL	FILE	DATE
	HP002	10/02/2026

6. Fauna Survey Results

6.1. Fauna Habitat Units

Four fauna habitat units were identified during the survey, corresponding to the four vegetation units described in Section 5.2. Fauna habitat units are characterised by common habitat traits and values as potential habitat for Threatened, Priority and other conservation significant species. Approximately 2.26 ha (12.07%) of the survey area is mapped as cleared, occurring as hardened bare ground, roads or access tracks including and surrounding the clients existing infrastructure at the site. In the area surrounding the survey area there are multiple dams and perennial water sources, some habitat values identified are considered in context to these water sources. The fauna habitat units are presented below, see Figure 20 for mapped fauna habitat units and Figures 13-16 for photos.

1. Fauna Habitat Unit 1: *Banksia speciosa* Woodland (BspeWL)

Associated Vegetation Unit: 1: *Banksia speciosa* Woodland (BspeWL)

Fauna Habitat Unit 1 comprises approximately 2.07 ha (11.01%) of the survey area and is found in pockets throughout the survey area, often adjoining larger areas of remnant vegetation beyond the survey area. Habitat Unit 1 consists of a Proteaceae dominated shrubland community characterised by *B. speciosa* with an understorey of shrubs and sedges. Density and structure of this fauna habitat unit is variable through the survey area, however in general the vegetation was dense with high levels of leaf litter and vegetative debris. In more disturbed areas, such as south of the paddock, this fauna habitat unit is sparser and the complex understorey is reduced.

Habitat value for fauna species of conservation significance:

This habitat provides high-quality foraging habitat for Baudin's Cockatoo (*Zanda baudinii*) and Carnaby's Cockatoo (*Zanda latirostris*), see Section 6.5.2 for more detail on the targeted black cockatoo habitat assessment. Evidence of black cockatoos feeding on *B. speciosa* was detected and a number of suitable foraging species were observed in this vegetation.

The dense heath of this habitat unit is suitable as shelter and foraging habitat for quenda (*Isodon fusciventer*), dibbler (*Parantechinus apicalis*) and heath mouse (*Pseudomys shortridgei*). Dibblers specifically prefer a thick leaf litter layer, heath mouse (*Pseudomys shortridgei*) and dibbler (*Parantechinus apicalis*) also show a preference for long unburnt habitats, requiring habitat that is minimum 10 years post-fire (TSSC, 2016). The scrubby, dense nature of the vegetation is also suitable for quenda (*Isodon fusciventer*) nesting (DBCA, 2017c). Suitable daytime shelter habitat for tammar wallaby (*Notamacropus eugenii derbianus*) is also present in this fauna habitat unit. This fauna habitat also provides hunting habitat for peregrine falcon (*Falco peregrinus*) who predate small to medium sized birds, such as galahs (*Eolophus roseicapilla*), that are supported by this vegetation.

There is also potential low-quality habitat present for malleefowls (*Leipoa ocellata*); including abundant leaf litter and sandy substrate available for nest-mounds. Good connectivity to other areas of suitable foraging and breeding habitat is also present, notably Fitzgerald River National Park. It is likely historically this was suitable habitat, however the extensive European rabbit (*Oryctolagus cuniculus*) and fox (*Vulpes vulpes*) activity currently is a limitation to occupancy and use by this species. Low-quality habitat also exists for chuditch (*Dasyurus geoffroyi*), who are known to utilise shrublands and heaths.

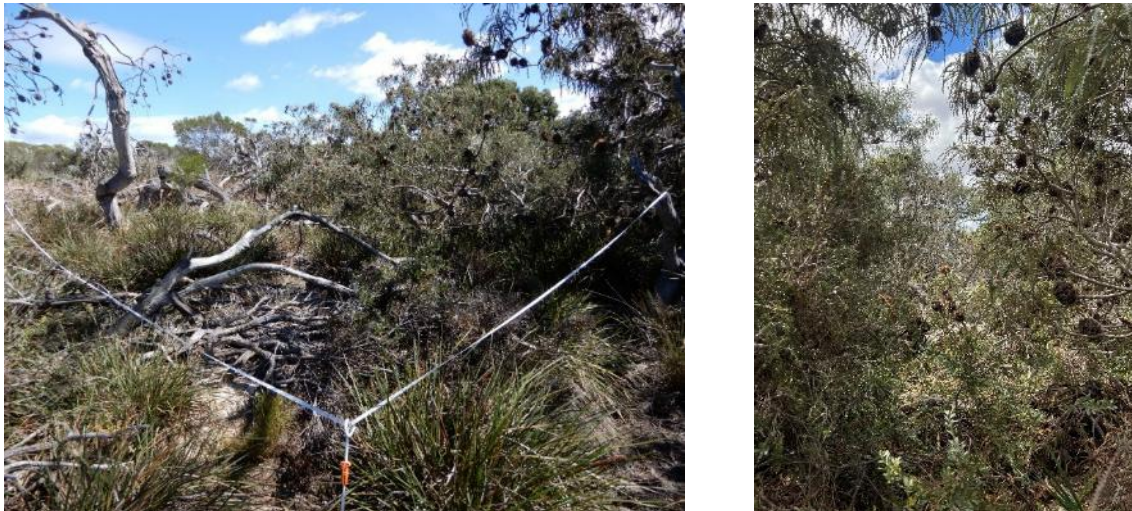


Figure 13: Fauna Habitat Unit 1: BspeWL present within the survey area.

2. Fauna Habitat Unit 2: *Acacia cyclops* Shrubland (AcycShL)

Associated Vegetation Unit: 2: *Acacia cyclops* Shrubland (AcycShL)

Fauna Habitat Unit 2 comprises approximately 0.43 ha (2.30%) of the survey area and is found in small pockets throughout the survey area. Habitat Unit 2 consists of a dense shrubland characterised by *A. cyclops* with an understorey of small shrubs and sedges. It is likely a regenerated community following clearing/disturbance.

Habitat value for fauna species of conservation significance:

This habitat may provide value as temporary shelter habitat for species such as quenda (*Isodon fusciventer*), dibbler (*Parantechinus apicalis*) and heath mouse (*Pseudomys shortridgei*) due to the shrub density, however small-scale connectivity to this habitat is low as it is bordered by parkland cleared vegetation.



Figure 14: Fauna Habitat Unit 2: AcycShL present within the survey area.

3. Fauna Habitat Unit 3: Uninterpretable – Parkland

Associated Vegetation Unit: 3: Uninterpretable – Parkland

Fauna Habitat Unit 3 comprises approximately 7.76 ha (41.48%) of the survey area and is found throughout. This habitat unit is degraded and it was likely historically parkland cleared. It currently primarily consisting of stands of moodjar (*N. floribunda*) surrounded by open sandy areas.

Habitat value for fauna species of conservation significance:

The moodjar (*N. floribunda*) stands present in this fauna habitat unit provide a foraging resource for Baudin's Cockatoo (*Zanda baudinii*; EN/EN) and Carnaby's Cockatoo (*Zanda latirostris*; EN/EN), see Section 6.5.2 for more detail on the targeted black

cockatoo habitat assessment. Evidence of *Zanda* sp. stripping live and dead timber on moodjar trees (*N. floribunda*) for grubs was detected.

This fauna habitat also provides hunting habitat for peregrine falcon (*Falco peregrinus*) who predate on small to medium sized birds, such as galahs (*Eolophus roseicapilla*), that were observed perching in this habitat.



Figure 15: Fauna Habitat Unit 3: Uninterpretable – Parkland present within the survey area.

4. Fauna Habitat Unit 4: Paddock

Associated Vegetation Unit: 4: Paddock

Fauna Habitat Unit 4 comprises approximately 6.20 ha (33.14%) of the survey area and encompasses the northern paddock. This area has been historically cleared and utilised as a paddock, this habitat is primarily grass and weed species, with some areas that show evidence of seasonal inundation.

Habitat value for fauna species of conservation significance:

This habitat provides low-quality habitat for tammar (*Notamacropus eugenii derbianus*) and western brush wallaby (*Notamacropus irma*). The open grassy areas providing foraging habitat. Additionally, seasonally wet, low-lying areas of paddock were observed, providing some areas of preferred habitat for western brush wallaby (*Notamacropus irma*).



Figure 16: Fauna Habitat Unit 4: Paddock present within the survey area.

6.2. Fauna Diversity

A total of 38 fauna taxa were recorded during the survey including 27 species of Aves, two species of Insecta, six species of Mammalia and three of Reptilia. Refer to the full fauna species list in Table 22 in Appendix E. Of the recorded species, four were non-native species; European honeybee (*Apis mellifera*), cabbage white butterfly (*Pieris rapae*), fox (*Vulpes vulpes*) and European rabbit (*Oryctolagus cuniculus*). Three were conservation significant taxa; tammar wallaby (*Notamacropus eugenii derbianus*; P4); western brush wallaby (*Notamacropus irma*; P4); and *Zanda* sp. (EN/EN; potentially Baudin's Cockatoo (*Zanda baudinii*) and/or Carnaby's Cockatoo (*Zanda latirostris*)), see Section 6.4 for more on conservation significant fauna detected.

6.3. General Fauna Observations

A high level of fox (*Vulpes vulpes*) and European rabbit (*Oryctolagus cuniculus*) activity was detected in the survey area. Extensive warrens were detected, particularly in Fauna Habitat Unit 1: BspeWL, which provided good shelter and foraging habitat, particularly for rabbits (*Oryctolagus cuniculus*). This habitat also supported many species of small birds and mammals, providing prey for foxes. The abundance of these introduced species in the survey area is likely a limiting factor for the occupancy for some native species due to predation and/or being outcompeted for habitat and food resources. See Figure 17(a-b) for photos of indications of fox and rabbit presence.

Of the fauna and fauna activity observed in the survey area the majority was associated with Fauna Habitat Unit 1: BspeWL, which is considered high-quality habitat, and the moodjar (*N. floribunda*) present in Fauna Habitat Unit 3: uninterpretable – parkland, see Figure 20. 71.05% of fauna and fauna activity indicators detected in the survey area were of the family Aves, likely due to the favourable habitat values associated with Proteaceous shrubland that were present for these taxa, and the generally higher detection rate of birds compared to other fauna families. The presence of *Banksia* spp. provides food resources for nectar feeding birds such as honeyeaters (family: Meliphagidae) and parrots. The microhabitats and leaf litter present also supports a range of invertebrates which provides additional food resources for bird species. It is also noted that generally birds are highly mobile and likely utilise a range of habitats beyond the survey area.

A number of species detections were incidentally recorded in the adjacent treatment ponds/dams present in the adjacent lot; hoary-headed grebe (*Poliiocephalus poliocephalus*), Australian shelduck (*Tadorna tadornoides*) and grey teal (*Anas gracilis*). The proximity of these perennial fresh-water sources is also a valuable resource for many bird and mammal species utilising the survey area.

A number of reptile species were detected in the survey area. The open areas associated with the sparser sections of Fauna Habitat Units 1: BspeWL, 3: uninterpretable – parkland and 4: paddock, provide ideal sun basking habitat for lizards and snakes.

Refer to Figure 17 for photographs of indicators of species presence observed during the survey and Figure 20 for mapped species detections.



Figure 17: Indicators and photos of species detected in the survey area.

a) European rabbit (*Oryctolagus cuniculus*) warren; b) fox (*Vulpes vulpes*) scat.



Figure 17 continued. c) New Holland honeyeater (*Phylidonyris novaehollandiae*) feeding on *B. speciosa*; d) galah (*Eolophus roseicapilla*) flock perching on moodjar (*N. floribunda*); and e) willy wagtail (*Rhipidura leucophrys*).

6.4. Presence of Threatened and Priority Fauna

Of the 38 fauna taxa recorded, four detected were listed as Priority or Threatened fauna: tammar wallaby (*Notamacropus eugenii derbianus*; P4); western brush wallaby (*Notamacropus irma*; P4); and *Zanda* sp. (EN/EN; potentially Baudin's Cockatoo (*Zanda baudinii*) and/or Carnaby's Cockatoo (*Zanda latirostris*)). *Fauna Report Forms* were submitted to DBCA for these species on the 16/02/2026 (Appendix F).

Zanda sp. were recorded in the survey area, detections were made via direct sightings of individuals, a flock flying overhead, calls and indications of foraging. Indications of foraging included chewed *B. speciosa* cones and stripped live and dead timber of moodjar (*N. floribunda*) for grubs, see Figure 17(c-d) and Figure 19(a-b). The presence of high-quality foraging habitat, in addition to the proximity to fresh water sources provides ideal resources for these taxa. See Section 6.5 for more details on the targeted black cockatoo habitat assessment.

Tammar wallaby (*Notamacropus eugenii derbianus*) presence was detected via tracks and scats, see Figure 18(a). Suitable habitat in the survey area for this species was associated with the dense vegetation in Fauna Habitat Unit 1: BspeWL (Figure 19c) and the open areas in Fauna Habitat Units 3 and 4. Western brush wallaby (*Notamacropus irma*) presence was detected via scats, Figure 18(b). Suitable habitat was observed for this species and was associated with the scrubby vegetation in Fauna Habitat Unit 1: BspeWL and the open, seasonally wet areas in Fauna Habitat Unit 4: paddock (Figure 19d).

Potential habitat was also observed for quenda (*Isodon fusciventer*), dibbler (*Parantechinus apicalis*) and heath mouse (*Pseudomys shortridgei*) in Fauna Habitat Unit 1: BspeWL, see Figure 19(e-f). The proximity of a perennial water source also increases the suitability of this habitat for these species in the survey area.

Refer to Figure 18 for photographs of indicators of Threatened and Priority species presence observed, Figure 19 for photographs of suitable habitat present and Figure 20 for locations of species detected during the survey.

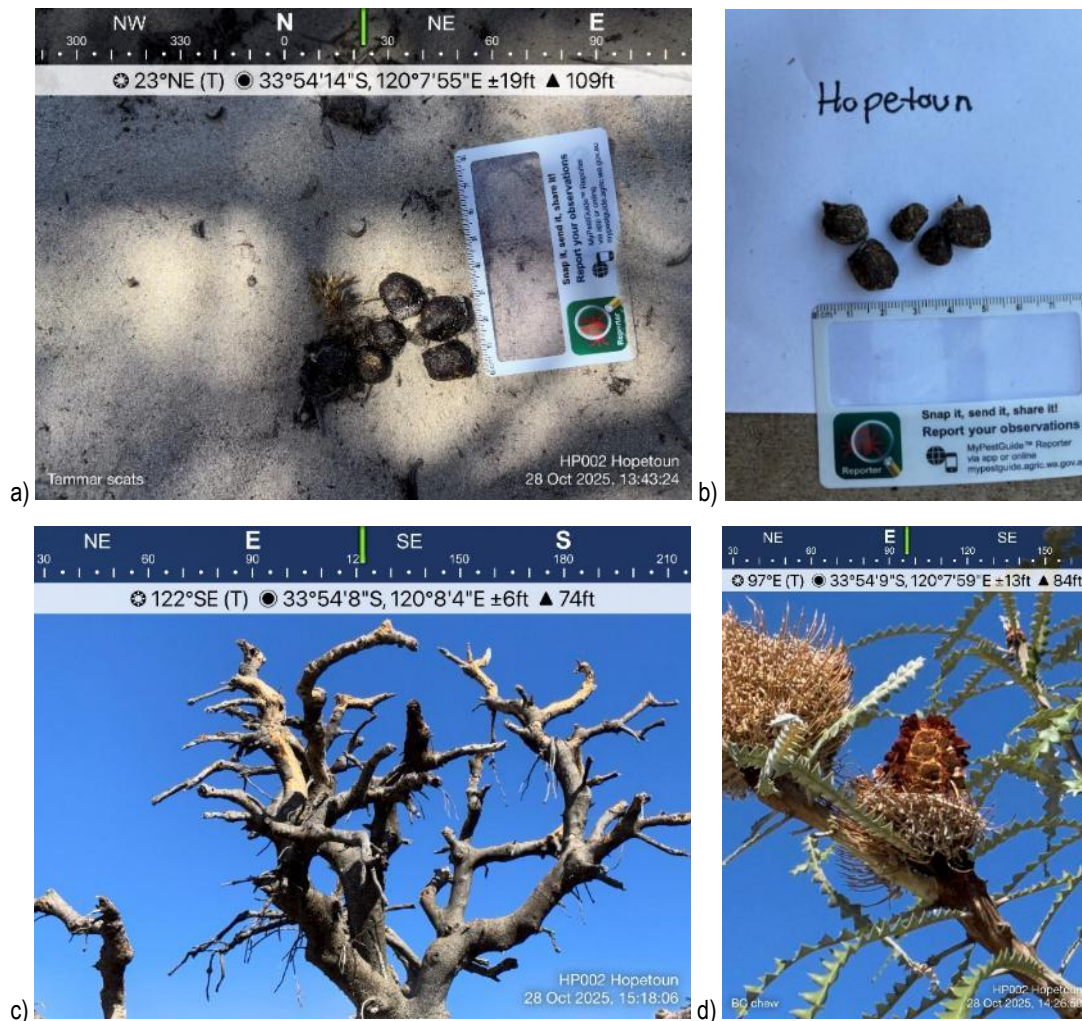


Figure 18: Threatened and Priority fauna indicators detected in the survey area.

a) Tammar wallaby (*Notamacropus eugenii derbianus*) scats; b) western brush wallaby (*Notamacropus irma*) scat; c) Black Cockatoo (*Zanda* sp.) stripped moodjar (*N. floribunda*) timber for grubs; and d) chewed *B. speciosa* cone.



Figure 19: Threatened and Priority fauna habitat observed in the survey area.

a) *Zanda* sp. foraging habitat in 1: BspeWL; b) *Zanda* sp. potential foraging resource in 3: uninterpretable – parkland.

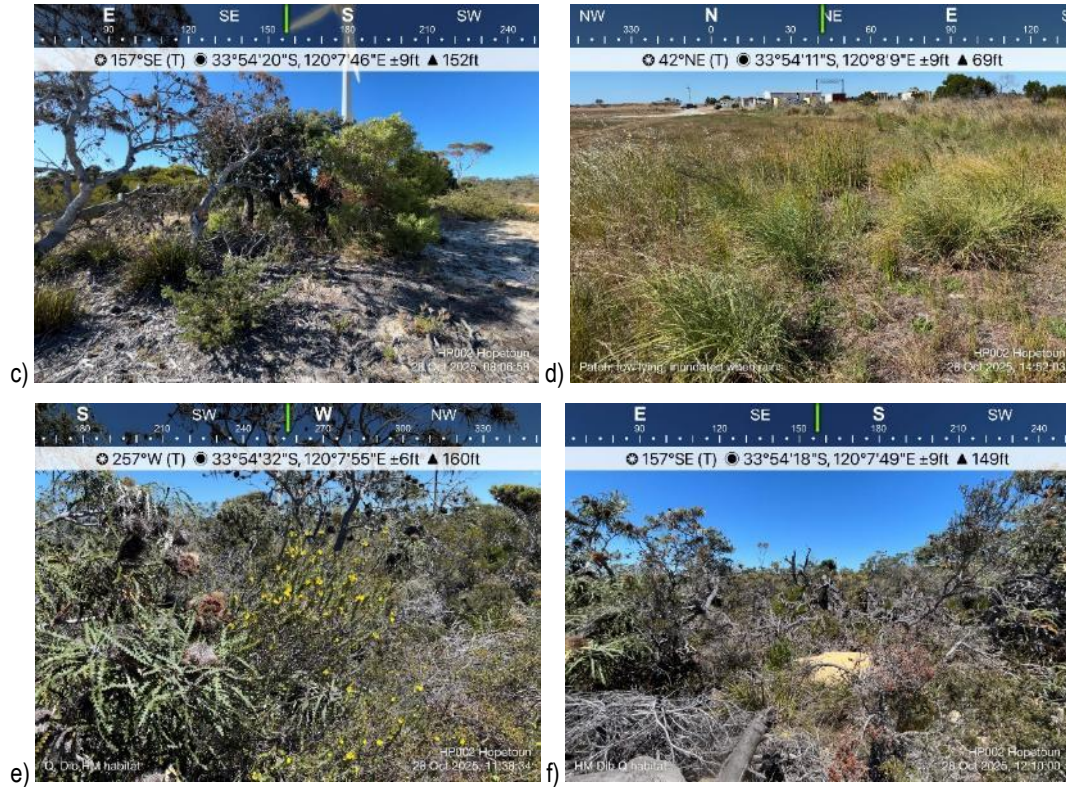
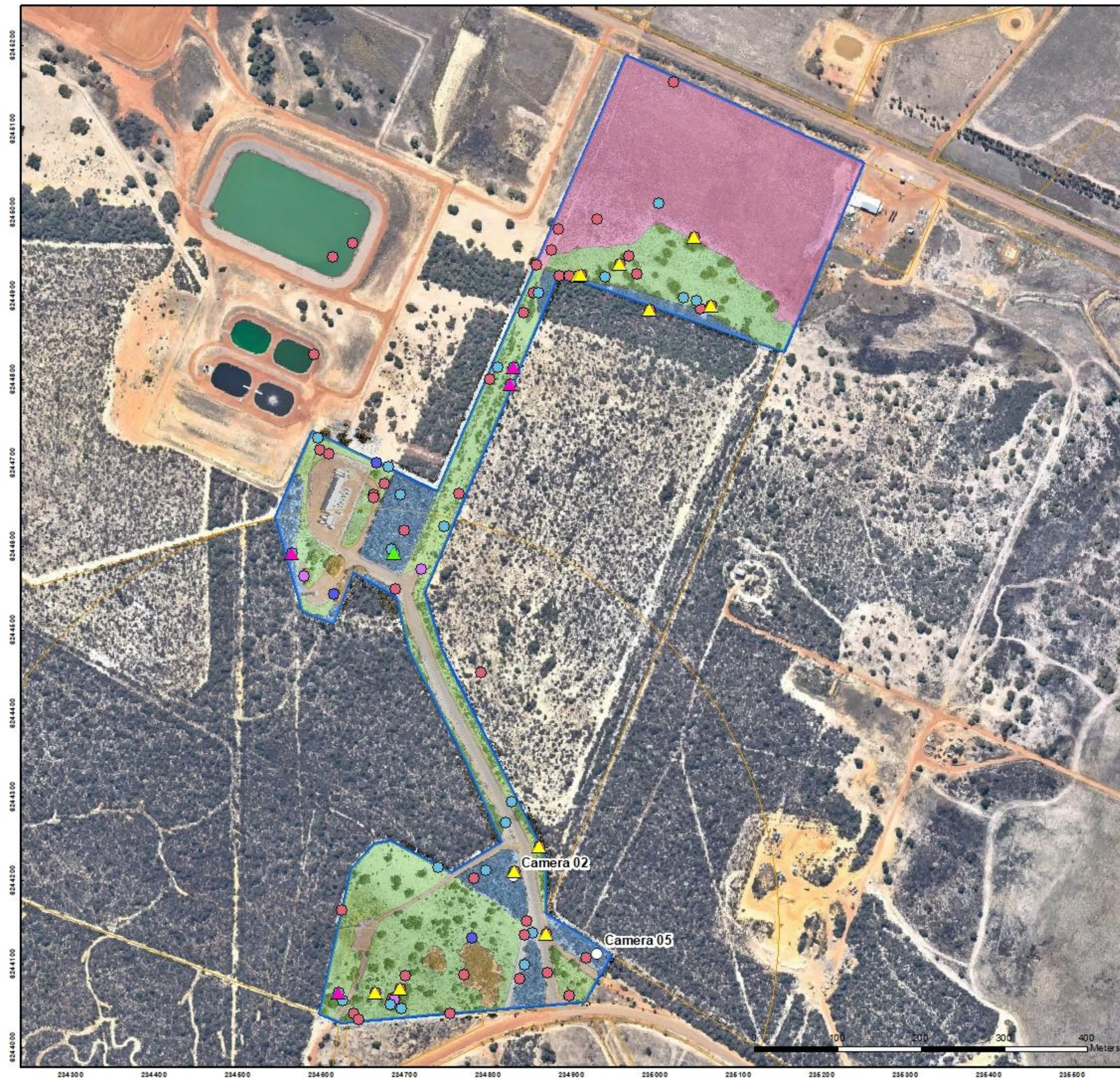


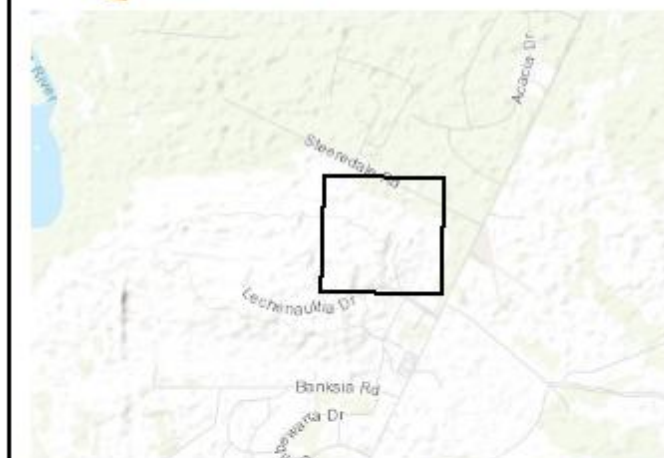
Figure 19 continued. c) potential habitat for tammar wallaby (*Notamacropus eugenii derbianus*) in 1: BspeWL; d) potential habitat for western brush wallaby (*Notamacropus irma*) in 4: paddock; e) potential habitat for quenda (*Isoodon fusciventer*); and f) potential habitat for quenda (*Isoodon fusciventer*), dibbler (*Parantechinus apicalis*) and heath mouse (*Pseudomys shortridgei*).



