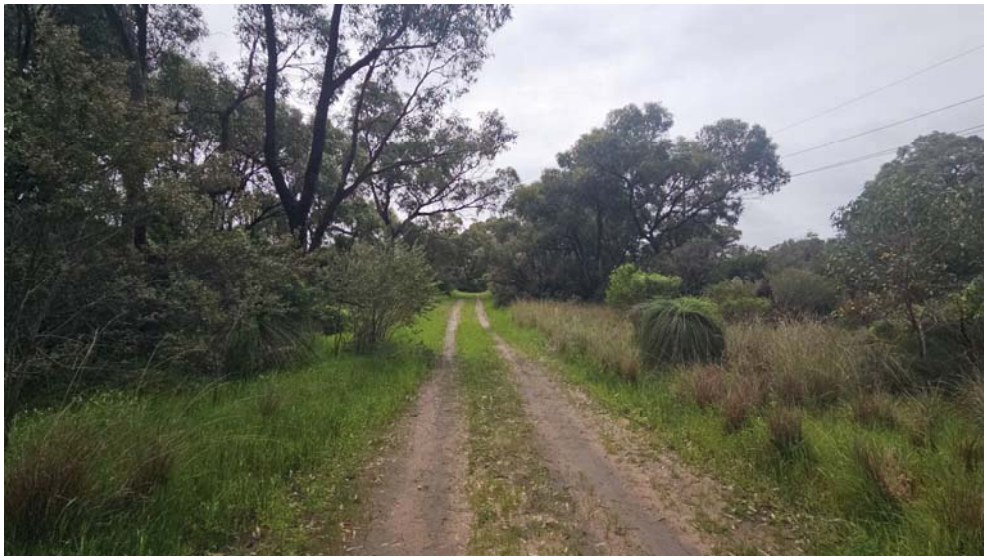
Fauna Assessment



Miscellaneous Lots

Patterson Road - East Rockingham

BlueScope Future Technologies Pty Ltd

December 2025

V2

On behalf of:
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SUMMARY

This report details the results of a fauna assessment over a number of miscellaneous lots located on or near Patterson Road, East Rockingham (survey area) (Figure 1). The survey area has a combined extent of about 19.9 ha.

The proponent (BlueScope Future Technologies Pty Ltd) is seeking to develop sections of the survey area and the clearing of some native vegetation will be required. Information obtained as part of this fauna assessment report will be used in conjunction with other environmental investigations to guide project planning which will aim to minimise potential environmental impacts.

It is understood that the survey results will, if required, be used to inform a native vegetation clearing permit (NVCP) application regulated under the state *Environmental Protection Act 1986* (*EP Act*) and a possible Commonwealth referral under the *Environment Protection and Biodiversity Conservation Act 1999* (*EPBC Act*)

The scope of works was to conduct a "basic" fauna assessment with the primary aim of identifying the potential for fauna species of conservation significance to be present within the survey area. The assessment has included a literature review and a daytime reconnaissance survey.

Field work at the site was carried out on the 17 September 2025. All survey work and reporting has been carried out by Greg Harewood (Zoologist).

Key Findings

- For the purpose of this assessment the fauna habitats within the survey area have been divided into four units based mainly on vegetation structure. The identified units are:

  1: Open Woodland of tuart (*Eucalyptus gomphocephala)* over peppermint (*Agonis flexuosa*), basket bush (*Spyridium globulosum*) summer-scented wattle (*Acacia rostellifera),* Western Australian golden wattle *(Acacia saligna)* over grass trees (*Xanthorrhoea preissii*) over annual weeds in calcareous sand.

  2: Open Low Heath of grass trees (*Xanthorrhoea preissii*), with some scattered small shrubs over annual weeds (grassland) in calcareous sand.

  3: Tall open Scrub/Tall Open Shrubland of Chenille honey-myrtle (*Melaleuca huegelii*) and Western Australian golden wattle (*Acacia saligna)* over annual weeds in calcareous sand.

  4: Existing cleared areas.

- The survey area itself is only likely to support a small range of its original fauna assemblage given its relatively small size and its apparent history of disturbance. The area does however adjoin other additional areas of vegetation which increases its capacity to support some species that require larger remnants to persist. Most species present would however be common, widespread bird species. The survey area does potentially have some limited value to a small number of conservation significant species (e.g. quenda).

- The black cockatoo breeding habitat assessment identified 82 trees within the survey area with a DBH of >30cm. Most of these trees (82) appeared to not contain hollows of any size. One tree contained one small hollow which was occupied by feral bees.

- No trees appeared to contain hollows of a size or orientation considered suitable for black cockatoos to use for nesting purposes.

- No evidence of black cockatoos foraging within the survey area was found.

- BCE's foraging score method returned an overall value of between 0 (no foraging value) to 2 (low foraging value) for the identified habitat units, with variations occurring depending on cockatoo species and vegetation composition.

- Application of the DCCEEW's Foraging Quality Scoring Tool to the entire survey area as one results in a high quality foraging score for all three species of black cockatoo (8 out of 10). This is a consequence of the score having to start at a maximum of 10 (given the foraging habitat present contains "eucalypt woodland") and there being only one attribute (lack of foraging evidence) that could be used, without doubt, to reduce the starting score to a lower level.

- No existing roosting trees (trees used at night by black cockatoos to rest) or roosting activity was positively identified during the survey. The closest documented and recently active cockatoo roost sites are located about four kilometres east of the survey area.

- Fifteen fauna species (mainly common bird species) were observed or secondary evidence of their presence recorded during the field survey. In summary one vertebrate fauna species of conservation significance were positively identified as utilising the survey area:

    - Quenda – P4 (WA).

- Several additional species of conservation significance may also utilise the survey area, though, as no evidence of their presence was identified during the field survey, their status in the area in some cases remains uncertain:

    - Peregrine Falcon – OS (WA).

    - Carnaby`s Cockatoo – Endangered (WA/Federal).

    - Forest Red-tailed Black Cockatoo – Vulnerable (WA/Federal)

- In cases where some habitat is present and available information indicates at least some probability of the species occurrence, likely impacts are anticipated to most likely to be related to the loss of a small area of habitat and the potential for some species to be killed or injured during clearing. This in particular relates to the quenda (*Isoodon fusciventer*) (DBCA Priority 4 species), which are a ground-based species that seeks daytime refuge in logs/log piles or dense undergrowth.

- The potential presence of some fauna species will need to be taken into consideration during ongoing planning and during the approval process. If approval for the proposal is granted, consideration should be given to the implementation of a fauna management plan, in particular immediately prior to and during clearing.

1. INTRODUCTION

This report details the results of a fauna assessment over a number of miscellaneous lots located on or near Patterson Road, East Rockingham (survey area) (Figure 1). The survey area has a combined extent of about 19.9 ha.

The proponent (BlueScope Future Technologies Pty Ltd) is seeking to develop sections of the survey area and the clearing of some native vegetation will be required. Information obtained as part of this fauna assessment report will be used in conjunction with other environmental investigations to guide project planning which will aim to minimise potential environmental impacts.

It is understood that the survey results will, if required, be used to inform a native vegetation clearing permit (NVCP) application regulated under the state *Environmental Protection Act 1986* (*EP Act*) and a possible Commonwealth referral under the *Environment Protection and Biodiversity Conservation Act 1999* (*EPBC Act*).

2. SCOPE OF WORKS

The scope of works is to conduct a “basic” fauna assessment and carry out a targeted survey for black cockatoo habitat. The assessment will therefore involve:

- A basic (Level 1) Fauna Assessment (EPA 2020).
- Targeted searches for black cockatoo habitat/site use (habitat trees, existing and potential nest hollows, foraging and roosting habitat) with the aim of:
    - Determining the presence of black cockatoos.
    - Evaluate the habitat quality, including the presence of key foraging and breeding tree species.
    - Assess the availability of food sources, nesting hollows, potential habitat trees and overall suitability for black cockatoos, and
- Report for summarising methods and results.

Note: For the purposes of this report the term black cockatoo is in reference to Baudin’s black cockatoo *Zanda baudinii*, Carnaby’s black cockatoo *Zanda latirostris* and the forest red-tailed black cockatoo *Calyptorhynchus banksii naso.*

3. METHODS

3.1 LITERATURE REVIEW – FAUNA SPECIES OF CONSERVATION SIGNIFICANCE

A list of conservation significant fauna recorded or likely to occur within the survey area has been compiled by a review of available databases and literature including, but not limited to the following data sources:

- Department of Biodiversity, Conservation and Attractions (DBCA) Threatened Fauna Database (Dandjoo) search (DBCA 2025a). A 10 km buffer around the survey area was applied to capture previous fauna records within the immediate vicinity.

- Department of Climate Change, Energy Agriculture, Water and the Environment's (DCCEEW) Protected Matters database search for fauna listed as being of national environmental significance (NES) under the *Environment Protection and Biodiversity Conservation Act 1999* (the *EPBC Act*) (DCCEEW 2025). The minimum buffer (0 km) was applied to this search as the databases contains distribution data (areas) and not actual fauna records.

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

- *Environment Protection and Biodiversity Conservation Act 1999* (*EPBC Act*). Administered by the DCCEEW.

- *Biodiversity Conservation Act 2016 (BC Act)*. Administered by the Western Australian DBCA (Govt. of WA 2025).

- Red List produced by the Species Survival Commission (SSC) of the World Conservation Union (also known as the IUCN Red List - the acronym derived from its former name of the International Union for Conservation of Nature and Natural Resources). The Red List has no legislative power in Australia but is used as a framework for State and Commonwealth categories and criteria; and the

- DBCA Priority Fauna list. A non-statutory list maintained by the DBCA for management purposes (DBCA 2025b).

The *EPBC Act* and *BC Act* also requires the compilation of a list of migratory species that are recognised under international treaties including the:

- Japan Australia Migratory Bird Agreement 1981 (JAMBA).

- China Australia Migratory Bird Agreement 1998 (CAMBA).

- Republic of Korea-Australia Migratory Bird Agreement 2007 (ROKAMBA), and

- Bonn Convention 1979 (The Convention on the Conservation of Migratory Species of Wild Animals).

Most, but not all migratory bird species listed in the annexes to these bilateral agreements are also protected in Australia as matters of national environmental significance (MNES) under the EPBC Act. However, species only classified as 'marine" under the EPBC Act are not discussed as they are not considered as specially protected under the MNES classification.

The conservation status of the fauna species listed as occurring or possibly occurring in the vicinity of the survey area has been assessed using the most recent lists published in accordance with the above-mentioned instruments and is indicated as such in the fauna listings of this report. A full listing of conservation codes is provided in Appendix A.

3.2 FIELD SURVEYS

The field component of the fauna assessment was carried out on 17 September 2025 by Greg Harewood (Zoologist).

3.2.1 FAUNA HABITAT ASSESSMENT

Vegetation units identified during the daytime reconnaissance survey has been used to define broad scale fauna habitats across the survey area. The main aim of the habitat assessment was to determine which fauna species of conservation significance would be most likely to be utilising the survey area.

As part of the desktop literature review, available information on the habitat requirements of the species of conservation significance listed as possibly occurring in the area was researched, including the outcomes of an ecology site inspection carried out by JBS&G in August 2025 (JBS&G 2025). During the field survey the habitats within the survey area were assessed and specific elements identified, if present, to determine the likelihood of listed threatened species utilising the area and its significance to them.

3.2.2 BLACK COCKATOO HABITAT ASSESSMENT

The following methods were employed to comply with the defined scope of works and are based on Commonwealth of Australia (2012 and 2022) guidelines which state that surveys for Carnaby's, Baudin's and forest red-tailed black cockatoo habitat should:

- be done by a suitably qualified person with experience in vegetation or cockatoo surveys, depending on the type of survey being undertaken.
- maximise the chance of detecting the species' habitat and/or signs of use.
- determine the context of the site within the broader landscape—for example, the amount and quality of habitat nearby and in the local region (for example, within 12 km).
- account for uncertainty and error (false presence and absences), and
- include collation of existing data on known locations of breeding and feeding birds and night roost locations.

The Commonwealth of Australia (2012) places habitats used by black cockatoos into the following three categories:

- Breeding Habitat.
- Foraging Habitat, and
- Night Roosting Habitat.

3.2.2.1 Breeding Habitat Assessment

The black cockatoo breeding habitat assessment identified all suitable breeding tree species within the survey area that have a diameter at breast height (DBH) equal to or greater than 30 centimetres. The DBH of each tree was estimated using pre-made "calipers".

A survey which included the identification of tuart trees with a DBH of equal to or over 15 cm DBH had previously been undertaken over sections of the survey area by JBS&G personnel (JBS&G 2025). The location and DBH data from this previous survey work has been used in the black cockatoo assessment where available and all previously identified trees were revisited and checked for hollows.

Target tree species included marri (*Corymbia calophylla*), jarrah (*Eucalyptus marginata*), flooded gum (*E. rudis*), tuart (*E. gomphocephala*) and any other *Corymbia/Eucalyptus* species of a suitable size that were present. Peppermints, *Banksia*, sheoak and *Melaleuca* tree species (for example) were not assessed as they typically do not develop hollows used by black cockatoos.

