Biodiversity Surveys (Flora, Fauna and Vegetation)

Wadandi Track Alignment, Carbunup River, Marybrook to Gardiner Road, Cowaramup

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Abbreviations and Acronyms

Organisations	
DBCA	Department of Biodiversity, Conservation and Attractions
DCCEEW	Commonwealth Department of Climate Change, Energy, the Environment and Water
DWER	WA Department of Water and Environmental Regulation
EPA	Environmental Protection Authority
The City	City of Busselton
The Shire	Shire of Augusta Margaret River
Common Terms	
Conservation significant	Threatened or Priority flora, fauna or communities or considered significant for other reasons, such as association with restricted habitat types, potential undescribed taxa, or species representing a significant range extension.
CR	Critically Endangered
DBH	Diameter at Breast Height (cm)
DSA	Desktop Survey Area - Survey Area plus a 5 km buffer for general species data, 10 km for black cockatoo roosting and breeding records
EN	Endangered
GIS	Geographic Information Systems
FRTBC	Forest Red-tailed Black Cockatoo
IBRA	Interim Biogeographic Regionalisation for Australia
LSNA	Locally Significant Natural Area
MNES	Matters of National Environmental Significance
PEC	Priority Ecological Community
PMST	Protected Matters Search Tool
Project	The proposed action
Significant flora	As defined in Section 11 of EPA Technical Guidance (EPA, 2016)
Significant vegetation	As defined in Section 11 of EPA Technical Guidance (EPA, 2016)
SPRAT	Species Profile and Threats
Suitable DBH tree	Generally native eucalypt trees over 50 cm Diameter at Breast Height (DBH).
Survey Area	Wadandi Track – Carbunup River, Marybrook to Gardiner Road, Cowaramup - Targeted survey area included approximately 4 m either side of the track centre (total 8 m width) along (~17.82 km), General survey area included the broader rail reserve along ~29.63 km.
SW	Southwest
Target species	Threatened or Priority flora or fauna taxa specifically targeted in the Survey
TEC	Threatened Ecological Community
VU	Vulnerable
WA	Western Australia
WRP	Western Ringtail Possum (*Pseudocheirus occidentalis*)
WTBC	White Tailed Black Cockatoo (Baudin's Cockatoo or Carnaby's Cockatoo)
Legislation	
BC Act	*Biodiversity Conservation Act 2016* (WA)
BC Regs	*Biodiversity Conservation Regulations 2018* (WA)
EP Act	*Environmental Protection Act 1986* (WA)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)

Measurements	
ha	Hectare
km	Kilometre
m	Metre

Data Capture and Information Management Systems Approach

Data collection	
Field data collection	Handheld high sensitivity Garmin Global Positioning Systems (GPS) with ~3 m accuracy
Photos	Mobile phones were used for site photos taken by SW Environmental personnel
Reporting and Artificial Intelligence (AI)	
Chat GPT Plus	SW Environmental retains full responsibility for the content and findings presented in the report. AI was used for quality control, summarising text, tables and grammar improvements. No confidential, personal, or sensitive project information was intentionally disclosed.
Grammarly	Used for quality control, text review and to edit written language structure.

Executive Summary

The City of Busselton proposes to construct a section of the Wadandi Track between Carbunup River, Marybrook and Gardiner Drive, Cowaramup. The project involves the development of a track within a former rail corridor. The track will require some clearing of native vegetation within a well-defined linear disturbance footprint.

SW Environmental undertook a Reconnaissance and Targeted Flora and Vegetation Survey, and a Basic and Targeted Fauna Assessment, comprising desktop review and field investigations in accordance with Environmental Protection Authority (EPA) guidance. The 17.82 km long Survey Area encompasses the proposed track alignment to a nominal width of 8 m, within a former rail corridor characterised by a low gradient, with an original formation width of ~ 4 m and localised cut-and-fill batters of up to ~ 2 m wide. Adjacent vegetation was also surveyed along the entire 29.63 km rail reserve within the City.

Vegetation along the rail formation was historically cleared and now comprises a mosaic of conditions; cleared areas, weed-dominated vegetation, non-local plantings and patches of native regrowth, particularly within wetter sections. More intact native vegetation occurs adjacent to the rail formation and along its margins and is generally not expected to be impacted by the proposed works.

The desktop study identified 53 conservation significant flora taxa recorded within the 5 km desktop survey area. Ten conservation significant vegetation communities were also identified. The Cowamarup (Cw2), Yelverton (Yw), Abba and Southern River vegetation complexes mapped within the Survey Area are all below the national biodiversity conservation objective, with less than 30% of their pre-European extent remaining. The Cowaramup (C2 and Cw2), Metricup (M), Treeton (Tw), Yelverton (Y, Yd and Yw), Abba and Southern River complexes may meet the criteria for Locally Significant Natural Areas.

The Survey Area intersects both the Perth (SWA02) and Southern Jarrah Forest (JAF02) IBRA subregions, and comprises a mosaic of upland forest, creekline vegetation, seasonal wetlands and disturbed areas. Eight vegetation units were mapped:

- Jarrah-Marri open forest associated with upland positions and elevated sandy soils;
- *Banksia* woodland and *Kunzea* scrub vegetation associated with elevated sandy soils, including degraded and transitional forms;
- Seasonally wet *Eucalyptus rudis* and peppermint woodland on sandy flats;
- Marri forest and moisture-influenced vegetation associated with lower slopes and seasonally damp flats;
- *Eucalyptus patens* creekline forest and associated drainage line vegetation;
- Seasonally wet *Kunzea* and *Nuytsia* shrublands with sedgeland communities;
- *Melaleuca* dampland forest; and
- Claypan vegetation associated with seasonally waterlogged soils and drainage systems.

Vegetation condition ranged from Excellent to Completely Degraded, with higher quality vegetation associated with drainage lines and remnant edges, and more degraded vegetation occurring along the historical rail formation. Cleared areas and infrastructure also occur.

Eight Priority flora taxa were recorded within the Survey Area - *Acacia flagelliformis* (Priority 4), *Acacia semitrullata* (Priority 4), *Dillwynia* sp. Capel (P.A. Jurjevich 1771) (Priority 3), *Gahnia sclerioides* (Priority

4), *Jacksonia gracillima* (Priority 3), *Johnsonia inconspicua* (Priority 3), *Loricobbia pinifolia* (Priority 3), and *Netrostylis* sp. Blackwood River (A.R. Annels 3043) (Priority 3).