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Overview Map Scale 1:100,000

Legend

 Survey Area

 Cadastre

 Camera Traps

Threatened & Priority Fauna (EPBC Act, BC Act)

▲ *Zanda* sp. (EN/EN)

▲ *Notamacropus eugenii derbianus* (-IP4)

▲ *Notamacropus irma* (-IP4)

Fauna Habitat Units

 1: *Banksia speciosa* Woodland [BspeWL]

 2: *Acacia cyclops* Shrubland [AcycShL]

 3: Uninterpretable - Parkland

 4: Paddock

 Cleared

Fauna Observed (family)

● Aves

● Insecta

● Mammalia

● Reptilia

Scale
1:4,500 @ A3
GDA MGA 2020 Zone 51

Data Sources
Overview Map: World Topographic Map (Cart.HREF, Garmin, © OpenStreetMap contributors, and the GIS User community)
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Figure 20: Fauna Habitat and Threatened & Priority Fauna

STATUS	QA Check	Drawn by
	BMT	MJH
FINAL	FILE	DATE
	HP002	10/02/2026

6.5. Black Cockatoo Habitat

6.5.1. Breeding Habitat

No trees of suitable species to form hollows for use by Baudin's Cockatoo (*Zanda baudinii*) or Carnaby's Cockatoo (*Zanda latirostris*) were present, thus no significant trees were identified within the survey area. It should be noted that the survey area does not lie within the modelled breeding range for Baudin's Cockatoo (*Zanda baudinii*) and Carnaby's Cockatoo (DAWE, 2022). However, surveys for significant trees are conducted as per Commonwealth guidelines for targeted black cockatoo habitat assessment (DAWE, 2022). The available habitat is not considered suitable breeding habitat for Baudin's Cockatoo (*Zanda baudinii*) or Carnaby's Cockatoo.

6.5.2. Foraging and Roosting Habitat

Evidence of foraging was observed within the survey area during the survey period. Indications of foraging consisted of chewed *B. speciosa* cones and stripped live and dead timber of moodjar (*N. floribunda*), indicating black cockatoo foraging for grubs, see Section 6.4 for more information and photos. Foraging habitat was primarily found in Fauna Habitat Unit 1: BspeWL, whilst the moodjar (*N. floribunda*) trees in Fauna Habitat Unit 3: uninterpretable – parkland also offered a valuable feeding resource.

Fauna Habitat unit 1: BspeWL contained known documented foraging species for Baudin's Cockatoo (*Zanda baudinii*) and Carnaby's Cockatoo (*Zanda latirostris*) such as *B. coccinea*, *B. speciosa*, *Eucalyptus pleurocarpa* and *Lambertia inermis* (DAWE, 2022; DPaW, 2013; Groom, 2011). The DAWE (2022) foraging habitat assessment is conducted on areas greater than 1 ha and that contain known foraging species, 1: BspeWL is considered the available foraging habitat in the survey area and is approximately 2.06 ha (>1 ha; Table 10) and therefore the tool can be applied. The foraging habitat identified scored a total of 8 under the DAWE (2022) scoring tool, which is considered to be 'High Quality' as per the DAWE (2022) guidelines, see Table 9 for scoring and justification for habitat in the survey area and Table 15 in Appendix C for the full scoring template (DAWE, 2022). See Figure 21 for mapped foraging habitat.

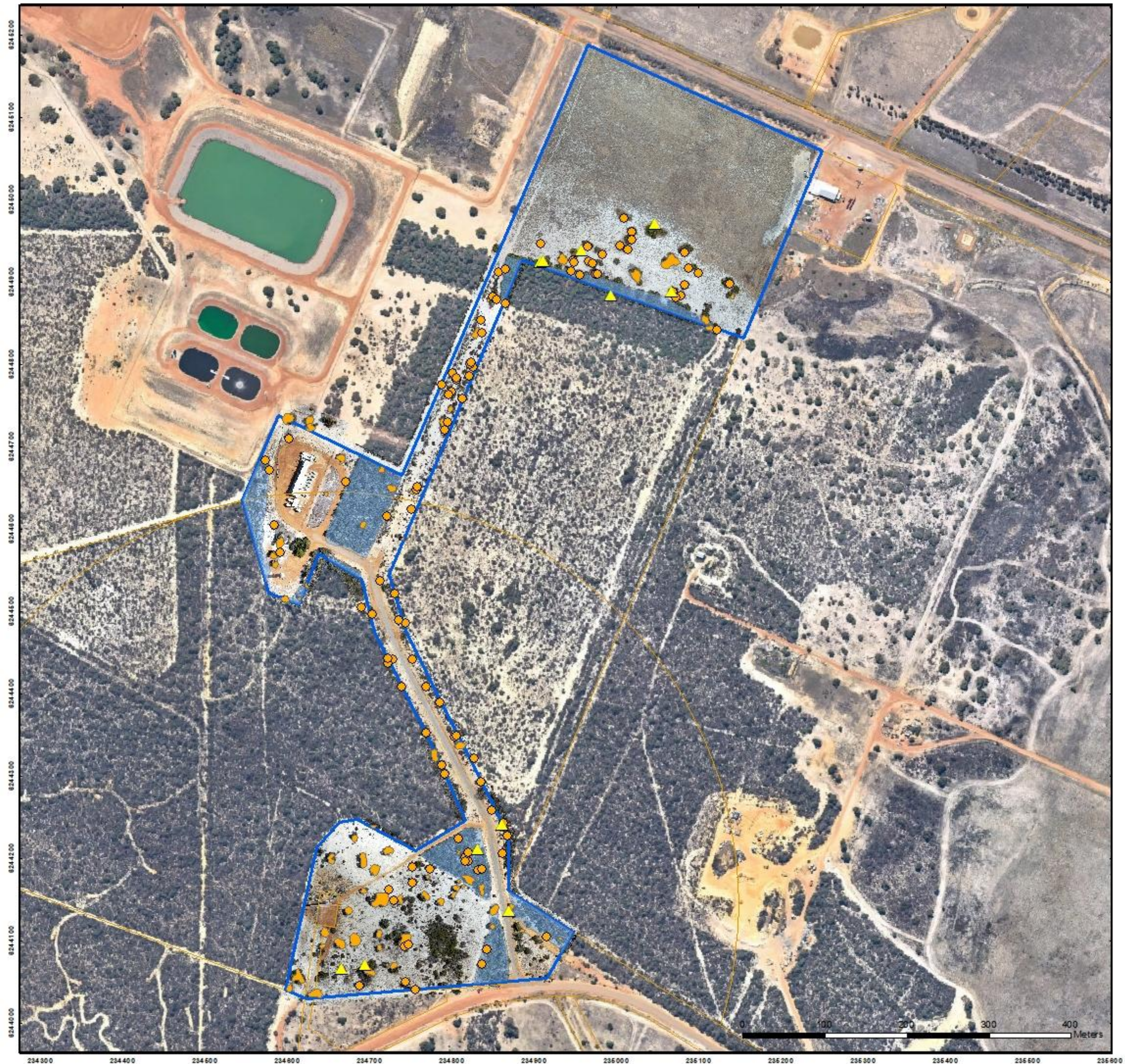
There were no appropriate roosting trees for Baudin's Cockatoo (*Zanda baudinii*) and Carnaby's Cockatoo (*Zanda latirostris*) in the survey area. The available habitat is not considered suitable roosting habitat.

Table 10: Scoring tool for foraging habitat in the survey area.

Score	Baudin's Cockatoo	Carnaby's Cockatoo	Justification
Initial score – Baudin's Cockatoo Start at a score of 10 if your site is native eucalypt woodlands and forest, and proteaceous woodland and heath, particularly marri, within the range of the species, including along roadsides and parkland cleared areas. Can include planted vegetation. This tool only applies to sites equal to or larger than 1 hectare in size Initial score – Carnaby's Cockatoo Start at a score of 10 if your site is native shrubland, kwonkan heathland or woodland, dominated by proteaceous plant species such as <i>Banksia</i> spp. (including <i>Dryandra</i> spp.), <i>Hakea</i> spp. and <i>Grevillea</i> spp., as well as native eucalypt woodland and forest that contains foraging species, within the range of the species, including along roadsides and parkland cleared areas. Also includes planted native vegetation. This tool only applies to sites equal to or larger than 1 hectare in size.	10	10	Site consists of Kwongkan Proteaceous woodland and heath that contains suitable foraging species for Baudin's Cockatoo and Carnaby's Cockatoo. Overall potential foraging habitat exceeds 1 ha in area.
Foraging potential Subtract 2 from your score if there is no evidence of feeding debris on your site.	0	0	Evidence of foraging debris in the survey area.
Connectivity Subtract 2 from your score if you have evidence to conclude that there is no other foraging habitat within 12 km of your site.	0	0	Database searches (DBCA, 2025g) provide evidence of Carnaby's foraging within 12 km of the survey area.

Table 10 continued.

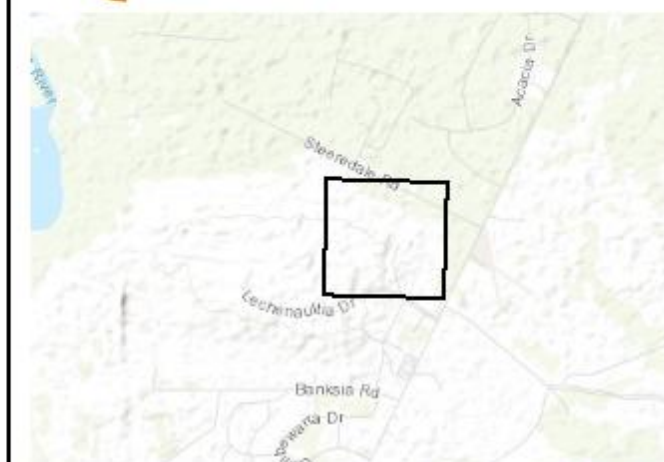
Score	Baudin's Cockatoo	Carnaby's Cockatoo	Justification
Proximity to breeding Subtract 2 if you have evidence to conclude that your site is more than 12 km from breeding habitat.	-2	-2	Survey area is not within the modelled breeding range for Carnaby's Cockatoo or Baudin's Cockatoo (DAWE, 2022).
Proximity to roosting Subtract 1 if you have evidence to conclude that your site is more than 20 km from a known night roosting habitat.	0	0	Database searches (DBCA, 2025g) provide records of three known Black Cockatoo roosting sites within 20 km of the survey area.
Impact from significant plant disease Subtract 1 if your site has disease present (e.g. <i>Phytophthora</i> spp. or Marri canker) and the disease is affecting more than 50% of the preferred food plants present.	0	0	No evidence of plant disease observed.
Final score	8	8	



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Legend

- Survey Area
- Cadastre
- ▲ *Zanda* sp. (EN/EN)
- 1: *Banksia speciosa* Woodland [BspeWL]
- *Nuytsia floribunda*
- Nuytsia floribunda*

Scale
 1:4,500 @ A3
 GDA MGA 2020 Zone 51

Data Sources:
 Overview Map: World Topographic Map (SRTM30 PLUS, Garmin), © OpenStreetMap contributors, and the GIS User community
 Cadastre, Roads and Aerial Imagery Data © 2025 Western Australian Land Information Authority (WALIA)
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Figure 21: Black Cockatoo Habitat

	QA Check BMT	Drawn by MJH
STATUS FINAL	FILE HP002	DATE 04/02/2026

7. Discussion

7.1. Vegetation, Threatened and Priority Flora and Ecological Communities

The scope for this component of the survey was to provide the client with findings regarding flora and vegetation following a desktop assessment investigation and field survey of the survey area, including conducting a LOO assessment, characterising and evaluating the flora and vegetation units present and detecting potential Threatened or Priority flora and ecological communities within the survey area.

The field survey detected 167 flora species, 117 native and 50 introduced species. No Threatened or Priority flora species were detected and the 86 Threatened or Priority species identified in the desktop assessment were evaluated as Unlikely or Highly Unlikely to occur following the field survey. Four vegetation units were identified in the survey; 1: *Banksia speciosa* Woodland (BspeWL), 2: *Acacia cyclops* Shrubland (AcycShL), 3: uninterpretable – parkland, and 4: paddock. The vegetation ranged from Good and Very Good in 1: BspeWL and 2: AcycShL, to Degraded in 3: uninterpretable - parkland and Completely Degraded in 4: paddock. Condition in the survey area aligned with disturbance and vegetation assemblages' responses following these events. Vegetation Unit 1: BspeWL presented as an ecologically intact vegetation unit with a floristically complex under and mid-storey. Vegetation Unit 2: AcycShL showed some evidence of disturbance due to a reduced understorey, being dominated by *A. cyclops*, an opportunistic coloniser, and occurring in small isolated pockets. Vegetation Unit 3: uninterpretable – parkland presented as remnant stands of moodjar (*N. floribunda*) and sparse shrubs with some understorey characteristics, however lacked *B. speciosa* or *A. cyclops* and so could not be allocated to 1: BspeWL or 2: AcycShL, it is likely this vegetation unit represents regenerating vegetation following clearing. Vegetation Unit 4: paddock existed in the north of the survey area, this area was historically cleared and primarily consisted of grasses and agricultural weeds.

Vegetation Unit 1: BspeWL resembled TEC/PEC Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia (Kwongkan; EN/P3). Quadrat analysis of this vegetation unit against TEC/PEC criteria confirmed that approximately 2.06 ha of Kwongkan TEC/PEC was present within the survey area. One other PEC was identified in the desktop assessment; *Regelia velutina*/*Melaleuca lutea* shrubland of the Fitzgerald River National Park; and was assessed as Highly Unlikely to occur following the field survey.

A total of 50 weed species were detected in the survey including bridal creeper (*A. asparagoides*) and Paterson's curse (*E. plantagineum*), species listed as 'Declared Pest – s22(2)' under the BAM Act. Bridal creeper is also recognized as a WoNS, whilst Paterson's curse is considered a potential WoNS and was included in the nominated species to be assessed as part of the Australian Weeds Strategy (IPAC, 2017; CISS, 2024). Bridal creeper was most prevalent in Vegetation Unit 3: uninterpretable – parkland.

During the survey a total of 173 moodjar (*N. floribunda*) tree occurrences were recorded (Figure 23, Appendix A). 65 (38%) of the trees recorded were single-stemmed, whilst 46 (27%) had ten or more stems. Majority of the trees occurred near or in previously disturbed areas; in the northern paddock, along the access roads and in the southern portion of the survey area. In the southern area there are also multiple trees whose roots are exposed, likely due to top soil erosion in bare areas. Additionally, 88 (51%) of the trees were accompanied by occurrences of WoNS bridal creeper (*A. asparagoides*).

7.2. Basic Fauna Survey

The scope for this component of the survey was to provide the client with findings regarding fauna habitat and fauna presence following a desktop assessment investigation and field survey of the survey area, including conducting a LOO assessment, characterising and evaluating the fauna habitat values present and detecting potential habitat for conservation significant fauna species and/or their presence within the survey area

Four fauna habitat units were identified in the survey, which correlated to the vegetation units described in the vegetation survey; 1: *Banksia speciosa* Woodland (BspeWL), 2: *Acacia cyclops* Shrubland (AcycShL), 3: uninterpretable – parkland, and 4: paddock. The field survey detected 38 fauna taxa of which three were conservation significant taxa: tammar wallaby (*Notamacropus eugenii derbianus*; - /P4); western brush wallaby (*Notamacropus irma*; - /P4); and *Zanda* sp. (EN/EN; as a collective of Baudin's Cockatoo (*Zanda baudinii*) and/or Carnaby's Cockatoo (*Zanda latirostris*)). As both Baudin's Cockatoo (*Zanda baudinii*; EN/EN) and Carnaby's Cockatoo (*Zanda latirostris*; EN/EN) were considered possible to occur in the survey area, it was not possible to differentiate between them with confidence in this survey. This is considered a minor limitation of the survey, however identification to genus level was considered sufficient as both species are listed as Endangered under

the BC Act and EPBC Act, as such they fall underneath the same EPBC protections and referral guidelines (DAWE, 2022). 80 conservation significant species were identified in the desktop assessment of which five were considered Possible to occur post field survey.

The majority of the fauna habitat values observed in the survey area were associated with Fauna Habitat Unit 1: BspeWL and the habitat it provided. The vegetation characteristics, feed species and long unburnt nature of Fauna Habitat Unit 1 provided suitable habitat for conservation significant species including: tammar wallaby (*Notamacropus eugenii derbianus*; - /P4); western brush wallaby (*Notamacropus irma*; - /P4); Baudin's Cockatoo (*Zanda baudinii*; EN/EN); Carnaby's Cockatoo (*Zanda latirostris*; EN/EN); dibbler (*Parantechinus apicalis*; EN/EN); quenda (*Isoodon fusciventer*; - /P4); heath mouse (*Pseudomys shortridgei*; EN/VU); peregrine falcon (*Falco peregrinus*; - /OS); malleefowl (*Leipoa ocellata*; VU/VU); and chuditch (*Dasyurus geoffroii*; VU/VU). Additional habitat values were identified in Fauna Habitat Unit 3: uninterpretable – parkland for *Zanda* sp. and peregrine falcon. Low quality habitat for tammar wallaby and western brush wallaby was also detected in Fauna Habitat Unit 4: paddock.

Detection of tammar wallaby (*Notamacropus eugenii derbianus*; - /P4) and western brush wallaby (*Notamacropus irma*; - /P4) was achieved via scats. *Zanda* sp. was detected via direct sightings of individuals, a flock flying overhead, calls and indications of foraging. Indications of foraging included chewed *B. speciosa* cones and stripped live and dead timber of moodjar (*N. floribunda*) for grubs.

In the survey area high levels of fox (*Vulpes vulpes*) and European rabbit (*Oryctolagus cuniculus*) activity was observed. Including extensive warrens, diggings and scats. The abundance of these introduced species in the survey area is likely a limiting factor for the occupancy for some native species due to predation and/or being outcompeted for habitat and food resources.

7.3. Targeted Black Cockatoo Habitat Assessment

The scope for this component of the survey was to provide the client with findings regarding the presence and quality of breeding, foraging and roosting habitat for Baudin's Cockatoo (*Zanda baudinii*) and Carnaby's Cockatoo (*Zanda latirostris*) in the survey area.

The survey area is outside of the modelled breeding range for both species and no significant trees were identified, therefore the available habitat is not considered suitable breeding habitat for Baudin's Cockatoo (*Zanda baudinii*) or Carnaby's Cockatoo. Furthermore, there were no appropriate roosting trees for Baudin's Cockatoo (*Zanda baudinii*) or Carnaby's Cockatoo (*Zanda latirostris*) in the survey area, thus the available habitat is not considered suitable night roosting habitat.

Evidence of foraging was observed in this survey via chewed *B. speciosa* cones and the stripping of live and dead timber of moodjar (*N. floribunda*) trees for grubs. Fauna Habitat Unit 1: BspeWL contained known foraging species including *B. coccinea*, *B. speciosa*, *E. pleurocarpa* and *L. inermis* (DAWE, 2022; DPaW, 2013; Groom, 2011). Fauna Habitat Unit 1 scored an 8 against the DAWE (2022) foraging quality scoring tool for both Black Cockatoo species. As per the guidelines, a score of 8 is considered High Quality foraging habitat and loss of greater than 1 ha of such habitat is likely to require a referral to the minister (DAWE, 2022).

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9. Appendices

Appendix A – Supplementary Maps

Appendix B – Desktop Assessment LOO Analysis

Appendix C – Black Cockatoo Foraging Quality Scoring Tool and DAWE (2022) Definitions

Appendix D – Conservation Status Definitions and Condition

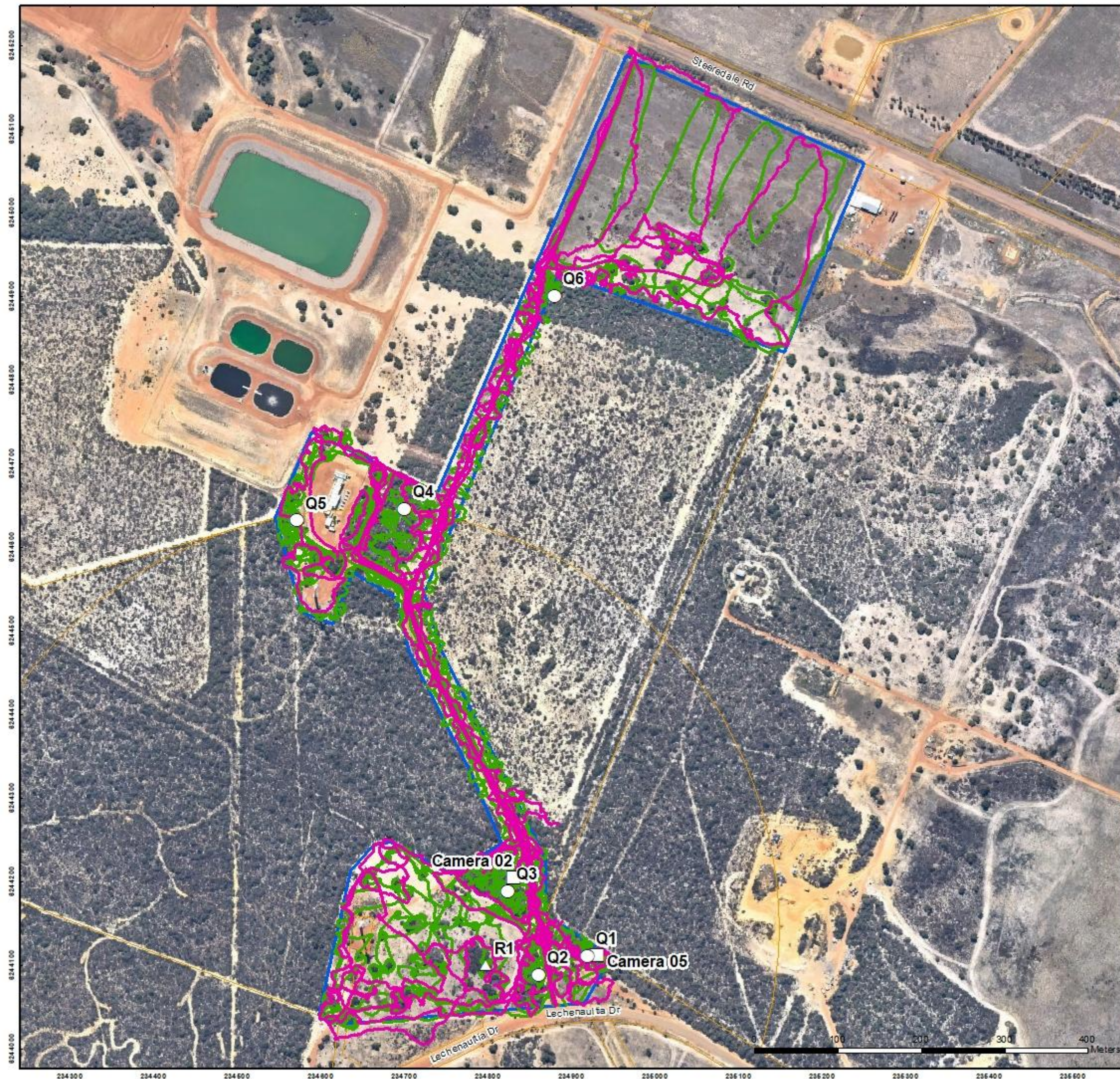
Appendix E – Species Lists, Relevé and Quadrat Data

Appendix F – Threatened and Priority Reporting Form and TEC Occurrence Form

Appendix G - EPBC Act PMST reports

Appendix A

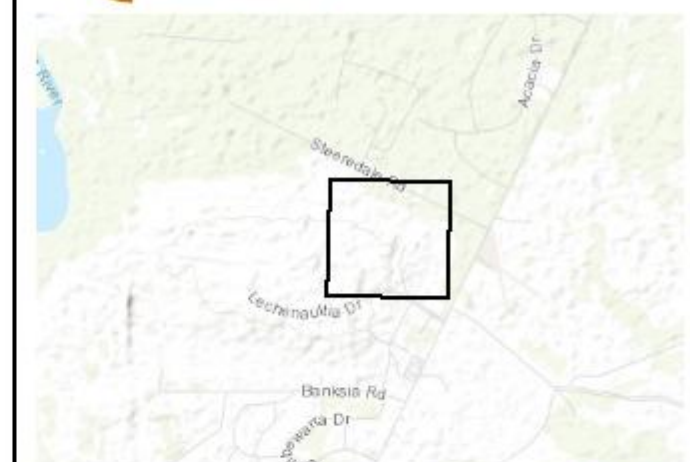
Supplementary Maps



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Overview Map Scale 1:100,000