The location of each tree identified as being over the threshold DBH was recorded with a GPS and details on tree species, number and size of hollows (if any) noted. Trees observed to contain hollows (of any size/type) were marked with "H" using spray paint.

Hollow/potential hollows were placed into one of four categories, based on the size of the apparent hollow entrance, these being:

- Small = ~<5cm diameter (i.e. entrance too small for a black cockatoo);
- Medium = ~5cm-10cm diameter (i.e. entrance too small for a black cockatoo);
- Large = ~>10cm diameter (entrance large enough for a black cockatoo but hollow appears unsuitable for nesting i.e. wrong orientation, appears too small, too low or too shallow); or
- Large (cockatoo) = ~>10cm diameter (entrance and apparent hollow appears big enough and suitably sized/orientated for a black cockatoo to use for nesting).

Based on this assessment, trees present within the survey area were placed into one of five categories as defined by Commonwealth of Australia (2022):

- **Not a potential or suitable nesting tree** - Tree <30cm DBH or an unsuitable species (these were not recorded).
- **Potential nesting tree (no hollows)** - Tree ≥30cm DBH, no hollows seen.
- **Potential nesting tree (hollows or possible hollows)** - Tree ≥30cm DBH, one or more hollows seen, none of which were considered suitable for black cockatoos to use for nesting.
- **Suitable nesting tree** - Tree ≥30cm DBH, one or more hollows seen, with at least one considered suitable for black cockatoos to use for nesting, but with no evidence of use, or
- **Known nesting tree** - Tree ≥30cm DBH, one or more hollows seen, 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).

For the purposes of this assessment, a tree containing a potential black cockatoo nest hollow was defined as:

Generally, any tree which is alive or dead that contains one or more visible hollows (cavities within the trunk or branches) or possible hollows potentially suitable for occupation by black cockatoo for the purpose of nesting/breeding. Hollows or possible hollows that had an entrance greater than about 10cm in diameter and would allow the entry of a black cockatoo into a suitably orientated and sized branch/trunk, were recorded as a "potential nest hollow".

Identified hollows were examined using binoculars for evidence of actual use by black cockatoos (e.g. chewing around hollow entrance, scarring and scratch marks on trunks and branches). Details recorded included hollow size, height, type, orientation, comments on suitability and any evidence of use. A drone and pole mounted camera were available for use to inspect suspect hollows; however, they were not required during the survey.

A review of available literature was carried out to determine the location/extent of any known/likely black cockatoo breeding habitat areas in the vicinity of the survey area.

3.2.2.2 Foraging Habitat Assessment

Foraging habitat is represented by plant species that are known to provide a food source for black cockatoos. This can be in the form of seeds, flowers and also boring grubs that are extracted from some plant species.

The location and nature of black cockatoo foraging evidence (e.g. chewed fruits around base of trees) observed during the field survey was recorded. The nature and extent of potential foraging habitat present was documented irrespective of the presence of any actual foraging evidence.

Based on these observations (and other relevant information) the black cockatoo foraging value of each of the identified vegetation units present has been assessed for each of the three black cockatoo species using two methods, these being:

1. Bamford's scoring methodology - Bamford Consulting Ecologists (BCE 2020). Scoring system for the Assessment of Foraging Value of Vegetation for Black-Cockatoos.

2. DCCEEW's scoring methodology - Commonwealth of Australia (2022). Referral guideline for three threatened black cockatoo species: Carnaby's Cockatoo, Baudin's Cockatoo and the Forest Red-tailed Black Cockatoo. Commonwealth of Australia, Canberra, Australian Capital Territory.

The system developed by Bamford Consulting Ecologists (BCE) aims to provide an objective scoring system that is practical and can be used by trained field zoologists with experience in the environments frequented by the species.

The foraging value score used provides a numerical value out of 10 that reflects the significance of vegetation as foraging habitat for black cockatoos. This numerical value is designed to provide information to assist in the assessment of impact significance and offset requirements by the relevant regulatory authorities. The foraging value of the vegetation depends upon the type, density and condition of trees and shrubs in an area and can be influenced by the context such as the availability of foraging habitat nearby. The BCE scoring system for value of foraging habitat has three components as detailed below. These three components are drawn from the DCCEEW offsets guide (Commonwealth of Australia 2012) but the scoring approach was developed by BCE (2020) and includes a fourth (moderation) component.

Calculating the total score (out of 10) requires the following steps:

- Site Condition: Determining a score out of six for the vegetation composition, condition and structure.

- Site Context: Determining a score out of three for the context of the site.

- Species Stocking Rate: Determining a score out of one for species density, and.

- Moderation: Determining the total score out of 10, which may require moderation for context and species density with respect to the site condition (vegetation) score.

Foraging value can thus be assigned a score out of six, based upon site vegetation characteristics, or a score out of 10 if context and species density are also considered. The score out of 10 is calculated only for vegetation of at least Low to Moderate foraging value (vegetation characteristics score of ≥3). Vegetation with No, Negligible or Low foraging value is effectively assigned context and species density scores of '0' because the context and species density are of little relevance if the vegetation does not support regular foraging by the birds. Foraging value scores are calculated differently for the three black-cockatoo species depending upon the vegetation present (BCE 2020).

A full description of the process involved in calculating of scores and the moderation process are described in more detail in Appendix B.

The Commonwealth of Australia's (2022) referral guidelines for black cockatoos provide a method for determining foraging quality within the defined "impact area" of a development (Table A1 – Foraging quality scoring tool template – Appendix C). The foraging quality scoring tool has been developed to guide developers on what the DCCEEW views as important determinants of high-quality foraging habitat.

Habitat assessments and associated field observations of the impact area and in proximity to the impact area must be sufficient to complete the scoring tool, provide a solid justification for the score given to each attribute in the scoring tool and for supporting an overall appraisal of the foraging habitat quality on site.

The attributes the DCCEEW views as being important determinants of foraging habitat quality are:

- Foraging potential.
- Connectivity.
- Proximity to breeding.
- Proximity to night roosting, and
- Impact from significant plant disease.

If an impact site contains native vegetation used for foraging at any time by one or more of the black cockatoo species as described in the table (Appendix B), and is larger than 1 hectare in size, it is considered at face value to be of very high quality, important for recovery and therefore as having a score of 10. This is because black cockatoos rely on foraging resources to provide sufficient energy for breeding and to rebuild condition in the post-breeding period. The availability of foraging habitat, in close proximity to breeding and night roosting habitat, as well as watering sites, is also critical in ensuring that birds can successfully raise chicks.

The scoring tool includes consideration of the three components used in the *EPBC Act* Offsets Assessment Guide in the calculation of habitat quality (site condition, site context and species stocking rate) by taking into account contextual factors that may lessen the quality of that habitat, to give you a final habitat quality score, i.e., you use the context adjustors to subtract from the starting score.

The DCCEEW scoring tool is to be applied once to the entire impact area of your proposed action, even if there is more than one type of foraging habitat, for example, *Banksia* woodland and heath, introduced eucalyptus trees and planted pines (*Pinus pinaster*). You will always start with a score of 10.

The scoring tool should be completed once for each black cockatoo species occurring within an impact area.

It is the developer's responsibility to define the impact area and consider indirect, offsite or facilitated impacts on black cockatoos, and include these areas in the definition of the impact area used in the calculations.

If there is insufficient evidence to determine what score a particular habitat attribute meets, one of two options can be considered:

- carry out additional targeted surveys, or
- apply the precautionary principle (i.e. assume the habitat is of sufficient quality to warrant referral).

A full description of the process involved in calculating scores using this method are described in more detail in Appendix C.

A review of available literature was also carried out to determine the location/extent of any known/likely black cockatoo foraging habitat areas in the vicinity of the survey area.

3.2.2.3 Night Roosting Habitat Assessment

Direct and indirect evidence of black cockatoos roosting within trees on site was noted where observed (e.g. branch clippings, droppings or moulted feathers).

A review of available literature was carried out to determine the location/extent of any known/likely black cockatoo roosting habitat areas in the vicinity.

3.2.3 FAUNA OBSERVATIONS

Evidence of the presence or likely presence of fauna species of conservation significance (or suitable habitat) was searched for and recorded concurrent with other site surveys. Opportunistic observations of all fauna species were made during all field survey work and recorded where positive species identifications were made.

This aspect of the assessment included but was not limited to:

- Undertaking a series of transects across the survey area.
- Searching for evidence (i.e. individuals, tracks, scats, calls) of potential conservation significant species under logs, rocks and leaf litter.
- Observing bird species with binoculars.

3.3 LIKELIHOOD OF OCCURRENCE – FAUNA SPECIES OF CONSERVATION SIGNIFICANCE

Based on the information gathered during the site reconnaissance survey and the documented distribution and habitat preferences of the species of conservation significance identified as potentially being present in the general area, their likelihood of occurrence within the survey area itself has been assessed.

The rankings and criteria used were:

- Would Not Occur: There is no suitable habitat for the species in the survey area and/or there is no documented record of the species in the general area since records have been kept and/or the species is generally accepted as being locally/regionally extinct (supported by a lack of recent records).
    - Locally Extinct: Populations no longer occur within a small part of the species natural range, in this case within 10 or 20km of the survey area. Populations do however persist outside of this area.
    - Regionally Extinct: Populations no longer occur in a large part of the species natural range, in this case within the central Swan Coastal Plain region. Populations do however persist outside of this area.
- Unlikely to Occur: The survey area is outside of the currently documented distribution for the species in question, or no suitable habitat (type, quality and extent) was identified as being present during the field assessment. Individuals of some species may occur occasionally as vagrants/transients especially if suitable habitat is located nearby, but the survey area itself would not support a population or part population of the species.
- Possibly Occurs: The survey area is within the known distribution of the species in question and habitat of at least marginal quality was identified as being present during the field assessment, supported in some cases by recent records being documented in literature from within or near the survey area. In some cases, while a species may be classified as possibly being present at times, habitat may be marginal (e.g. poor quality, fragmented, limited in extent) and therefore the frequency of occurrence and/or population levels may be low.
- Known to Occur: The species in question was positively identified as being present (for sedentary species) or as using the survey area as habitat for some other purpose (for non-sedentary/mobile species) during the field survey. This information may have been obtained by direct observation of individuals or by way of secondary evidence (e.g. foraging debris, tracks and scats). In some cases, while a species may be classified as known to occur, habitat may be marginal (e.g. poor quality, fragmented, limited in extent) and therefore the frequency of occurrence and/or population levels may be low.

4. SURVEY LIMITATIONS

No seasonal sampling was carried out as part of this fauna assessment. The conclusions presented are based upon field data and the environmental monitoring and/or testing carried out over a limited period of time and are therefore merely indicative of the environmental condition of the site at the time of the field assessments. It should be recognised that site conditions can change with time.

Lack of observational data on some species should also not necessarily be taken as an indication that a species is absent from the site or does not utilise it for some purpose at times.

During the survey, habitat trees with hollows were searched for. It should be noted that identifying hollows suitable for fauna species from ground level has limitations. Generally, the full characteristics of any hollow seen are not fully evident (e.g. internal dimensions). It is also difficult to locate all hollows within all trees as some are not observable from ground level. Where considered warranted and if feasible a drone and/or pole camera was deployed to assist in assessing the characteristics of tree hollows.

The location of observations was recorded using a handheld GPS. The accuracy of the GPS cannot be guaranteed above a level of about 5 to 10 metres, though it should be noted that in some circumstance the accuracy can increase or decrease beyond this range.

5. RESULTS

5.1 LITERATURE REVIEW – FAUNA SPECIES OF CONSERVATION SIGNIFICANCE

The literature review identified multiple fauna species of conservation significance as potentially occurring in the general area as listed in Table 1. The Dandjoo database (DBCA 2025a) and Protected Matter Search Tool (DCCEEW 2025) results, used as a primary source for compiling this listing, are held within Appendix D.

Given the survey area's proximity to the ocean and some lakes numerous migratory shorebirds along with various marine and wetland fauna species appeared in the database searches. These species are in most cases not specifically listed or discussed in this report given there is no suitable habitat for any within the survey area. None of these species would, under normal circumstances, occur within the survey area or be impacted on by the proposed development.

The likelihood of the below listed species occurring within the survey area is provided in Section 5.3 of the report.

Table 1: Conservation significant fauna previously recorded or potentially occurring within the general vicinity of the survey area.