An additional Priority species, *Cyathochaeta teretifolia* (Priority 3), is considered likely to occur within suitable habitat but was not detected during the survey. It has been recorded previously from the Survey Area. An additional species of significance, *Synaphea* aff. *obtusata*, has been identified by the WA Herbarium. *Synaphea obtusata* is known from the Darling Scarp and South Coast, with this collection representing the first record west of these landforms. Pending taxonomic confirmation, this taxon should be treated as a potential new species of conservation significance. No Threatened flora species were recorded within the Survey Area. Weeds were present throughout the Survey Area, with highest densities associated with localised disturbance along the rail reserve, such as historical infrastructure, gravel extraction and dumping.

A known occurrence of the *Seasonal rainfall-filled wetlands with an impeding substrate of the Swan Coastal Plain and Jarrah Forest in transitional rainfall zones* ecological community (Critically Endangered under the EPBC Act; Priority 1 PEC) was confirmed within the Survey Area, corresponding with the Claypan TEC vegetation unit.

Mapped occurrences of the *Banksia Woodlands of the Swan Coastal Plain* ecological community (Endangered under the EPBC Act; Priority 3 PEC) also intersect the Survey Area; however, vegetation within the Survey Area did not meet the diagnostic criteria required to confirm the ecological community.

The VU 4 – Marri Forest vegetation unit is considered likely to represent *Corymbia calophylla* woodlands on heavy soils of the southern Swan Coastal Plain (floristic community type 1b as originally described in Gibson et al. 1994), listed as Critically Endangered under the BC Act.

Vegetation associated with drainage lines exhibited characteristics consistent with Whicher Scarp G2 and/or Swan Coastal Plain Paluslope Wetlands ecological communities (both Priority 1 PECs). While not formally classified as a PEC, these areas are considered to represent a higher ecological value component of the Survey Area due to their hydrological function, structural complexity and role in supporting fauna habitat and landscape connectivity.

The desktop study identified 257 terrestrial (or semi-aquatic) vertebrate fauna taxa that may occur within the DSA. Under the BC Act, this count included, 17 Threatened taxa, eight Priority-listed species, one Conservation Dependent taxon, one Other Specially Protected taxon, and 16 Migratory birds. Additionally, two fish and ten invertebrates of conservation significance were returned. Forty-three fauna taxa were detected during surveys, including two Threatened species and one Priority 4-listed taxon. Numerous other fauna species may utilise the Survey Area as part of a broader habitat network.

Habitat quality varied significantly within vegetation types and the proposed track formation had a much lower fauna habitat quality than the adjacent areas. Areas of good quality habitat were mostly small patchy areas associated with relatively intact vegetation, particularly within drainage lines and creeklines, where vegetation structure, canopy connectivity and understorey complexity were retained, or where long-term native regrowth has re-established these values. These areas provide suitable habitat supporting habitat for a range of fauna species linking vegetation each side of the track in good habitat connectivity.

No black cockatoo breeding trees or roosts were recorded along the track alignment. No hollow-bearing trees were recorded within the 8 m wide proposed track area. Sixty-three trees were of a suitable DBH for developing black cockatoo breeding hollows (>50 cm). These included 49 Marri, eight Blackbutt, three Jarrah, two introduced Eucalyptus spp., and one Karri. Five suitable DBH trees were likely to require clearing.

Baudin's Cockatoo and FRTBC foraging residue was recorded, with Marri fruit displaying characteristic chew marks attributable to each species. No evidence of Carnaby's cockatoo was found but may use the site at other times. Approximately 45.24 ha of native vegetation was classified as high quality black cockatoo foraging habitat (max score). Foraging scores will be lower along the track alignment due to the track being only a small, disturbed portion of the broader reserve and consisting of young regrowth, sparse or low canopy cover of feed species.

Eighteen WRP were recorded and four CBP within the rail reserve within the 2025/26 Survey Area length. An additional 11 WRP and 3 CBP were recorded in the rail reserve between the 2025/26 survey patches (to be the subject of future surveys). No South-western Brush-tailed Phascogale were recorded.

Highest numbers of WRP are most likely to align with vegetation within the within the Swan Coastal Plain IBRA, areas of intact midstorey or contiguous vegetation in the southern Jarrah Forest IBRA or those near (<500 m from drainage lines). Numbers of WRP encounters are likely to significantly decrease southwards along the alignment. In most areas, the partially disturbed and narrow, linear nature of the corridor suggest that the area functions primarily as supporting habitat and a movement corridor, rather than core habitat within the track alignment itself.

Other conservation significant fauna taxa (Quenda - detected, Carter's Freshwater Mussel, Dunsborough Burrowing Crayfish, South-western Brush-tailed Phascogale, Rakali and Peregrine Falcon) may occur. Species may be transient or associate the track with movement through the landscape rather than long-term occupation, due to the narrow, linear extent of the Survey Area.

Overall, the proposed works involve a linear disturbance footprint within a broader vegetated landscape and are unlikely to result in significant impacts to flora, vegetation or fauna values. This would be subject to implementation of recommended avoidance and management measures.

Recommendations:

- Clearing should be minimised and confined to the defined disturbance footprint, with avoidance of remnant native vegetation where practicable.
- Priority flora species should be retained wherever possible.
- Impacts to Threatened and Priority Ecological Communities should be avoided where possible.
- An authorised fauna spotter should be present during clearing to manage risks to fauna, particularly WRP and other arboreal species. A risk-based approach to fauna management and fauna spotting may be appropriate in more disturbed sections of the alignment particularly in the south (JAF02 IBRA).
- Where practicable, clearing should be scheduled outside peak fauna breeding periods.
- Weed hygiene and management measures should be implemented during construction to prevent the spread of high-impact environmental weeds along the alignment.
- Disturbed areas should be rehabilitated where practicable, including infill planting of locally native species, particularly adjacent to higher value vegetation.
- Clearing of native vegetation will require a permit under Part V Division 2 of the EP Act, unless exemptions apply (noting that exemptions do not apply within ESAs).
- Potential impacts to MNES should be reviewed against the Significant Impact Guidelines under the EPBC Act.

1 Introduction

1.1 Project Overview

The City of Busselton ('the City') is proposing to construct portions of the Wadandi Track, between Carbunup River, Marybrook and 500 m to the north of Gardiner Road, Cowaramup (final 2026 alignment totalling approximately 29 km in length).

In 2025, the proposed track was subject to final detailed design, along with final route refinement along section options depending on constraints. Baseline flora, fauna and vegetation surveys were required along the 2025 alignment (29.63 km) to inform the project design. Portions of the alignment were excluded from the Survey Area where they could not be assessed in the field at the time due to tenure or alignment uncertainties. A length of approximately 17.82 km (the Survey Area) was surveyed through spring 2025 and the start of 2026. Figure 1 (Appendix A) presents the Survey Area location and Desktop Study Area (DSA) (5 km[1]). Figure 2 (Appendix A) presents the approximate Survey Area (proposed alignment).