Legend

Survey Area

Cadastre

Survey Effort

— Basic Fauna & Targeted Black Cockatoo Habitat Assessment

— Flora, Vegetation & Targeted TEC/PEC survey

Sample Sites

Camera trap

Quadrat

▲ Relieve

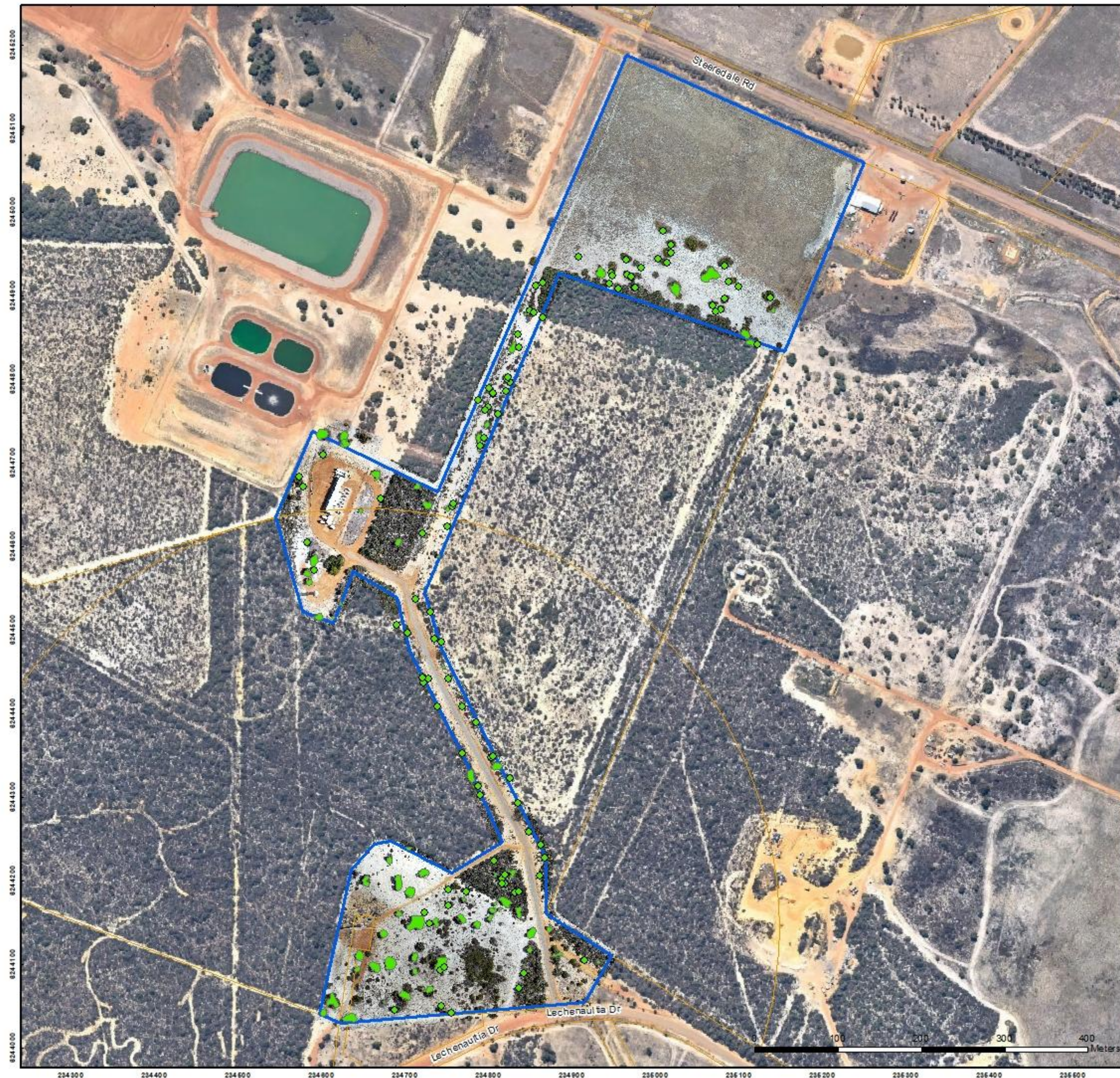
Scale
 1:4,500 @ A3
 GDA MGA 2020 Zone 51

Data Sources
 Overview Map: World Topographic Map (ESRI, HERE, Garmin, © OpenStreetMap contributors, and the GIS User community)
 Cadastre, Roads and Aerial Imagery Data © 2025 Western Australian Land Information Authority (Landgate)
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Figure 22: Survey Effort

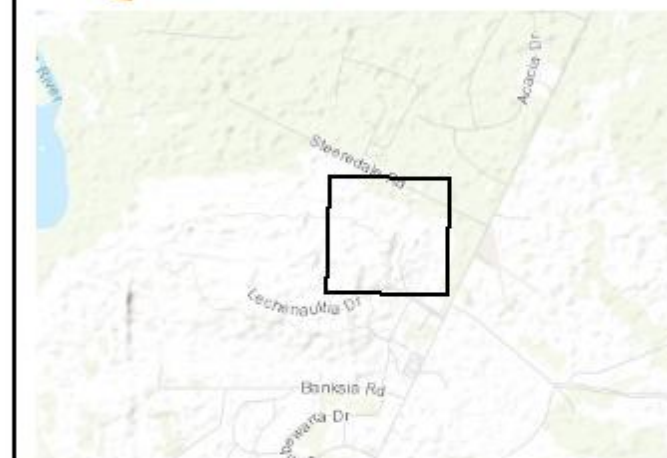
STATUS	QA Check	Drawn by
	BMT	MJH
FINAL	FILE	DATE
	HP002	09/01/2026



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Overview Map Scale 1:100,000

Legend

- Survey Area
- Cadastre
- Moodjar occurrence
- Moodjar occurrence

Scale
 1:4,500 @ A3
 GDA MGA 2020 Zone 51

Data Sources
 Overview Map: World Topographic Map (ESRI, HERE, Garmin, © OpenStreetMap contributors, and the GIS User community)
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Figure 23: Moodjar Occurrence

	QA Check BMT	Drawn by MJH
STATUS FINAL	FILE HP002	DATE 10/02/2026

Appendix B

Desktop Assessment LOO Analysis

Table 11: Criteria for assessing the LOO of Threatened or Priority flora and fauna within the study area.

Likelihood	Criteria
Present	The species/ecological community has been previously recorded in the survey area from previous surveys within the survey area and/or from DBCA database searches.
Likely	Species/ecological community has previously been recorded within the study area, and suitable habitat is present within the survey area. Key habitat requirements for the species/ecological community are present within the survey area.
Possible	Species/ecological community has previously been recorded within the study area, and one or more of the below criteria are met: - Habitat requirements are unknown/poorly known. - Previously recorded greater than 10 km from the survey area and suitable habitat is present. - Suitable habitat is present, but the species is cryptic or highly mobile and may not have been detected despite extensive surveys.
Unlikely	The species/ecological community has been recorded locally through database searches and one or more of the below criteria are met: - Suitable habitat does not occur at the survey area or suitable habitat may occur but the species/ecological community has a highly restricted distribution, is very rare and only known from a limited number of populations. - Unlikely to occur due to the site lacking critical habitat, only containing marginally suitable habitat, and/or the survey area is considerably degraded. - Not recorded in the survey area despite adequate survey effort.
Highly Unlikely	No suitable habitat within the survey area or the survey area is outside the species' natural distribution. Species Considered Locally/Regionally Extinct.

Table 12: Potential Threatened or Priority flora located within the study area and LOO analysis (post survey).

Note: Species are presented based on post survey LOO, then pre survey LOO, then alphabetically by family, then species name. Species description and habitat information taken from publicly available resources (DEC, 2012c; Euclid, n.d; Gibbons et al., 2013; Hislop, 2013; Macfarlane et al., 2020; Maslin, 2014; McQuoid and French, 2021; Meissner et al., 2014; Rye, 2013; Rye, 2021; Trudgen and Rye, 2014; WAH, 1998- ; Wilkins et al., 2009).

Family	Species	Vernacular	Status BC Act/ EPBC Act	Description- Species	Description – Habitat	Peak Flowering period	Likelihood of Occurrence (Pre Survey)	Likelihood of Occurrence (Post Survey)	Comments
Apiaceae	<i>Xanthosia peduncularis</i>		P3	Spreading perennial, herb, ca 0.15 m high. Trifoliate leaves at base of plant. Cream flowers in a compound umbrel with 3 or 4 rays.	Gravelly sand.	Sept to Nov	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Asparagaceae	<i>Thysanotus brachiatus</i>		P2	Rhizomatous, leafless perennial, herb, to 0.3 m high. Fl. Purple.	Grey sand.	Nov to Dec	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Asparagaceae	<i>Thysanotus parviflorus</i>		P4	Perennial herb, 0.1-0.3 m high. Flowers Purple.	Grey Sand.	Oct to Nov	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Dilleniaceae	<i>Hibbertia acrotrichion</i>		P2	Erect, dwarf shrub, 0.15 - 0.3 m high. Linear, cylindrical leaves spirally arranged along short side shoots. Hairy new growth. Yellow flowers, 5 petals with eleven stamens.	grey or stony sand. Coastal regions.	Aug to Sept	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Dilleniaceae	<i>Hibbertia papillata</i>		P2	Shrub, to 0.5 m high. Fl. yellow.	Grey or white sand, clayey sand, yellow skeletal sand over quartzite. Ridges and slopes.	Sep to Nov	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Ericaceae	<i>Andersonia carinata</i>		P2	Erect slender shrub, 0.1-0.45(-0.8) m high. Fl. pink/pink-white/pink-purple.	White sand, gravelly lateritic soils. Plains.	Aug to Oct	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Ericaceae	<i>Leucopogon</i> sp. Lake Magenta (K.R. Newbey 3387)		P1	Erect shrub to 1.7 m high. Fl. White.	Kwongkan heathland, with Banksia, Melaleuca and Hakea. Dry yellow loam over laterite. Sandplain with grey sand.	Nov	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Euphorbiaceae	<i>Calycopeplus marginatus</i>		P3	Erect, much-branched shrub, 0.3-2(-4) m high. Fl. white.	White sand, red loam, stony clay. Near watercourses, cliffs, amongst rocks.	May or Jul to Oct.	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Fabaceae	<i>Acacia amyctica</i>		P2	Erect, bushy, pungent shrub, 0.7-1.5 m high. Flower yellow.	Sandy loam or clay. Flats.	Aug to Sep	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Fabaceae	<i>Bossiaea atrata</i>		P3	Compact, dense, intricately-branched, rigid, spinescent herb, to 1.2 m high. Fl. orange-yellow-red-brown.	White sand or sandy loam over laterite or clay, quartzite sand, clay.	May to Aug	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Fabaceae	<i>Pultenaea adunca</i>		P3	Erect, slender shrub, (0.15-)0.3-1 m high. Fl. yellow & red.	White/grey sand.	Mar or Oct	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Goodeniaceae	<i>Dampiera deltoidea</i>		P4	Erect perennial, herb, 0.12-0.4 m high. Fl. blue.	Sand, sandy clay, loam. Sandplains, around quartzite rocks.	Sep to Nov	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Goodeniaceae	<i>Dampiera sericantha</i>		P3	Erect, slender perennial, herb, 0.05-0.3(-0.6) m high, stems with blunt angles. Fl. blue.	Sand, sometimes with gravel. Plains. Associated with disturbance.	May or Aug to Dec	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Goodeniaceae	<i>Goodenia phillipsiae</i>		P4	Shrub, ca 0.3 m high. Fl. Yellow.	Eucalyptus and Melaleuca shrubs. Firebreaks. Flat to small hill, greyish/brown/yellowish sandy clay loam. Some laterite or quartz.	Nov	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Haemodoraceae	<i>Anigozanthos</i> <i>bicolor</i> subsp. <i>minor</i>	Little kangaroo paw, two-coloured kangaroo paw, small two-colour kangaroo paw	T - VU	Rhizomatous, perennial, herb, 0.05-0.2 m high. Fl. green & red.	White Sand. Well-watered or winter-wet sites. Subcoastal freshwater sumps, off granite. Moist sandy soils in heath communities dominated by Thryptomene, <i>Borya</i> sp, <i>Leptospermum</i> sp. and <i>Diuris laxiflora</i> and in shallow soils over granite.	Aug to Oct	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Haloragaceae	<i>Gonocarpus hispidus</i>		P2	Erect perennial, herb or shrub, ca 0.16 m high. Fl. red-brown.	Stony quartzitic sand.	Sep	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Hemerocallidaceae	<i>Caesia arcuata</i>	curved grass lily	P1	Perennials, rhizomatous, forming robust leafy clumps, 35–50 cm high, 35–40 cm wide.	It grows in yellow sand or surface grey sand over yellow sand in woodland of <i>Banksia speciosa</i> , mallee eucalypts and <i>Nuytsia floribunda</i> , apparently favouring valleys or swales. <i>Caesia arcuata</i> appears to be more common in areas of soil disturbance.	Sep to Dec	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.

Table 12 continued.

Family	Species	Vernacular	Status BC Act/ EPBC Act	Description- Species	Description – Habitat	Peak Flowering period	Likelihood of Occurrence (Pre Survey)	Likelihood of Occurrence (Post Survey)	Comments
Loganiaceae	<i>Adelphacme minima</i>		P3	Annual.	Known from the Darling and Eyre regions of the South-West Botanical Province, Western Australia, from Bunbury in the north to Ravensthorpe in the east.	Sept to Oct, Nov to Jan	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Myrtaceae	<i>Cyathostemon gracilis</i>		P2	Slender shrub 0.5-0.7 m high. Fl. white.	Sandy soils on fairly flat ground.	Apr, Aug to Oct.	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Myrtaceae	<i>Regelia cymbifolia</i>		P4	Erect shrub, 0.5-2 m high. Fl. pink-purple.	White, grey or yellow sand. Undulating plains.	Aug to Nov	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Myrtaceae	<i>Kunzea similis</i> subsp. <i>similis</i>		T - CR	Shrub, to 1.5 m high.	Fine clayey sand. Low slopes.		Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Orchidaceae	<i>Calochilus pruinus</i>	Mallee Beard orchid	T - CR	Pinkish-green to pinkish-brown, pruinose (white powdery coating); leaf absent, replaced by a basal sheathing bract; flowers small (14-19mm long).	Deep, well drained light brown sands. Mallee shrubland and woodland associated with <i>Eucalyptus</i> aff. <i>falcata</i> , <i>E. angulosa</i> , <i>Acacia cyclops</i> , <i>Calothamnus quadrifidus</i> , <i>Pomaderris myrtilloides</i> , <i>Acrotriche cordata</i> and <i>Desmocladius flexuosus</i> .	Aug to Oct	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Pleurophascaceae	<i>Pleurophascum occidentale</i>		P4	This distinctive moss forms a loose mat with vertical stems, 1 to 3 cm high, growing off a rhizomatous base. It is generally glossy yellowish-green above and bronze-brown below. The soft leaves are spirally arranged, and overlap.	Grows with other mosses under the cover of myrtaceous and other shrubs. Known to occur in a wide range of habitat including shallow soils on the edge of granite, deep white sand on laterite, sandy clay loam on sandstone, pink sand on sandstone as well as sandy soils some distance from granite outcrops.		Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Polygalaceae	<i>Comesperma lanceolatum</i>		P2	Upright, spreading shrub. 0.1-0.33 m high. Flowers blue.	White sand, marine plains, sand dunes, quartzite ridges.	Nov	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Proteaceae	<i>Adenanthos dobagii</i>	Fitzgerald woolybush	T - EN	Spreading, diffuse shrub, 0.3-1.5 m high. Fl. cream/pink.	Sand, gravelly sandy clay.	Aug to Nov or Jan	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Proteaceae	<i>Hakea acuminata</i>		P2	Shrub, 0.5-1.8 m high.	Deep white sand, grey sand over granite, loam. Undulating plain.		Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Rhamnaceae	<i>Cryptandra craigiae</i>		P1	Erect to spreading shrub, 0.1-0.25 m high.	Sand. Low-lying sand dunes, low rises between or adjacent to swampy areas, gutter on disturbed road verge.		Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Rhamnaceae	<i>Spyridium oligocephalum</i>		P3	Shrub, (0.3-)0.6-1.5 m high. Fl. white-cream.	Sandy soils. Sandplains.	Mar or Jul to Oct	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Rhamnaceae	<i>Stenanthemum cristatum</i>		P2	Spreading to prostrate shrub, 0.05-0.2 m high. Fl. white.	Gravelly soils.	Nov.	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Rubiaceae	<i>Opercularia acolytantha</i>	Esperance dog weed	P3 - Pres Ex	Perennial, herb or shrub, 0.08-0.1 m high,	Low Trees and Shrubland. Grey sandy loam.	Nov to Oct	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Thymelaeaceae	<i>Pimelea eyrei</i>		P2	Erect, spindly shrub, 0.3-1.3 m high. Fl. white/cream.	Low shrubland in sand, often on quartzite ridges.	Aug to Nov	Possible	Unlikely	Not present in the survey area. Unsuitable habitat.
Asteraceae	<i>Senecio serratifomis</i> subsp. <i>serratifomis</i>		P1	Erect annual, herb, to 0.3 m high. Fl. yellow.	Sand, limestone. Coastal dunes.	Aug	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Casuarinaceae	<i>Allocasuarina hystrix</i>		P4	Dioecious herb, to 3 m high, with erect branchlets with 10-12 leaf teeth per whorl.	Orange, red or brown loam with limestone or granite outcropping. Plains, lower slopes, hilltops.	Feb, Apr, Jun, Dec	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Cyperaceae	<i>Lepidosperma</i> sp. Shoemaker Levy (L. Ang & O. Davies 10815)		P3	Tufted sedge to 0.35 m tall, stems compressed.	Sandy clay, loamy sand. Gentle slopes with minor outcropping (ironstone, greenstone, quartz).	Oct to Nov.	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Ericaceae	<i>Conostephium prolatum</i>		P2	Erect shrub, 1 m high. Fl. white to cream.	Shallow sand over quartzite, as a component of sub-coastal heath.	Aug and Oct	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.

Table 12 continued.

Family	Species	Vernacular	Status BC Act/ EPBC Act	Description- Species	Description – Habitat	Peak Flowering period	Likelihood of Occurrence (Pre Survey)	Likelihood of Occurrence (Post Survey)	Comments
Ericaceae	<i>Leucopogon compactus</i>		P4	Much-branched shrub, 0.3-1 m high. Fl. White.	Yellow sand with lateritic gravel, stony clay, loam over granite. Plains, hillslopes.	Jun to Aug or Dec	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Euphorbiaceae	<i>Ricinocarpus trichophorus</i>	Barrens bush Wedding bush	T - EN	Erect, openly branching shrub, 0.3-1 m high. Fl. white.	Sandy clay, loam. Breakaways, among sandstone rocks.	May or Aug to Sep	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Fabaceae	<i>Acacia argutifolia</i>	East Barrens wattle	P4	Low spreading, intricate shrub, 0.2-0.7 m high. Fl. yellow/cream.	Shallow sand over quartzite. Rocky hills and ridges.	Jul to Dec or Jan	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Fabaceae	<i>Acacia besleyi</i>	Bes' wattle	P1	Rounded or obconic, erect, often bushy, resinous shrub 1–3 m tall and to c. 2 m across.	Undulating country along drainage lines within rocky terrain. The soils comprise brown, loamy clay or red clay over granite or quartz diorite.	Oct	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Fabaceae	<i>Acacia phlebopetala</i> var. <i>pubescens</i>		P2	Open, spindly shrub, 0.3-1.5 m high. Fl. cream-white.	Clay soils. Along watercourses.	Oct to Dec or Jan	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Fabaceae	<i>Daviesia megacalyx</i>	long-sepalld daviesia	T - EN	Erect shrub, 0.7-1.6 m high. Fl. yellow/orange/red/brown/pink.	Gravelly laterite. Ridges, hillslopes.	Aug to Sep	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Fabaceae	<i>Daviesia newbeyi</i>		P3	Bushy, multi-stemmed, broom-like shrub, 0.25-1.5 m high. Fl. orange/yellow & red.	Sand or sandy clay over granite. Rocky slopes.	Aug to Oct	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Fabaceae	<i>Daviesia obovata</i>		T - EN	Erect, slender shrub, 0.7-1.5 m high. Fl. yellow & black.	Stony loam, sandy loam. Hillslopes, outcrops	Sept-Oct	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Fabaceae	<i>Euchilus calycinus</i> subsp. <i>Proxenus</i>		P4	Many-branched, compact shrub.	Sand, clay, sandy clay or loam, with gravel, over magnesite. Moderate slopes, adjacent to creek beds.	Sept to Nov	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Fabaceae	<i>Gastrolobium stenophyllum</i>		P3	Bushy, erect shrub, to 3 m high. Fl. orange/ pink/red.	Sandy soils over granite. Base of rock outcrops, along rivers, in woodland, shrubland or heath.	Sep to Dec or Jan to Feb	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Goodeniaceae	<i>Cooperhooikia georgei</i>	mauve cooperhooikia	T - EN	Slender shrub, 0.6-1.7 m high. Fl. pink-blue-purple.	Stony gullies.	Jul to Nov.	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Goodeniaceae	<i>Goodenia exigua</i>		P2	Perennial, herb, 0.02-0.1 m high, with terete leaves clustered in irregular whorls. Fl. Yellow.	Sandy clay. Winter-wet salt lake.	Oct	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Goodeniaceae	<i>Lechenaultia acutiloba</i>		P3	Hemispherical, ascending, much-branched shrub, 0.15-0.4 m high. Fl. green-yellow.	Sand or sandy gravel. Near river banks or swamps.	Sep to Dec	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Goodeniaceae	<i>Lechenaultia superba</i>		P4	Erect, spreading shrub, (0.15-)0.3-0.7 m high. Fl. yellow-orange/orange-red.	Quartzite soils. Rocky hillsides.	May or Aug to Nov or Jan	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Lamiaceae	<i>Microcorys glabra</i> var. <i>pubescens</i>		P3	Erect, open herb, to 1 m high.	Grey sandy clay over quartz gravel, red clay over granite, rocky clay, sandy or clay loam, siltstone, spongeolite. Flat plains, watercourses, hillsides and slopes.		Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Lamiaceae	<i>Microcorys longiflora</i>		P3	Shrub, 0.4-1.5 m high. Fl. pink.	Gravelly sand, sandy loam over quartzite. Hillsides, undulating plains.	Nov.	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Malvaceae	<i>Lasiopetalum adenotrichum</i>		P2	Erect shrub with hairy stems, 0.25 - 0.5 m high. Fl. white.	Shallow, loamy sand in moist coastal habitats, specifically on wave cut benches or low to moderately incised gullies.	Sep to Nov	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Malvaceae	<i>Lasiopetalum monticola</i>		P3	Erect slender or straggling shrub, 0.45-1.5 m high. Fl. white-cream-pink.	Rocky soils. Steep slopes, gullies.	Aug to Oct	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Malvaceae	<i>Thomasia pygmaea</i>	tiny thomasia	P3	Low shrub, 0.05-0.3 m high. Fl. blue-purple-pink.	Stony sandy loam, clayey sand. Marine plains.	Aug to Oct	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Myrtaceae	<i>Calothamnus macrocarpus</i>		P2	Erect shrub, 0.4-2(-3) m high. Fl. red.	Rocky quartzite soils, sand. Slopes.	Feb or Apr or Aug to Dec.	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.

Table 12 continued.