Species	Conservation Status[1]	
	BC Act	*EPBC Act*
Perth Slider *Lerista lineata*	P3	-
Jewelled South-west Ctenotus *Ctenotus gemmula*	P3	-
Black-striped Burrowing Snake *Neelaps calonotos*	P3	-
Abrolhos dwarf bearded dragon *Pogona minor minima*	VU	-
Australasian Bittern *Botaurus poiciloptilus*	EN	EN
Black-backed Bittern *Botaurus dubius*	P4	-
Malleefowl *Leipoa ocellata*	VU	VU
Migratory Shorebirds/Wetland Species	Various	Various
Blue Billed Duck *Oxyura australis*	P4	-
Peregrine Falcon *Falco peregrinus*	OS	-
Grey Falcon *Falco hypoleucos*	VU	VU
Osprey *Pandion haliaetus*	MI	Mig
Carnaby`s Cockatoo *Zanda latirostris*	EN	EN
Baudin`s Cockatoo *Zanda baudinii*	EN	EN
Forest Red-tailed Black Cockatoo *Calyptorhynchus banksii naso*	VU	VU
Masked Owl *Tyto novaehollandiae novaehollandiae*	P3	-
Fork-tailed Swift *Apus pacificus*	MI	Mig
Grey Wagtail *Motacilla cinerea*	MI	Mig
Chuditch *Dasyurus geoffroii*	VU	VU
Quenda *Isoodon fusciventer*	P4	-
South-western Brush-tailed Phascogale *Phascogale tapoatafa wambenger*	CD	-
Numbat *Myrmecobius fasciatus*	EN	EN
Western Ringtail Possum *Pseudocheirus occidentalis*	CR	CR
Woylie *Bettongia penicillata ogilbyi*	CR	EN
Western Brush Wallaby *Notamacropus irma*	P4	-
Tammar Wallaby *Notamacropus eugenii derbianus*	P4	-
Water Rat *Hydromys chrysogaster*	P4	-
Western False Pipistrelle *Falsistrellus mackenziei*	P4	-

[1] See Appendix A for conservation status codes

5.2 FIELD SURVEYS

5.2.1 FAUNA HABITAT ASSESSMENT

For the purpose of this assessment the fauna habitats within the survey area have been divided into four units based mainly on vegetation structure. The identified units are:

1: Open Woodland of tuart (*Eucalyptus gomphocephala)* over peppermint (*Agonis flexuosa*), basket bush (*Spyridium globulosum*) summer-scented wattle (*Acacia rostellifera),* Western Australian golden wattle *(Acacia saligna)* over grass trees (*Xanthorrhoea preissii*) over annual weeds in calcareous sand. This unit is restricted to a narrow strip bordering Patterson Road and along the pipeline route running south of Patterson Road. Density and age of the various plant species vary. Understorey (low to tall shrubland) is variable and ranges from being totally absent (grassland to open grassland) to patches of relatively dense shrubs, sometimes dominating.

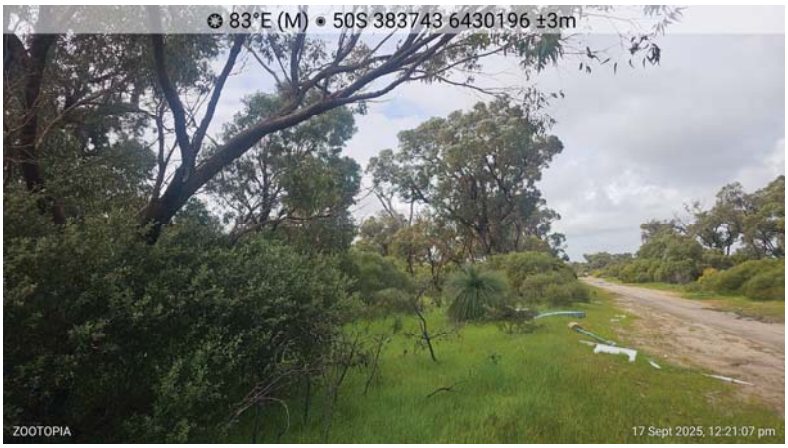
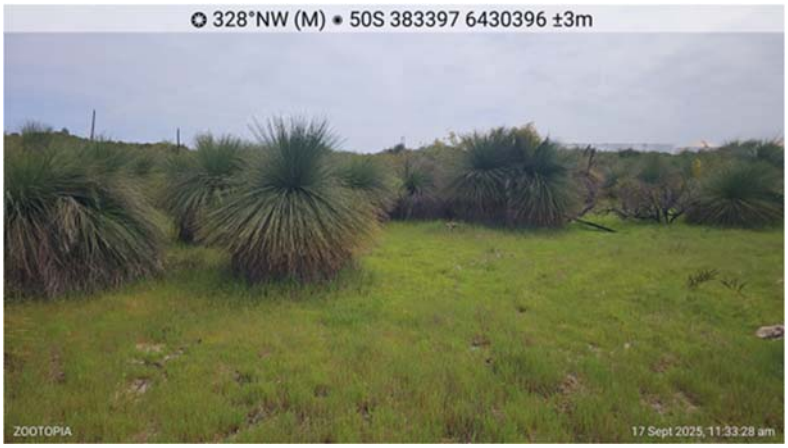
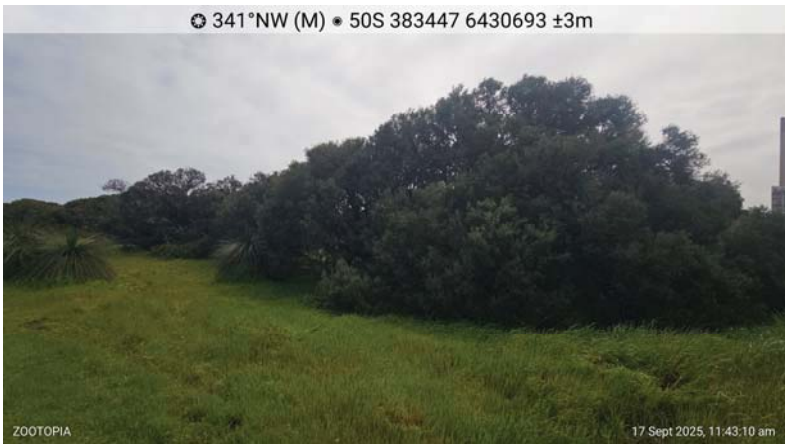
2: Open Low Heath of grass trees (*Xanthorrhoea preissii*), with some scattered small shrubs over annual weeds (grassland) in calcareous sand. This unit is mainly distributed across the central section of the main survey area. Variable grass tree density.

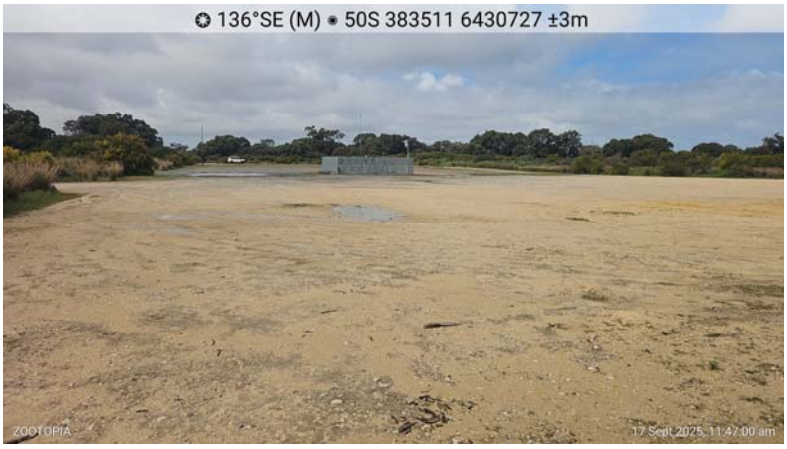
3: Tall open Scrub/Tall Open Shrubland of Chenille honey-myrtle (*Melaleuca huegelii*) and Western Australian golden wattle (*Acacia saligna)* over annual weeds in calcareous sand. Mainly located in the northern half of the survey area, dissected by some areas of grass tree heath and grassland.

4: Existing cleared areas – includes the hardstand area and some vehicular tracks.

Example images of the various fauna habitats present are provided in Table 2.

Table 2: Example images of the fauna habitats within the survey area

Fauna Habitat Description	Example Image
Open Woodland of tuart over peppermint, basket bush, summer-Scented wattle, Western Australian golden wattle over grass trees over annual weeds in calcareous sand	
Open Low Heath of grass trees with some scattered small shrubs over annual weeds (grassland) in calcareous sand.	
Tall open Scrub/Tall Open Shrubland of Chenille honey-myrtle and Western Australian golden wattle over annual weeds in calcareous sand.	

Fauna Habitat Description	Example Image
Existing cleared areas	

The survey area itself is only likely to support a small range of its original fauna assemblage given its relatively small size and its apparent history of disturbance. The area does however adjoin other additional areas of vegetation which increases its capacity to support some species that require larger remnants to persist. Most species present would however be common, widespread bird species. The survey area does potentially have some limited value to a small number of conservation significant species (e.g. quenda).

5.2.2 BLACK COCKATOO HABITAT ASSESSMENT

5.2.2.1 Breeding Habitat Assessment

Trees considered potentially suitable for black cockatoos to use as nesting habitat (subject to a suitable hollow being present and other factors) found within the survey area comprised the following species:

- Tuart – *Eucalyptus gomphocephala.*

A summary of the habitat trees observed is provided in Table 3. The locations of habitat trees are shown in Figure 2.

Table 3: Summary of potential habitat trees (DBH ≥30cm) within the survey area

Total Number of Habitat Trees (DBH > 30cm)	Number of Habitat Trees with No Hollows Observed	Number of Habitat Trees with Possible Hollows considered Unsuitable for Black Cockatoos	Number of Habitat Trees with Possible Hollows considered Potentially suitable for Black Cockatoos
82	81	1	0

The black cockatoo breeding habitat assessment identified 82 trees within the survey area with a DBH of ≥30cm. Most of these trees (82) appeared to not contain hollows of any size. One tree contained one small hollow which was occupied by feral bees.

No trees were assessed as containing hollows suitable for black cockatoos to use for nesting purposes.

Additional details on each habitat tree observed can be found in Appendix E.

Based on available mapping, there is approximately 8,600 ha of remnant native vegetation within 12 km of the survey area (DPIRD 2025). Much of this is likely to contain "potential" breeding habitat as defined by DCCEEW (i.e. suitable tree species with a DBH ≥30).

5.2.2.2 Foraging Habitat Assessment

The following flora species are known to be or are potentially used as a direct food source (e.g. seeds, flowers, nectar, bark or grubs) by one or more species of black cockatoo were recorded within the survey area:

- Tuart - *Eucalyptus gomphocephala.*
- Peppermint – *Agonis flexuosa.*
- Summer-scented Wattle - *Acacia rostellifera*.
- Western Australian Golden Wattle - *Acacia saligna*, and
- Grass Tree – *Xanthorrhoea preissii*.

It should be noted that all the above-mentioned species while foraged upon on occasions would make up only a small proportion of any one bird's diet relative to more favoured plant species such as marri, jarrah, banksia and sheoak which are absent from the survey area.

No evidence of black cockatoos foraging within the survey area was found.

Foraging value scores have been calculated for the survey area using both BCE's method (BCE 2020) and DCCEEW's Foraging Quality Scoring Tool (Commonwealth of Australia 2022).

BCE's foraging score method returned an overall value of between 0 (no foraging value) to 2 (low foraging value) for the identified habitat units, with variations occurring depending on cockatoo species and vegetation composition.

Application of the DCCEEW's Foraging Quality Scoring Tool to the entire survey area as one results in a high quality foraging score for all three species of black cockatoo (8 out of 10). This is a consequence of the score having to start at a maximum of 10 (given the foraging habitat present contains "eucalypt woodland") and there being only one attribute (lack of foraging evidence) that could be used, without doubt, to reduce the starting score to a lower level.

Details of the methods used and the justification of the conclusions drawn can be found in Appendix B (BCE's method) and Appendix C (DCCEEW's method).

Based on available mapping there is about 8,600 ha of remnant native vegetation within 12 km of the survey area (DPIRD 2025). Much of this is likely to represent black cockatoo foraging habitat of some type.

5.2.2.3 Night Roosting Habitat Assessment

No evidence of black cockatoos roosting within trees located within the survey area was observed during the survey period. It is difficult to determine if trees or groves of trees within the survey area represent potential roosting habitat as a range of factors, not all of which can be observed, determine suitability. Some of the larger trees may be suitable for roosting but as indicated no actual evidence of use was seen.

A review of the 2022 Great Cocky Count database (the most recent available) shows no documented roost sites within the survey area. The 2022 Great Cocky Count report documents the closest active roosts as being approximately four kilometres east of the survey area (Site ID: KWIWELR002 and KWIWELR003). KWIWELR002 was being used by 119 white tailed black cockatoos and KWIWELR003 was being used by 2 red-tailed black cockatoos during the April 2022 survey (Pryor *et al.* 2023). There are about 20 other black cockatoo roost sites within 12 km of the survey area documented by Pryor *et al*. (2023), though not all are necessarily in use at any one time

Based on available vegetation mapping (DPIRD 2025) it is estimated that there is approximately 19,300 ha of native vegetation within 20 km the survey area and therefore there is significant potential for roosting habitat to be present in the wider area (assuming the presence of suitable trees).

5.2.3 FAUNA OBSERVATIONS

Fifteen fauna species were recorded during the site reconnaissance survey (Appendix F). Most of the fauna recorded were relatively common, widespread bird species.