The proposed track is predominantly located along a former railway line formation, within the associated rail reserve under the care and management of the City. The existing rail formation is approximately 4 m wide and has cut or fill batters in some areas of approximately 2 m wide. The proposed track prioritises existing cleared sections of the rail formation, with some sections requiring clearing of regrowth vegetation or pruning of encroaching vegetation to establish a safe and accessible track. Minor localised deviations may cross remnant vegetation. The track has already been constructed in some areas as walking track, firebreaks or existing roads / hardstands.

The proposed track may require clearing assessment and approvals under relevant State and Commonwealth environmental legislation, including the *Environmental Protection Act 1986* (EP Act), *Biodiversity Conservation Act 2016* (BC Act) and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

SW Environmental was engaged to undertake a flora, fauna and vegetation survey of the proposed track alignment to identify environmental values and constraints, and to inform track design to avoid and minimise impacts to native vegetation, conservation significant flora and fauna, and associated habitats.

1.2 Scope of Work

SW Environmental was commissioned to carry out Reconnaissance and Targeted Flora and Vegetation and Basic Fauna and Targeted Black Cockatoo[2] and Western Ringtail Possum (WRP) (*Pseudocheirus occidentalis*) (Critically Endangered) Biodiversity Surveys. The assessment included both desktop review and field survey components and was undertaken in accordance with the EPA Technical Guidance (EPA, 2016, 2020). The scope of work included:

[1] With the exception of Black Cockatoo breeding and roosting records, of which a 10 km DSA was utilised

[2] collectively refers to

- Forest Red-tailed Black-Cockatoo (*Calyptorhynchus banksii* subsp. *naso*) (Vulnerable)
- Baudin's Cockatoo (*Zanda baudinii*) (Endangered)
- Carnaby's Cockatoo (*Zanda latirostris*) (Endangered)

- A desktop assessment of existing environmental information relevant to the Survey Area, including Threatened and Priority flora, fauna and ecological communities (conservation significant[3] species and communities) and other biodiversity constraints.
- A reconnaissance flora and vegetation survey to map vegetation types and condition along the rail reserve.
- A targeted flora survey, undertaken in spring, to identify the presence of target flora species with potential to occur within the Survey Area (track alignment). Note some areas require follow up surveys in spring 2026 to capture orchid flowering.
- A likelihood of occurrence assessment for conservation significant flora.
- A fauna survey and habitat assessment, including identification of habitat for target fauna species.
- Targeted surveys for black cockatoos, including identification of foraging habitat, potential breeding habitat (suitable DBH[4] trees), and roost sites within the Survey Area.
- Targeted surveys for WRP, including identification of suitable habitat and evidence of species presence within the Survey Area and adjacent rail reserve where observed.
- Nocturnal surveys to identify potential use of the Survey Area by nocturnal fauna, including WRP and roosting black cockatoos.
- Identification and assessment of suitable DBH trees, including trees containing hollows suitable for black cockatoos and other hollow-dependent fauna within the Survey Area.
- A likelihood of occurrence assessment for conservation significant fauna.
- Identification of wetlands, drainage lines and other sensitive habitat along the alignment.
- Recommendations for management measures to avoid and minimise impacts to native vegetation, flora and fauna, and associated habitats.

In summary, the flora and vegetation survey included a reconnaissance survey of the alignment and adjacent vegetation, with targeted surveys for conservation significant flora undertaken during the spring survey period along the proposed track and batters and vegetation unit mapping and condition assessment within the broader rail reserve.

The fauna survey component included a basic terrestrial fauna habitat assessment, species list, likelihood of occurrence assessment for conservation significant species, along with targeted black cockatoo and WRP surveys. The targeted black cockatoo component also recorded suitable DBH trees within the proposed track and batters. Opportunistic observations of fauna and signs within the surrounding habitat were recorded.

[3] Conservation significant refers to Threatened or Priority flora, fauna or communities or those considered significant for other reasons, such as association with restricted habitat types, potential undescribed taxa, or species representing a significant range extension.

[4]Generally native eucalypt trees over 50 cm Diameter at Breast Height (DBH); Trees between 30 – 49 cm DBH were also recorded. Whilst not considered being of suitable size to develop black cockatoo hollows (>50 cm), they may develop black cockatoo breeding hollows in the future and were provided for context.

2 Methods

2.1 Desktop Study

A desktop study was undertaken, including a review of publicly available information and datasets (Table A-1, Appendix C). This provided background information to inform the survey design and subsequent reporting. Aerial imagery of the Survey Area was also reviewed.

The Desktop Study Area (DSA) generally comprises the Survey Area with a 5 km buffer. For black cockatoo breeding and roosting records, a buffer of 10 km was utilised, reflect the distance cockatoos generally travel from a nesting site to forage (maximum range of 12 km). The DSA was utilised to compile relevant desktop assessment information to inform the survey and contextualise the results within the wider region. The location of the Survey Area and DSA are presented in Figures 1 and 2 (Appendix A).

2.2 Survey Personnel

Personnel involved in the survey and reporting are listed in Table 2-1. Where required, plant material was collected under a Flora Taking (Biological Assessment) Licence and an Authorisation to Take or Disturb Threatened Flora issued under the BC Act and associated Regulations.

The survey conformed to Section 4 of the *Australian code of practice for the care and use of animals for scientific purposes* (National Health and Medical Research Council, 2004). No animals were captured or collected during the survey. Surveys were carried out under Scientific Use License *Animal Welfare Act 2002*: Licence No: U285 / 2025 - 2027 and Wildlife Animal Ethics Committee (WAEC) Permit: WAEC 22-08-88. No nesting black cockatoos were disturbed during this survey.

Table 2-1 Survey Personnel and Licensing Information

Personnel	Experience	DBCA Flora Licences (BC Act)	Role
Kelly Paterson *Senior Botanist* *B. Sc. Hons. (Natural Resource Management)*	>10 years	FB62000182-2b TFL-2425-0086	Field Lead - Flora Plant Identifications Reporting
Shane Priddle *Ecologist* *B. Sc. (Marine Science)* *CEnvP*	>25 years	N/A	Field Lead - Fauna Reporting
Georgia Johnsen *Ecologist/Botanist* *B. Sc. (Marine Science & Conservation Biology)*	4 years	FB62000470-1b TFL 2324-0179	Field Survey Reporting
Madeline Barrett *Project Officer - Ecology* *BSc (Health Science), MSc (Sustainability and Environmental Management)*	1 year	N/A	Field Survey

2.3 Field Survey

2.3.1 Survey Approach

Field surveys were primarily undertaken in Spring 2025, to maximise detectability of flora and fauna (Table 2-2). Fauna surveys also extended from Winter into Summer with minor updates in Autumn.