Family	Species	Vernacular	Status BC Act/ EPBC Act	Description- Species	Description – Habitat	Peak Flowering period	Likelihood of Occurrence (Pre Survey)	Likelihood of Occurrence (Post Survey)	Comments
Myrtaceae	<i>Darwinia</i> sp. Thumb Peak (K.R. Newbey 4847)		P3	Shrub, 1 m high.	Sandy loam over quartzite. Hillside.		Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Myrtaceae	<i>Eucalyptus dissimulata</i> subsp. <i>dissimulata</i>		P4	(Mallee), 1.7-4 m high, bark smooth, grey. Fl. Cream.	White or yellow sand. Sandplains.	Dec	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Myrtaceae	<i>Eucalyptus merleae</i>		P2	Mallet erect, 6–10 m tall, without a lignotuber.	Occurs as almost pure stands on breakaways and slopes. Mostly occurs in heavy mica-rich clay, usually white to pale grey and occasionally shiny pale orange to pink.	Jul to Mar	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Myrtaceae	<i>Eucalyptus newbeyi</i>		P3	Tree, 5-8 m high, bark smooth. Fl. yellow-green.	Sandy clay, loam. Steep spongeolite valley sides & cliffs forming river banks.	Sep to Dec or Jan to Feb.	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Myrtaceae	<i>Eucalyptus praetermissa</i>	Beaufort Inlet mallet	P4	Tree, 4-12 m high, bark smooth. Fl. yellow/cream-white.	Loam over spongeolite. Coastal slopes.	Nov or Jan.	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Myrtaceae	<i>Eucalyptus x chrysantha</i>		P2	(Mallee), to 5 m high. Fl. yellow.	Sand, lateritic sandy loam. Flats, around rocky outcrops, slopes.	Aug to Dec	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Myrtaceae	<i>Gaudium confertum</i>		P2	Shrub, 1.5-3.5(-6.5) m high. Fl. white.	Stony quartzite sand. Slopes, rocky gullies.	Oct or Dec or Jan.	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Myrtaceae	<i>Verticordia crebra</i>		T - VU	Spreading shrub, 0.1-0.75 m high. Fl. yellow.	Sandy gravel, clay. Rocky spongeolite outcrops.	May or Jul to Oct	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Myrtaceae	<i>Verticordia longistylis</i>		P3	Spreading shrub, 0.05-0.7 m high. Fl. yellow & red/purple.	Shallow loamy sand. Rocky spongeolite flats & cliffs.	Dec or Jan to Jul.	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Myrtaceae	<i>Verticordia pityrhops</i>		T - EN	Erect, pine-like shrub, 0.5-1.1 m high. Fl. pink.	White sand. Rocky quartzite slopes.	Jan or Mar to May or Sep to Oct.	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Orchidaceae	<i>Corysanthes limpida</i>	crystal helmet orchid	P4	Tuberous, perennial, dwarf herb, 0.01 m high. Fl. red & green.	Sand. Coastal dunes.	Aug to Sep	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Proteaceae	<i>Adenanthos ellipticus</i>		T - VU	Erect, non-lignotuberous shrub, 0.6-3 m high. Fl. orange & red/pink.	White siliceous sand over quartzite. Rocky hillsides.	Jan or Apr to May or Aug to Nov	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Scrophulariaceae	<i>Eremophila denticulata</i> subsp. <i>denticulata</i>		T - VU	Erect, open shrub, 0.5-2.5 m high. Fl. pink-orange/yellow-orange-red.	Alluvium, sand, sandy clay loam. River beds & plains, laterite breakaways.	Aug to Dec or Jan to Feb	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Scrophulariaceae	<i>Myoporum cordifolium</i>		T - EN	Spindly, erect shrub, 0.3-0.8 m high. Fl. white/white-pink.	Sandy loam or clay loam. Flat plains.	Jul to Nov	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Solanaceae	<i>Anthocercis fasciculata</i>		P4	Erect, viscid shrub, 0.8-3.5 m high. Fl. white.	Sandy soils. Rocky quarzitic ranges.	Jul to Dec	Unlikely	Unlikely	Not present in the survey area. Unsuitable habitat.
Chenopodiaceae	<i>Roycea pycnophylloides</i>	saltmat	T - EN	Perennial herb, forming densely branched silvery mats to 1 m wide.	Sandy soils, clay. Saline Flats.	Sep	High Unlikely	Highly Unlikely	Not present in the survey area. Unsuitable habitat.
Ericaceae	<i>Styphelia quartzitica</i>		P2	Erect shrub 0.6 m high. Fl. orange.	Grows in shallow sandy soils over quartzite in the understory of dense heath.	Mar to May.	High Unlikely	Highly Unlikely	Not present in the survey area. Unsuitable habitat.
Fabaceae	<i>Grievea craigiana</i>		P3	Upright spindly shrub. Red to orange flowers.	Calcareous pale grey or brown loam and silcrete over felsic Kybulup schist and gravel quartz. Mallee Thicket and Eucalypt woodland.	Aug to Nov	High Unlikely	Highly Unlikely	Not present in the survey area. Unsuitable habitat.
Myrtaceae	<i>Anticoryne diosmoides</i>		P4	Shrub, to 1.5 m high. Fl. pink.	Loamy sand over quartzite. Low rocky hills and slopes, mountain peaks.	Jul or Sep to Dec.	High Unlikely	Highly Unlikely	Not present in the survey area. Unsuitable habitat.

Table 12 continued.

Family	Species	Vernacular	Status BC Act/ EPBC Act	Description- Species	Description – Habitat	Peak Flowering period	Likelihood of Occurrence (Pre Survey)	Likelihood of Occurrence (Post Survey)	Comments
Myrtaceae	<i>Anticoryne ovalifolia</i>		P2	Erect shrub, 0.4-2 m high. Fl. white/white-pink.	Quartzite soils, granite. Rocky slopes.	May or Aug to Nov.	High Unlikely	Highly Unlikely	Not present in the survey area. Unsuitable habitat.
Myrtaceae	<i>Astartea reticulata</i>		P3	Single-stemmed or basally branched shrub 0.7–1.5 m tall. Fl. pale pink or white.	Occurs in winter-wet depressions or near watercourses along the coastal plain, commonly associated with the paperbark species <i>Melaleuca cuticularis</i> .	Late Nov to Jun	High Unlikely	Highly Unlikely	Not present in the survey area. Unsuitable habitat.
Myrtaceae	<i>Austrobaekea uncinella</i>		P3	Shrub 1-2m high. Numerous flowers per stem. Pointed leaves.	Saltlake and watercourses.	Sept to Jan	High Unlikely	Highly Unlikely	Not present in the survey area. Unsuitable habitat.
Myrtaceae	<i>Eucalyptus astringens</i> subsp. <i>Merleae</i>		P2	Mallet erect, 6–10 m tall, without a lignotuber.	Occurs as almost pure stands on breakaways and slopes. Mostly occurs in heavy mica-rich clay, usually white to pale grey and occasionally shiny pale orange to pink.	Jul to Mar	High Unlikely	Highly Unlikely	Not present in the survey area. Unsuitable habitat.
Myrtaceae	<i>Eucalyptus brandiana</i>	four-winged mallet	P2	Mallet, 5 m high, smooth bark, lacking lignotuber. Fl. red to pink. Cuboid buds.	Spongeolite hills and escarpments surrounding, and to the north of, the Fitzgerald Inlet on the south coast of southwest Western Australia.	Jun to Nov	High Unlikely	Highly Unlikely	Not present in the survey area. Unsuitable habitat.
Myrtaceae	<i>Eucalyptus burdettiana</i>	Burdett gum	T - EN	(Mallee) or shrub, 1-4 m high, bark smooth. Fl. green-yellow.	Sandy soils. Quarzitic ridges & rocks.	Jan to Dec (irregular)	High Unlikely	Highly Unlikely	Not present in the survey area. Unsuitable habitat.
Myrtaceae	<i>Eucalyptus coronata</i>		T - VU	(Mallee), (0.6-)1.5-4 m high, bark smooth. Fl. white-cream/yellow.	Skeletal sand. Rocky quartzite hillsides.	Apr to May or Jul to Nov	High Unlikely	Highly Unlikely	Not present in the survey area. Unsuitable habitat.
Proteaceae	<i>Banksia anatona</i>	cactus dryandra	T - CR	Upright, non-lignotuberous shrub, to 5 m high. Fl. Yellow.	Grey sand over gravelly shale, rocky silty clay loam. Lower slopes of ranges.	Jan to Mar	High Unlikely	Highly Unlikely	Not present in the survey area. Unsuitable habitat.
Proteaceae	<i>Banksia laevigata</i> subsp. <i>laevigata</i>		P4	Non-lignotuberous shrub, 1-3.5 m high. Fl. green-yellow.	Rocky soils (spongeolite, laterite). Hills, top of breakaways.	Sep to Dec	High Unlikely	Highly Unlikely	Not present in the survey area. Unsuitable habitat.
Rhamnaceae	<i>Spyridium montanum</i>		P2	Erect shrub, 1-2.5 m high. Fl. white/cream.	Sandstone or shale. Mountains, gullies.	Apr to Jul or Oct	High Unlikely	Highly Unlikely	Not present in the survey area. Unsuitable habitat.
Rutaceae	<i>Boronia clavata</i>	Bremer boronia	T - EN	Upright, slender shrub, 0.5-1.5(-2.1) m high. Fl. yellow-green.	Alluvial sand & loam. Floodplains & river beds.	Aug to Oct.	High Unlikely	Highly Unlikely	Not present in the survey area. Unsuitable habitat.
Stylidiaceae	<i>Stylidium galioides</i>	yellow mountain triggerplant	T - VU	Creeping to semi-scandent perennial, herb, 0.1-0.3 m high, Leaves in whorls, oblanceolate, 0.25-4 cm long, 0.7-6 mm wide, apex subacute to acute, margin entire, glabrous. Scape glabrous. Inflorescence racemose. Fl. yellow.	Gravelly quartzite soils. Rocky hillslopes and summits, heath, mallee shrubland.	Sep to Dec or Jan.	High Unlikely	Highly Unlikely	Not present in the survey area. Unsuitable habitat.

Table 13: Potential Threatened or Priority ecological communities located within the study area and LOO (post survey).

Note: Ecological communities are presented based on post survey LOO, then alphabetically. Ecological community descriptions are taken from publicly available resources (DoE, 2015b; DBCA, 2023).

Community Name	Status BC Act/ EPBC Act	Description	Likelihood of Occurrence (Pre Survey)	Likelihood of Occurrence (Post Survey)	Comments
Proteaceae Dominated Kwongan Shrublands of the Southeast Coastal Floristic Province of Western Australia	P3 / T - EN	Consists of ≥30% cover of Proteaceae species across all layers where shrubs occur or where two or more Proteaceae species are present that are likely to form a significant vegetative component when regenerated. It occurs on sandplains and marine plains, occupying lower and upper slopes and ridges, as well as uplands. It typically occurs on duplex soils and deep to shallow soils on the sandplains; and on sandy soils to clay loam, gravelly loam and loam on quartzite (e.g. The Barrens, Stirlings and Russell Range) and greenstone ranges (e.g. Ravensthorpe Range). The structure of the vegetation is that of a shrubland, ranging from low to high, and can form dense thickets or be relatively open due to variation in soils and landscape position, or due to disturbance history (e.g. fire). Mallee eucalypts may be present at varying densities, but providing the minimum Proteaceae cover is present, the ecological community is still recognised. The description, area and condition thresholds that apply to the EPBC-listed TEC of the same name, also apply to this Priority ecological community. Threats: past threats have principally been fragmentation from land clearing, current threats are plant disease Phytophthora cinnamomi, increased fire frequencies, invasive weeds and feral animals.	Likely	Known/ Recorded	TEC/PEC detected in survey area.
Regelia velutina/Melaleuca lutea shrubland of the Fitzgerald River National Park.	P2 / -	A shrubland dominated by members of the Myrtaceae occurring on areas of exposed quartzite bedrock with shallow loamy sand soils on mountain ridges, large quartzite hillocks and a wave cut bench.	Highly unlikely	Highly unlikely	Not present in the survey area. Unsuitable habitat.

Table 14: Potential conservation significant fauna located within the study area and LOO analysis (post survey).

Note: Species are presented based on post survey LOO, then alphabetically by family, then species name. Species habitat description taken from publicly available resources (Australian Museum, 2019, 2024; Benshemesh, 2007; Cullen and Harvey, 2010; DCCEEW, 2023a, 2023b, 2024a, 2024b; DEC, 2012a, 2012b; DPAW, 2017; DSEWPaC, 2012b; DWER, 2024c; Geering et al., 2007; Higgins and Davies, 1996; Morcombe, 2000; TSSC, 2011, 2015a, 2015b, 2016, 2018, 2020; Wayne et al., 2021). * = denotes species detection confidence to a genus level.

Family	Species	Vernacular	Status BC Act/ EPBC Act	Habitat Description	Likelihood of Occurrence (Pre Survey)	Likelihood of Occurrence (Post Survey)	Habitat Present	Likelihood of Detection if Present	Species Present	Comment
Cacatuidae	<i>Zanda baudinii</i>	Baudin's Cockatoo, white-tailed long- billed black cockatoo	T - EN / T - EN	Hollows of large, mature trees. Foraging habitat includes vegetation containing proteaceous heath/woodland, eucalypt woodlands or forest (particularly Marri and Jarrah forest) and <i>Pinus</i> spp.	Likely	Known/ Recorded*	No	High	Yes*	<i>Zanda</i> sp. recorded, unable to determine species. High quality foraging habitat present.
Cacatuidae	<i>Zanda latirostris</i>	Carnaby's Cockatoo, white-tailed short- billed black cockatoo	T - EN / T - EN	Eucalypt woodlands, especially those that contain salmon gum and wandoo, and in shrubland or kwongan heathland dominated by hakea, dryandra, banksia and grevillea species. It also occurs in remnant patches of native vegetation on land otherwise cleared for agriculture. It also forages in forests containing marri, jarrah or karri.	Likely	Known/ Recorded*	No	High	Yes*	<i>Zanda</i> sp. recorded, unable to determine species. High quality foraging habitat present.
Macropodidae	<i>Notamacropus eugenii</i> <i>derbianus</i>	tammar wallaby	P4 / -	Dense, low vegetation for daytime shelter and open grassy areas for feeding. This species inhabits coastal scrub, heath, dry sclerophyll forest and thickets in mallee and woodland.	Possible	Known/ Recorded	Yes	Medium	Yes	Species detected in survey area via scats. Suitable habitat present.
Macropodidae	<i>Notamacropus irma</i>	western brush wallaby	P4 / -	Preferred habitat includes open forest or woodland, particularly open, seasonally-wet flats with low grasses and open scrubby thickets.	Possible	Known/ Recorded	Yes	Medium	Yes	Species detected in survey area via scats. Suitable habitat present.
Dasyuridae	<i>Dasyurus geoffroii</i>	chuditch, western quoll	T - VU / T - VU	Woodland or forest. Logs must have a diameter > 30 cm and a hollow with 7–20 cm diameter and 1 m length (Dunlop and Morris 2012). Burrows are constructed beneath habitat features such as stumps, logs, trees or rock outcrops.	Possible	Possible	Yes	Low	No	Suitable habitat present.
Dasyuridae	<i>Parantechinus apicalis</i>	dibbler	T - EN / T - EN	Old-growth mallee heath. Prefer vegetation with a dense canopy greater than 1 m high which has been unburnt for at least 10 years or more.	Possible	Possible	Yes	Low	No	Low quality habitat present.
Falconidae	<i>Falco peregrinus</i>	peregrine falcon	OS / -	It requires abundant prey and secure nest sites, and prefers coastal and inland cliffs or open woodlands near water.	Possible	Possible	Yes	Medium	No	Suitable hunting habitat as prey species present e.g., galah
Megapodiidae	<i>Leipoa ocellata</i>	malleefowl	T - VU / T - VU	Arid and semi-arid areas dominated by mallee eucalypts on sandy soils. They are known to also occur in Mulga (<i>Acacia aneura</i>), Broombush (<i>Melaleuca uncinata</i>), Scrub Pine (<i>Callitris verrucosa</i>), Eucalyptus woodlands and coastal heathlands. Malleefowl require abundant leaf litter and a sandy substrate for the successful construction of nest mounds.	Possible	Possible	Yes	Low	No	Remnant habitat is long unburnt >50 years and site is connected to other suitable habitat for both foraging and breeding. Remnant patches in the site may be too degraded to support breeding e.g., extensive rabbit warrens.
Muridae	<i>Pseudomys shortridgei</i>	heath mouse, dayang	T - VU / T - EN	Historical distribution. Closest recent record Ravensthorpe. Floristically-rich, dry heathland in long unburnt vegetation.	Possible	Possible	Yes	Low	No	Suitable habitat present. Remnant habitat is long unburnt >50 years.
Accipitridae	<i>Pandion haliaetus</i>	osprey	MI / MI	Littoral and coastal habitats and terrestrial wetlands and offshore islands. Requires extensive areas of open fresh, brackish or saline water for foraging.	Unlikely	Unlikely	No	High	No	Not detected during survey. No suitable habitat present.
Charadriidae	<i>Charadrius cucullatus</i>	hooded plover	P4 / -	Broad, flat open sandy beaches, backed by sand dunes. Also on inland salt lakes.	Highly Unlikely	Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Charadriidae	<i>Pluvialis squatarola</i>	grey plover	MI / MI	Sheltered embayments, estuaries and lagoons with mudflats and sandflats; terrestrial wetlands such as near-coastal lakes and swamps, or salt-lakes (Marchant and Higgins 1993).	Unlikely	Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Dasyornithidae	<i>Dasyornis longirostris</i>	western bristlebird	T - EN / T - EN	Preferred habitat includes floristically diverse low dense coastal heathland.	Possible	Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.

Table 14 continued.

Family	Species	Vernacular	Status BC Act/ EPBC Act	Habitat Description	Likelihood of Occurrence (Pre Survey)	Likelihood of Occurrence (Post Survey)	Habitat Present	Likelihood of Detection if Present	Species Present	Comment
Diomedidae	<i>Thalasseus bergii</i>	crested tern	MI / MI	Tropical and subtropical coastlines, foraging in the shallow waters of lagoons, coral reefs, estuaries, bays, harbours and inlets, along sandy, rocky, coral or muddy shores, on rocky outcrops in open sea, in mangrove swamps and also far out to sea on open water. It shows a preference for nesting on offshore islands, low-lying coral reefs, sandy or rocky coastal islets, coastal spits, lagoon mudflats, and artificial islets in saltpans and sewage works within 3 km of the coast.	Unlikely	Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Iulomorphidae	<i>Atelomastix lengae</i>	Leng's atelomastix millipede	T - VU / -	This species is only known from one male and one female from an unburnt gully in the Eyre range, Fitzgerald River National Park. These two specimens were found under rocks.	Unlikely	Unlikely	No	Low	No	Not detected during survey. No suitable habitat present.
Laridae	<i>Hydroprogne caspia</i>	Caspian tern	MI / MI	Sheltered coastal embayments (harbours, lagoons, inlets, bays, estuaries and river deltas) and those with sandy or muddy margins are preferred. They also occur on near-coastal or inland terrestrial wetlands that are either fresh or saline, especially lakes (including ephemeral lakes), waterholes, reservoirs, rivers and creeks.	Unlikely	Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Psophodidae	<i>Psophodes nigrogularis</i>	western whipbird	EN / EN	Dense heath-like shrubby thickets on coastal dunes, and mallee woodland or shrubland with an open upperstorey above a dense shrubby understorey. Preferred habitat is usually 2–3 metres tall and dominated by shrubs such as <i>Agonis marginata</i> , hakeas (e.g. <i>Hakea elliptica</i> and <i>H. trifurcata</i>), Showy Dryandra (<i>Banksia formosa</i>), <i>Eutaxia obovata</i> , <i>Acacia myrtifolia</i> and Heart-leaf Poison-bush (<i>Gastrolobium bilobum</i>), usually with a dense shrubby understorey, and sometimes intermixed with stunted eucalypts such as Marri (<i>Eucalyptus calophylla</i>) and Jarrah (<i>E. marginata</i>).	Unlikely	Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present. More likely Oberon subspecies to be present.
Psophodidae	<i>Psophodes nigrogularis</i> subsp. <i>oberon</i>	western wheatbelt whipbird	P4 / -	Occurs in mallee, often open mallee vegetation with a dense, tall shrub layer up to 1.5 m tall and dominated by such species as Hakea, Lambertia, Dryandra or Banksia.	Possible	Unlikely	No	Medium	No	Habitat structure and degradation, large cleared areas are unlikely to support populations. Targeted dawn survey conducted.
Scolopacidae	<i>Actitis hypoleucos</i>	common sandpiper	MI / MI	Wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats. Has been recorded in estuaries and deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties. The muddy margins utilised by the species are often narrow, and may be steep. The species is often associated with mangroves, and sometimes found in areas of mud littered with rocks or snags.	Unlikely	Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Scolopacidae	<i>Calidris acuminata</i>	sharp-tailed sandpiper	MI / MI & T - VU	Prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, saltpans and hypersaline salt lakes inland. They also occur in saltworks and sewage farms. They use flooded paddocks, sedgelands and other ephemeral wetlands, but leave when they dry. They use intertidal mudflats in sheltered bays, inlets, estuaries or seashores, and also swamps and creeks lined with mangroves. They tend to occupy coastal mudflats mainly after ephemeral terrestrial wetlands have dried out, moving back during the wet season. They may be attracted to mats of algae and water weed either floating or washed up around terrestrial wetlands, and coastal areas with much beach cast seaweed. Sometimes they occur on rocky shores and rarely on exposed reefs.	Unlikely	Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Scolopacidae	<i>Calidris ferruginea</i>	curlew sandpiper	T - CR / T - CR & MI	Intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. Also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They occur in both fresh and brackish waters. Occasionally they are recorded around floodwaters.	Unlikely	Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.

Table 14 continued.

Family	Species	Vernacular	Status BC Act/ EPBC Act	Habitat Description	Likelihood of Occurrence (Pre Survey)	Likelihood of Occurrence (Post Survey)	Habitat Present	Likelihood of Detection if Present	Species Present	Comment
Scolopacidae	<i>Calidris tenuirostris</i>	great knot	T - CR / T - CR & MI	Sheltered coastal habitats, with large intertidal mudflats or sandflats. This includes inlets, bays, harbours, estuaries and lagoons. They are occasionally found on exposed reefs or rock platforms, shorelines with mangrove vegetation, ponds in saltworks, at swamps near the coast, saltlakes and non-tidal lagoons. Rarely occurs on inland lakes and swamps.	Unlikely	Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Scolopacidae	<i>Limosa lapponica</i>	bar-tailed godwit	MI / MI	Coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. It is found often around beds of seagrass and, sometimes, in nearby saltmarsh. It has been sighted in coastal sewage farms and saltworks, salt lakes and brackish wetlands near coasts, sandy ocean beaches, rock platforms, and coral reef-flats. It is rarely found on inland wetlands or in areas of short grass, such as farmland, paddocks and airstrips, although it is commonly recorded in paddocks at some locations overseas.	Unlikely	Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Scolopacidae	<i>Numenius madagascariensis</i>	eastern curlew	T - CR / T - CR & MI	Intertidal mudflats and sandflats, often with beds of seagrass, on sheltered coasts, especially estuaries, mangrove swamps, bays, harbours and lagoons.	Unlikely	Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Scolopacidae	<i>Tringa nebularia</i>	common greenshank, greenshank	MI / MI	Found in a wide variety of inland wetlands and sheltered coastal habitats of varying salinity. It occurs in sheltered coastal habitats, typically with large mudflats and saltmarsh, mangroves or seagrass. Habitats include embayments, harbours, river estuaries, deltas and lagoons and are recorded less often in round tidal pools, rock-flats and rock platforms. Uses both permanent and ephemeral terrestrial wetlands, including swamps, lakes, dams, rivers, creeks, billabongs, waterholes and inundated floodplains, claypans and salt flats. It will also use artificial wetlands, including sewage farms and saltworks dams, inundated rice crops and bores. The edges of the wetlands used are generally of mud or clay, occasionally of sand, and may be bare or with emergent or fringing vegetation, including short sedges and saltmarsh, mangroves, thickets of rushes, and dead or live trees.	Unlikely	Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Acanthizidae	<i>Aphelocephala leucopsis</i>	southern whiteface	- / T - VU	Favours wide range of open woodlands and shrublands with understorey of grasses, shrubs or both which are usually dominated by acacias or eucalypts on ranges, foothills and lowlands, and plains. Foraging almost exclusively on the ground in areas of low tree density and herbaceous understorey litter cover.	Highly Unlikely	Highly Unlikely	N/A	Medium	No	Not detected during survey. No suitable habitat present and beyond documented range.
Anatidae	<i>Cereopsis novaehollandiae</i> subsp. <i>grisea</i>	Recherche Cape Barren goose	T - VU / T - VU	It occurs on offshore islands and rocks, and at adjacent sites on the mainland. It inhabits grasslands and low fields of succulent herbs (comprised of <i>Carpobrotus</i> sp.), and occasionally occurs in open areas in taller and denser vegetation.	Highly Unlikely	Highly Unlikely	No		No	Not detected during survey. No suitable habitat present.
Anatidae	<i>Oxyura australis</i>	blue-billed duck	P4 / -	Prefers deep water in large permanent wetlands and swamps with dense aquatic vegetation.	Unlikely	Highly Unlikely	No	High	No	Not detected during survey. No suitable habitat present.
Ardeidae	<i>Botaurus poiciloptilus</i>	Australasian bittern	T - EN / T - EN	Wetlands, permanent and seasonal freshwater habitats, particularly those dominated by sedges, rushes and reeds (e.g. Phragmites, Cyperus, Eleocharis, Juncus, Typha, Baumea, Bolboschoenus) or cutting grass (Gahnia) growing over a muddy or peaty substrate.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Charadriidae	<i>Charadrius leschenaultii</i>	greater sand plover	T - VU / T - VU & MI	Almost entirely coastal, inhabiting littoral and estuarine habitats. Mainly occur on sheltered sandy, shelly or muddy beaches with large intertidal mudflats or sandbanks, as well as sandy estuarine lagoons. Seldom occur at shallow freshwater wetlands.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Dasyuridae	<i>Phascogale calura</i>	red-tailed phascogale, red-tailed wambenger, kenngoos	CD / T - VU	Inhabits Wandoo (<i>Eucalyptus wandoo</i>) and Sheoak (<i>Allocasuarina huegeliana</i>) woodland associations, with populations being most dense in the latter vegetation type. They show a preference for long unburnt habitat with a continuous canopy, as well as tree hollows.	Unlikely	Highly Unlikely	No	Low	No	Not detected during survey. No suitable habitat present. No hollows or continuous canopy.
Diomedidae	<i>Diomedea antipodensis</i>	Antipodean albatross	- / T - VU & MI	Marine, pelagic and aerial species. Nests in open patchy vegetation, such as among tussock grassland or shrubs on ridges, slopes and plateaus.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Diomedidae	<i>Diomedea dabbenena</i>	Tristan albatross	T - CR / T - EN & MI	Marine, pelagic seabird that sleeps and rests on ocean waters when not breeding.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Diomedidae	<i>Diomedea epomophora</i>	southern royal albatross	T - VU / T - VU & MI	Marine, pelagic seabird that sleeps and rests on ocean waters when not breeding.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.