Evidence of one fauna species of conservation significance was observed during the survey period, this being foraging evidence(diggings) attributed to the quenda (*Isoodon fusciventer*) which was recorded at several locations. The lack of evidence other species of conservation significance being observed does not eliminate the potential for them still occur, if only infrequently. The likelihood of conservation significant species occurring within the survey area is provided in Section 5.3 of the report.

5.3 LIKELIHOOD OF OCCURRENCE – FAUNA SPECIES OF CONSERVATION SIGNIFICANCE

Based on the information gathered during the site reconnaissance survey and the documented distribution and habitat preferences of the species of conservation significance identified as potentially being present in the general area, their likelihood of occurrence within the survey area itself has been assessed. A summary of this assessment is presented in Table 4.

Some comments on the possible impacts of any proposed development are also provided in the table though as no specific development plan has been put forward these are preliminary comments that should be reviewed as planning progresses.

One vertebrate fauna species of conservation significance (listed as State or Federal threatened/migratory species or as DBCA priority species) was positively identified as utilising the survey area for some purpose during the survey period:

- Quenda *Isoodon fusciventer* – P4 (*BC Act* Priority Species)
  Foraging evidence (diggings) attributed to this species this species was found during the survey period and there are numerous records from nearby surrounding areas. Possibly present in areas containing dense groundcover.

Several additional species of conservation significance may utilise the survey area for some purpose at times, but their status on-site and/or in the general area is difficult to determine because they were not sighted during the field survey, or evidence of use was not observed:

- Peregrine Falcon *Falco peregrinus* – OS (*BC Act*)
  This species potentially utilises some sections of the survey area as part of a much larger home range, though it is only likely to occur infrequently. All areas represent potential foraging habitat for this species. No potential nest sites present. Listed as a potential species based on available information.

- Carnaby`s Cockatoo *Zanda latirostris* – Endangered (*BC Act & EPBC Act*).
  No evidence of this species observed. The survey area contains areas of potential black cockatoo breeding habitat (trees with a DBH >30cm) but no suitable hollows are present. The majority of the native vegetation within the survey area represents negligible to low quality foraging habitat for this species. No evidence of roosting observed. Listed as a potential species based on available information.

- Forest Red-tailed Black Cockatoo *Calyptorhynchus banksii naso* –Vulnerable (*BC Act* & *EPBC Act*). No evidence of this species observed. The survey area contains areas of potential black cockatoo breeding habitat (trees with a DBH >30cm) but no suitable hollows are present. The majority of the native vegetation within the survey area represents negligible to low quality foraging habitat for this species. No evidence of roosting observed. Listed as a potential species based on available information.

A number of other species of conservation significance (as listed in Table 4), while possibly present in the larger bush remnants in the wider area (e.g. Marlee Reserve, Paganoni Swamp, Yalgorup National Park), are not listed as potentially occurring within the survey area primarily due to a complete lack of suitable habitat (quality and extent) and/or known local/regional extinction.

Table 4: Likelihood of Occurrence – Fauna Species of Conservation Significance

Species	Conservation Status		Habitat Preferences	Habitat Present	Likelihood of Occurrence	Comments/Possible Impacts
	BC Act	*EPBC Act*				
Perth Slider *Lerista lineata*	P3	-	Inhabits loose white sands and leaf litter under areas of shrubs and heath particularly in association with banksias.	No/Marginal	Unlikely to Occur	Current status in area uncertain but possibly locally extinct. Habitat appears marginal at best. No impact on this species anticipated.
Jewelled South-west Ctenotus *Ctenotus gemmula*	P3	-	Prefers pale sandplains supporting either banksia or mallee with heath. Seeks shelter beneath leaf litter, in abandoned stick-ant nest and burrows at the base of trees and shrubs	No/Marginal	Unlikely to Occur	Current status in area uncertain but possibly locally extinct. Habitat appears marginal at best. No impact on this species anticipated.
Black-striped Burrowing Snake *Neelaps calonotos*	P3	-	Favours sandy soils supporting heath and banksia/eucalypt woodland	No/Marginal	Unlikely to Occur	Current status in area uncertain but possibly locally extinct. Habitat appears marginal at best. No impact on this species anticipated.
Abrolhos dwarf bearded dragon *Pogona minor minima*	VU	-	Found only on islands at Houtman Abrolhos	No	Would Not Occur.	DBCA Database error. No impact on this species will occur.
Australasian Bittern *Botaurus poiciloptilus*	EN	EN	Freshwater wetlands, occasionally estuarine; prefers heavy vegetation such as beds of tall dense *Typha, Baumea* and sedges in freshwater swamps.	No	Would Not Occur.	No suitable habitat. No impact on this species will occur.
Black-backed Bittern *Botaurus dubius*	P4	-	ense vegetation surrounding/within freshwater pools, swamps and lagoons, well screened with trees. Shelters in dense beds of Typha, Baumea and tall rushes in freshwater swamps around lakes and along rivers.	No	Would Not Occur.	No suitable habitat. No impact on this species will occur.
Mallleefowl *Leipoa ocellata*	VU	VU	Mainly scrubs and thickets of mallee *Eucalyptus* spp., boree *Melaleuca lanceolata* and bowgada *Acacia linophylla*, also dense litter forming shrublands.	No	Would Not Occur.	Regionally extinct. No impact on this species will occur.
Migratory Shorebirds/Wetland Species/Marine Species (various reptiles, birds and mammals)	MI, Various	Ma, Mig, Various	Varies between species but includes open ocean, beaches and permanent/temporary wetlands varying from billabongs, swamps, lakes, floodplains, sewerage farms, saltwork ponds, estuaries, lagoons, mudflats sandbars, pastures, airfields, sports fields and lawns.	No	Would Not Occur.	No suitable habitat. No impact on these species will occur.
Blue Billed Duck *Oxyura australis*	P4	-	Well vegetated freshwater swamps, large dams and lakes, winters on more open water. Occasionally salt lakes and estuaries freshened by floodwaters.	No	Would Not Occur.	No suitable habitat. No impact on this species will occur.
Peregrine Falcon *Falco peregrinus*	OS	-	Diverse from rainforest to arid shrublands, from coastal heath to alpine Mainly about cliffs along coasts, rivers and ranges and about wooded watercourses and lakes.	Yes	Possibly Occurs.	May forage in general area. Modification of areas of foraging habitat. No significant impact on this species will occur.

Species	Conservation Status		Habitat Preferences	Habitat Present	Likelihood of Occurrence	Comments/Possible Impacts
	BC Act	*EPBC Act*				
Grey Falcon *Falco hypoleucos*	VU	VU	Usually confined to the arid inland. Inhabits *Triodia* grassland, Acacia shrubland, and lightly timbered arid woodland. Most sightings of the grey falcon have been within the arid zones	No	Would Not Occur.	Rarely if ever recorded on coastal plain. No suitable habitat. No impact on this species will occur.
Osprey *Pandion haliaetus*	Mi	Mig	Coasts, estuaries, bays, inlets, islands, and surrounding waters, coral atolls, reefs, lagoons, rock cliffs and stacks. Ascends larger rivers.	No	Unlikely to Occur.	Occasional flyovers possible but this species would mainly confine its activities to coastal areas in this region.
Carnaby`s Cockatoo *Zanda latirostris*	EN	EN	Forests, woodlands, heathlands, farms; feeds on *Banksia*, *Hakea* and Marri.	Yes	Possibly Occurs.	Known to occur in general area. Modification/loss of small areas of low quality foraging habitat, however, no significant impact on this species overall conservation status is anticipated given limited area of likely impact.
Baudin`s Cockatoo *Zanda baudinii*	EN	EN	Mainly eucalypt forests where it feeds primarily on the marri seeds.	Yes	Unlikely to Occur	Known to occur in general area but only occasionally relative to the other two species. Modification/loss of small areas of low-quality foraging habitat, however, no significant impact on this species overall conservation status is anticipated given limited area of likely impact.
Forest Red-tailed Black Cockatoo *Calyptorhynchus banksii naso*	VU	VU	Eucalypt forests, feeds on marri, jarrah, blackbutt, karri, sheoak and snottygobble.	Yes	Possibly Occurs.	Known to occur in general area. Modification/loss of small areas of low-quality foraging habitat, however, no significant impact on this species overall conservation status is anticipated given limited area of likely impact.
Masked Owl *Tyto novaehollandiae novaehollandiae*	P3	-	Roosts and nests in heavy forest, hunts over open woodlands and farmlands.	Yes/Marginal	Unlikely to Occur.	Only occasionally recorded in his part of the southwest. No suitable nest/roost hollows. No significant impact on this species anticipated.
Fork-tailed Swift *Apus pacificus*	MI	Ma, Mig	Low to very high airspace over varied habitat from rainforest to semi desert.	Yes	Unlikely to Occur	May occur very occasionally for brief periods. Entirely aerial. No impact on this species will occur.
Grey Wagtail *Motacilla cinerea*	MI	Mig, Ma	In Australia, near running water in disused quarries, sandy, rocky streams in escarpments and rainforest, sewerage ponds, ploughed fields and airfields.	No	Would Not Occur.	No suitable habitat. No impact on this species will occur.
Chuditch *Dasyurus geoffroii*	VU	VU	Forest, mallee shrublands, woodland and desert. The densest populations have been found in riparian jarrah forest.	No	Would Not Occur.	Regionally extinct. Very occasional transient individuals only. No impact on this species will occur.

Species	Conservation Status		Habitat Preferences	Habitat Present	Likelihood of Occurrence	Comments/Possible Impacts
	BC Act	*EPBC Act*				
Quenda *Isoodon fusciventer*	P4	-	Dense scrubby, often swampy, vegetation with dense cover.	Yes	Known to Occur	Diggings attributed to this species recorded. Loss/modification of a small area of habitat. Potential for individuals to be killed or injured during clearing. However, no significant impact on this species overall conservation status is anticipated given limited area of likely impact.
South-west Brush-tailed Phascogale *Phascogale tapoatafa wambenger*	CD	-	Dry sclerophyll forests and open woodlands that contain hollow-bearing trees but a sparse ground cover.	Yes/Marginal	Unlikely to Occur	Known to occur in general area but project area lacks hollow bearing trees. No significant impact on this species overall conservation status is anticipated given limited area of likely impact.
Numbat *Myrmecobius fasciatus*	EN	EN	Open Woodlands generally dominated by eucalypts that provide hollow logs and branches for shelter and termites for food.	No/Marginal	Would Not Occur.	Regionally extinct. This species has not been recorded on the coastal plain for over 50 years. No impact on this species will occur.
Western Ringtail Possum *Pseudocheirus occidentalis*	CR	CE	Coastal peppermint, coastal peppermint-tuart, jarrah-marri associations, sheoak woodland, and eucalypt woodland and mallee.	Yes	Unlikely to Occur	Not known to occur north of the Mandurah Estuary. No impact on this species anticipated.
Woylie *Bettongia penicillata ogilbyi*	CR	EN	Open sclerophyll forest and woodland with a low, dense, understorey of tussock grasses or woody scrub.	No/Marginal	Would Not Occur.	Regionally extinct. This species has not been recorded on the coastal plain for over 50 years. No impact on this species will occur.
Western Brush Wallaby *Notamacropus irma*	P4	-	Prefers areas of forest and woodland supporting a dense shrub layer adjacent to small open areas.	Yes	Would Not Occur.	Locally extinct. This species could not persist in the fragmented habitat within and around the survey area. No impact on this species will occur.
Tammar Wallaby *Notamacropus eugenii derbianus*	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	No	Would Not Occur.	Regionally extinct. This species has not been recorded on the coastal plain for over 50 years. No impact on this species will occur.
Water Rat *Hydromys chrysogaster*	P4	-	Permanent water, fresh, brackish or marine.	No	Would Not Occur.	No suitable habitat. No impact on this species will occur.
Western False Pipistrelle *Falsistrellus mackenziei*	P4	-	Wet sclerophyll forest dominated by karri and in high rainfall zones of the jarrah and marri forest.	Yes/Marginal	Unlikely to Occur.	Only occasionally recorded in his part of the southwest. No suitable nest/roost hollows. No significant impact on this species anticipated.

See Appendix A for conservation status codes

6. CONCLUSION

The fauna assessment within the survey area was primarily undertaken to document black cockatoo habitat and to determine the possible presence of other conservation significant fauna species and/or their habitat.

With respect to fauna habitat values in general, the remnant native vegetation present is only likely to support a small range of its original fauna assemblage given its small size and history of disturbance. The area does adjoin some additional vegetation which increases its capacity to support some species that require larger remnants to persist. Most species present would however be common, widespread bird species. The survey area does potentially have some limited value to a small number of conservation significant species (e.g. quenda).

The black cockatoo breeding habitat assessment identified 82 trees within the survey area with a DBH of >30cm. Most of these trees (82) appeared to not contain hollows of any size. One tree contained one small hollow which was occupied by feral bees.

No trees were assessed as containing hollows suitable for black cockatoos to use for nesting purposes.

BCE's foraging score method returned an overall value of between 0 (no foraging value) to 2 (low foraging value) for the identified habitat units, with variations occurring depending on cockatoo species and vegetation composition.