Table 2-2 Survey dates and type

Survey Type	Dates
Flora	26 September 2025, 7 October 2025, 9 October 2025, 10 October 2025, 14 October 2025, 16 October 2025, 17 October 2025, 24 October 2025, 3 November 2025, 10 November 2025, 8 December 2025
Fauna - Diurnal (basic and targeted black cockatoo and WRP)	4, 5 December 2025, 26 February 2026, 20 May 2026
Fauna - Nocturnal (black cockatoo roosts and WRP)	16 July, 28, 29 October 2025, 20 May 2026

2.3.2 Flora and Vegetation

The Survey Area was traversed on foot to characterise vegetation types, structure and condition. The primary Survey Area included the 4 m alignment with a 2 m buffer on either side, with additional opportunistic observations of adjacent vegetation taken to inform vegetation unit and condition assessment.

Vegetation units were delineated based on aerial imagery, field observations and mapping notes, with mapping undertaken using GIS. Quadrat-based sampling and numerical analysis were not undertaken, as these are not required for reconnaissance-level surveys (EPA 2016). Vegetation condition was assessed using the Keighery (1994) scale, as adopted by the EPA (2016) (Table A-1, Appendix C).

Targeted surveys for conservation significant flora were undertaken during the spring survey period (Table 2-2 above), focusing on suitable habitat identified during the desktop assessment and field reconnaissance. Where conservation significant flora was identified, their location and abundance were recorded using a handheld GPS (± 3 m accuracy), and voucher specimens were collected where appropriate.

2.3.3 Fauna

General Fauna

Fauna surveys comprised diurnal habitat assessment and opportunistic sightings in December 2025 and February 2026, and nocturnal surveys in July, October 2025 and May 2026. Surveys validated desktop findings and characterised fauna habitat types based on vegetation structure and condition. Evidence of fauna, including sightings, scat, tracks, diggings and feeding signs, was recorded. The fauna Survey Area was centred along the proposed track alignment with a width of 8 m (4 m plus 2 m either side) and included observations of fauna taxa in the broader rail reserve.

Black Cockatoo Survey Methodology

Targeted black cockatoo habitat surveys were carried out during the diurnal surveys within the 8 m survey corridor. Foraging habitat and evidence, potential breeding habitat (trees of suitable size and species recorded as Suitable DBH trees were assessed for hollows) and roosts were recorded. Detailed black cockatoo survey methodology is provided in Appendix H. Suitable DBH trees were categorised as 'clearing' or 'shoulder', depending on whether they were likely to be cleared of not (i.e. within the 4 m wide formation or 2 m shoulder).

Western Ringtail Possum Survey Methodology

The entire alignment occurs with the known distribution of WRP; higher population densities coincide with the best habitat, being remnant vegetation with midstorey and canopy connection offsite, and much lower densities occur in degraded areas or paddock trees. Following consultation with Parks and Wildlife Service, DBCA South West Region, to support impact assessment the WRP survey scope was refined:

- Diurnal surveys to identify presence or absence from scat and drey searches along the track,
- Nocturnal surveys to target the highest quality vegetation and exclude degraded and completely degraded areas,
- A single pass (rather than repeat surveys) of the target areas.

Diurnal targeted surveys for WRP were undertaken in Summer 2025 / 2026 and Spring 2025 plus a minor gap survey in May 2026. They included habitat assessment and targeted searches for evidence of WRP, including scats and dreys, focussed on the 8 m wide Survey Area. Adjacent habitat features were noted where observed.

Nocturnal spotlight surveys were undertaken along ~24.5 km of transects in July, October 2025 and May 2026 by two experienced observers using 1000 lumen Ledlenser headtorches. They were conducted by foot or slow-moving vehicle (walking pace) where the alignment followed or was located adjacent to a road. The abundance and distribution of WRP within the Survey Area and adjacent reserve were recorded, to approximately 40 m each side. This was dependant on spotlight throw. Individuals observed outside the Survey Area were also recorded between patches within the rail reserve for context.

Other nocturnal mammals were also recorded if observed including Common Brushtail Possum (*Trichosurus vulpecula*) and South-western Brush-tailed Phascogale (*Phascogale tapoatafa* subsp. *wambenger*) (CD).

2.4 Limitations

The following survey limitations are shown below.

Table 2-3 Assessment of survey limitations

Aspect	Constraint	Comment
Availability of contextual information	No limitation	The Survey Area is located within a well surveyed region, with sufficient contextual information available. Relevant database searches were obtained, including DBCA Threatened and Priority Fauna, Flora and Ecological Communities databases, NatureMap and the PMST database extracts.
Competency / experience	No limitation	Surveys were undertaken by suitably qualified and experienced personnel, including a Senior Botanist (>10 years' experience) and a Principal Ecologist (>25 years' experience and Certified Environmental Practitioner No.310).
Adequacy of the survey intensity and proportion of survey achieved	No limitation	The survey effort applied was adequate to identify biodiversity values. A precautionary approach was adopted.
Survey timing / season	No limitation	The survey scope is adequate to inform environmental assessment. The surveys were completed in suitable weather conditions, with the rainfall in the 12 months preceding the survey consistent with long-term averages, with slightly higher rainfall recorded during the winter period. Some of the winter surveys particularly for nocturnal have resulted in lower movement / activity and less WRP records.
Survey effort and coverage	No limitation	The Survey Area was traversed on foot, with survey effort distributed along the alignment to provide representative coverage of vegetation types and fauna habitat.
Detectability	Minor limitation	While surveys were undertaken during an appropriate season, some flora (e.g. orchids) and fauna may exhibit seasonal or inter-annual variability in detectability and may not have been recorded.
Access	Minor limitation	Some densely vegetated areas and drainage lines were difficult to traverse; however, the majority of the Survey Area was accessible, and these areas are unlikely to have significantly influenced survey outcomes.
Disturbance	Minor limitation	Localised disturbances were present within the Survey Area, including areas of historical disturbance (e.g. tracks and clearing) and a portion of the alignment that had been recently burnt prior to the survey. Recently burnt areas may reduce detectability of some flora species, particularly geophytes and annuals, and may temporarily influence fauna habitat characteristics. However, these disturbances were localised and are not considered to have significantly affected the overall assessment of vegetation values or fauna habitat within the Survey Area.
Resources	No limitation	Adequate time, personnel and equipment were available to complete the survey to the required standard.
Identification of hollows	Minor limitation	Known limitations inherent in the survey of hollows are addressed in detail in Appendix G. Hollow characteristics may change over time. There is a low risk that black cockatoos may breed in a hollow where evidence of use is not visible or hollow characteristics are atypical. Not all active cockatoo hollows show signs of heavy chewing, and active or past breeding hollows may be missed. The lead surveyor has extensive experience in the identification and assessment of hollows and is considered competent in relation to this skill. The results are provided based on experience and professional judgement though certainty of use cannot be guaranteed without hollow watching during the breeding season.