Table 14 continued.

Family	Species	Vernacular	Status BC Act/ EPBC Act	Habitat Description	Likelihood of Occurrence (Pre Survey)	Likelihood of Occurrence (Post Survey)	Habitat Present	Likelihood of Detection if Present	Species Present	Comment
Diomedidae	<i>Diomedea exulans</i>	wandering albatross	T - VU / T - VU & MI	Marine, pelagic seabird that sleeps and rests on ocean waters when not breeding.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Diomedidae	<i>Diomedea sanfordi</i>	northern royal albatross	T - EN / T - EN & MI	Marine, pelagic and aerial. Habitat includes subantarctic, subtropical, and occasionally Antarctic waters.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Diomedidae	<i>Phoebastria fusca</i>	sooty albatross	T - EN / T - VU & MI	Marine; pelagic in subtropical and subantarctic waters. Breeds on islands in the southern Indian and Atlantic Oceans.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Diomedidae	<i>Thalassarche carteri</i>	Indian yellow-nosed albatross	T - EN / T - VU & MI	Marine bird, located in subtropical and warmer subantarctic waters (Marchant and Higgins 1990).	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Diomedidae	<i>Thalassarche cauta</i>	shy albatross	T - VU / T - VU & MI	Marine species. Breeds on rock islands.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Diomedidae	<i>Thalassarche chlororhynchos</i>	Atlantic yellow-nosed albatross	T - VU / MI	Marine species. Builds nests built on tussock grass, on rocks and under trees.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Diomedidae	<i>Thalassarche chrysostoma</i>	grey-headed albatross	T - EN / T - EN & MI	Marine, pelagic and migratory bird. Its habitat includes subantarctic, subtropical, and occasionally Antarctic waters in the Pacific, Indian, Atlantic and Southern Oceans.	Highly Unlikely	Highly Unlikely	No		No	Not detected during survey. No suitable habitat present.
Diomedidae	<i>Thalassarche impavida</i>	Campbell albatross	T - VU / T - VU & MI	Marine sea bird inhabiting sub-Antarctic and subtropical waters from pelagic to shelf-break water habitats.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Diomedidae	<i>Thalassarche melanophris</i>	black-browed albatross	T - EN / T - VU & MI	Marine species that inhabits Antarctic, subantarctic and temperate waters and occasionally enters the tropics.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Diomedidae	<i>Thalassarche steadi</i>	white-capped albatross	- / T - VU & MI	The species occurs both inshore and offshore.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Falconidae	<i>Falco hypoleucos</i>	grey falcon	T - VU / T - VU	Usually in lightly timbered country, especially stony plains and lightly timbered acacia shrublands.	Highly Unlikely	Highly Unlikely	N/A	Medium	No	Not detected during survey. No suitable habitat present and well beyond documented range.
Laridae	<i>Sternula nereis nereis</i>	Australian fairy tern	T - VU / T - VU	Coastal areas and embayments of a variety of habitats including offshore, estuarine or lacustrine (lake) islands, wetlands and mainland coastline. Nests on sheltered sandy beaches, spits and banks above the high tide line and below vegetation. Roosts on beaches at night.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Muridae	<i>Hydromys chrysogaster</i>	water-rat, rakali	P4 / -	Permanent fresh or brackish water, subalpine streams and other inland waterways to lakes, swamps, and farm dams. Lives in burrows on low banks of rivers, lakes, wetlands, estuaries and even along the coast, associated with riparian vegetation.	Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Myrmecobiidae	<i>Myrmecobius fasciatus</i>	numbat, walpurti	T - EN / T - EN	Current known distribution is a small area of WA's Jarrah forest and Wheatbelt, notably at Dryandra Woodland and the Upper Warren area. Habitat is generally woodland dominated by Eucalyptus species, with abundant hollow logs and branches for shelter and termites for food.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Procellariidae	<i>Ardenna carneipes</i>	flesh-footed shearwater	T - VU / MI	Mainly occurs in the subtropics over continental shelves and slopes and occasionally inshore waters. Breeds on islands in burrows on sloping ground in coastal forest, scrubland, shrubland or grassland.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Procellariidae	<i>Ardenna grisea</i>	sooty shearwater	MI / MI	Marine species. Occurs in pelagic (open ocean) sub-tropical, sub-Antarctic and Antarctic waters.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Procellariidae	<i>Ardenna tenuirostris</i>	short-tailed shearwater	MI / MI	Found in coastal waters.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.

Table 14 continued.

Family	Species	Vernacular	Status BC Act/ EPBC Act	Habitat Description	Likelihood of Occurrence (Pre Survey)	Likelihood of Occurrence (Post Survey)	Habitat Present	Likelihood of Detection if Present	Species Present	Comment
Procellariidae	<i>Halobaena caerulea</i>	blue petrel	- / T - VU	Pelagic, occasionally over shallow waters.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Procellariidae	<i>Macronectes giganteus</i>	southern giant-petrel	MI / T - EN & MI	Marine; Antarctic to subtropical waters.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Procellariidae	<i>Macronectes halli</i>	northern giant-petrel	MI / T - VU & MI	Marine, oceanic; mainly in subantarctic waters.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Procellariidae	<i>Pachyptila turtur subantarctica</i>	fairy prion (southern)	- / T - VU	Sub-Antarctic seas and islands while breeding. Subtropical seas non breeding time; rarely inshore expect when sheltering from storms.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Procellariidae	<i>Pterodroma mollis</i>	soft-plumaged petrel	- / T - VU	Is a marine, oceanic species.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Psittacidae	<i>Pezoporus flaviventris</i>	western ground parrot	T - CR / T - CR	Ground-dwelling species inhabiting low, dry or swampy near-coastal heathland. Often occurring in habitat that has been unburnt for long periods of time. Flies at dawn or dusk, eating small seeds. Known only from two locations in the far south-west of Western Australia: Fitzgerald River National Park and Cape Arid National Park/Nuytsland Nature Reserve.	Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Scolopacidae	<i>Arenaria interpres</i>	ruddy turnstone	MI / MI	Prefers coastal regions with exposed rock coast lines or coral reefs, platforms and shelves, often with shallow tidal pools and rocky, shingle or gravel beaches. Occasionally been sighted in estuaries, harbours, bays and coastal lagoons, among low saltmarsh or on exposed beds of seagrass, around sewage ponds and on mudflats.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Scolopacidae	<i>Calidris alba</i>	sanderling	MI / MI	Almost entirely coastal mostly on open sandy beaches exposed to open sea-swell, and also on exposed sandbars and spits, and shingle banks, where they forage in the wave-wash zone and amongst rotting seaweed.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Scolopacidae	<i>Calidris canutus</i>	red knot, knot	T - EN / T - EN & MI	Intertidal mudflats, sandflats and sandy beaches of sheltered coasts, in estuaries, bays, inlets, lagoons and harbours; sometimes on sandy ocean beaches or shallow pools on exposed wave-cut rock platforms or coral reefs. Occasionally seen on terrestrial saline wetlands near the coast, such as lakes, lagoons, pools and pans, and recorded on sewage ponds and saltworks, but rarely use freshwater swamps. They rarely use inland lakes or swamps.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Scolopacidae	<i>Calidris ruficollis</i>	red-necked stint	MI / MI	Coastal areas, including sheltered inlets, bays, lagoons and estuaries with intertidal mudflats; ephemeral or permanent shallow wetlands near the coast or inland, and sometimes flooded paddocks or damp grasslands (Higgins and Davies 1996).	Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Scolopacidae	<i>Limosa lapponica menzbieri</i>	northern Siberian bar-tailed godwit	T - CR / T - CR	Occurs mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. It has also been recorded in coastal sewage farms and saltworks, saltlakes and brackish wetlands near coasts, sandy ocean beaches, rock platforms, and coral reef-flats.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Scolopacidae	<i>Tringa brevipes</i>	grey-tailed tattler	MI & P4 / MI	Typical habitat is often found to be sheltered coasts with reefs and rock platforms or with intertidal mudflats.	Highly Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Scolopacidae	<i>Tringa glareola</i>	wood sandpiper	MI / MI	Inland shallow freshwater wetlands, often with other waders. They prefer ponds and pools with emergent reeds and grass, surrounded by tall plants or dead trees and fallen timber.	Unlikely	Highly Unlikely	No	Medium	No	Not detected during survey. No suitable habitat present.
Balaenidae	<i>Eubalaena australis</i>	southern right whale	T - VU / T - EN & MI	Coastal reproductive areas.	Highly Unlikely	Highly Unlikely	No	Low	No	Not detected during survey. No suitable habitat present.
Balaenopteridae	<i>Balaenoptera borealis</i>	sei whale	- / T - VU	Deep water oceanic habitat.	Highly Unlikely	Highly Unlikely	No	Low	No	Not detected during survey. No suitable habitat present.
Balaenopteridae	<i>Balaenoptera musculus</i>	blue whale	- / T - EN	Deep water oceanic habitat.	Highly Unlikely	Highly Unlikely	No	Low	No	Not detected during survey. No suitable habitat present.
Balaenopteridae	<i>Balaenoptera physalus</i>	fin whale	- / T - VU	Deep water oceanic habitat.	Highly Unlikely	Highly Unlikely	No	Low	No	Not detected during survey. No suitable habitat present.

Table 14 continued.

Family	Species	Vernacular	Status BC Act/ EPBC Act	Habitat Description	Likelihood of Occurrence (Pre Survey)	Likelihood of Occurrence (Post Survey)	Habitat Present	Likelihood of Detection if Present	Species Present	Comment
Balaenopteridae	<i>Megaptera novaeangliae</i>	humpback whale	CD & MI / MI	Oceanic.	Highly Unlikely	Highly Unlikely	No	Low	No	Not detected during survey. No suitable habitat present.
Carchariidae	<i>Carcharias taurus</i> (west coast population)	grey nurse shark	T - VU / T - VU	In-shore regions in cool temperate to subtropical waters.	Highly Unlikely	Highly Unlikely	No	Low	No	Not detected during survey. No suitable habitat present.
Cheloniidae	<i>Caretta caretta</i>	loggerhead turtle	T - EN / T - EN & MI	Marine, nesting on sandy beaches between 25-33 degrees Celsius.	Highly Unlikely	Highly Unlikely	No	Low	No	Not detected during survey. No suitable habitat present.
Cheloniidae	<i>Chelonia mydas</i>	green turtle	T - VU / T - VU & MI	Oceanic.	Highly Unlikely	Highly Unlikely	No	Low	No	Not detected during survey. No suitable habitat present.
Cheloniidae	<i>Eretmochelys imbricata</i>	hawksbill turtle	T - VU / T - VU & MI	Oceanic.	Highly Unlikely	Highly Unlikely	No	Low	No	Not detected during survey. No suitable habitat present.
Dermochelyidae	<i>Dermochelys coriacea</i>	leatherback turtle	T - VU / T - EN & MI	Oceanic.	Highly Unlikely	Highly Unlikely	No	Low	No	Not detected during survey. No suitable habitat present.
Lamnidae	<i>Carcharodon carcharias</i>	great white shark	T - VU / T - VU & MI	Continental and insular shelf waters. Can move closer inshore.	Highly Unlikely	Highly Unlikely	No	Low	No	Not detected during survey. No suitable habitat present.
Otariidae	<i>Arctocephalus forsteri</i>	New Zealand fur seal	OS / -	Rocky coastline and offshore islands that provide protection. Breeding in areas of tussock/scrub vegetation.	Highly Unlikely	Highly Unlikely	No	Low	No	Not detected during survey. No suitable habitat present.
Otariidae	<i>Neophoca cinerea</i>	Australian sea-lion	T - EN / T - EN	Exposed islands and reefs, rocky terrain, sandy beaches and vegetated foredunes and swales.	Highly Unlikely	Highly Unlikely	No	Low	No	Not detected during survey. No suitable habitat present.
Physeteridae	<i>Physeter macrocephalus</i>	sperm whale	VU / MI	Oceanic.	Highly Unlikely	Highly Unlikely	No	Low	No	Not detected during survey. No suitable habitat present.
Rhincodontidae	<i>Rhincodon typus</i>	whale shark	- / T - VU & MI	The whale shark inhabits all tropical and warm-temperate seas. The fish is primarily pelagic, and can be found in both coastal and oceanic habitats.	Highly Unlikely	Highly Unlikely	No	Low	No	Not detected during survey. No suitable habitat present.
Triakidae	<i>Galeorhinus galeus</i>	school shark	/ CD	Oceanic.	Highly Unlikely	Highly Unlikely	No	Low	No	Not detected during survey. No suitable habitat present.

Appendix C

Black Cockatoo Foraging Quality Scoring Tool and DAWE (2022) Definitions

Table 15: Foraging quality scoring tool template (DAWE, 2022).

Starting Score		Baudin's Cockatoo	Carnaby's Cockatoo	Forest Red-Tailed Black Cockatoo
10		Start at a score of 10 if your site is native eucalypt woodlands and forest, and proteaceous woodland and heath, particularly Marri, within the range of the species, including along roadsides and parkland cleared areas. Can include planted vegetation. This tool only applies to sites equal to or larger than 1 hectare in size.	Start at a score of 10 if your site is native shrubland, kwongan heathland or woodland, dominated by proteaceous plant species such as <i>Banksia</i> spp. (including <i>Dryandra</i> spp.), <i>Hakea</i> spp. and <i>Grevillea</i> spp., as well as native eucalypt woodland and forest that contains foraging species, within the range of the species, including along roadsides and parkland cleared areas. Also includes planted native vegetation. This tool only applies to sites equal to or larger than 1 hectare in size.	Start at a score of 10 if your site is Jarrah or Marri woodland and/or forest, or if it is on the edge of Karri forest, or if Wandoo and Blackbutt occur on the site, within the range of the subspecies, including along roadsides and parkland cleared areas. This tool only applies to sites equal to or larger than 1 hectare in size.
Attribute	Subtractions	Context adjustor (attributes reducing functionality of foraging habitat)		
Foraging potential	-2	Subtract 2 from your score if there is no evidence of feeding debris on your site.	Subtract 2 from your score if there is no evidence of feeding debris on your site.	Subtract 2 from your score if there is no evidence of feeding debris on your site.
Connectivity	-2	Subtract 2 from your score if you have evidence to conclude that there is no other foraging habitat within 12 km of your site.	Subtract 2 from your score if you have evidence to conclude that there is no other foraging habitat within 12 km of your site.	Subtract 2 from your score if you have evidence to conclude that there is no other foraging habitat within 12 km of your site.
Proximity to breeding	-2	Subtract 2 if you have evidence to conclude that your site is more than 12 km from breeding habitat	Subtract 2 if you have evidence to conclude that your site is more than 12 km from breeding habitat.	Subtract 2 if you have evidence to conclude that your site is more than 12 km from breeding habitat.
Proximity to roosting	-1	Subtract 1 if you have evidence to conclude that your site is more than 20 km from a known night roosting habitat.	Subtract 1 if you have evidence to conclude that your site is more than 20 km from a known night roosting habitat.	Subtract 1 if you have evidence to conclude that your site is more than 20 km from a known night roosting habitat.
Impact from significant plant disease	-1	Subtract 1 if your site has disease present (e.g. <i>Phytophthora</i> spp. or Marri canker) and the disease is affecting more than 50% of the preferred food plants present.	Subtract 1 if your site has disease present (e.g. <i>Phytophthora</i> spp. or Marri canker) and the disease is affecting more than 50% of the preferred food plants present.	Subtract 1 if your site has disease present (e.g. <i>Phytophthora</i> spp. or Marri canker) and the disease is affecting more than 50% of the preferred food plants present.
Total score		8	8	N/A

DAWE (2022) Definitions

Breeding habitat: Habitat that contains known, suitable or potential nesting trees:

- **Known nesting trees:** Trees (live or dead but still standing) which contains a hollow where black cockatoo breeding has been recorded or which demonstrates evidence of breeding (i.e. showing evidence of use through scratches, chew marks or feathers). Note: some records of known nesting trees within or near the area of an action can be requested from the WA Department of Biodiversity, Conservation and Attractions and the WA Museum.
- **Suitable nesting trees:** Trees with suitable nesting hollows present, although no evidence of use. Note that any species of tree may develop suitable hollows for breeding.
- **Suitable nest hollow:** Any hollow with dimensions suitable for use for nesting by black cockatoos. Characteristics of hollows used by each species is available in the SPRAT database. Suitable nest hollows are only found in live trees with a DBH of at least 500 mm. Usually this will be a natural hollow, but artificial hollows may also be suitable in some circumstances (for example, where the artificial hollow has been specifically designed for use by black cockatoos). Note that artificial hollows have only been shown to have value for Carnaby's Cockatoos to date.
- **Potential nesting trees:** Trees that have a suitable DBH to develop a nest hollow, but do not currently have hollows. Trees suitable to develop a nest hollow in the future are 300-500 mm DBH. Note that many species of eucalypt may develop suitable hollows for breeding.

Foraging habitat: Plant species known to support foraging (see Table 1) within the range of each of the species.

Night roosting habitat: Habitat that contains one, or a group of, known or potential roosting trees:

- **Known roosting tree:** A tree (generally the tallest), native or introduced know to be used for night roosting or which demonstrates evidence of roosting. Usually close to an important water source and within an area of high-quality foraging habitat (see Appendix A). During the breeding season, male black cockatoos roost in the vicinity of the nesting trees, therefore a breeding area may also be considered to be night roosting habitat. Roosting habitat is not always evident and can be discovered during surveys.
- **Potential roosting tree:** A tall tree of any species within close proximity to water.

Night roosting site: Night roosting habitat that contains one or more known night roosting tree and includes all vegetation within a 500 m radius of each known night roosting tree.

Appendix D

Conservation Status Definitions and Condition Scale

Table 16: Conservation code definitions for flora and fauna listed as Threatened or Specially Protected.

Threatened, Extinct and Specially Protected fauna or flora are species 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.

Threat Category	Definition
Threatened species	Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the Biodiversity Conservation Act 2016 (BC Act). Threatened fauna is the species of fauna that are listed as critically endangered, endangered or vulnerable threatened species. Threatened flora is the species of flora that are listed as critically endangered, endangered or vulnerable threatened species. The assessment of the conservation status of threatened species is in accordance with the BC Act listing criteria and the requirements of Ministerial Guideline Number 1 and Ministerial Guideline Number 2 that adopts the use of the International Union for Conservation of Nature (IUCN) Red List of Threatened Species Categories and Criteria³, and is based on the national distribution of the species.
Threatened - Critically endangered species (CR)	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.
Threatened - Endangered species (EN)	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.
Threatened - Vulnerable species (VU)	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.
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.
Threatened - Extinct (EX)	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).
Threatened – Extinct in the wild (EW)	Species that “is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form”, and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act). Currently there are no fauna or flora species listed as extinct in the wild.
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.
Specially protected species – Conservation Dependent (CD)	Species of special conservation need that are dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act). Currently only fauna are listed as species of special conservation interest.
Specially protected species – Other specially protected species (OS)	Species otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act). Currently only fauna are listed as species otherwise in need of special protection.

Table 16 continued.

Threat Category	Definition
Specially protected species Continued.	
Specially protected species - Migratory species (MI)	Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act). Migratory species include birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) or The Republic of Korea (ROKAMBA), and fauna subject to the <i>Convention on the Conservation of Migratory Species of Wild Animals</i> (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.

Table 17: Conservation code definitions for flora and fauna listed as Priority.

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.

Threat Category	Definition
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, for example, agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements for threatened listing and appear to be under immediate threat from known threatening processes. These species are in urgent need of further survey.
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, for example, national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements for threatened listing and appear to be under threat from known threatening processes. These species are in urgent need of further survey.
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. These species need further survey.
Priority 4: Rare, Near Threatened and other species in need of monitoring	(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands. (b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as a conservation dependent specially protected species. (c) Species that have been removed from the list of threatened species or lists of conservation dependent or other specially protected species, during the past five years for reasons other than taxonomy. (d) Other species in need of monitoring.

Table 18: Conservation code definitions for ecological communities listed as Threatened (TEC).

Threat Category	Definition
Collapsed (CO)	An ecological community listed by order of the Minister as collapsed under section 31(1) of the BC Act. As determined by criteria set out in section 32 of the BC Act, an ecological community is eligible for listing as a collapsed ecological community at a particular time if, at that time: a) there is no reasonable doubt that the last occurrence of the ecological community has collapsed; or b) the ecological community has been so extensively modified throughout its range that no occurrence of it is likely to recover: i. its species composition or structure; or ii. (ii) its species composition and structure.
Critically Endangered (CR)	A threatened ecological community listed in the category of critically endangered under section 27(1)(a) of the BC Act, as determined by criteria set out in section 28 of the BC Act and the ministerial guidelines. A critically endangered ecological community faces an extremely high risk of becoming eligible for listing as a collapsed ecological community in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines.
Endangered (EN)	A threatened ecological community listed in the category of endangered ecological community under section 27(1)(b) of the BC Act, as determined by criteria set out in section 29 of the BC Act and the ministerial guidelines. A threatened ecological community faces a very high risk of becoming eligible for listing as a collapsed ecological community in the near future, as determined in accordance with criteria set out in the ministerial guidelines.
Vulnerable (VU)	A threatened ecological community listed in the category of vulnerable ecological community under section 27(1)(c) of the BC Act, as determined by criteria set out in section 30 of the BC Act and the ministerial guidelines. A vulnerable ecological community faces a high risk of becoming eligible for listing as a collapsed ecological community in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines.

Table 19: Conservation code definitions for ecological communities listed as Priority (PEC).

Possible Threatened ecological communities that do not meet survey criteria or that are not adequately defined are added to the Priority Ecological Community List under priorities 1, 2 and 3. Ecological communities that are adequately known and not threatened but rare, near threatened, or have recently been removed from the threatened list are placed in Priority 4. Conservation dependent ecological communities are placed in Priority 5.

Threat Category	Definition
Priority One (P1) Poorly known ecological communities – very few occurrences, very restricted distribution	Ecological communities that are known from very few occurrences with a very restricted distribution (generally ≤ 5 occurrences or a total area of ≤ 100 ha). Occurrences are believed to be under threat either due to limited extent, or being on lands under immediate threat (e.g., within agricultural or pastoral lands, urban areas, active mineral leases) or for which current threats exist. May include communities with occurrences on protected lands. Communities may be included if they are comparatively well-known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under immediate threat from known threatening processes across their range.
Priority Two (P2) Poorly known ecological communities – few occurrences, restricted distribution	Communities that are known from few occurrences with a restricted distribution (generally ≤ 10 occurrences or a total area of ≤ 200 ha). At least some occurrences are not believed to be under immediate threat (within approximately 10 years) of destruction or degradation. Communities may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under threat from known threatening processes.
Priority Three (P3) Poorly known ecological communities – inadequately surveyed or not well defined	Communities may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and/or are not well defined, and known threatening processes exist that could affect them. This category includes three sub-categories: - Communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation. - Communities known from a few widespread occurrences, which are either large or with significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat (within approximately 10 years). - Communities made up of large, and/or widespread occurrences, that may or may not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing by domestic and/or feral stock, inappropriate fire regimes, clearing, hydrological change, etc.
Priority Four (P4) Adequately known ecological communities – rare, near threatened, or recently removed from the threatened list	Ecological communities that are adequately known and either rare but not threatened, near threatened, or have recently been removed from the threatened list. These communities require regular monitoring. - Rare: ecological communities known from few occurrences 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 communities are usually represented on conservation lands. - Near threatened: ecological communities that are considered to have been adequately surveyed and that do not qualify as conservation dependent, but that are close to qualifying for a higher threat category. (iii) Ecological communities that have been removed from the list of threatened communities during the past five years.
Priority Five (P5) Conservation dependent ecological communities	Ecological communities that are not threatened but are subject to a specific conservation program, the cessation of which would result in the community becoming threatened within five years.

Table 20: Condition Rating Scale (adapted from Keighery 1994) outlined in EPA (2016).

Vegetation Condition Rating	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance or damage caused by human activities since European settlement.
Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species. Damage to trees caused by fire, the presence of non-aggressive weeds and occasional vehicle tracks.
Very good	Vegetation structure altered, obvious signs of disturbance. Disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. Disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching Good condition without intensive management. Disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds at high density, partial clearing, dieback and grazing.
Completely Degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees and shrubs.

Appendix E

Species Lists, Relevé and Quadrat Data

Table 21: Flora species list recorded within survey area.