Application of the DCCEEW's Foraging Quality Scoring Tool to the entire survey area as one results in a high quality foraging score for all three species of black cockatoo (8 out of 10). This is a consequence of the score having to start at a maximum of 10 (given the foraging habitat present contains "eucalypt woodland") and there being only one attribute (lack of foraging evidence) that could be used, without doubt, to reduce the starting score to a lower level.

No existing roosting trees (trees used at night by black cockatoos to rest) or roosting activity was positively identified during the survey. The closest documented and recently active cockatoo roost sites are located about four kilometres east of the survey area.

Fifteen fauna species (mainly common bird species) were observed or secondary evidence of their presence recorded during the field survey. In summary one vertebrate fauna species of conservation significance were positively identified as utilising the survey area:

- Quenda – P4 (WA).

Several additional species of conservation significance may also utilise the survey area, though, as no evidence of their presence was identified during the field survey, their status in the area in some cases remains uncertain:

- Peregrine Falcon – OS (WA).

- Carnaby`s Cockatoo – Endangered (WA/Federal).
- Forest Red-tailed Black Cockatoo – Vulnerable (WA/Federal)

In cases where some habitat is present and available information indicates at least some probability of the species occurrence, likely impacts are anticipated to most likely to be related to the loss of a small area of habitat and the potential for some species to be killed or injured during clearing. This in particular relates to the quenda (*Isoodon fusciventer*) (DBCA Priority 4 species), which are a ground-based species that seeks daytime refuge in logs/log piles or dense undergrowth.

The potential presence of some fauna species will need to be taken into consideration during ongoing planning and during the approval process. If approval for the proposal is granted, consideration should be given to the implementation of a fauna management plan, in particular immediately prior to and during clearing.

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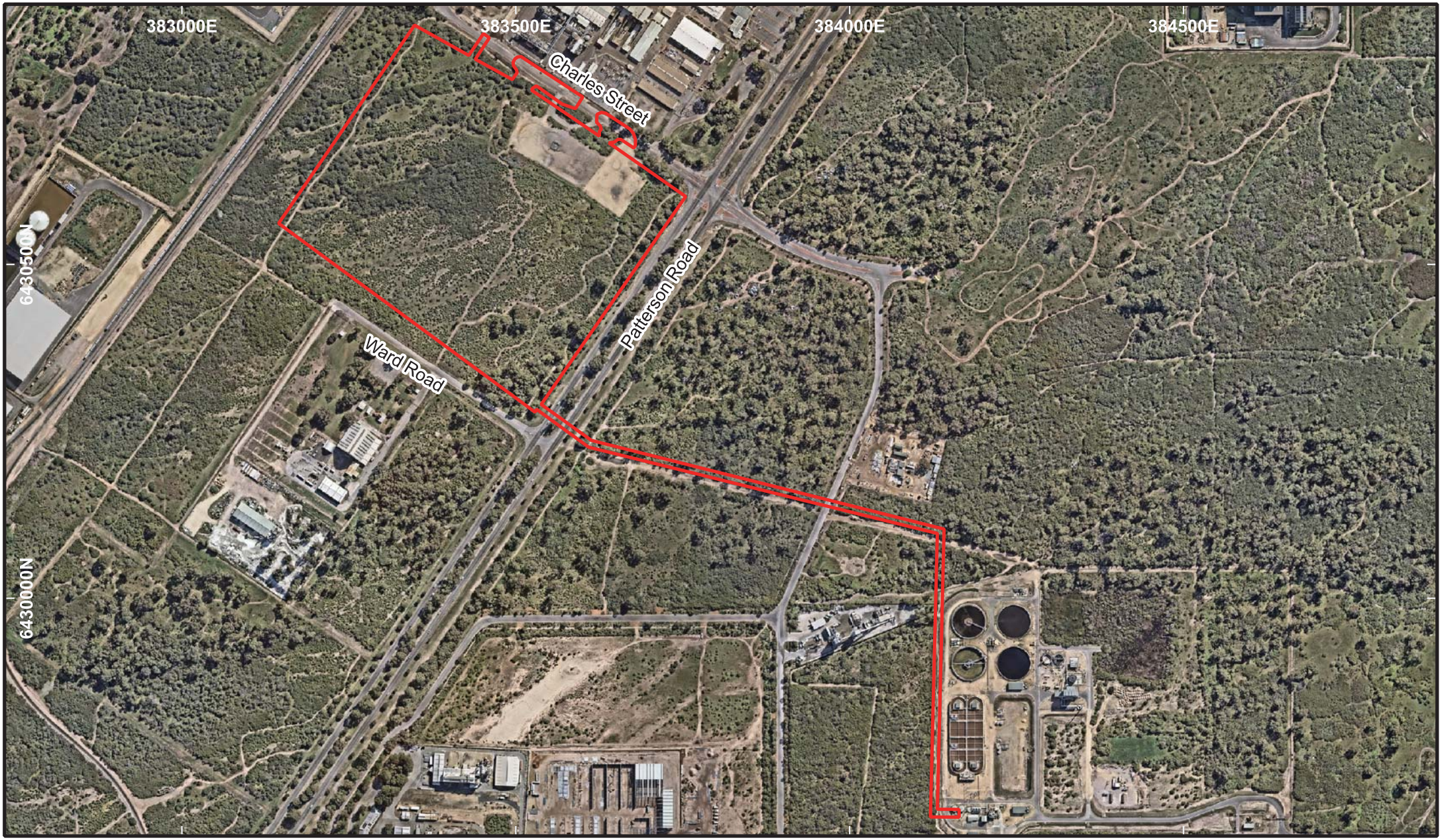
FIGURES



Legend

Indicative Project Boundary (19.93 ha)

0 100 200 300 400 500

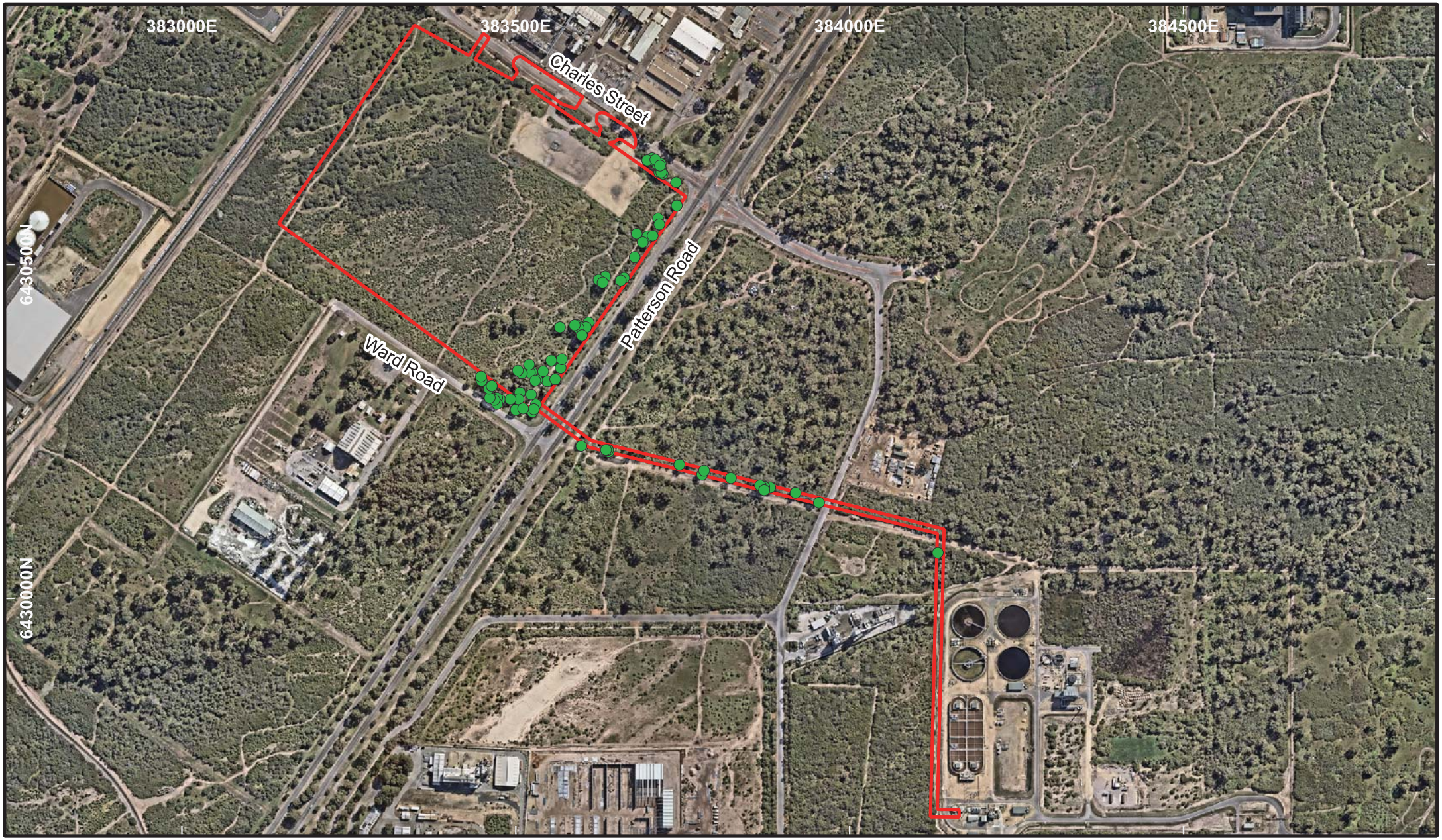
Metres

Fauna Survey

Miscellaneous Lots
Patterson Road
East Rockingham

Project Area Aerial Photograph

Drawn: G Harewood	
Date: October 2025	
Scale: 1:7,500	
Coordinate System: GDA 2020/MGA Z50	**Figure 1**



Legend

- Indicative Project Boundary (19.93 ha)
- Habitat Tree (DBH >30cm)
  No hollows suitbale for black cockatoos

0 100 200 300 400 500
Metres

Fauna Survey

Miscellaneous Lots
Patterson Road
East Rockingham

Project Area Habitat Trees (DBH >30cm)

Drawn: G Harewood	
Date: October 2025	
Scale: 1:7,500	
Coordinate System: GDA 2020/MGA Z50	Figure 2

APPENDIX A
CONSERVATION CATEGORIES

Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)
Threatened Fauna Categories

Threatened fauna may be listed under Section 178 of the *Environment Protection and Biodiversity Conservation Act 1999* (*EPBC Act*) in any one of the following categories:

Category	Code	Description
Extinct	E	There is no reasonable doubt that the last member of the species has died.
*Extinct in the wild	EW	A species (a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or (b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
*Critically Endangered	CR	A species is facing an extremely high risk of extinction in the wild in the immediate future.
*Endangered	EN	A species: (a) is not critically endangered; and (b) is facing a very high risk of extinction in the wild in the near future.
*Vulnerable	VU	A species (a) is not critically endangered or endangered; and (b) is facing a high risk of extinction in the wild in the medium-term future.
Conservation Dependent	CD	A species is the focus of a specific conservation program the cessation of which would result in the species becoming vulnerable, endangered or critically endangered
*Migratory	Mig	(a) all migratory species that are: (i) native species; and (ii) from time to time included in the appendices to the Bonn Convention; and (b) all migratory species from time to time included in annexes established under JAMBA, CAMBA and ROKAMBA; and (c) all native species from time to time identified in a list established under, or an instrument made under, an international agreement approved by the Minister.
Marine	Ma	Species in the list established under s248 of the *EPBC Act*

Note: Only species in those categories marked with an asterix are matters of national environmental significance (NES) under the *EPBC Act*.

Biodiversity Conservation Act 2016 (BC Act)
Specially Protected Fauna Categories

Biodiversity Conservation (Listing of Native Species) (Fauna) Order 2022, made by the Minister under sections 13(1), 19(1) and 23(1) of the Act and regulation 174(1) of the Biodiversity Conservation Regulations 2018

Threatened Species		
Category	**Code**	**Description**
Critically Endangered species	CR	Species 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
Endangered species	EN	Species 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.
Vulnerable species	VU	Species 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.
Presumed extinct species	EX	Species where there is no reasonable doubt that the last member of the species has died.
Extinct in the wild species	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 from.
Specially Protected Species		
Category	**Code**	**Description**
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*)
Species of special conservation interest (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*).
Species otherwise in need of special protection (other specially protected).	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*).

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

*Priority is not a listing category under the BC Act.

All fauna and flora are protected in WA following the provisions in Part 10 of the *BC Act*. The protection applies even when a species is not listed as threatened or specially protected, and regardless of land tenure (State managed land (Crown land), private land, or Commonwealth land). Species that may possibly be threatened species that do not meet the criteria for listing under the BC Act because of insufficient survey or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of prioritisation for survey and evaluation of conservation status so that consideration can be given to potential listing as threatened. Species that are adequately known, meet criteria for near threatened, or are rare but not threatened, or that have been recently removed from the threatened species list or conservation dependent or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring. Assessment of priority status is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

***IUCN Red List* Threatened Species Categories**

The *IUCN Red List of Threatened Species*™ is a checklist of taxa that have undergone an extinction risk assessment using the *IUCN Red List Categories and Criteria*.