3 Desktop Study

3.1 Overview

A desktop study was undertaken for the Survey Area plus a 5 km buffer (Desktop Study Area; DSA) to identify conservation significant flora, fauna and ecological communities with potential to occur. A list of common fauna species was also compiled. The assessment used publicly available datasets, including DBCA Threatened and Priority Flora and Fauna databases, Threatened and Priority Ecological Communities, NatureMap and the DCCEEW Protected Matters Search Tool (PMST).

3.1.1 Previous Surveys

Several previous surveys have been completed along the track alignment and were reviewed during the desktop assessment (Table 3-1).

Table 3-1 - Previous surveys within the Wadandi Track alignment

Author	Report Name	Year
Harewood, G.	Fauna assessment Busselton to Flinders Bay Rail Trail.	2013
Ekologica	A flora and vegetation survey for the proposed Busselton-Flinders Bay Rail Trail	2012
Great Southern Biologic	Dieback survey and Management Plan	2012
ngh environmental	Survey of the proposed rail walk trail to identify known and potential *Engaewa* habitat	2012
Roberts, J.D.	Rails to Trails *Geocrinia alba* surveys, October 16-17, 2012	2012
Eco Logic and Ecosystem Solutions	Rails to Trails Desktop Review Analysis and Recommendations	2011
Webb, A	A Floristic Survey of the Vasse-Yallingup Siding Reserves	2010
John Monoghan and Associates	Final Report - Rails to Trails Study. Ludlow to Flinders Bay	1996

The desktop assessment informed targeted survey effort and methodology, as well as the likelihood of occurrence of conservation significant taxa.

3.2 Regional Environmental Setting

3.2.1 IBRA Region and Climate

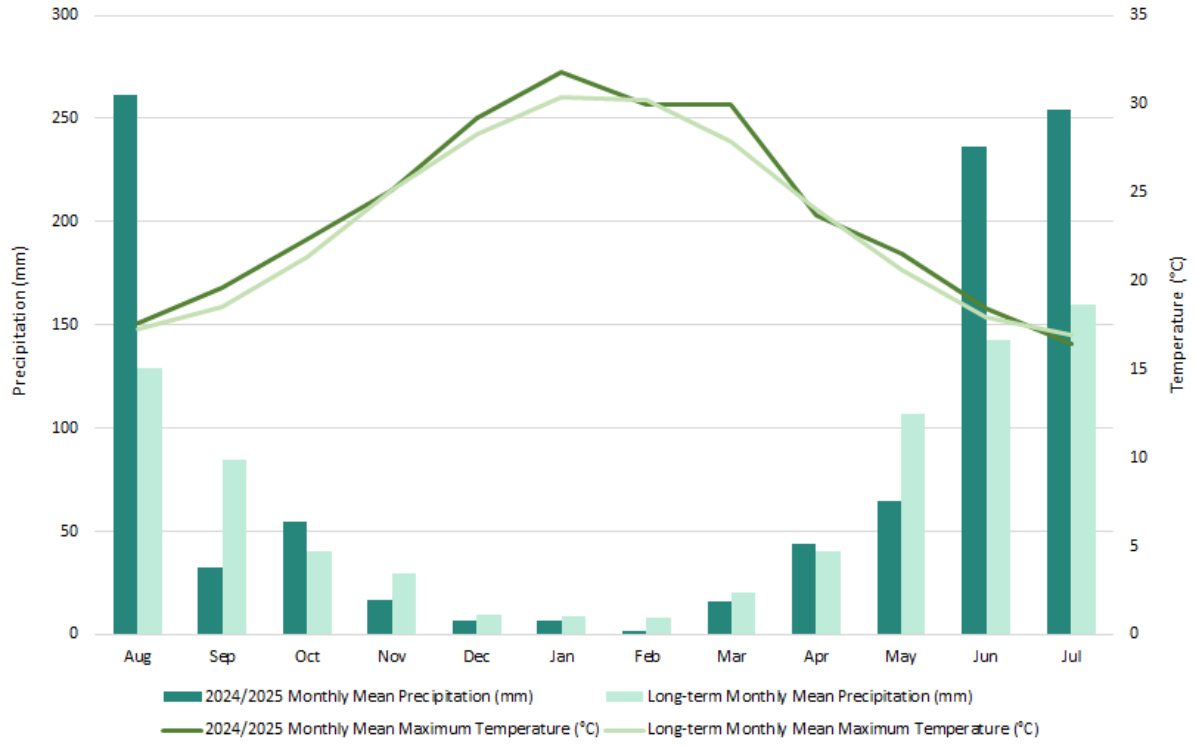
The Survey Area intersects both the Swan Coastal Plain Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (specifically the Perth (SWA02) IBRA subregion) and the Jarrah Forest IBRA bioregion (specifically the Southern Jarrah Forest (JAF02) IBRA subregion) (DCCEEW, 2022, 2023b). The Perth botanical subregion is of a Mediterranean climate, typically experiencing winter precipitation ranging between 600 to 1,000 mm per annum (Mitchell et al., 2002). The Southern Jarrah Forest region is of a warm Mediterranean climate, typically experiencing winter precipitation ranging between 600 to 1200 mm per annum (Beard, 2015).

Climatic information from the period of August 2024 to July 2025, together with long-term climate data from the most relevant weather stations to the Survey Area; Jindong (station number 9978) and Busselton Aero (station number 9603) (BoM, 2025) is presented in Graph 3-1.

The Busselton Aero station contained the most comprehensive temperature data. Long-term mean maximum temperatures ranged from 30.4°C in January, the hottest month, to 16.9°C in July, the coolest month. Mean maximum temperatures exceeded the long-term average during nine of the 12 months preceding the survey (Graph 3-1).

The Jindong station was utilized for rainfall data. The long-term average annual rainfall at Jindong is 779.7 mm. Annual rainfall during the 12 months preceding the survey was approximately 995.8 mm, around 216 mm above the long-term average. Rainfall exceeded the long-term average during five of the 12 months between August 2024 and July 2025, with the greatest variation recorded in August 2024, when rainfall was approximately 132 mm above average (Graph 3-1).

The flora survey was undertaken during spring, with one survey date occurring in early summer. Seasonal conditions were favourable for flora detection, including adequate soil moisture and active growth. Slightly elevated winter rainfall may have contributed to increased vegetation growth, including weed cover within disturbed areas; however, this is not considered to have significantly influenced overall survey outcomes.