Note: Species are presented alphabetically by family then species name. * = introduced species, # = low confidence identification.

Family	Genus	Species	Vernacular
Aizoaceae	<i>Carpobrotus</i>	<i>modestus</i>	inland pigface
Aizoaceae	<i>Disphyma</i>	<i>crassifolium</i>	round-leaved pigface
Aizoaceae	<i>Mesembryanthemum</i>	<i>aitonis</i>	angled iceplant *
Aizoaceae	<i>Tetragonia</i>	<i>implexica</i>	bower spinach
Anarthriaceae	<i>Anarthria</i>	<i>aff. scabra</i>	
Anarthriaceae	<i>Anarthria</i>	<i>scabra</i>	
Araliaceae	<i>Trachymene</i>	<i>pilosa</i>	native parsnip
Asphodelaceae	<i>Asphodelus</i>	<i>fistulosus</i>	onion weed *
Asparagaceae	<i>Asparagus</i>	<i>asparagoides</i>	bridal creeper * (WoNS)
Asteraceae	<i>Arctotheca</i>	<i>calendula</i>	cape weed *
Asteraceae	<i>Cirsium</i>	<i>vulgare</i>	spear thistle *
Asteraceae	<i>Cotula</i>	<i>australis</i>	common cotula *
Asteraceae	<i>Erigeron</i>	<i>bonariensis</i>	*
Asteraceae	<i>Euchiton</i>	<i>sphaericus</i>	
Asteraceae	<i>Gamochaeta</i>	<i>calviceps</i>	*
Asteraceae	<i>Hypochaeris</i>	<i>glabra</i>	smooth cat's ear *
Asteraceae	<i>Podotheca</i>	<i>angustifolia</i>	sticky longheads
Asteraceae	<i>Pseudognaphalium</i>	<i>lanatum</i>	
Asteraceae	<i>Sonchus</i>	<i>asper</i>	rough sowthistle *
Asteraceae	<i>Sonchus</i>	<i>oleraceus</i>	common sowthistle *
Asteraceae	<i>Ursinia</i>	<i>anthemoides</i>	ursinia *
Asteraceae	<i>Vellereophyton</i>	<i>dealbatum</i>	white cudweed *
Asteraceae	<i>Vittadinia</i>	<i>gracilis</i>	
Boraginaceae	<i>Echium</i>	<i>plantagineum</i>	Paterson's curse *
Brassicaceae	<i>Brassica</i>	<i>tournefortii</i>	Mediterranean turnip *
Campanulaceae	<i>Wahlenbergia</i>	<i>capensis</i>	cape bluebell *
Caryophyllaceae	<i>Spergularia</i>	<i>brevifolia</i>	
Casuarinaceae	<i>Allocasuarina</i>	<i>humilis</i>	dwarf sheoak
Casuarinaceae	<i>Allocasuarina</i>	<i>thuyoides</i>	horned sheoak
Chenopodiaceae	<i>Atriplex</i>	<i>semibaccata</i>	berry saltbush
Chenopodiaceae	<i>Enchylaena</i>	<i>lanata</i>	
Chenopodiaceae	<i>Maireana</i>	<i>brevifolia</i>	small leaf bluebush
Chenopodiaceae	<i>Rhagodia</i>	<i>crassifolia</i>	fleshy saltbush
Chenopodiaceae	<i>Tecticornia</i>	<i>lepidosperma</i>	
Crassulaceae	<i>Crassula</i>	<i>colorata</i>	dense stonecrop
Crassulaceae	<i>Crassula</i>	<i>exserta</i>	
Cyperaceae	<i>Caustis</i>	<i>dioica</i>	
Cyperaceae	<i>Chaetospora</i>	<i>curvifolia</i>	
Cyperaceae	<i>Cyathochaeta</i>	<i>avenacea</i>	
Cyperaceae	<i>Ficinia</i>	<i>nodosa</i>	knotted club rush

Table 21 continued.

Family	Genus	Species	Vernacular
Cyperaceae	<i>Isolepis</i>	<i>cernua</i>	nodding club-rush
Cyperaceae	<i>Mesomelaena</i>	<i>stygia</i>	
Cyperaceae	<i>Schoenus</i>	<i>brevisetis</i>	
Cyperaceae	<i>Schoenus</i>	<i>caespititius</i>	
Cyperaceae	<i>Schoenus</i>	<i>submicrostachyus</i>	
Cyperaceae	<i>Schoenus</i>	<i>pleiostemoneus</i>	
Cyperaceae	<i>Schoenus</i>	<i>subbarbatus</i>	bearded bog-rush
Cyperaceae	<i>Tricostularia</i>	<i>neesii</i>	Nee's tricostularia
Cyperaceae	<i>Tricostularia</i>	<i>compressa</i>	clustered tricostularia
Dilleniaceae	<i>Hibbertia</i>	<i>gracilipes</i>	
Dilleniaceae	<i>Hibbertia</i>	<i>hemignosta</i>	
Dilleniaceae	<i>Hibbertia</i>	<i>mucronata</i>	prickly hibbertia
Dilleniaceae	<i>Hibbertia</i>	<i>racemosa</i>	stalked Guinea flower
Droseraceae	<i>Drosera</i>	<i>trichocaulis</i>	
Ericaceae	<i>Andersonia</i>	<i>macranthera</i>	
Ericaceae	<i>Lysinema</i>	<i>pentapetalum</i>	curry flower
Ericaceae	<i>Leucopogon</i>	<i>obovatus</i>	
Ericaceae	<i>Leucopogon</i>	<i>sp. coujinup</i>	
Ericaceae	<i>Lysinema</i>	<i>ciliatum</i>	
Ericaceae	<i>Oligarrhena</i>	<i>micrantha</i>	
Ericaceae	<i>Styphelia</i>	<i>conchifolia</i>	
Ericaceae	<i>Styphelia</i>	<i>crassifolia</i>	
Fabaceae	<i>Acacia</i>	<i>crassiuscula</i>	
Fabaceae	<i>Acacia</i>	<i>cyclops</i>	coastal wattle
Fabaceae	<i>Acacia</i>	<i>myrtifolia</i>	
Fabaceae	<i>Acacia</i>	<i>varia</i> var. <i>parviflora</i>	
Fabaceae	<i>Daviesia</i>	<i>major</i>	
Fabaceae	<i>Eutaxia</i>	<i>major</i>	
Fabaceae	<i>Gompholobium</i>	<i>tomentosum</i>	hairy yellow pea
Fabaceae	<i>Jacksonia</i>	<i>capitata</i>	
Fabaceae	<i>Lupinus</i>	<i>albus</i>	white lupin *
Fabaceae	<i>Ornithopus</i>	<i>compressus</i>	yellow serradella *
Fabaceae	<i>Psoralea</i>	<i>pinnata</i>	African scurfpea *
Fabaceae	<i>Trifolium</i>	<i>arvense</i>	hare's foot clover *
Fabaceae	<i>Trifolium</i>	<i>glomeratum</i>	cluster clover *
Geraniaceae	<i>Erodium</i>	<i>botrys</i>	long storksbill *
Geraniaceae	<i>Pelargonium</i>	<i>capitatum</i>	rose pelargonium *
Goodeniaceae	<i>Dampiera</i>	<i>fasciculata</i>	bundled-leaf dampiera
Goodeniaceae	<i>Goodenia</i>	<i>incana</i>	hoary goodenia
Goodeniaceae	<i>Lechenaultia</i>	<i>heteromera</i>	claw leschenaultia
Goodeniaceae	<i>Scaevola</i>	<i>crassifolia</i>	thick-leaved fan-flower

Table 21 continued.

Family	Genus	Species	Vernacular
Haemodoraceae	<i>Anigozanthos</i>	<i>rufus</i>	red kangaroo paw
Haemodoraceae	<i>Conostylis</i>	<i>bealiana</i>	
Haemodoraceae	<i>Conostylis</i>	<i>serrulata</i>	
Haemodoraceae	<i>Conostylis</i>	<i>vaginata</i>	sheath conostylis
Haemodoraceae	<i>Haemodorum</i>	<i>spicatum</i>	bohn
Hemerocallidaceae	<i>Johnsonia</i>	<i>acaulis</i>	
Hemerocallidaceae	<i>Tricoryne</i>	<i>elator</i>	yellow autumn lily
Iridaceae	<i>Patersonia</i>	<i>lanata</i>	woolly patersonia
Iridaceae	<i>Romulea</i>	<i>rosea</i>	Guildford grass *
Juncaceae	<i>Juncus</i>	<i>pallidus</i>	pale rush
Lauraceae	<i>Cassytha</i>	<i>glabella</i>	tangled dodder laurel
Loranthaceae	<i>Nuytsia</i>	<i>floribunda</i>	Moodjar, WA Christmas tree
Myrtaceae	<i>Apectospermum</i>	<i>spinescens</i>	
Myrtaceae	<i>Beaufortia</i>	<i>empetrifolia</i>	south coast beaufortia
Myrtaceae	<i>Calothamnus</i>	<i>gracilis</i>	
Myrtaceae	<i>Calytrix</i>	<i>decandra</i>	pink starflower
Myrtaceae	<i>Calytrix</i>	<i>leschenaultii</i>	
Myrtaceae	<i>Chamelaucium</i>	<i>megalopetalum</i>	large waxflower
Myrtaceae	<i>Conothamnus</i>	<i>aureus</i>	
Myrtaceae	<i>Eucalyptus</i>	<i>ecostata</i>	coastal silver mallee
Myrtaceae	<i>Eucalyptus</i>	<i>pleurocarpa</i>	blue mallee
Myrtaceae	<i>Melaleuca</i>	<i>lanceolata</i>	Rottneest teatree *
Myrtaceae	<i>Melaleuca</i>	<i>nesophila</i>	mindiyed *
Myrtaceae	<i>Melaleuca</i>	<i>thymoides</i>	
Myrtaceae	<i>Melaleuca</i>	<i>villosisepala</i>	
Myrtaceae	<i>Taxandria</i>	<i>spathulata</i>	
Onagraceae	<i>Oenothera</i>	<i>stricta</i>	common evening primrose *
Orchidaceae	<i>Cyrtostylis</i>	<i>robusta</i> #	mosquito orchid
Orchidaceae	<i>Disa</i>	<i>bracteata</i>	South African orchid *
Orchidaceae	<i>Microtis</i>	<i>media</i>	tall mignonette orchid
Orobanchaceae	<i>Orobanche</i>	<i>minor</i>	lesser broomrape *
Pittosporaceae	<i>Billardiera</i>	<i>fusiformis</i>	Australian bluebell
Pittosporaceae	<i>Billardiera</i>	<i>lehmanniana</i>	kurup
Poaceae	<i>Aira</i>	<i>cupaniana</i>	silvery hairgrass *
Poaceae	<i>Amphipogon</i>	<i>turbatus</i>	
Poaceae	<i>Austrostipa</i>	<i>elegantissima</i>	
Poaceae	<i>Avena</i>	<i>barbata</i>	bearded oat *
Poaceae	<i>Briza</i>	<i>maxima</i>	blowfly grass *
Poaceae	<i>Briza</i>	<i>minor</i>	shivery grass *
Poaceae	<i>Bromus</i>	<i>diandrus</i>	great brome *
Poaceae	<i>Bromus</i>	<i>hordeaceus</i>	soft brome *

Table 21 continued.

Family	Genus	Species	Vernacular
Poaceae	<i>Cenchrus</i>	<i>clandestinus</i>	kikuyu grass *
Poaceae	<i>Ehrharta</i>	<i>calycina</i>	perennial veldt grass *
Poaceae	<i>Eragrostis</i>	<i>curvula</i>	African lovegrass *
Poaceae	<i>Hordeum</i>	<i>leporinum</i>	barley grass *
Poaceae	<i>Lagurus</i>	<i>ovatus</i>	hare's tail grass *
Poaceae	<i>Lolium</i>	<i>rigidum</i>	Wimmera ryegrass *
Poaceae	<i>Parapholis</i>	<i>incurva</i>	coast barbgrass *
Poaceae	<i>Polypogon</i>	<i>monspeliensis</i>	annual beardgrass *
Poaceae	<i>Rytidosperma</i>	<i>setaceum</i>	
Poaceae	<i>Vulpia</i>	<i>myuros</i>	rat's tail fescue *
Polygonaceae	<i>Rumex</i>	<i>acetosella</i>	sorrel *
Polygonaceae	<i>Rumex</i>	<i>crispus</i>	curled dock *
Primulaceae	<i>Lysimachia</i>	<i>arvensis</i>	pimpernel *
Proteaceae	<i>Adenanthos</i>	<i>cuneatus</i>	coastal jugflower
Proteaceae	<i>Banksia</i>	<i>blechnifolia</i>	
Proteaceae	<i>Banksia</i>	<i>coccinea</i>	scarlet banksia
Proteaceae	<i>Banksia</i>	<i>obovata</i>	wedge-leaved dryandra
Proteaceae	<i>Banksia</i>	<i>pulchella</i>	teasel banksia
Proteaceae	<i>Banksia</i>	<i>speciosa</i>	showy banksia
Proteaceae	<i>Conospermum</i>	<i>teretifolium</i>	spider smokebush
Proteaceae	<i>Conospermum</i>	<i>floribundum</i>	
Proteaceae	<i>Franklandia</i>	<i>fucifolia</i>	lanoline bush
Proteaceae	<i>Hakea</i>	<i>corymbosa</i>	cauliflower hakea
Proteaceae	<i>Isopogon</i>	<i>polycephalus</i>	clustered coneflower
Proteaceae	<i>Isopogon</i>	<i>trilobus</i>	barrel coneflower
Proteaceae	<i>Lambertia</i>	<i>inermis</i> var. <i>drummondii</i>	
Proteaceae	<i>Lambertia</i>	<i>inermis</i> var. <i>inermis</i>	
Proteaceae	<i>Melaleuca</i>	<i>striata</i>	
Proteaceae	<i>Petrophile</i>	<i>teretifolia</i>	
Proteaceae	<i>Stirlingia</i>	<i>anethifolia</i>	
Proteaceae	<i>Synaphea</i>	<i>divaricata</i>	
Restionaceae	<i>Chordifex</i>	<i>crispatus</i>	
Restionaceae	<i>Chordifex</i>	<i>sphacelatus</i>	
Restionaceae	<i>Hypolaena</i>	<i>exsulca</i>	
Restionaceae	<i>Hypolaena</i>	<i>humilis</i>	
Restionaceae	<i>Lepidobolus</i>	<i>chaetocephalus</i>	bristle-headed chaff rush
Restionaceae	<i>Lyginia</i>	<i>imberbis</i>	
Rutaceae	<i>Cyanothamnus</i>	<i>ramosus</i> subsp. <i>anethifolius</i>	
Solanaceae	<i>Solanum</i>	<i>hoplopetalum</i>	thorny solanum *
Solanaceae	<i>Solanum</i>	<i>laciniatum</i>	kangaroo apple *
Solanaceae	<i>Solanum</i>	<i>nigrum</i>	black berry nightshade *

Table 21 continued.

Family	Genus	Species	Vernacular
Stylidiaceae	<i>Stylidium</i>	<i>pilosum</i>	silky triggerplant
Stylidiaceae	<i>Stylidium</i>	<i>repens</i>	matted triggerplant
Xanthorrhoeaceae	<i>Xanthorrhoea</i>	<i>platyphylla</i>	

Relevé	R1	Veg Code	AcycShL	Survey date	28/10/2025
Vegetation Descriptions:		(NVIS; DoEE, 2017): M ^ <i>Acacia cyclops</i> , <i>Hibbertia mucronata</i> ^shrub\4\ d: G ^^ <i>Caustis dioica</i> , <i>Ficinia nodosa</i> , <i>Tricostularia neesii</i> ^sedge\2\ i. (Muir's, 1977): <i>Acacia cyclops</i> Thicket, over <i>Hibbertia mucronata</i> Open Dwarf Scrub, over <i>Caustis dioica</i> , <i>Ficinia nodosa</i> , <i>Tricostularia neesii</i> Very Open Low Sedges.			
Recorder/s:		Dr E. Hickman			
Location:		Lot 11 (No. 74) Lechenaultia Drive, Hopetoun WA 6348			
GPS (latitude, longitude):		-33.9101840369403, 120.131682017818			
Condition:		Very Good			
Aspect:		SE	Slope:	Gentle	
Geology:		Nil	Rock:	Nil	
Soil Colour:		Light Grey	Soil type:	Sand	
Hydrology:		Good drainage	Landform:	Slope Middle	
Layer	Height (m)	Cover Code	Dominant Species	Other species	
T1	>30				
T2	10-30				
T3	<10				
M1	>8				
M2	<8				
S1	>2	D > 70%	<i>Acacia cyclops</i>		
S2	1-2				
S3	0.5-1	E <5%	<i>Hibbertia mucronata</i>		
S4	<0.5				
V	NA	S 10-30%	<i>Caustis dioica</i> , <i>Ficinia nodosa</i> , <i>Tricostularia neesii</i>		
H	NA				
G	NA	E <5%	<i>Ehrharta calycina</i>		
					

Quadrat	Q1	Veg Code	BspeWL	Survey date	30/10/2025
Quadrat comments:	<i>B. speciosa</i> 90% dead, <i>H. corymbosa</i> dead. Dumped fencing wire present.				
Vegetation Descriptions:	(NVIS; DoEE, 2017): M ^ <i>Banksia speciosa</i> , ^ <i>Melaleuca striata</i> , <i>Adenanthos cuneatus</i> ^shrub\3\c; G ^ <i>Anarthria scabra</i> ^sedge\2\i. (Muir's, 1977): <i>Banksia speciosa</i> Dense Thicket, over <i>Melaleuca striata</i> and <i>Adenanthos cuneatus</i> Low Scrub, over <i>Anarthria scabra</i> Open Tall Sedges.				
Recorder/s:	Dr E. Hickman, M. Hollyock				
Location:	Lot 11 (No. 74) Lechenaultia Drive, Hopetoun WA 6348				
GPS (latitude, longitude):	-33.9101080130785, 120.132993031293				
Condition:	Good				
Aspect:	SE	Slope:	Gentle		
Geology:	Nil	Rock:	Nil		
Soil Colour:	Light brown	Soil type:	Sand		
Hydrology:	Good drainage	Landform:	Slope Middle		
Species name	Sp #	Form	Height (m)	Cover (%)	Flowering/Fruiting
<i>Banksia speciosa</i>		S-shrub	1.6	d > 70%	FL/FR
<i>Anarthria scabra</i>		V-sedge	0.75	i 10-30%	Flowering
<i>Melaleuca striata</i>		S-shrub	1.2	r < 10%	Fruiting
<i>Hibbertia mucronata</i>		S-shrub	0.7	r < 10%	Flowering
<i>Lechenaultia heteromera</i>		S-shrub	0.4	r < 10%	Flowering
<i>Eutaxia major</i>		S-shrub	0.4	r < 10%	Flowering
<i>Adenanthos cuneatus</i>		S-shrub	0.4	r < 10%	
<i>Melaleuca thymoides</i>		S-shrub	0.7	r < 10%	FL/FR
<i>Dampiera fasciculata</i>		S-shrub	0.3	r < 10%	Flowering
<i>Caustis dioica</i>		V-sedge	0.5	r < 10%	Flowering
<i>Chordifex crispatus</i>		V-sedge	0.5	r < 10%	Flowering
<i>Schoenus caespititius</i>		V-sedge	0.5	r < 10%	Flowering
<i>Lyginia imberbis</i>		V-sedge	0.5	r < 10%	Flowering
<i>Eucalyptus ecostata</i>		M-mallee	4	r < 10%	Fruiting
<i>Hakea corymbosa</i>		S-shrub		r < 10%	
<i>Hypolaena exsulca</i>		V-sedge	0.4	bi ≈ 0	



Quadrat	Q2	Veg Code	BspeWL	Survey date	30/10/2025
Quadrat comments:		<i>B. speciosa</i> 40% dead, <i>H. corymbosa</i> dead. Bridal creeper present <2%. Vegetation Description (NVIS; DoEE, 2017): M ^ <i>Banksia speciosa</i> , ^ <i>Melaleuca striata</i> , <i>Adenanthos cuneatus</i> ^shrub\3\c; G ^ <i>Anarthria scabra</i> ^sedge\2\i. Vegetation Description (Muir's, 1977): <i>Banksia speciosa</i> Thicket, over <i>Melaleuca striata</i> and <i>Adenanthos cuneatus</i> Low Scrub, over <i>Anarthria scabra</i> Dense Tall Sedges.			
Recorder/s:		Dr E. Hickman, M. Hollyock			
Location:		Lot 11 (No. 74) Lechenaultia Drive, Hopetoun WA 6348			
GPS (latitude, longitude):		-33.9102980308234, 120.132359024137			
Condition:		Good			
Aspect:		SE	Slope:	Gentle	
Geology:		Nil	Rock:	Nil	
Soil Colour:		Light brown	Soil type:	Sand	
Hydrology:		Good drainage	Landform:	Slope Middle	
Species name	Sp #	Form	Height (m)	Cover (%)	Flowering/Fruiting
<i>Banksia speciosa</i>		S-shrub	6	c 30-70%	FL/FR
<i>Anarthria scabra</i>		V-sedge	0.5	c 30-70%	Flowering
<i>Melaleuca striata</i>		S-shrub	1.5	r <10%	Fruiting
<i>Hakea corymbosa</i>		S-shrub	-	r <10%	
<i>Dampiera fasciculata</i>		S-shrub	0.3	r <10%	Flowering
<i>Melaleuca thymoides</i>		S-shrub	0.4	r <10%	FL/FR
<i>Asparagus asparagoides</i>		H-herb	0.4	r <10%	Fruiting
<i>Hypochaeris glabra</i>		H-herb	0.05	r <10%	FL/FR
<i>Ehrharta calycina</i>		G-grass	0.6	r <10%	Flowering
<i>Acacia cyclops</i>		S-shrub	1.6	r <10%	
<i>Lyginia imberbis</i>		V-sedge	0.4	r <10%	Flowering
<i>Hypolaena exsulca</i>		V-sedge	0.4	r <10%	Flowering
<i>Chordifex crispatus</i>		V-sedge	0.4	r <10%	Flowering
<i>Adenanthos cuneatus</i>		S-shrub	1.6	r <10%	Flowering
<i>Billardiera lehmanniana</i>		S-shrub	0.9	r <10%	Flowering
<i>Schoenus submicrostachyus</i>		V-sedge	0.25	bi ≈0	
<i>Microtis media</i>		H-herb	0.5	bi ≈0	Flowering



Quadrat	Q3	Veg Code	BspeWL	Survey date	30/10/2025
Quadrat comments:	<i>B. speciosa</i> 50% dead.				
Vegetation Descriptions:	Vegetation Description (NVIS; DoEE, 2017): <i>M</i> ^ <i>Banksia speciosa</i> , ^ <i>Melaleuca striata</i> , <i>Nuytsia floribunda</i> ^shrub\3c; <i>G</i> ^ <i>Anarthria scabra</i> ^sedge\2i. Vegetation Description (Muir's, 1977): <i>Banksia speciosa</i> Thicket, over <i>Melaleuca striata</i> and <i>Nuytsia floribunda</i> Scrub, over <i>Anarthria scabra</i> Open Tall Sedges.				
Recorder/s:	Dr E. Hickman, M. Hollyock				
Location:	Lot 11 (No. 74) Lechenaultia Drive, Hopetoun WA 6348				
GPS (latitude, longitude):	-33.9093900192528, 120.131989968940				
Condition:	Good				
Aspect:	SE	Slope:	Gentle		
Geology:	Nil	Rock:	Nil		
Soil Colour:	Light brown	Soil type:	Sand		
Hydrology:	Good drainage	Landform:	Slope Middle		
Species name	Sp #	Form	Height (m)	Cover (%)	Flowering/Fruiting
<i>Banksia speciosa</i>		S-shrub	1.6	c 30-70%	FL/FR
<i>Melaleuca striata</i>		S-shrub	2	i 10-30%	Fruiting
<i>Nuytsia floribunda</i>		S-shrub	2.5	i 10-30%	
<i>Anarthria scabra</i>		V-sedge	0.5	i 10-30%	Flowering
<i>Eucalyptus pleurocarpa</i>		M-mallee	2	r <10%	FL/FR
<i>Beaufortia empetrifolia</i>		S-shrub	1.2	r <10%	Fruiting
<i>Hibbertia mucronata</i>		S-shrub	1.2	r <10%	Flowering
<i>Adenanthos cuneatus</i>		S-shrub	1.5	r <10%	
<i>Taxandria spathulata</i>		S-shrub	1.6	r <10%	Flowering
<i>Melaleuca thymoides</i>		S-shrub	1.6	r <10%	FL/FR
<i>Melaleuca villosisepala</i>		S-shrub	1.6	r <10%	Fruiting
<i>Allocasuarina humilis</i>		S-shrub	1	r <10%	Fruiting
<i>Conospermum teretifolium</i>		S-shrub	1.6	r <10%	Flowering
<i>Chordifex crispatus</i>		V-sedge	0.4	r <10%	Flowering
<i>Tricostularia neesii</i>		V-sedge	0.6	r <10%	Flowering
<i>Hypolaena exsulca</i>		V-sedge	0.25	r <10%	Flowering
<i>Hypolaena humilis</i>		V-sedge	0.25	r <10%	Flowering
<i>Caustis dioica</i>		V-sedge	0.6	r <10%	Flowering
<i>Lyginia imberbis</i>		V-sedge	0.5	r <10%	Flowering
<i>Conostylis vaginata</i>		H-herb	0.05	r <10%	Flowering
<i>Hibbertia gracilipes</i>		S-shrub	0.2	bi ≈0	Flowering
<i>Eutaxia major</i>		S-shrub	0.5	bi ≈0	Flowering
<i>Dampiera fasciculata</i>		S-shrub	0.2	bi ≈0	
<i>Lechenaultia heteromera</i>		S-shrub	0.25	bi ≈0	Flowering
<i>Stylidium repens</i>		H-herb	0.05	bi ≈0	
<i>Hypochaeris glabra</i>		H-herb	0.25	bi ≈0	Flowering
<i>Vulpia myuros</i>		G-grass	0.05	bi ≈0	Flowering
<i>Schoenus submicrostachyus</i>		V-sedge	0.1	bi ≈0	
<i>Goodenia incana</i>		H-herb	0.1	bi ≈0	
<i>Leucopogon sp. coujinup</i>		S-shrub	0.1	bi ≈0	
<i>Drosera trichocaulis</i>		H-herb	0.02	bi ≈0	Flowering