Categories are summarized below.

Category	Code	Description
Extinct	EX	Taxa for which there is no reasonable doubt that the last individual has died.
Extinct in the Wild	EW	Taxa which is known only to survive in cultivation, in captivity or and as a naturalised population well outside its past range and it has not been recorded in known or expected habitat despite exhaustive survey over a time frame appropriate to its life cycle and form.
Critically Endangered	CR	Taxa facing an extremely high risk of extinction in the wild.
Endangered	EN	Taxa facing a very high risk of extinction in the wild.
Vulnerable	VU	Taxa facing a high risk of extinction in the wild.
Near Threatened	NT	Taxa which has been evaluated but does not qualify for CR, EN or VU now but is close to qualifying or likely to qualify in the near future.
Least Concern	LC	Taxa which has been evaluated but does not qualify for CR, EN, VU, or NT but is likely to qualify for NT in the near future.
Data Deficient	DD	Taxa for which there is inadequate information to make a direct or indirect assessment of its risk of extinction based on its distribution and/or population status.
Not Evaluated	NE	Taxa which has not been evaluated.

A full list of categories and their meanings are available at:

https://www.iucnredlist.org/resources/categories-and-criteria

APPENDIX B

BAMFORD'S SCORING SYSTEM FOR THE ASSESSMENT OF FORAGING VALUE OF VEGETATION FOR BLACK COCKATOOS (BCE 2020) AND CALCULATIONS

Scoring system for the assessment of foraging value of vegetation for Black-Cockatoos. Revised 5th June 2020

Bamford Consulting Ecologists

Introduction

Application of the Offset Assessment Guide (offsets guide) developed by the federal environment department for assessing Black-Cockatoo foraging habitat requires the calculation of a score out of 10. The following system has been developed by Bamford Consulting Ecologists (BCE) with assistance from Quessentia Consulting to provide an objective scoring system that is practical and can be used by trained field zoologists with experience in the environments frequented by the species.

The foraging value score provides a numerical value that reflects the significance of vegetation as foraging habitat for Black-Cockatoos, and this numerical value is designed to provide the information needed by the Federal Department of Agriculture, Water and the Environment (DAWE) to assess impact significance and offset requirements. The foraging value of the vegetation depends upon the type, density and condition of trees and shrubs in an area and can be influenced by the context such as the availability of foraging habitat nearby. The BCE scoring system for value of foraging habitat has three components as detailed above. These three components are drawn from the DAWE offsets guide but the scoring approach was developed by BCE and includes a fourth (moderation) component.

Calculating the total score (out of 10) requires the following steps:

A Site condition. Determining a score out of six for the vegetation composition, condition and structure; plus

B Site context. Determining a score out of three for the context of the site; plus

C Species stocking rate. Determining a score out of one for species density.

D Determining the total score out of 10, which may require moderation for context and species density with respect to the site condition (vegetation) score. Moderation also includes consideration of pine plantations as a special case for foraging value.

Calculation of scores and the moderation process are described in detail below.

A. Site condition. Vegetation composition, condition and structure scoring

Site Score	Description of Vegetation Values		
	Carnaby's Black-Cockatoo	**Baudin's Black-Cockatoo**	**Forest Red-tailed Black-Cockatoo**
0	No foraging value. No Proteaceae, eucalypts or other potential sources of food. Examples: • Water bodies (e.g. salt lakes, dams, rivers); • Bare ground; • Developed sites devoid of vegetation (e.g. infrastructure, roads, gravel pits) or with vegetation of no food value, such as some suburban landscapes. • Mown grass	No foraging value. No eucalypts or other potential sources of food. Examples: • Water bodies (e.g. dams, rivers); • Bare ground; • Developed sites devoid of vegetation (e.g. infrastructure, roads, gravel pits).	No foraging value. No eucalypts or other potential sources of food. Examples: • Water bodies (e.g. dams, rivers); • Bare ground; • Developed sites devoid of vegetation (e.g. infrastructure, roads, gravel pits).
1	Negligible to low foraging value. Examples: • Scattered specimens of known food plants but projected foliage cover of these is < 2%. This could include urban areas with scattered foraging trees; • Paddocks that are lightly vegetated with melons or other known food-source weeds (e.g. *Erodium* spp.) that represent a short-term and/or seasonal food source; • Blue Gum plantations (foraging by Carnaby's Black-Cockatoos has been reported but appears to be unusual).	Negligible to low foraging value. Scattered specimens of known food plants but projected foliage cover of these < 1%. This could include urban areas with scattered foraging trees.	Negligible to low foraging value. Scattered specimens of known food plants but projected foliage cover of these < 1%. Could include urban areas with scattered foraging trees.

Site Score	Description of Vegetation Values		
	Carnaby's Black-Cockatoo	**Baudin's Black-Cockatoo**	**Forest Red-tailed Black-Cockatoo**
2	Low foraging value. Examples: • Shrubland in which species of foraging value, such as shrubby banksias, have < 10% projected foliage cover; • Woodland with tree banksias 2-5% projected foliage cover; • Open eucalypt woodland/mallee of small-fruited species; • Paddocks that are densely vegetated with melons or other known food-source weeds (e.g. *Erodium* spp.) that represent a short-term and/or seasonal food source.	Low foraging value. Examples: • Woodland with scattered specimens of known food plants (e.g. Marri and Jarrah) 1-5% projected foliage cover; • Urban areas with scattered foraging trees.	Low foraging value. Examples: • Woodland with scattered specimens of known food plants (e.g. Marri, Jarrah or Sheoak) 1-5% projected foliage cover; • Urban areas with scattered food plants such as Cape Lilac, *Eucalyptus caesia* and *E. erythrocorys*.
3	Low to Moderate foraging value. Examples: • Shrubland in which species of foraging value, such as shrubby banksias, have 10-20% projected foliage cover; • Woodland with tree banksias 5-20% projected foliage cover; • Eucalypt Woodland/Mallee of small-fruited species; • Eucalypt Woodland with Marri < 10% projected foliage cover.	Low to Moderate foraging value. Examples: • Eucalypt Woodland with known food plants (especially Marri) 5-20% projected foliage cover; • Parkland-cleared Eucalypt Woodland/Forest with known food plants 10-40% projected foliage cover (poor long-term viability without management); • Younger areas of (managed) revegetation with known food plants 10-40% projected foliage cover (establishing food sources with good long-term viability).	Low to Moderate foraging value. Examples: • Eucalypt Woodland with known food plants (especially Marri and Jarrah) 5-20% projected foliage cover; • Parkland-cleared Eucalypt Woodland/Forest with known food plants 10-40% projected foliage cover (poor long-term viability without management); • Younger areas of (managed) revegetation with known food plants 10-40% projected foliage cover (establishing food sources with good long-term viability).

Site Score	Description of Vegetation Values		
	Carnaby's Black-Cockatoo	**Baudin's Black-Cockatoo**	**Forest Red-tailed Black-Cockatoo**
4	Moderate foraging value. Examples: • Woodland/low forest with tree banksias (of key species *B. attenuata* and *B. menziesii*) 20-40% projected foliage cover; • Kwongan/ Shrubland in which species of foraging value, such as shrubby banksias, have 20-40% projected foliage cover; • Eucalypt Woodland/Forest with Marri 20-40% projected foliage cover.	Moderate foraging value. Examples: • Marri-Jarrah Woodland/Forest with 20-40% projected foliage cover; • Marri-Jarrah Forest with 40-60% projected foliage cover but vegetation condition reduced due to weed invasion and/or some tree deaths. • Eucalypt Woodland/Forest with diverse, healthy understorey and known food trees (especially Marri) 10-20% projected foliage cover. • Orchards with highly desirable food sources (e.g. apples, pears, some stone fruits).	Moderate foraging value. Examples: • Marri-Jarrah Woodland/Forest with 20-40% projected foliage cover; • Marri-Jarrah Forest with 40-60% projected foliage cover but vegetation condition reduced due to weed invasion and/or some tree deaths; • Sheoak Forest with 40-60% projected foliage cover.
5	Moderate to High foraging value. Examples: • Banksia Low Forest (of key species *B. attenuata* and *B. menziesii*) with 40-60% projected foliage cover; • Banksia Low Forest (of key species *B. attenuata* and *B. menziesii*) with > 60% projected foliage cover but vegetation condition reduced due to weed invasion and/or some tree deaths; • Pine plantations with trees more than 10 years old (but see pine note below in moderation section).	Moderate to High foraging value. Examples: • Marri-Jarrah Forest with 40-60% projected foliage cover; • Marri-Jarrah Forest with > 60% projected foliage cover but vegetation condition reduced due to weed invasion and/or some tree deaths.	Moderate to High foraging value. Examples: • Marri-Jarrah Forest with 40-60% projected foliage cover; • Marri-Jarrah Forest with > 60% projected foliage cover but vegetation condition reduced due to weed invasion and/or some tree deaths. • Sheoak Forest with > 60% projected foliage cover.

Site Score	Description of Vegetation Values		
	Carnaby's Black-Cockatoo	**Baudin's Black-Cockatoo**	**Forest Red-tailed Black-Cockatoo**
6	High foraging value. Example: • Banksia Low Forest (of key species *B. attenuata* and *B. menziesii*) with > 60% projected foliage cover and vegetation condition good with low weed invasion and/or low tree deaths (indicating it is robust and unlikely to decline in the medium term).	High foraging value. Example: • Marri-Jarrah Forest with > 60% projected foliage cover and vegetation condition good with low weed invasion and/or low tree deaths (indicating it is robust and unlikely to decline in the medium term).	High foraging value. Example: • Marri-Jarrah Forest with > 60% projected foliage cover and vegetation condition good with low weed invasion and/or low tree deaths (indicating it is robust and unlikely to decline in the medium term).

Vegetation structural class terminology follows Keighery (1994).

B. Site context.

Site Context is a function of site size, availability of nearby habitat and the availability of nearby breeding areas. Site context includes consideration of connectivity, although Black-Cockatoos are very mobile and will fly across paddocks to access foraging sites. Based on BCE observations, Carnaby's are unlikely to regularly go over open ground for a distance of more than a few kilometres and prefer to follow tree-lines.

The maximum score for site context is 3, and because it is effectively a function of presence/absence of nearby breeding and the distribution of foraging habitat across the landscape, the following table, developed by Bamford Consulting in conjunction with DEE, provides a *guide* to the assignation of site context scores. Note that 'local area' is defined as within a 15 km radius of the centre point of the study site. This is greater than the maximum distance of 12km known to be flown by Carnaby's Black-Cockatoo when feeding chicks in the nest.

Site Context Score	**Percentage of the existing native vegetation within the 'local' area that the study site represents.**	
	'Local' breeding known/likely	**'Local' breeding unlikely**
3	> 5%	> 10%
2	1 - 5%	5 - 10%
1	0.1 - 1%	1 - 5%
0	< 0.1%	< 1%

The table above provides weighting for where nearby breeding is known (or suspected) and for the proportion of foraging habitat within 15km represented by the site being assessed. Some adjustments may be needed based on the judgement of the assessor and in relation to the likely function of the site. For example, a small area of foraging habitat (eg 0.5% of such habitat within 15km) could be upgraded to a context of 2 if it formed part of a critical movement corridor. In contrast, the same sized area of habitat, of the same local proportion, could be downgraded if it were so isolated that birds could never access it.

C. Species density (stocking rate).

Species stocking rate is described as "the usage and/or density of a species at a particular site" in the offsets guide. The description also implies that a site supports a discrete population, which is unlikely in the case of very mobile black-cockatoos. Assignation of the species density score (0 or 1) is based upon the black-cockatoo species being either abundant or not abundant. A score of 1 is used where the species is seen or reported regularly and/or there is abundant foraging evidence. Regularly is when the species is seen at intervals of every few days or weeks for at least several months of the year. A score of 0 is used when the species is recorded or reported very infrequently and there is little or no foraging evidence. Where information on actual presence of birds is lacking, a species density score can be assigned by interpreting the landscape and the site context. For example, a site with a moderate condition score that is part of a network of such habitat where a black-cockatoo species is

known would get a species density score of 1 even without clear presence data, while a species density score of 0 can be assigned to a site where the level of usage can confidently be predicted to be low.

D. Moderation of scores for the calculation of a value out of 10.

The calculation out of 10 requires the vegetation characteristics (out of 6) to be combined with the scores given for context and species density. It is considered that the context and density scores are not independent of vegetation characteristics; otherwise habitat of absolutely no value for black-cockatoo foraging (such as concrete or a wetland) could get a foraging score out of 10 as high as 4 if it occurred in an area where the species breed (context score of 3) and are abundant (species density score of 1). Similarly, vegetation of negligible or low characteristics which could not support black-cockatoos could be assigned a score as high as 6 out of 10. In that case, the score of 6 would be more a reflection of nearby vegetation of high characteristics than of the foraging value of the negligible to low scoring vegetation. The Black-Cockatoos would only be present because of vegetation of high characteristics, so applying the context and species density scores to vegetation of low characteristics would not give a true reflection of their foraging value.