Graph 3-1 Rainfall and mean maximum temperature data from the Jindong (number 9978) and Busselton Aero (number 9603) bureau stations, respectively (BoM, 2025)

3.2.2 Soil Landscape Mapping

Soil landscape mapping prepared by the Department of Agriculture (now the Department of Primary Industries and Regional Development (DPIRD)) represents a compilation of multiple soil and soil-landscape surveys across the south-west of Western Australia (DPIRD, 2025b). Soils within the Survey Area occur across 16 mapped units:

- **211SpLDw Ludlow wet flats phase -** Flats with poor subsoil drainage in winter. Deep yellow brown siliceous sands over limestone (i.e. Spearwood Sands);
- **213AbAB1 Abba Flats phase -** Flats and low rises with sandy grey brown duplex (Abba) and gradational (Busselton) soils;
- **213AbAB2 Abba gentle slopes phase -** Very gently sloping terrain. Pale sandy earths, Semi-wet soils, Pale deep sands and Duplex sandy gravels;
- **213AbABd Abba deep sandy rises phase -** Gently sloping low dunes and rises (0-5% gradients) with deep bleached sands;
- **213AbABw Abba wet flats phase -** Winter wet flats and slight depressions with sandy grey brown duplex (Abba) and gradational (Busselton) soils;
- **213AbJD1 Jindong flats phase -** Well drained flats with sandy gradational grey brown (Busselton) soils, some red brown sands and loams (Marybrook Soils);
- **213AbJDf Jindong fertile flats phase -** Well drained flats with deep red brown sands, loams and light clays (i.e. Marybrook soils);
- **214ThTRvw Treeton wet valley phase -** Broad U-shaped drainage depressions with swampy floors;
- **214WsYL1 Yelverton flats phase -** Raised flats. Duplex sandy gravels, semi-wet soils, yellow deep sands and sandy earths and loamy gravels;
- **214WsYL2 Yelverton very gentle slopes phase -** Undulating terrain. Duplex sandy gravels, semi-wet soils, yellow deep sands and sandy earths and loamy gravels;
- **214WsYLvw Yelverton wet valleys phase -** Broad U-shaped minor valleys with swampy floors. Soils on the valley floors are non-saline wet soils;
- **214WsYLw Yelverton wet flats phase -** Poorly drained depressions on the shelf surface. Soils are non-saline wet soils and grey-brown sands and loams
- **216CoCO1 Cowaramup flats Phase -** Flats (0-2% gradient) with gravelly duplex (Forest Grove) and pale grey mottled (Mungite) soils;
- **216CoCO2 Cowaramup gentle slope phase -** Gentle slope (2-5% gradient) with gravelly duplex (Forest Grove) soils;
- **216CoCOvw Cowaramup wet vales Phase -** Small, broad U-shaped drainage depressions with swampy floors. Gravelly duplex (Forest Grove) soils on sideslopes and poorly drained alluvial soils on valley floor; and
- **216WvMT4 Metricup gentle slope phase -** Moderate slopes (gradients mainly 10-15%) with gravelly duplex (Forest Grove) soils (DPIRD, 2025b).

3.2.3 Regional Vegetation

Vegetation complexes of the Southwest Forest Region and Swan Coastal Plain (south of Lancelin) have been mapped at a scale of 1:50,000 and 1:250,000, respectively (DBCA, 2018a, 2018b; Heddle et al., 1980; Mattiske & Havel, 1998; Webb et al., 2016). These complexes are characteristic of various combinations in landform, soil and rainfall. Ten vegetation complexes intersect the Survey Area, comprising seven mapped within the SW Forest Region and three within the Swan Coastal Plain:

- **SW Forest Region**
    - Cowaramup (C2) Margaret River Plateau Uplands: Open forest of *Eucalyptus marginata* subsp. *marginata-Corymbia calophylla-Banksia grandis* on lateritic uplands in perhumid and humid zones.
    - Cowaramup (Cw2) Margaret River Plateau Valleys: Woodland of *Eucalyptus marginata* subsp. *marginata-Corymbia calophylla* on slopes and low woodland of *Melaleuca preissiana-Banksia littoralis* on depressions in perhumid and humid zones.
    - Metricup (M) Margaret River Plateau Uplands: Woodland to open forest of *Eucalyptus marginata* subsp. *marginata-Corymbia calophylla* on escarpment in the humid zone.
    - Treeton (Tw) Blackwood Plateau and Plain Valleys: Open forest of *Eucalyptus patens-Corymbia calophylla-Eucalyptus marginata* subsp. *marginata* on lower slopes and on floors of minor valleys in the perhumid zone.
    - Yelverton (Y) Whicher Scarp Uplands: Woodland of *Eucalyptus marginata* subsp. *marginata-Corymbia calophylla-Allocasuarina fraseriana-Agonis flexuosa* and open woodland of *Corymbia calophylla* on low undulating uplands in the humid zone.
    - Yelverton (Yd) Whicher Scarp Uplands: Woodland of *Allocasuarina fraseriana-Eucalyptus marginata* subsp. *marginata-Xylomelum occidentale-Banksia attenuata* on sandy slopes in the humid zone.
    - Yelverton (Yw) Whicher Scarp Valleys: Woodland of *Allocasuarina fraseriana-Nuytsia floribunda-Agonis flexuosa-Banksia attenuata* on slopes and open forest of *Corymbia calophylla-Eucalyptus patens-Eucalyptus marginata* subsp. *marginata* on the lower slopes and woodland of *Eucalyptus rudis-Melaleuca rhaphiophylla* on valley floors in the humid zone.
- **Swan Coastal Plain**
    - Abba Complex: A mixture of open forest of *Corymbia calophylla* (Marri) - *Eucalyptus marginata* (Jarrah) - *Banksia* species and woodland of *Corymbia calophylla* (Marri) with minor occurrences of *Corymbia haematoxylon* (Mountain Marri). Woodland of *Eucalyptus rudis* (Flooded Gum) - *Melaleuca* species along creeks and on flood plains.
    - Southern River Complex: Open woodland of *Corymbia calophylla* (Marri) - *Eucalyptus marginata* (Jarrah) - Banksia species with fringing woodland of *Eucalyptus rudis* (Flooded Gum) - *Melaleuca rhaphiophylla* (Swamp Paperbark) along creek beds.
    - Yoongarillup Complex: Woodland to tall woodland of *Eucalyptus gomphocephala* (Tuart) with *Agonis flexuosa* in the second storey. Less consistently an open forest of *Eucalyptus gomphocephala* (Tuart) - *Eucalyptus marginata* (Jarrah) -

Corymbia calophylla (Marri). South of Bunbury is characterized by *Eucalyptus rudis* (Flooded Gum)-*Melaleuca* species open forests.