Quadrat	Q4	Veg Code	BspeWL	Survey date	30/10/2025
Quadrat comments:	<i>B. speciosa</i> 10% dead.				
Vegetation Descriptions:	(NVIS; DoEE, 2017): <i>M</i> ^ <i>Banksia speciosa</i> , ^ <i>Melaleuca striata</i> , <i>Adenanthos cuneatus</i> \^shrub\3\c; <i>G</i> ^ <i>Anarthria scabra</i> \^sedge\2\i. (Muir's, 1977): <i>Banksia speciosa</i> Thicket, over <i>Melaleuca striata</i> and <i>Adenanthos cuneatus</i> Low Scrub, over <i>Anarthria scabra</i> Open Tall Sedges.				
Recorder/s:	Dr E. Hickman, M. Hollyock				
Location:	Lot 11 (No. 74) Lechenaultia Drive, Hopetoun WA 6348				
GPS (latitude, longitude):	-33.9052389655262, 120.130785992369				
Condition:	Very Good				
Aspect:	NW	Slope:	Gentle		
Geology:	Nil	Rock:	Nil		
Soil Colour:	Light brown	Soil type:	Sand		
Hydrology:	Good drainage	Landform:	Slope Middle		
Species name	Sp #	Form	Height (m)	Cover (%)	Flowering/Fruiting
<i>Banksia speciosa</i>		S-shrub	4	c 30-70%	FL/FR
<i>Melaleuca striata</i>		S-shrub	1.7	i 10-30%	Fruiting
<i>Anarthria scabra</i>		V-sedge	0.5	i 10-30%	Flowering
<i>Taxandria spathulata</i>		S-shrub	1.6	r <10%	Flowering
<i>Adenanthos cuneatus</i>		S-shrub	2	r <10%	
<i>Melaleuca thymoides</i>		S-shrub	0.7	r <10%	Flowering
<i>Lysinema ciliatum</i>		S-shrub	1.6	r <10%	Flowering
<i>Hibbertia mucronata</i>		S-shrub	1	r <10%	Flowering
<i>Calothamnus gracilis</i>		S-shrub	1.6	r <10%	Fruiting
<i>Petrophile teretifolia</i>		S-shrub	0.5	r <10%	Fruiting
<i>Hibbertia gracilipes</i>		S-shrub	0.25	r <10%	Flowering
<i>Lechenaultia heteromera</i>		S-shrub	0.5	r <10%	Flowering
<i>Eutaxia major</i>		S-shrub	0.4	r <10%	
<i>Franklandia fucifolia</i>		S-shrub	1.2	r <10%	Flowering
<i>Conothamnus aureus</i>		S-shrub	0.25	r <10%	Fruiting
<i>Calytrix leschenaultii</i>		S-shrub	0.25	r <10%	Flowering
<i>Chordifex crispatus</i>		V-sedge	0.5	r <10%	Flowering
<i>Caustis dioica</i>		V-sedge	1.5	r <10%	Flowering
<i>Tricostularia neesii</i>		V-sedge	0.7	r <10%	
<i>Beaufortia empetrifolia</i>		S-shrub	2	r <10%	Fruiting
<i>Cyathochaeta avenacea</i>		V-sedge	1.6	r <10%	
<i>Schoenus submicrostachyus</i>		V-sedge	0.1	r <10%	
<i>Schoenus caespititius</i>		V-sedge	0.5	bi ≈0	Flowering
<i>Lyginia imberbis</i>		V-sedge	0.5	bi ≈0	Flowering
<i>Cyrtostylis robusta</i>		H-herb	0.01	bi ≈0	



Quadrat	Q5	Veg Code	BspeWL	Survey date	30/10/2025
Quadrat comments:	A. cyclops dead. B. speciosa absent, B. coccinea instead.				
Vegetation Descriptions:	(NVIS; DoEE, 2017): <i>M</i> ^ <i>Banksia coccinea</i> , ^ <i>Melaleuca striata</i> , <i>Adenanthos cuneatus</i> , <i>Hibbertia mucronata</i> ^shrub\3c; <i>G</i> ^ <i>Hypolaena exsulca</i> ^sedge\1\i. (Muir's, 1977): <i>Banksia coccinea</i> scrub, over <i>Melaleuca striata</i> , <i>Adenanthos cuneatus</i> and <i>Hibbertia mucronata</i> Low Scrub, over <i>Hypolaena exsulca</i> Open Low Sedges.				
Recorder/s:	Dr E. Hickman, M. Hollyock				
Location:	Lot 11 (No. 74) Lechenaultia Drive, Hopetoun WA 6348				
GPS (latitude, longitude):	-33.9053259696811, 120.129396021366				
Condition:	Good				
Aspect:	NE		Slope:	Gentle	
Geology:	Nil		Rock:	Nil	
Soil Colour:	Light Grey		Soil type:	Sand	
Hydrology:	Good drainage		Landform:	Slope Upper	
Species name	Sp #	Form	Height (m)	Cover (%)	Flowering/Fruiting
<i>Adenanthos cuneatus</i>		S-shrub	2	i 10-30%	
<i>Billardiera fusiformis</i>		S-shrub	1.5	i 10-30%	Flowering
<i>Hibbertia mucronata</i>		S-shrub	1.6	i 10-30%	Flowering
<i>Melaleuca striata</i>		S-shrub	2	i 10-30%	Fruiting
<i>Conospermum teretifolium</i>		S-shrub	2	i 10-30%	
<i>Hypolaena exsulca</i>		V-sedge	0.25	i 10-30%	Flowering
<i>Acacia cyclops</i>		S-shrub	2	i 10-30%	
<i>Banksia coccinea</i>		S-shrub	5	i 10-30%	FL/FR
<i>Gompholobium tomentosum</i>		S-shrub	1.5	r <10%	FL/FR
<i>Beaufortia empetrifolia</i>		S-shrub	1.5	r <10%	Fruiting
<i>Calothamnus gracilis</i>		S-shrub	1.6	r <10%	Fruiting
<i>Eutaxia major</i>		S-shrub	0.6	r <10%	Flowering
<i>Petrophile teretifolia</i>		S-shrub	0.6	r <10%	FL/FR
<i>Stirlingia anethifolia</i>		S-shrub	0.5	r <10%	Flowering
<i>Lechenaultia heteromera</i>		S-shrub	0.25	r <10%	Flowering
<i>Calytrix leschenaultia</i>		S-shrub	0.25	r <10%	Flowering
<i>Dampiera fasciculata</i>		S-shrub	0.5	r <10%	Flowering
<i>Lysinema ciliatum</i>		S-shrub	0.5	r <10%	Flowering
<i>Calytrix decandra</i>		S-shrub	0.25	r <10%	Flowering
<i>Oligarrhena micrantha</i>		S-shrub	0.25	r <10%	Flowering
<i>Conothamnus aureus</i>		S-shrub	0.4	r <10%	
<i>Hibbertia hemignosta</i>		S-shrub	0.25	r <10%	
<i>Leucopogon</i> sp. Coujinup		S-shrub	0.15	r <10%	
<i>Tricostularia neesii</i>		V-sedge	0.5	r <10%	Flowering
<i>Anarthria scabra</i>		V-sedge	0.4	r <10%	Flowering
<i>Lyginia imberbis</i>		V-sedge	0.5	r <10%	Flowering
<i>Anigozanthos rufus</i>		H-herb	0.5	bi ≈0	Flowering
<i>Crassula colorata</i>		H-herb	0.03	bi ≈0	
<i>Wahlenbergia capensis</i>		H-herb	0.25	bi ≈0	Flowering
<i>Ursinia anthemoides</i>		H-herb	0.2	bi ≈0	Fruiting



Quadrat	Q6	Veg Code	BspeWL	Survey date	30/10/2025
Quadrat comments:	Very deep leaf litter covering majority of plot. B. speciosa 10% dead. Bridal creeper present. Crown snake present.				
Vegetation Descriptions:	(NVIS; DoEE, 2017): M ^ <i>Banksia speciosa</i> , ^ <i>Melaleuca striata</i> , <i>Adenanthos cuneatus</i> ^shrub\3;c; G ^ <i>Anarthria scabra</i> ^sedge\2;i. (Muir's, 1977): <i>Banksia speciosa</i> Thicket, over <i>Melaleuca striata</i> and <i>Adenanthos cuneatus</i> Low Scrub, over <i>Anarthria scabra</i> Tall Sedges.				
Recorder/s:	Dr E. Hickman, M. Hollyock				
Location:	Lot 11 (No. 74) Lechenaultia Drive, Hopetoun WA 6348				
GPS (latitude, longitude):	-33.9029859937727, 120.132806031033				
Condition:	Very Good				
Aspect:	N	Slope:	Gentle		
Geology:	Nil	Rock:	Nil		
Soil Colour:	Light Brown	Soil type:	Sand		
Hydrology:	Good drainage	Landform:	Slope Lower		
Species name	Sp #	Form	Height (m)	Cover (%)	Flowering/Fruiting
<i>Banksia speciosa</i>		S-shrub	5	c 30-70%	FL/FR
<i>Anarthria scabra</i>		V-sedge	0.6	c 30-70%	Flowering
<i>Adenanthos cuneatus</i>		S-shrub	0.6	i 10-30%	
<i>Melaleuca striata</i>		S-shrub	2	r <10%	Fruiting
<i>Asparagus asparagoides</i>		S-shrub	1.6	r <10%	Fruiting
<i>Caustis dioica</i>		V-sedge	0.7	r <10%	Flowering
<i>Lechenaultia heteromera</i>		S-shrub	0.25	bi ≈0	Flowering
<i>Hibbertia racemosa</i>		S-shrub	0.25	bi ≈0	Flowering
<i>Eutaxia major</i>		S-shrub	0.5	bi ≈0	Flowering



Table 22: Fauna species list recorded within survey area.

Note: Species are presented alphabetically by class, family then species name. * = non-native species.

Family	Species	Vernacular	Status BC Act/EPBC Act
Aves			
Acanthizidae	<i>Acanthiza inornata</i>	western thornbill	
Anatidae	<i>Anas gracilis</i>	grey teal	
Anatidae	<i>Tadorna tadornoides</i>	Australia shelduck	
Artamidae	<i>Artamus cyanopterus</i>	dusky woodswallow	
Artamidae	<i>Cracticus torquatus</i>	grey butcherbird	
Artamidae	<i>Gymnorhina tibicen</i>	Australian magpie	
Cacatuidae	<i>Eolophus roseicapilla</i>	galah	
Cacatuidae	<i>Zanda</i> sp.	White-tailed Black Cockatoo	EN/EN
Campephagidae	<i>Coracina novaehollandiae</i>	black-faced cuckooshrike	
Columbidae	<i>Ocyphaps lophotes</i>	crested pigeon	
Columbidae	<i>Phaps chalcoptera</i>	common bronzewing	
Corvidae	<i>Corvus coronoides</i>	Australian raven	
Cuculidae	<i>Cacomantis flabelliformis</i>	fan-tailed cuckoo	
Cuculidae	<i>Chrysococcyx lucidus</i>	shining bronze-cuckoo	
Falconidae	<i>Falco cenchroides</i>	nankeen kestrel	
Hirundinidae	<i>Hirundo neoxena</i>	welcome swallow	
Hirundinidae	<i>Petrochelidon nigricans</i>	tree martin	
Meliphagidae	<i>Anthochaera carunculata</i>	red wattlebird	
Meliphagidae	<i>Anthochaera chrysoptera</i>	little wattlebird	
Meliphagidae	<i>Anthochaera lunulata</i>	western wattlebird	
Meliphagidae	<i>Manorina flavigula</i>	yellow-throated myna	
Meliphagidae	<i>Phylidonyris novaehollandiae</i>	New Holland honeyeater	
Monarchidae	<i>Grallina cyanoleuca</i>	magpie-lark	
Podicipedidae	<i>Polycephalus polycephalus</i>	hoary-headed grebe	
Psittaculidae	<i>Barnardius zonarius</i>	Australian ringneck	
Psittaculidae	<i>Psephotus varius</i>	mulga parrot	
Rhipiduridae	<i>Rhipidura leucophrys</i>	willy wagtail	
Insecta			
Apidae	<i>Apis mellifera</i> *	European honeybee*	*
Pieridae	<i>Pieris rapae</i> *	cabbage white butterfly*	*
Mammalia			
Canidae	<i>Vulpes vulpes</i> *	fox*	*
Leporidae	<i>Oryctolagus cuniculus</i> *	European rabbit*	*
Macropodidae	<i>Macropod</i> sp.	macropod species	
Macropodidae	<i>Macropus fuliginosus</i>	western grey kangaroo	
Macropodidae	<i>Notamacropus eugenii derbianus</i>	tammar wallaby	P4/ -
Macropodidae	<i>Notamacropus irma</i>	western brush wallaby	P4/ -
Reptilia			
Scincidae	<i>Ctenotus</i> sp.	skink species	
Scincidae	<i>Tiliqua occipitalis</i>	western blue-tongued lizard	
Varanidae	<i>Varanus</i> sp.	goanna species	

Appendix F

Threatened and Priority Reporting Form and TEC Occurrence Form



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

COMMUNITY:	Proteaceae Dominated Kwongan Shrublands of the South-east Coastal Floristic Province of Western Australia (Kwongan)	OBSERVATION DATE: 30/10/2025
New occurrence ☒	Site ID: _____	CONS STATUS: P3/EN
OBSERVER/S:	Dr. Ellen Hickman, Mikayla Hollyock	PHONE: 9842 1575
ROLE:	Senior Botanist	ORGANISATION: Bio Diverse Solutions
EMAIL:	enquiry@biodiversesolutions.com	

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place):			
Lot 11 (No. 74) Lechenaultia Dirve			
Hopetoun WA 6348			
			Reserve No: _____
DISTRICT:	Albany	LGA:	Shire of Ravensthorpe
			Land manager present: ☐
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:
GDA94 / MGA94 ☐	DecDegrees ☒ DegMinSec ☐ UTM's ☐		GPS ☒ Differential GPS ☐ Map ☐
AGD84 / AMG84 ☐	Lat / Northing: -33.909289		No. satellites: _____ Map used: _____
WGS84 ☐	Long / Easting: 120.131911		Boundary polygon captured: ☒ Map used: _____
Unknown ☒	Zone: _____		
LAND TENURE:			
Nature reserve ☐	Timber reserve ☐	Private property ☒	Rail reserve ☐ Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐ Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____ Specify other: _____

AREA ASSESSMENT:	Edge survey ☐	Partial survey ☒	Full survey ☐	Area observed (m ²): 20600
EFFORT:	Time spent surveying (minutes): 1440		No. of minutes spent / 100 m ² : 7	

THREATS - type, and supporting information: e.g. clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents.	Cause/Agent: e.g. weed type, grazing species, recreation type	Area affected	Current impact (N-E)	Potential Impact (L-E)	Potential Threat Onset (S-L)
• Fire - too infrequent	Long unburnt environment (>50 years), effect seen in tree death of Banksia and Hakea spp. (obligate seeders) and no new recruitment of seedlings.	80%	M	H	M
• Weed invasion	Bridal creeper and patersons curse found at boundaries of vegetation and in surrounding areas.	80%	N	E	M
•		%			
•		%			
•		%			
•		%			
•		%			
•		%			
•		%			

*Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme

*Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

CONDITION OF OCCURRENCE: (Bush Forever Scale) (estimate % of area in each)

Pristine ☐ ____% Very Good ☒ 34% Degraded ☐ ____%
Excellent ☐ ____% Good ☒ 66% Completely Degraded ☐ ____%

RECOMMENDED MANAGEMENT ACTIONS: e.g. roadside markers, weed control, etc.

Weed control

Fire management

ACTIONS IMPLEMENTED (include date):

HABITAT INFORMATION: (Check more than one box for combinations or where necessary)

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest ☐	Granite ☐	(on soil surface; e.g. gravel, quartz fields)	Sand ☒	Red ☐	Well drained ☒
Hill ☐	Dolerite ☐		Sandy loam ☐	Brown ☐	Seasonally inundated ☐
Ridge ☐	Laterite ☐	0-10% ☒	Loam ☐	Yellow ☐	Permanently inundated ☐
Outcrop ☐	Ironstone ☐	10-30% ☐	Clay loam ☐	White ☒	Tidal ☐
Slope ☒	Limestone ☐	30-50% ☐	Light clay ☐	Grey ☒	
Flat ☐	Quartz ☐	50-100% ☐	Peat ☐	Black ☐	
Open depression ☐	Specify other:		Specify other:	Specify other:	Specify other:
Drainage line ☐	Nil				
Closed depression ☐					
Wetland ☐					

Specific Landform Element: (Refer to field manual for additional values)

CONDITION OF SOIL:

Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐ Cracked ☐ Saline ☐ Other:

VEGETATION CLASSIFICATION:

1. Banksia speciosa Woodland (BSpeWL)
- 2.
- 3.
- 4.

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

FIRE HISTORY:

Last Fire: Season/Month: _____ Year: 1957 **Fire Intensity:** High ☐ Medium ☐ Low ☐ No evidence of fire ☒

Actual Occurrence Landuse: Horizon Power power station

Adjacent Landuse:

Associated Flora Species:

Banksia speciosa

Adenanthos cuneatus

Melaleuca striata

Anarthria scabra

Banksia coccineae

Hakea corymbosa

Associated Fauna Species:

OTHER COMMENTS:

ATTACHED: Map ☐ Mudmap ☐ Photo ☒ GIS data ☒ Field notes ☐

Other:

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ Date entered: _____ Database no: _____



Threatened and Priority Ecological Community (TEC/PEC) Occurrence Report Form

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of record: Mikayla Hollyock

Role: Ecolgoist & Environmental
Consultant

Signature: MJH

Date submitted: 16/02/2026

Please return form to:

communities.data@dpaw.wa.gov.au

or Species and Communities Branch, Department of Parks and Wildlife, Locked Bag 104, Bentley Delivery Centre WA 6983

Record entered by: _____ *Date entered:* _____ *Database no:* _____



Fauna Report Form

Database No: _____

SPECIES NAME: <u>Zanda sp. (Zanda baudinii or Zanda latirostris)</u>	NUMBER SEEN: <u>35 +</u>
OBSERVATION DATE: <u>27/10/2025, 28/10/2025</u>	TIME: <u>Diurnal and dusk sightings</u>
OBSERVER NAME/S: <u>Kelly Debono</u>	
Organisation/Company and Role/Job <u>Bio Diverse Solutions, Senior Wildlife Ecologist</u>	
Title: _____	
EMAIL: <u>enquiry@biodiversesolutions.com.au</u>	PHONE: <u>9842 1575</u>

OBSERVATION LOCATION: (i.e. property address, street and suburb, distance to nearest intersection, reserve name/number etc.)

Lot 11 (No. 74) Lechenaultia Drive, Hopetoun WA 6348

COORDINATES:	DATUM:	SOURCE:	COORDINATE ACCURACY:
Latitude/Northing: <u>-33.908915</u>	GDA94 ☐	GPS ☐	30m ☒ 10km ☐
Longitude/Easting: <u>120.132425</u>	WGS84 ☐	Map ☐	300m ☐ 50km ☐
Zone (required for UTM's): _____	Unknown ☐	Google Earth ☐	1km ☐ 100km ☐
	Other (specify): GDA2020	GIS ☒	

LAND TENURE:

Nature Reserve ☐	State Forest ☐	Private Property ☒	Rail Reserve ☐	Aboriginal Reserve ☐	Shire Reserve ☐
National Park ☐	Timber Reserve ☐	Pastoral Lease ☐	Main Road Reserve ☐	State Waters <5.4km ☐	Other (specify): _____
Conservation Park ☐	Water Reserve ☐	UCL ☐	Shire Road Reserve ☐	Marine Park ☐	

CERTAINTY OF ANIMAL IDENTIFICATION:	AGE AND SEX:
Certain ☒ Photo ☒	Number of Adults: Male _____ Female _____ Unknown <u>~35+</u>
Moderately certain ☐ Specimen ☐	Number of Juveniles: Male _____ Female _____ Unknown _____
Not sure ☐ Identified by expert ☒	Number of Pouch Young: Male _____ Female _____ Unknown _____

Expert name, affiliation: Kelly Debono, Senior Wildlife Ecologist

DISTINGUISHING FEATURES/DESCRIPTION OF OBSERVED ANIMAL: (required to confirm identification or attach photo)

Large black cockatoos with white tail bands (beak not seen hence identification only to a genus level).

OBSERVATION: (animal activity and other relevant details)

Multiple detections; flock and individuals seen flying overhead, calls heard and foraging evidence observed. (Photos of foraging evidence attached.)

OBSERVATION DETAILS: (select as many as applicable)

METHOD:	TYPE:
Opportunistic ☐ Translocation ☐	Dawn sighting ☒ Caught/Trapped ☐ Taken into care ☐
Survey ☒ Historical (Written) ☐	Day sighting ☒ Spotlighting ☐ Released ☐
Monitoring ☐ Historical (Oral) ☐	Dusk sighting ☐ Remote camera ☐ Other (specify): _____
Other (specify): _____	Night sighting ☐ Remote sensing ☐
Survey/monitoring type (specify): Basic fauna & targeted black cockatoo habitat assessment	Dead (fresh) ☐ Acoustic recorder ☐
	Dead (degenerated) ☐ Subfossil/Fossil ☐

SECONDARY SIGNS:

Heard ☒	Nest/Mound ☐	Feathers/Hair/Fur/Skin ☐	Feeding residue ☒
Scats ☐	Natural Hollow ☐	Bones ☐	Fauna run ☐
Tracks ☐	Artificial Hollow ☐	Eggs/eggshell ☐	Other (specify): _____
Diggings ☐	Burrow ☐	Shell ☐	

CAUSE OF DEATH:

Roadkill ☐	Found drowned ☐	Predation by native animal ☐	Unknown ☐
Found shot ☐	Stranded on beach ☐	Predation by cat/fox/dog ☐	Other (specify): _____
Found poisoned ☐	Annual die off ☐	Starvation/malnutrition ☐	

Fauna Report Form

Database No: _____

REPRODUCTIVE STATE:

- | | | | |
|---|---|--|---|
| Non-breeding ☐ | Pregnant ☐ | Nesting ☐ | Unknown ☒ |
| Mating ☐ | Lactating ☐ | Eggs in nest ☐ | Other(specify): |
| Breeding colours ☐ | Young in pouch ☐ | Young in nest ☐ | |
| Breeding/Mating call ☐ | Young at heel ☐ | Fledgling emergence ☐ | |

SPECIMEN: (Select as many as applicable)

- | | | | |
|--|--|--|---------------------------------------|
| Fresh carcass ☐ | Partial carcass ☐ | Skull/bones ☐ | Not retained ☐ |
| Frozen carcass ☐ | DNA sample ☐ | Hair/Fur/Skin/feather ☐ | Other (specify): |
| Degenerated carcass ☐ | Spirit specimen ☐ | Scats ☐ | |

Specimen location and catalogue number:

- | | | | |
|------------------------------------|--|--|--|
| WA Museum ☐ | Other Museum/Collection ☐ | Given to the Department ☐ | Retained by collector ☐ |
| Catalogue No: | Museum/Collection name: | Office location: | Collectors Reference No. |
| | Catalogue No. | Contact name: | |

Specimen identified by (name, affiliation):

HABITAT INFORMATION: (Select as many as applicable)

Landform:

- | | | | | |
|--|--|--|----------------------------------|---|
| Cave ☐ | Hill/Mountain ☐ | Open Depression ☐ | Lake ☐ | Ocean ☐ |
| Cliff ☐ | Slope ☐ | Drainage line ☐ | Wetland ☐ | Artificial surface ☐ |
| Rocky outcrop ☐ | Sand dune ☐ | River ☐ | Swamp ☐ | Other (specify): |
| Gully/Gorge ☐ | Flat ☒ | Creek ☐ | Aquifer ☐ | |
| Ridge ☐ | Plain ☐ | Seepage ☐ | Estuary ☐ | |
| Crest/Summit ☐ | Closed Depression ☐ | Pool ☐ | Beach ☐ | |

Vegetation Type:

- | | | | | |
|---|------------------------------------|---|--|---------------------------------|
| Forest ☐ | Scrubland ☐ | Saltbush/Samphire ☐ | Revegetation ☐ | Park ☐ |
| Woodland ☐ | Grassland ☐ | Rock Community ☐ | Farmland ☒ | Garden ☐ |
| Shrubland ☒ | Spinifex ☐ | Wetland/Riparian ☐ | Orchard ☐ | Other (specify): |
| Mallee ☐ | Sedgeland ☐ | Remnant Vegetation ☐ | Plantation ☐ | |

Associated flora species, ecological communities, and other habitat information:

Kwonglan heathland with abundant feed species (eg. Banksia spp. and hakea spp.). Nuytsia floribunda trees also present with timber stripped for grubs.