For this reason, the context and species density scores need to be moderated for the vegetation characteristic score to prevent vegetation of little or no foraging value receiving an excessive score out of 10. A simple approach is to assign a context and species density score of zero to sites with a Condition score of low (2), negligible (1) or none (0), on the basis that birds will not use such areas unless they are adjacent to at least low-moderate quality foraging habitat ($\geq$3). The approach to calculating a score out of 10 can be summarised as follows:

vegetation composition, condition and structure score (out of 6)	context score	Species density score
3-6 (low/moderate to high value)	Assessed as per B above	Assessed as per C above
0-2 (no to low value)	0	0

Note that this moderation approach may require interpretation depending on the context. For example, vegetation with a condition score of 2 could be given a context score of 1 under special circumstances. Such as when very close to a major breeding area or if strategically located along a movement corridor.

Pine plantations

Pine plantations are an important foraging resource for Carnaby's Black-Cockatoo (only) but are not directly comparable with native vegetation. In comparing native vegetation with pine plantations for the purpose of calculating offsets, the following should be noted:

- Pine plantations are a commercial crop established with the intention of being harvested and thus have short-term availability (30-50 years), whereas native vegetation is available indefinitely if protected. Due to the temporary nature of pines as a food source, site condition and context differs between pines and native vegetation.
- Although pines provide a high abundance of food in the form of seeds, they are a limited food resource compared with native vegetation which provides seeds, insect larvae, flowers and nectar. The value of insect larvae in the diet of Carnaby's Black-Cockatoo has not been quantified, but in the vicinity of Perth, the birds forage very heavily on insect larvae in young cones of *Banksia attenuata* in winter, ignoring the seeds in these cones and seeds in older cones on the same trees (Scott and Black 1981; M. Bamford pers. obs.). This suggests that insect larvae are of high nutritional importance immediately prior to the breeding season.
- Pine plantations have very little biodiversity value other than their importance as a food source for Carnaby's Black-Cockatoos. They inhibit growth of other flora. While this is not a factor for direct consideration with respect to Carnaby's Black-Cockatoo, it is a factor in regional conservation planning of which offsets for the cockatoos are a part.

Taking the above points into consideration, it is possible to assign pine plantations a foraging value as follows:

- Site condition. The actual foraging value of pines is high. Stock *et al.* (2013) report that it takes nearly twice as many seeds of *Pinus pinaster* to meet the daily energy requirements for Carnaby's Black-Cockatoo compared with Marri, and three times as many *P. pinaster* seeds compared with Slender Banksia. However, pines are planted at a high density so the food supply per hectare can be high. Taking account of the lack of variety of food from pines, this suggests a site condition score of 4 or 5 out of 6 (5 is used in Section A above). As a source of food, pines are thus comparable to the best banksia woodland. This site condition score then needs to be adjusted to take account of the short-term nature of the food supply (for pine plantations to be harvested. Where pines are 'ornamental, such as in some urban contexts, they can be treated as with other trees in urban landscapes). The foraging value of a site after pines are harvested will effectively be 0, or possibly 1 if there is some retention. It is proposed that this should approximately halve the site condition score; young pine plantations could be redacted slightly less than old plantations on the basis that a young plantation provides a slightly longer term food supply. If a maximum site condition score of 5 is given, then a young plantation (>10 but <30 years old) could be assigned a score of 3, and an old plantation (>30 years old) could be assigned a score of 2. Plantations <10 years old and thus not producing large quantities of cones could also get a score of 2, but recognising they may increase in value.
- Site context. Although a temporary food source, pines can be very important for Carnaby's Black-Cockatoo in some contexts; they could be said to carry populations in areas where there

is little native vegetation. The system for assigning a context score as outlined above (Section B) also applies to pines. Thus, a context score of 3 can be given where pines are a significant proportion of foraging habitat (>5% if breeding occurs; >10% if no breeding), but where pines are a small part of the foraging landscape they will receive a context score of less than this.

- Species density. As outlined above (Section C), pines will receive a species density score of 1 where Carnaby's Black-Cockatoo are regular visitors. This is irrespective of an old plantation having a moderated condition score of 2.

Based on the above, pine plantations that represent a substantial part of the foraging landscape, such as in the region immediately north of Perth, would receive a total score (out of 10) of 6; young plantations in this area would receive a score of 7. In contrast, isolated and small plantations in rural landscapes could receive a score of just 2 if they are only a small proportion of foraging habitat and Carnaby's Black-Cockatoos are not regularly present.

Keighery (1994).

Scott, J. K. and Black, R. (1981). Selective Predation by White-Tailed Black Cockatoos on Fruit of *Banksia attenuata* Containing the Seed-Eating Weevil *Alphitopis nivea*. *Australian Wildlife Research* **8(2)**, 421-430.

Stock, W.D., Finn, H., Parker, J. and Dods, K. (2013). Pine as Fast Food. Foraging Ecology of an Endangered Cockatoo in a Forestry Landscape. PlosOne 8: issue 4.

BlueScope Steel - Miscellaneous Lots - Patterson Road East Rockingham

October 2025

Foraging values of vegetation recorded for black cockatoos (BCE 2020)

Habitat Description	Vegetation Characteristics			Site Context			Species Density			Total Score		
	CC	BC	FRTBC	CC	BC	FRTBC	CC	BC	FRTBC	CC	BC	FRTBC
Open Woodland of tuart over peppermint, basket bush, summer-scented wattle, Western Australian golden wattle over grass trees over annual weeds in calcareous sand.	2	2	2	0	0	0	1	0	1	**2**	**2**	**2**
Open Low Heath of grass trees with some scattered small shrubs over annual weeds (grassland) in calcareous sand.	2	2	0	0	0	0	1	0	0	**2**	**2**	**0**
Tall open Scrub/Tall Open Shrubland of Chenille honey-myrtle and Western Australian golden wattle over annual weeds in calcareous sand.	1	0	0	0	0	0	0	0	0	**1**	**0**	**0**
Existing cleared areas	0	0	0	0	0	0	0	0	0	**0**	**0**	**0**

CC = Carnaby's Cockatoo, BC = Baudin's Cockatoo, FRTBC = Forest Red-tailed Black Cockatoo

Appraisal/Justification

The following flora species, known to be or potentially used as a direct food source (e.g. seeds, flowers, nectar, bark or grubs) by one or more species of black cockatoo were recorded within the survey area:

Black cockatoo foraging species recorded within survey area

- Tuart - *Eucalyptus gomphocephala.*
- Peppermint – *Agonis flexuosa*.
- Summer-Scented Wattle - *Acacia rostellifera*.
- Western Australian Golden Wattle - *Acacia saligna*, and
- Grass Tree – *Xanthorrhoea preissii*.

It should be noted that all the above-mentioned species while foraged upon on occasions would make up only a small proportion of any one bird's diet relative to more favoured plant species such as marri, jarrah, banksia and sheoak which are absent from the survey area.

Based on available vegetation mapping it is estimated that there is approximately 13,600 ha of native vegetation within 15 km the survey area, much of which is very likely to represent potential black cockatoo foraging habitat of some type, though it is difficult to specifically calculate.

Site condition.

The **open woodland of tuart** vegetation has been assigned a score of 2 for all black cockatoo species mainly because of the presence of “Open eucalypt woodland/mallee of small-fruited species” and grass trees which together represent a low value foraging resource.

The **open low heath of grass trees** has been assigned a score of 2 for Carnaby’s and Baudin’s cockatoo as it represents a low value foraging resource that would not be used at all by the forest red-tailed black cockatoo (score 0).

The **tall open scrub/tall open shrubland** has been assigned a score of 1 for Carnaby’s as it has some value but it is very low. A score of 0 has been given to the other two species of black cockatoo as it is not a resource they would utilise.

The existing **cleared areas** have been assigned a score of 0 due to having no foraging value.

Site context.

It is unclear if local breeding (within 15 km) is “likely” for all black cockatoo species.

All units have been assigned a score of 0 as in each case the vegetation unit in question represents <0.1% of the 13,600 ha of native vegetation within 15 km.

Species Density.

The **open woodland of tuart** vegetation has been assigned a score of 1 for Carnaby’s and the forest red-tailed black cockatoo as, while no foraging evidence was observed they are known to frequent the general area regularly. Baudin’s Cockatoo is uncommon in this section of the coastal plain and has been given a score of 0.

The **open low heath of grass trees** has been assigned a score of 1 for Carnaby’s as it represents a low value foraging resource that may be visited on occasions by this species. Baudin’s and the forest red-tailed black cockatoo have been given a score of 0 as they are very unlikely to utilise this area.

The **tall open scrub/tall open shrubland** has been given a score of 0 to all three species of black cockatoo as it is not a resource they would utilise on a regular basis.

The existing **cleared areas** have been assigned a score of 0 due to having no foraging value.

Moderation/Total Score

In all cases the total score has been moderated given by re-assigning a score of 0 to the site context and species density scores give the low site condition scores.

The total score for **open woodland of tuart vegetation** has been moderated and only the site condition score used to arrive at a total of 2 for each black cockatoo species.

The **open low heath of grass trees** has been moderated and only the site condition score used to arrive at a total of 2 for Carnaby's and Baudins and a 0 the forest red-tailed black cockatoo.

The **tall open scrub/tall open shrubland** has been moderated and only the site condition score used to arrive at a total of 1 for Carnaby's and 0 for Baudins and the forest red-tailed black cockatoo.

The **existing cleared areas** have been assigned a score of 0 due to having no foraging value.

APPENDIX C

DCCEEW'S SCORING SYSTEM FOR THE ASSESSMENT OF FORAGING VALUE OF VEGETATION FOR BLACK COCKATOOS (COMMONWEALTH OF AUSTRALIA 2022) AND CALCULATIONS

Appendix C: Foraging quality scoring tool

A foraging habitat quality scoring tool has been developed to guide you on what the department views as important for assessing quality of foraging habitat and which should influence your decision to refer your proposal to the Minister for the Environment for likely significant impacts on foraging habitat.

The scoring tool is designed to be simple, with a structure that allows for more detailed information to be taken into account, if needed. For actions that will clearly require a referral, more detailed information relating to the key attributes in the scoring tool may be required, including on proposed avoidance and mitigation measures (see Appendix B).

How the scoring tool works

If your impact site contains native vegetation used for foraging at any time by one or more of the black cockatoo species as described in the table below, and is larger than 1 hectare in size, it is considered at face value to be of very high quality, important for recovery and therefore as having a score of 10. This is because black cockatoos rely on foraging resources to provide sufficient energy for breeding and to rebuild condition in the post-breeding period. The availability of foraging habitat, in close proximity to breeding and night roosting habitat, as well as watering sites, is also critical in ensuring that birds can successfully raise chicks.

The scoring tool includes consideration of the three components used in the EPBC Act Offsets Assessment Guide in the calculation of habitat quality (site condition, site context and species stocking rate) by taking into account contextual factors that may lessen the quality of that habitat, to give you a final habitat quality score, i.e., you use the context adjustors to subtract from your starting score.

To support your habitat score, you should provide an overall appraisal of the habitat to clearly explain and justify the score, and include it in your referral to the minister if you decide to refer.

Using the scoring tool

The scoring tool below is to be applied once to the entire impact area of your proposed action, even if there is more than one type of foraging habitat, for example, *Banksia* woodland and heath, introduced eucalyptus trees and planted pines (*Pinus pinaster*). You will always start with a score of 10.

You should complete the scoring tool for each black cockatoo species occurring within your impact area.

It is your responsibility to define the impact area and consider indirect, offsite or facilitated impacts on black cockatoos, and include these areas in the definition of your impact area (see Glossary).

If you have insufficient evidence to determine what score a particular habitat attribute meets, you should either:

- carry out additional targeted surveys (see Appendix B)
- apply the precautionary principle (i.e. assume the habitat is of sufficient quality to warrant referral).

The scoring tool should not be used to calculate the value of an offset site.

Table A1 Foraging quality scoring tool template

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 *Banksia* spp. (including *Dryandra* spp.), *Hakea* spp. and *Grevillea* 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	Sub-tractions	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. *Phytophthora* 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. *Phytophthora* 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. *Phytophthora* spp. or Marri canker) and the disease is affecting more than 50% of the preferred food plants present.
Total score		*Enter score*	*Enter score*	*Enter score*
Appraisal		To support your habitat score, you should provide an overall appraisal of the habitat on the impact site and within 20km of the impact area to clearly explain and justify the score. It should include discussion on the foraging habitat's proximity to other resources (e.g. exact distance to proximate resources), frequency of use of proximate sites, the degree of evidence and description of vegetation type and condition.		

BlueScope Steel - Miscellaneous Lots - Patterson Road East Rockingham

October 2025

Foraging Quality Scoring Tool (Commonwealth of Australia 2022)

Starting Score		Baudin's Cockatoo	Carnaby's Cockatoo	Forest Red-tailed Black Cockatoo
10		10	10	10
Attribute	**Subtractions**	**Context Adjustor (attributes reducing functionality of foraging habitat)**		
Foraging potential	**-2**	-2	-2	-2
Connectivity	**-2**	0	0	0
Proximity to breeding	**-2**	0	0	0
Proximity to roosting	**-1**	0	0	0
Impact from significant Plant disease	**-1**	0	0	0
Total Score		8	8	8

For the purpose of this assessment the **impact area** has been defined as being restricted to the survey area.