Statistics regarding the current and pre-European extent of the vegetation complex represented within the Survey Area are presented in Table 3-2. As outlined in the EPA's *Position Statement No. 2: Environmental Protection of Native Vegetation in Western Australia* (EPA, 2000), the national biodiversity conservation target aims to prevent ecological communities from being reduced below 30 % of their pre-European extent (DCCEEW, 2024). The Cowamarup (Cw2), Yelverton (Yw), Abba and Southern River Complexes all fall below the 30% retention target, with less than 30% of their pre-European extent remaining (Table 3-2). Of these, the Abba Complex is of particular significance, with only 6.54% remaining.

Table 3-2 Vegetation complex statistics from the CAR and LGA vegetation complex reports (DBCA, 2019)

Vegetation Complex	Pre-European Extent (ha)	Current Extent (ha)	% Remaining	City of Busselton, % Remaining	Area	
					SW Forest Region	Swan Coastal Plain
Cowaramup, C2	13,692.45	4,442.60	32.45	35.19	X	
Cowaramup, Cw2	6,654.67	1,352.26	20.32	23.30	X	
Metricup, M	823.80	548.38	66.57	66.57	X	
Treeton, Tw	8,676.10	2,926.58	33.73	28.54	X	
Yelverton, Y	9,007.37	3,222.00	35.77	31.14	X	
Yelverton, Yd	2,439.37	1,358.92	55.71	53.71	X	
Yelverton, Yw	3,589.14	1,065.20	29.68	28.09	X	
Abba Complex	50,892.78	3,326.20	6.54	6.64		X
Southern River Complex	58,781.48	10,832.18	18.43	20.53		X
Yoongarrilup Complex	27977.93	10,018.14	35.81	10.90		X

The South West Biodiversity Project provides criteria for the identification and prioritisation of Locally Significant Natural Areas (LSNAs). The Cowaramup (C2 and Cw2), Metricup (M), Treeton (Tw), Yelverton (Y, Yd and Yw), Abba and Southern River complexes meet, or potentially meet, the criteria for classification as LSNAs (Molloy et al., 2007).

3.2.4 Habitat Connectivity

The South West Regional Ecological Linkages (SWREL) project (Molloy et al., 2009) identifies regional scale ecological linkages and aims to respond to the issues of fragmentation and climate change through land use planning policy and procedures. It also seeks to retain native vegetation and fauna habitat and reduce the loss of biodiversity and ecological function. The SWREL axis lines are a series of vegetation patches which, due to their proximity, act as habitat stepping stones, facilitating ecological processes and movement of organisms within and across the landscape (i.e. at the landscape scale).

The capacity for fauna to move is generally related to size; the larger the animal the greater the ability to cover a larger area (Molloy et al., 2009). Studies referred to in the SWREL Technical Report generally indicate (simplified) that:

- Small mammals may cross widths of up to 100 m while dispersing,
- small insectivorous passerines may cross gaps up to 20 m but not over 80 m,

- arthropods and small lizards are generally sedentary in nature and unlikely to move between patches,
- small invertebrates (as pollinators) will generally not disperse over 100 m, and
- frogs will generally disperse over 150m.

While vegetation gaps will, to some degree, compromise the capacity for fauna to persist, gaps of <100 m will not bring about a significant barrier to the dispersal of many fauna taxa. A gap of 1000 m between patches of remnant vegetation is recognised as a major barrier to the movement of many fauna species and represents a threshold, that once crossed, presents a major decline in biotic interaction.

The Survey Area intersects vegetation mapped (WALGA, 2022) as:

- 1a: with an edge touching or <100 m from a linkage

  0.89 km length of Survey Area
- 1b: with an edge touching or <100 m from a natural area selected in 1a

  1.88 km length of Survey Area
- 1c: with an edge touching or <100 m from a natural area selected in 1b

  0.62 km length of Survey Area
- 2a: with an edge touching or <500 m from a natural linkage

  0.62 km length of Survey Area
- 2c: with an edge touching or <500 m from a natural area selected in 2b (edge touching or <500 m from natural area selected in 2a)

  1.01 km length of Survey Area
- 3c: with an edge touching or <1000 m from a natural area selected in 3b

  0.80 km length of Survey Area

An axis line intersects the Survey Area in a northwest/southeast direction through Vasse Yallingup Siding Road, just under <600 m south of Hayes Road and ~2.5 km west of Quindalup South Road (WALGA, 2022).

3.3 Locally Significant Flora Records

Database searches identified 53 conservation significant flora taxa within the DSA, including 23 Threatened species listed under State and/or Commonwealth legislation. Additional data was also provided by the City of Busselton and DBCA. Two existing records of significant flora occur within the current Survey Area, *Acacia semitrullata* (P4) and *Cyathochaeta teretifolia* (P3), as indicated in blue shading in Appendix D Table D-1.

Based on habitat assessment, several of the conservation significant flora taxa identified in the database search are unlikely to occur within the Survey Area due to a lack of suitable habitat, disturbance history associated with the former rail alignment, or their known geographic distribution.

A full list of returned taxa is provided in Appendix D Table D-1..

3.4 Locally Significant Vegetation Records

The searches of DBCA's TEC and PEC Database (DBCA, 2025b) returned ten listed significant vegetation communities with records located within the DSA, as listed below:

- Banksia Woodlands of the Swan Coastal Plain ecological community
    - Southern *Banksia attenuata* woodlands (a component of the Banksia Woodlands of the Swan Coastal Plain TEC)
    - West Whicher Scarp *Banksia attenuata* woodland (Swan Coastal Plain centred woodlands of grey/white sands community B2) (a component of the Banksia Woodlands of the Swan Coastal Plain TEC)
- *Corymbia calophylla* woodlands on heavy soils of the southern Swan Coastal Plain (floristic community type 1b as originally described in Gibson et al. 1994)
- Dense shrublands on clay flats (floristic community type 9 as originally described in Gibson et al. 1994)
- *Eucalyptus patens*, *Corymbia calophylla*, *Agonis flexuosa* Closed Low Forest
- Shrublands of near permanent wetlands in creeklines of the Whicher Scarp (Whicher Scarp community G2)
- Shrublands on southern Swan Coastal Plain Ironstones (Busselton area) (floristic community type 10b as originally described in Gibson et al. 1994)
- Subtropical and Temperate Coastal Saltmarsh
- Swan Coastal Plain Paluslope Wetlands
- Quindalup *Eucalyptus gomphocephala* and/or *Agonis flexuosa* woodlands (Can form a component of the Tuart woodlands and forests of the Swan Coastal Plain EPBC listed TEC, as discussed below)
- Seasonal rainfall filled wetlands with impeding substrate of the Swan Coastal Plain and Jarrah Forest in transitional rainfall zones (synonymous with Claypans of the Swan Coastal Plain EPBC Listed TEC, as discussed below)

An additional three Commonwealth-listed TECs were returned by the DCCEEW SPRAT database search (DCCEEW, 2025) as 'likely to occur' or 'may occur' within the DSA, as indicated below.