FIRE HISTORY:

Last fire (season and year, or estimate time passed): >50 years ago. Fire Intensity: High ☐ Medium ☐ Low ☐ No signs of fire ☒

OTHER COMMENTS:

Submitter of record:	Mikayla Hollyock	Organisation and Role:	Bio Diverse Solutions, Ecologist
Contact Details:	mikayla@biodiversesolutions.com.au	Date Submitted:	16/02/2026



Fauna Report Form

Database No: _____

SPECIES NAME: Notamacropus irma	NUMBER SEEN: NA
OBSERVATION DATE: 28/10/2025	TIME: am/pm
OBSERVER NAME/S: Kelly Debono	
Organisation/Company and Role/Job: Bio Diverse Solutions, Senior Wildlife Ecologist	
Title:	
EMAIL: enquiry@biodiversesolutions.com.au	PHONE: 9842 1575

OBSERVATION LOCATION: (i.e. property address, street and suburb, distance to nearest intersection, reserve name/number etc.)

Lot 11 (No. 74) Lechenaultia Drive, Hopetoun WA 6348

COORDINATES:	DATUM:	SOURCE:	COORDINATE ACCURACY:
Latitude/Northing: -33.905705	GDA94 ☐	GPS ☐	30m ☒ 10km ☐
Longitude/Easting: 120.130651	WGS84 ☐	Map ☐	300m ☐ 50km ☐
Zone (required for UTM's):	Unknown ☐	Google Earth ☐	1km ☐ 100km ☐
	Other (specify): GDA2020	GIS ☒	

LAND TENURE:

Nature Reserve ☐	State Forest ☐	Private Property ☒	Rail Reserve ☐	Aboriginal Reserve ☐	Shire Reserve ☐
National Park ☐	Timber Reserve ☐	Pastoral Lease ☐	Main Road Reserve ☐	State Waters <5.4km ☐	Other (specify): ☐
Conservation Park ☐	Water Reserve ☐	UCL ☐	Shire Road Reserve ☐	Marine Park ☐	

CERTAINTY OF ANIMAL IDENTIFICATION:	AGE AND SEX:
Certain ☒ Photo ☐	Number of Adults: Male _____ Female _____ Unknown _____
Moderately certain ☐ Specimen ☒	Number of Juveniles: Male _____ Female _____ Unknown _____
Not sure ☐ Identified by expert ☒	Number of Pouch Young: Male _____ Female _____ Unknown _____

Expert name, affiliation: Kelly Debono, Senior Wildlife Ecologist

DISTINGUISHING FEATURES/DESCRIPTION OF OBSERVED ANIMAL: (required to confirm identification or attach photo)

Scat identified as western brush wallaby

OBSERVATION: (animal activity and other relevant details)

Scat identified as western brush wallaby (photo attached).

OBSERVATION DETAILS: (select as many as applicable)

METHOD:	TYPE:
Opportunistic ☐ Translocation ☐	Dawn sighting ☐ Caught/Trapped ☐ Taken into care ☐
Survey ☒ Historical (Written) ☐	Day sighting ☐ Spotlighting ☐ Released ☐
Monitoring ☐ Historical (Oral) ☐	Dusk sighting ☐ Remote camera ☐ Other (specify):
Other (specify):	Night sighting ☐ Remote sensing ☐
Survey/monitoring type (specify): Basic fauna survey	Dead (fresh) ☐ Acoustic recorder ☐
	Dead (degenerated) ☐ Subfossil/Fossil ☐

SECONDARY SIGNS:

Heard ☐	Nest/Mound ☐	Feathers/Hair/Fur/Skin ☐	Feeding residue ☐
Scats ☒	Natural Hollow ☐	Bones ☐	Fauna run ☐
Tracks ☐	Artificial Hollow ☐	Eggs/eggshell ☐	Other (specify):
Diggings ☐	Burrow ☐	Shell ☐	

CAUSE OF DEATH:

Roadkill ☐	Found drowned ☐	Predation by native animal ☐	Unknown ☐
Found shot ☐	Stranded on beach ☐	Predation by cat/fox/dog ☐	Other (specify):
Found poisoned ☐	Annual die off ☐	Starvation/malnutrition ☐	

Fauna Report Form

Database No: _____

REPRODUCTIVE STATE:

- | | | | |
|---|---|--|---|
| Non-breeding ☐ | Pregnant ☐ | Nesting ☐ | Unknown ☒ |
| Mating ☐ | Lactating ☐ | Eggs in nest ☐ | Other(specify): |
| Breeding colours ☐ | Young in pouch ☐ | Young in nest ☐ | |
| Breeding/Mating call ☐ | Young at heel ☐ | Fledgling emergence ☐ | |

SPECIMEN: (Select as many as applicable)

- | | | | |
|--|--|--|--|
| Fresh carcass ☐ | Partial carcass ☐ | Skull/bones ☐ | Not retained ☒ |
| Frozen carcass ☐ | DNA sample ☐ | Hair/Fur/Skin/feather ☐ | Other (specify): |
| Degenerated carcass ☐ | Spirit specimen ☐ | Scats ☒ | |

Specimen location and catalogue number:

- | | | | |
|------------------------------------|--|--|--|
| WA Museum ☐ | Other Museum/Collection ☐ | Given to the Department ☐ | Retained by collector ☐ |
| Catalogue No: | Museum/Collection name: | Office location: | Collectors Reference No. |
| | Catalogue No. | Contact name: | |

Specimen identified by (name, affiliation):

HABITAT INFORMATION: (Select as many as applicable)

Landform:

- | | | | | |
|--|--|--|----------------------------------|---|
| Cave ☐ | Hill/Mountain ☐ | Open Depression ☐ | Lake ☐ | Ocean ☐ |
| Cliff ☐ | Slope ☐ | Drainage line ☐ | Wetland ☐ | Artificial surface ☐ |
| Rocky outcrop ☐ | Sand dune ☐ | River ☐ | Swamp ☐ | Other (specify): |
| Gully/Gorge ☐ | Flat ☒ | Creek ☐ | Aquifer ☐ | |
| Ridge ☐ | Plain ☐ | Seepage ☐ | Estuary ☐ | |
| Crest/Summit ☐ | Closed Depression ☐ | Pool ☐ | Beach ☐ | |

Vegetation Type:

- | | | | | |
|---|------------------------------------|---|--|---------------------------------|
| Forest ☐ | Scrubland ☐ | Saltbush/Samphire ☐ | Revegetation ☐ | Park ☐ |
| Woodland ☐ | Grassland ☐ | Rock Community ☐ | Farmland ☒ | Garden ☐ |
| Shrubland ☒ | Spinifex ☐ | Wetland/Riparian ☐ | Orchard ☐ | Other (specify): |
| Mallee ☐ | Sedgeland ☐ | Remnant Vegetation ☐ | Plantation ☐ | |

Associated flora species, ecological communities, and other habitat information:

Kwonglan heathland and paddock.

FIRE HISTORY:

Last fire (season and year, or estimate time passed): >50 years ago. Fire Intensity: High ☐ Medium ☐ Low ☐ No signs of fire ☒

OTHER COMMENTS:

Submitter of record:	Mikayla Hollyock	Organisation and Role:	Bio Diverse Solutions, Ecologist
Contact Details:	mikayla@biodiversesolutions.com.au	Date Submitted:	16/02/2026



Fauna Report Form

Database No: _____

SPECIES NAME: Notamacropus eugenii derbiunus	NUMBER SEEN: NA
OBSERVATION DATE: 28/10/2025	TIME: am/pm
OBSERVER NAME/S: Kelly Debono	
Organisation/Company and Role/Job: Bio Diverse Solutions, Senior Wildlife Ecologist	
Title:	
EMAIL: enquiry@biodiversesolutions.com.au	PHONE: 9842 1575

OBSERVATION LOCATION: (i.e. property address, street and suburb, distance to nearest intersection, reserve name/number etc.)

Lot 11 (No. 74) Lechenaultia Drive, Hopetoun WA 6348

COORDINATES:	DATUM:	SOURCE:	COORDINATE ACCURACY:
Latitude/Northing: -33.910435	GDA94 ☐	GPS ☐	30m ☒ 10km ☐
Longitude/Easting: 120.129772	WGS84 ☐	Map ☐	300m ☐ 50km ☐
Zone (required for UTM's):	Unknown ☐	Google Earth ☐	1km ☐ 100km ☐
	Other (specify): GDA2020	GIS ☒	

LAND TENURE:

Nature Reserve ☐	State Forest ☐	Private Property ☒	Rail Reserve ☐	Aboriginal Reserve ☐	Shire Reserve ☐
National Park ☐	Timber Reserve ☐	Pastoral Lease ☐	Main Road Reserve ☐	State Waters <5.4km ☐	Other (specify):
Conservation Park ☐	Water Reserve ☐	UCL ☐	Shire Road Reserve ☐	Marine Park ☐	

CERTAINTY OF ANIMAL IDENTIFICATION:	AGE AND SEX:
Certain ☒ Photo ☒	Number of Adults: Male _____
Moderately certain ☐ Specimen ☒	Female _____
Not sure ☐ Identified by expert ☒	Unknown _____
	Number of Juveniles: Male _____
	Female _____
	Unknown _____
	Number of Pouch Young: Male _____
	Female _____
	Unknown _____

Expert name, affiliation: Kelly Debono, Senior Wildlife Ecologist

DISTINGUISHING FEATURES/DESCRIPTION OF OBSERVED ANIMAL: (required to confirm identification or attach photo)

Scat identified as tammar wallaby

OBSERVATION: (animal activity and other relevant details)

Scat identified as tammar wallaby (photo attached).

OBSERVATION DETAILS: (select as many as applicable)

METHOD:	TYPE:
Opportunistic ☐ Translocation ☐	Dawn sighting ☐ Caught/Trapped ☐ Taken into care ☐
Survey ☒ Historical (Written) ☐	Day sighting ☐ Spotlighting ☐ Released ☐
Monitoring ☐ Historical (Oral) ☐	Dusk sighting ☐ Remote camera ☐ Other (specify):
Other (specify):	Night sighting ☐ Remote sensing ☐
Survey/monitoring type (specify): Basic fauna survey	Dead (fresh) ☐ Acoustic recorder ☐
	Dead (degenerated) ☐ Subfossil/Fossil ☐

SECONDARY SIGNS:

Heard ☐	Nest/Mound ☐	Feathers/Hair/Fur/Skin ☐	Feeding residue ☐
Scats ☒	Natural Hollow ☐	Bones ☐	Fauna run ☐
Tracks ☐	Artificial Hollow ☐	Eggs/eggshell ☐	Other (specify):
Diggings ☐	Burrow ☐	Shell ☐	

CAUSE OF DEATH:

Roadkill ☐	Found drowned ☐	Predation by native animal ☐	Unknown ☐
Found shot ☐	Stranded on beach ☐	Predation by cat/fox/dog ☐	Other (specify):
Found poisoned ☐	Annual die off ☐	Starvation/malnutrition ☐	

Fauna Report Form

Database No: _____

REPRODUCTIVE STATE:

- | | | | |
|---|---|--|---|
| Non-breeding ☐ | Pregnant ☐ | Nesting ☐ | Unknown ☒ |
| Mating ☐ | Lactating ☐ | Eggs in nest ☐ | Other(specify): |
| Breeding colours ☐ | Young in pouch ☐ | Young in nest ☐ | |
| Breeding/Mating call ☐ | Young at heel ☐ | Fledgling emergence ☐ | |

SPECIMEN: (Select as many as applicable)

- | | | | |
|--|--|--|--|
| Fresh carcass ☐ | Partial carcass ☐ | Skull/bones ☐ | Not retained ☒ |
| Frozen carcass ☐ | DNA sample ☐ | Hair/Fur/Skin/feather ☐ | Other (specify): |
| Degenerated carcass ☐ | Spirit specimen ☐ | Scats ☒ | |

Specimen location and catalogue number:

- | | | | |
|------------------------------------|--|--|--|
| WA Museum ☐ | Other Museum/Collection ☐ | Given to the Department ☐ | Retained by collector ☐ |
| Catalogue No: | Museum/Collection name: | Office location: | Collectors Reference No. |
| | Catalogue No. | Contact name: | |

Specimen identified by (name, affiliation):

HABITAT INFORMATION: (Select as many as applicable)

Landform:

- | | | | | |
|--|--|--|----------------------------------|---|
| Cave ☐ | Hill/Mountain ☐ | Open Depression ☐ | Lake ☐ | Ocean ☐ |
| Cliff ☐ | Slope ☐ | Drainage line ☐ | Wetland ☐ | Artificial surface ☐ |
| Rocky outcrop ☐ | Sand dune ☐ | River ☐ | Swamp ☐ | Other (specify): |
| Gully/Gorge ☐ | Flat ☒ | Creek ☐ | Aquifer ☐ | |
| Ridge ☐ | Plain ☐ | Seepage ☐ | Estuary ☐ | |
| Crest/Summit ☐ | Closed Depression ☐ | Pool ☐ | Beach ☐ | |

Vegetation Type:

- | | | | | |
|---|------------------------------------|---|--|---------------------------------|
| Forest ☐ | Scrubland ☐ | Saltbush/Samphire ☐ | Revegetation ☐ | Park ☐ |
| Woodland ☐ | Grassland ☐ | Rock Community ☐ | Farmland ☒ | Garden ☐ |
| Shrubland ☒ | Spinifex ☐ | Wetland/Riparian ☐ | Orchard ☐ | Other (specify): |
| Mallee ☐ | Sedgeland ☐ | Remnant Vegetation ☐ | Plantation ☐ | |

Associated flora species, ecological communities, and other habitat information:

Kwonglan heathland and paddock.

FIRE HISTORY:

Last fire (season and year, or estimate time passed): >50 years ago. Fire Intensity: High ☐ Medium ☐ Low ☐ No signs of fire ☒

OTHER COMMENTS:

Submitter of record:	Mikayla Hollyock	Organisation and Role:	Bio Diverse Solutions, Ecologist
Contact Details:	mikayla@biodiversesolutions.com.au	Date Submitted:	16/02/2026

Appendix G

EPBC Act PMST reports



Australian Government

Department of Climate Change, Energy,
the Environment and Water

EPBC Act Protected Matters Report

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

Report created: 01-Oct-2025

[Summary](#)

[Details](#)

[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	1
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	1
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	67
Listed Migratory Species:	46

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Lands:	2
Commonwealth Heritage Places:	None
Listed Marine Species:	71
Whales and Other Cetaceans:	14
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	4
Regional Forest Agreements:	None
Nationally Important Wetlands:	1
EPBC Act Referrals:	9
Key Ecological Features (Marine):	None
Biologically Important Areas:	11
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

National Heritage Places			[Resource Information]
Name	State	Legal Status	Buffer Status
Natural			
Fitzgerald River National Park	WA	Listed place	In buffer area only

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

Listed Threatened Ecological Communities		[Resource Information]
For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps. Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.		

Community Name	Threatened Category	Presence Text	Buffer Status
Proteaceae Dominated Kwongan Shrublands of the Southeast Coastal Floristic Province of Western Australia	Endangered	Community likely to occur within area	In feature area

Listed Threatened Species			[Resource Information]
Status of Conservation Dependent and Extinct are not MNES under the EPBC Act. Number is the current name ID.			
Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat may occur within area	In feature area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Cereopsis novaehollandiae grisea Cape Barren Goose (south-western), Recherche Cape Barren Goose [25978]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area	In feature area
Dasyornis longirostris Western Bristlebird [515]	Endangered	Species or species habitat known to occur within area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat known to occur within area	In feature area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pezoporus flaviventris Western Ground Parrot, Kyloring [84650]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In feature area
Zanda latirostris listed as Calyptorhynchus latirostris Carnaby's Black Cockatoo, Short-billed Black-cockatoo [87737]	Endangered	Breeding known to occur within area	In feature area
MAMMAL			
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat known to occur within area	In feature area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area	In buffer area only
Myrmecobius fasciatus Numbat [294]	Endangered	Species or species habitat may occur within area	In buffer area only
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat known to occur within area	In buffer area only
Parantechinus apicalis Dibbler [313]	Endangered	Species or species habitat known to occur within area	In buffer area only
Phascogale calura Red-tailed Phascogale, Red-tailed Wambenger, Kenngoor [316]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Pseudomys shortridgei Heath Mouse, Dayang, Heath Rat [77]	Endangered	Species or species habitat known to occur within area	In feature area
PLANT			
Adenanthos dobagii Fitzgerald Woollybush [21253]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Adenanthos ellipticus Oval-leaf Adenanthos [4570]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Anigozanthos bicolor subsp. minor Little Kangaroo Paw, Two-coloured Kangaroo Paw, Small Two-colour Kangaroo Paw [21241]	Endangered	Species or species habitat likely to occur within area	In feature area
Banksia anatona Cactus Dryandra [82758]	Critically Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Boronia clavata Bremer Boronia [5538]	Endangered	Species or species habitat may occur within area	In buffer area only
Coopernookia georgei Mauve Coopernookia [21218]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Daviesia megacalyx Long-sepalld Daviesia [56785]	Endangered	Species or species habitat may occur within area	In buffer area only
Daviesia obovata Paddle-leaf Daviesia [17311]	Endangered	Species or species habitat may occur within area	In buffer area only
Eremophila denticulata subsp. denticulata Fitzgerald Eremophila [64569]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Eucalyptus burdettiana Burdett Gum [13505]	Endangered	Species or species habitat known to occur within area	In buffer area only
Eucalyptus coronata Crowned Mallee [2308]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Kunzea similis subsp. similis [84068]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only
Ricinocarpos trichophorus Barrens Wedding Bush [19931]	Endangered	Species or species habitat may occur within area	In feature area
Roycea pycnophylloides Saltmat [21161]	Endangered	Species or species habitat may occur within area	In buffer area only
Stylidium galioides Yellow Mountain Triggerplant [4666]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Verticordia crebra [55678]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Verticordia pityrhops Little Pine Verticordia, Pine-like Featherflower [55798]	Endangered	Species or species habitat likely to occur within area	In buffer area only
REPTILE			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area	In buffer area only
SHARK			
Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat may occur within area	In buffer area only
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Listed Migratory Species			
[Resource Information]			
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In buffer area only
Hydroprogne caspia Caspian Tern [808]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

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

Scientific Name	Threatened Category	Presence Text	Buffer Status
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Caperea marginata Pygmy Right Whale [39]		Species or species habitat may occur within area	In buffer area only
Carcharias taurus Grey Nurse Shark [64469]		Species or species habitat likely to occur within area	In buffer area only
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area	In buffer area only
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Breeding known to occur within area	In buffer area only
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area	In buffer area only
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area	In buffer area only
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Terrestrial Species			
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Calidris ruficollis Red-necked Stint [860]		Species or species habitat known to occur within area	In buffer area only
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In feature area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]		
The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.		
Commonwealth Land Name	State	Buffer Status
Unknown		
Commonwealth Land - [51747]	WA	In buffer area only
Commonwealth Land - [51983]	WA	In buffer area only

Listed Marine Species [Resource Information]			
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris ruficollis Red-necked Stint [860]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Cereopsis novaehollandiae grisea Cape Barren Goose (south-western), Recherche Cape Barren Goose [25978]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In buffer area only
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat known to occur within area overfly marine area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area	In feature area
Charadrius ruficapillus Red-capped Plover [881]		Species or species habitat known to occur within area overfly marine area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In buffer area only
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Hydroprogne caspia as Sterna caspia Caspian Tern [808]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Larus pacificus Pacific Gull [811]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Onychoprion anaethetus as Sterna anaethetus Bridled Tern [82845]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Pachyptila turtur Fairy Prion [1066]		Species or species habitat may occur within area	In buffer area only
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In feature area
Phalacrocorax fuscescens Black-faced Cormorant [59660]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Puffinus assimilis Little Shearwater [59363]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Recurvirostra novaehollandiae Red-necked Avocet [871]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Stercorarius antarcticus as Catharacta skua Brown Skua [85039]		Species or species habitat may occur within area	In buffer area only
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thinornis cucullatus as Thinornis rubricollis Hooded Plover, Hooded Dotterel [87735]		Species or species habitat known to occur within area overfly marine area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Fish			
Acentronura australe Southern Pygmy Pipehorse [66185]		Species or species habitat may occur within area	In buffer area only
Campichthys galei Gale's Pipefish [66191]		Species or species habitat may occur within area	In buffer area only
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area	In buffer area only
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area	In buffer area only
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area	In buffer area only
Leptoichthys fistularius Brushtail Pipefish [66248]		Species or species habitat may occur within area	In buffer area only
Lissocampus caudalis Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area	In buffer area only
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area	In buffer area only
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area	In buffer area only
Nannocampus subosseus Bonyhead Pipefish, Bony-headed Pipefish [66264]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area	In buffer area only
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area	In buffer area only
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area	In buffer area only
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area	In buffer area only
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area	In buffer area only
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area	In buffer area only
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area	In buffer area only
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area	In buffer area only
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area	In buffer area only
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area	In buffer area only
Vanacampus poecilolaemus Longsnout Pipefish, Australian Long-snout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat likely to occur within area	In buffer area only
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat known to occur within area	In buffer area only
Reptile			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area	In buffer area only
Whales and Other Cetaceans [Resource Information]			
Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area	In buffer area only
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Current Scientific Name	Status	Type of Presence	Buffer Status
Caperea marginata Pygmy Right Whale [39]	Endangered	Species or species habitat may occur within area	In buffer area only
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In buffer area only
Eubalaena australis Southern Right Whale [40]		Breeding known to occur within area	In buffer area only
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In buffer area only
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area	In buffer area only
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area	In buffer area only
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In buffer area only
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In buffer area only

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Fitzgerald River	National Park	WA	In buffer area only
Jerdacuttup Lakes	Nature Reserve	WA	In buffer area only
Kundip	Nature Reserve	WA	In buffer area only

Protected Area Name	Reserve Type	State	Buffer Status
Unnamed WA26662	Nature Reserve	WA	In buffer area only

Nationally Important Wetlands		[Resource Information]	
Wetland Name		State	Buffer Status
Culham Inlet System		WA	In buffer area only

EPBC Act Referrals		[Resource Information]		
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Extraction of road building materials	2010/5684	Controlled Action	Post-Approval	In buffer area only
Ravensthorpe Nickel Project	2001/172	Controlled Action	Post-Approval	In buffer area only
Not controlled action				
Construction and operation of single wind turbine near Hopetoun WA	2003/1203	Not Controlled Action	Completed	In feature area
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Phillips River Gold Project	2005/2000	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Road upgrades and walk trail development	2009/4958	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Referral decision				
Phillips River Project	2011/6173	Referral Decision	Completed	In buffer area only

Biologically Important Areas		[Resource Information]		
Scientific Name		Behaviour	Presence	Buffer Status
Seabirds				
Ardenna carneipes				
Flesh-footed Shearwater [82404]		Foraging (in high numbers)	Known to occur	In buffer area only

Scientific Name	Behaviour	Presence	Buffer Status
Eudyptula minor Little Penguin [1085]	Foraging (provisioning young)	Known to occur	In buffer area only
Hydroprogne caspia Caspian Tern [808]	Foraging (provisioning young)	Known to occur	In buffer area only
Larus pacificus Pacific Gull [811]	Foraging (in high numbers)	Known to occur	In buffer area only
Onychoprion anaethetus Bridled Tern [82845]	Foraging (in high numbers)	Known to occur	In buffer area only
Phalacrocorax fuscescens Black-faced Cormorant [59660]	Foraging	Known to occur	In buffer area only
Puffinus assimilis tunneyi Little Shearwater [59363]	Foraging (in high numbers)	Known to occur	In buffer area only
Sternula nereis Fairy Tern [82949]	Foraging (in high numbers)	Known to occur	In buffer area only
Seals			
Neophoca cinerea Australian Sea Lion [22]	Foraging (male and female)	Known to occur	In buffer area only
Sharks			
Carcharodon carcharias White Shark [64470]	Foraging	Known to occur	In buffer area only
Whales			
Megaptera novaeangliae Humpback Whale [38]	Migration (north)	Known to occur	In buffer area only

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

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

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