Appraisal/Justification

The following flora species, known to be or potentially used as a direct food source (e.g. seeds, flowers, nectar, bark or grubs) by one or more species of black cockatoo were recorded within the survey area:

Black cockatoo foraging species recorded within the survey area

- Tuart - *Eucalyptus gomphocephala.*
- Peppermint – *Agonis flexuosa*.
- Summer-Scented Wattle - *Acacia rostellifera*.
- Western Australian Golden Wattle - *Acacia saligna*, and
- Grass Tree – *Xanthorrhoea preissii*.

It should be noted that all the above-mentioned species while foraged upon on occasions would make up only a small proportion of any one bird's diet relative to more favoured plant species such as marri, jarrah, banksia and sheoak which are absent from the survey area.

Based on available vegetation mapping (DPIRD 2025) it is estimated that there is approximately 19,300 ha of native vegetation within 20 km the survey area, much of

which is very likely to represent potential black cockatoo foraging habitat of some type, though it is difficult to specifically calculate.

Foraging Potential

No foraging evidence attributed to any black cockatoo species was recorded during the survey period and therefore subtracting 2 from all species scores is justified.

Connectivity

Based on available vegetation mapping (DPIRD 2025) it is estimated that there is approximately 8,600 ha of native vegetation within 12 km the survey area and there is therefore significant potential for foraging habitat for all three species to be present in the wider area (assuming the presence of suitable plant species).

No subtractions justified for any species.

Proximity to breeding

It is not known whether any species breed within 12 km of the survey area.

Based on available vegetation mapping (DPIRD 2025) it is estimated that there is approximately 8,600 ha of native vegetation within 12 km the survey area and there is therefore potential for breeding to take place in the wider area (assuming the presence of suitable trees).

No subtractions justified for any species.

Proximity to roosting

No existing roosting trees (trees used at night by black cockatoos to rest) or roosting activity was positively identified during the survey.

A review of the 2022 Great Cocky Count database (the most recent available) shows no documented roost sites within the survey area. The 2022 Great Cocky Count report documents the closest active roosts as being approximately four kilometres east of the survey area (Site ID: KWIWELR002 and KWIWELR003). KWIWELR002 was being used by 119 white tailed black cockatoos and KWIWELR003 was being used by 2 ed-tailed black cockatoos during the April 2022 survey (Pryor *et al.* 2023). There are about 20 other black cockatoo roost sites within 12 km of the survey area documented by Pryor *et al*. (2023), though not all are necessarily in use at any one time

Based on available vegetation mapping (DPIRD 2025) it is estimated that there is approximately 19,300 ha of native vegetation within 20 km the survey area and therefore there is significant potential for roosting habitat to be present in the wider area (assuming the presence of suitable trees).

No subtractions justified for any species.

Impact from significant Plant disease

Several dead trees are present within the survey area. The cause of these deaths is not known but the deaths do not account for more than 50% of the preferred food plants present.

No subtractions justified for any species.

APPENDIX D

DANDJOO DATABASE SEARCH
AND
PROTECTED MATTERS SEARCH TOOL RESULTS

APPENDIX E

DETAILS - POTENTIAL BLACK COCKATOO BREEDING HABITAT TREES

Habitat Trees = Hollow bearing trees
Datum - GDA2020
Entrance Size Ranges - Small = >5cm, Medium = 5 to 10cm, Large = >10cm

Waypoint Number	Datum	Zone	mE	mN	Tree Species	DBH (cm)	Number of Hollows	Estimated Hollow Entrance Size	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow
1748	GDA 2020	50H	383697	6430656	Tuart	>30	0				
1749	GDA 2020	50H	383698	6430656	Tuart	>30	0				
1750	GDA 2020	50H	383704	6430659	Tuart	>30	0				
1751	GDA 2020	50H	383704	6430657	Tuart	>30	0				
1752	GDA 2020	50H	383709	6430657	Tuart	>30	0				
1753	GDA 2020	50H	383712	6430650	Tuart	>30	0				
1754	GDA 2020	50H	383717	6430651	Tuart	>30	0				
1755	GDA 2020	50H	383716	6430648	Tuart	>30	0				
1756	GDA 2020	50H	383716	6430647	Tuart	>30	0				
1757	GDA 2020	50H	383717	6430644	Tuart	>30	0				
1758	GDA 2020	50H	383718	6430638	Tuart	>30	0				
1759	GDA 2020	50H	383715	6430638	Tuart	>30	0				
1760	GDA 2020	50H	383720	6430636	Tuart	>30	0				
1761	GDA 2020	50H	383741	6430588	Tuart	>30	0				
1762	GDA 2020	50H	383713	6430569	Tuart	>30	0				
1763	GDA 2020	50H	383715	6430560	Tuart	>30	0				
1764	GDA 2020	50H	383705	6430543	Tuart	>30	0				
1765	GDA 2020	50H	383697	6430542	Tuart	>30	0				
1766	GDA 2020	50H	383681	6430546	Tuart	>30	0				
1767	GDA 2020	50H	383690	6430533	Tuart	>30	0				
1768	GDA 2020	50H	383678	6430511	Tuart	>30	0				
1769	GDA 2020	50H	383634	6430482	Tuart	>30	0				
1771	GDA 2020	50H	383624	6430477	Tuart	>30	0				
1772	GDA 2020	50H	383630	6430473	Tuart	>30	0				
1773	GDA 2020	50H	383657	6430476	Tuart	>30	0				
1774	GDA 2020	50H	383662	6430480	Tuart	>30	0				
1775	GDA 2020	50H	383609	6430413	Tuart	>30	0				
1776	GDA 2020	50H	383605	6430406	Tuart	>30	0				
1777	GDA 2020	50H	383600	6430406	Tuart	>30	0				
1778	GDA 2020	50H	383594	6430405	Tuart	>30	0				
1779	GDA 2020	50H	383591	6430409	Tuart	>30	0				
1780	GDA 2020	50H	383599	6430394	Tuart	>30	0				
1781	GDA 2020	50H	383566	6430406	Tuart	>30	0				
1782	GDA 2020	50H	383569	6430358	Tuart	>30	0				
1783	GDA 2020	50H	383553	6430356	Tuart	>30	0				
1784	GDA 2020	50H	383567	6430345	Tuart	>30	0				
1785	GDA 2020	50H	383541	6430340	Tuart	>30	0				
1787	GDA 2020	50H	383547	6430325	Tuart	>30	0				
1790	GDA 2020	50H	383532	6430327	Tuart	>30	0				
1791	GDA 2020	50H	383529	6430326	Tuart	>30	0				
1792	GDA 2020	50H	383524	6430339	Tuart	>30	0				
1793	GDA 2020	50H	383521	6430338	Tuart	>30	0				
1794	GDA 2020	50H	383520	6430350	Tuart	>30	0				
1795	GDA 2020	50H	383509	6430337	Tuart	>30	0				
1796	GDA 2020	50H	383503	6430341	Tuart	>30	0				
1797	GDA 2020	50H	383523	6430305	Tuart	>30	0				
1801	GDA 2020	50H	383506	6430308	Tuart	>30	0				
1802	GDA 2020	50H	383504	6430298	Tuart	>30	0				
1803	GDA 2020	50H	383530	6430290	Tuart	>30	0				
1804	GDA 2020	50H	383525	6430279	Tuart	>30	0				
1805	GDA 2020	50H	383527	6430283	Tuart	>30	0				
1806	GDA 2020	50H	383511	6430284	Tuart	>30	0				
1807	GDA 2020	50H	383500	6430282	Tuart	>30	0				
1808	GDA 2020	50H	383492	6430298	Tuart	>30	1	Small	Bees		No
1809	GDA 2020	50H	383476	6430298	Tuart	>30	0				
1810	GDA 2020	50H	383472	6430300	Tuart	>30	0				
1811	GDA 2020	50H	383472	6430291	Tuart	>30	0				
1812	GDA 2020	50H	383468	6430297	Tuart	>30	0				
1813	GDA 2020	50H	383461	6430300	Tuart	>30	0				
1814	GDA 2020	50H	383464	6430318	Tuart	>30	0				
1815	GDA 2020	50H	383460	6430314	Tuart	>30	0				
1816	GDA 2020	50H	383449	6430326	Tuart	>30	0				
1817	GDA 2020	50H	383448	6430332	Tuart	>30	0				
wpt015	GDA 2020	50H	383740	6430623	Tuart	>30	0				

Waypoint Number	Datum	Zone	mE	mN	Tree Species	DBH (cm)	Number of Hollows	Estimated Hollow Entrance Size	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow
wpt031	GDA 2020	50H	383588	6430409	Tuart	>30	0				
wpt038	GDA 2020	50H	383559	6430328	Tuart	>30	0				
wpt052	GDA 2020	50H	384132	6430068	Tuart	>30	0				
wpt053	GDA 2020	50H	383954	6430143	Tuart	>30	0				
wpt054	GDA 2020	50H	383919	6430158	Tuart	>30	0				
wpt055	GDA 2020	50H	383881	6430166	Tuart	>30	0				
wpt056	GDA 2020	50H	383872	6430167	Tuart	>30	0				
wpt057	GDA 2020	50H	383869	6430166	Tuart	>30	0				
wpt058	GDA 2020	50H	383866	6430169	Tuart	>30	0				
wpt059	GDA 2020	50H	383872	6430162	Tuart	>30	0				
wpt060	GDA 2020	50H	383822	6430180	Tuart	>30	0				
wpt061	GDA 2020	50H	383779	6430185	Tuart	>30	0				
wpt062	GDA 2020	50H	383782	6430191	Tuart	>30	0				
wpt063	GDA 2020	50H	383745	6430200	Tuart	>30	0				
wpt064	GDA 2020	50H	383639	6430219	Tuart	>30	0				
wpt065	GDA 2020	50H	383638	6430222	Tuart	>30	0				
wpt066	GDA 2020	50H	383635	6430222	Tuart	>30	0				
wpt067	GDA 2020	50H	383598	6430228	Tuart	>30	0				

APPENDIX F

FAUNA RECORDED WITH THE SURVEY AREA

Fauna Recorded within the Survey Area

Miscellaneous Lots - Patterson Road - East Rockingham

Approx. Centroid - 32.255519°S and 115.762727°E

Compiled by Greg Harewood - September 2025

Class **Family** *Species*	Common Name	Conservation Status
Birds		
Cacatuidae Cockatoos, Corellas		
Eolophus roseicapilla	Galah	LC
Psittacidae Parrots		
Platycercus zonarius	Australian Ringneck Parrot	LC
Cuculidae Parasitic Cuckoos		
Cacomantis flabelliformis	Fan-tailed Cuckoo	LC
Maluridae Fairy Wrens, GrassWrens		
Malurus splendens	Splendid Fairy-wren	LC
Pardalotidae Pardalotes, Bristlebirds, Scrubwrens, Gerygones, Thornbills		
Gerygone fusca	Western Gerygone	LC
Sericornis frontalis	Spotted Scrubwren	LC
Smicrornis brevirostris	Weebill	LC
Meliphagidae Honeyeaters, Chats		
Lichenostomus virescens	Singing Honeyeater	LC
Dicruridae Monarchs, Magpie Lark, Flycatchers, Fantails, Drongo		
Rhipidura fuliginosa	Grey Fantail	LC
Rhipidura leucophrys	Willie Wagtail	LC
Corvidae Ravens, Crows		
Corvus coronoides	Australian Raven	LC

BC Act Status - S1 to S7, EPBC Act Status - CR = Critically Endangered EN = Endangered, VU = Vulnerable, EX = Extinct, DBCA Priority Status - P1 to P4, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, IUCN Red List Category Definitions LC = Least Concern - see Appendix A and https://www.iucnredlist.org/resources/categories-and-criteria for others.

Class **Family** *Species*	Common Name	Conservation Status
Zosteropidae White-eyes		
Zosterops lateralis	Silvereye	LC

Mammals

Peramelidae Bandicoots		
Isoodon obesulus fusciventer	Quenda	P4
Macropodidae Kangaroos, Wallabies		
Macropus fuliginosus	Western Grey Kangaroo	LC
Leporidae Rabbits, Hares		
Oryctolagus cuniculus	Rabbit	Introduced

BC Act Status - S1 to S7, EPBC Act Status - CR = Critically Endangered EN = Endangered, VU = Vulnerable, EX = Extinct, DBCA Priority Status - P1 to P4, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, IUCN Red List Category Definitions LC = Least Concern - see Appendix A and https://www.iucnredlist.org/resources/categories-and-criteria for others.

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The conclusions are based upon field data and the environmental monitoring and/or testing carried out over a limited period of time and are therefore merely indicative of the environmental condition of the site at the time of preparing the report. Also it should be recognised that site conditions, can change with time.

Within the limitations imposed by the scope of services, the field assessment and preparation of this report have been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. No other warranty, expressed or implied, is made.

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