- Claypans of the Swan Coastal Plain (comprising four BC Act listed communities) – 'likely to occur'
- Empodisma peatlands of southwestern Australia – 'likely to occur'
- Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain – 'may occur'

A total of 13 significant vegetation communities have known records, or have the expected habitat/distribution to occur within the DSA (DBCA, 2025b; DCCEEW, 2025). Of these, five are mapped from within the Survey Area (DBCA, 2025b). A full list of conservation significant vegetation communities identified in the desktop assessment is provided in Appendix E.

3.5 Local Fauna Records

The desktop study identified 257 terrestrial (or semi-aquatic), vertebrate fauna taxa that may occur within the DSA (excluding solely marine seabirds):

- Amphibia 13

- Aves 190
- Mammalia 29
- Reptilia 25

Under the BC Act, the above count included, 17 Threatened taxa, eight Priority-listed species, one Conservation Dependent taxon, one Other Specially Protected taxon, and 16 Migratory birds.

Conservation significant invertebrates and aquatic taxa were considered through desktop review only. Two fish and ten invertebrates of conservation significance were returned in desktop searches (ALA, 2026; DBCA, 2025c, 2025a; DCCEEW, 2025). The full list of returned taxa is provided in Appendix D, with a likelihood of occurrence assessment for conservation significant fauna presented in Appendix G.

One Important Bird Area (IBA), defined as being of high conservation priority by BirdLife International, occurs within 5 km of the Survey Area (Birds Australia, 2023). The Busselton Wetlands IBA occurs~7.3 km east of the Survey Area at the eastern extent of the alignment.

3.6 Black Cockatoos

3.6.1 Profiles

All three black cockatoo species have been recorded within the DSA (DBCA, 2025b). Detailed species profiles are provided Appendix F.

The DAWE (2022) Referral Guideline identifies four key SW habitat regions; Swan Coastal Plain, Wheatbelt, Jarrah Forest and South Coast. These are utilised differently by each of the three local black cockatoo taxa. The Survey Area intersects both Region 1: Swan Coastal Plain and Region 3: Jarrah Forest (DAWE, 2022).

The Swan Coastal Plain Region is primarily used by black cockatoos for foraging, with some small patches of breeding habitat evident (DAWE, 2022). Vegetation used by black cockatoos in this region is dominated by *Banksia* spp. and tuart woodlands, as well as Marri and Jarrah. A key focus for this region is the ongoing viability of foraging habitat, particularly for Carnaby's cockatoo. Vegetation in this region is fragmented and poorly-represented in conservation reserves (DAWE, 2022).

The Jarrah Forest Region is characterised by the dominant presence of Jarrah and Marri forests with Marri-Wandoo woodlands. All three black cockatoos breed within this region, existing as the main breeding area for Baudin's cockatoo and FRTBC. The region provides key foraging and wintering areas for Baudin's cockatoo, and primary foraging species for all three black cockatoos (Appendix G).

There is an estimated 19,568 ha of native vegetation (including regrowth) remaining within 10 km of the Survey Area (29 % of total area within 10 km, excluding marine areas). It is likely that a considerable portion of this area is likely to provide foraging resources for black cockatoos (DBCA, 2025).

3.6.2 Breeding Requirements and Records

Black cockatoos rely on large hollows for breeding. Hollow formation takes many years and requires damage to the tree, from animals (normally termites) or dropped branches, then further rotting. Fire is generally not a hollow-forming process; it may reduce the quality and number of hollows over time (Author pers obs.) and as a major contributor to the loss of older trees. Young and healthy trees quickly heal after damage and trees less than 100 years old are unlikely to contain large hollows. Supporting literature identifies suitable breeding hollows as occurring in:

- Trees over 150 years old (Koch, 2008),

- Marri trees aged ~200 years and Jarrah (~300 years), with an average tree being inhabited at ~400 years for Marri and ~500 years for Jarrah (Inions et al., 1989),
- Marri trees aged between 140 and 410 years of age (Johnstone et al., 2015),
- Jarrah trees aged between 120 and 150 years (Whitford, 2002),
- Marri trees aged at ~450 years, utilised by the medium sized Long-billed Corella (smaller than black cockatoos) (Mawson & Long, 1994), and
- Jarrah trees aged at over 1000 years (as stags) (Wayne, 2005).

For nesting, black cockatoos show a preference for:

- Large senescing trees,
- hollows not angled more than 45 degrees from vertical,
- entrances of at least 12 cm but usually much larger (20-40 cm), and
- deep or well-sheltered hollows in main trunks, or large branches which can provide a floor space of at least 30 cm diameter or more.

All three species of black cockatoo are of similar size and utilise similar hollows when breeding. The actual species of tree is likely unimportant. For example, Carnaby's cockatoo nest in Marri trees in the Marri forest and wandoo in the Wheatbelt. Each species may use the same individual hollows when not occupied by other black cockatoo species (Kirkby pers comm, 2019) or may be used interchangeably with other medium sized birds such as corellas, Galah, ducks and owls.

While breeding, black cockatoos will generally forage within a 6 - 12 km radius of their nesting site. Following breeding, birds assemble into flocks and move through the landscape searching for food, usually within 6 kms of a night roost (SEWPaC, 2012). Black cockatoos rely on access to watering points in selecting night roost sites, with roost sites usually within 2 kms of a watering point where they drink in the afternoon following daytime feeding (DAWE, 2022).

One FRTBC natural breeding record occurs within 10 km of the Survey Area (DBCA, 2025c). The record occurs just over 3.3 km northwest of the Survey Area, off Parkland Crescent, Quindalup. There are no records of Baudin's or Carnaby's Cockatoos breeding withing 10 km.

3.6.3 Roosting Behaviour and Records

Roosts are normally in large stands of tall trees, with a dense canopy and close to permanent water. Roosting trees need to be a suitable height, have a leafy canopy to shield the birds and help retain body heat. Smaller roost sites up to eight km away from the main roosts may be used when foraging distances from the main roost become too great (e.g. when Jarrah fruit has been exhausted locally) (Author pers obs., Johnstone et al., 2010).

Baudin's and Carnaby's cockatoos often roost about 30 cm or more apart in the outermost thin branches of the canopy, often among a clump of dense leaves, and generally in positions that are wind affected. FRTBC, however, roost side-by-side in family groups and on thick, protected perches under tall tree canopy (Johnstone et al., 2011).

DBCA database records returned 27 black cockatoo roosts within 10 km of the Survey Area, observed over 68 surveys since 2010 (DBCA, 2025c). They included a total 1842 White-tailed Cockatoo (WTBC) birds, with a maximum count of 932. FRTBC were less prevalent with both a total and maximum count of 54. Three roosts occur within 1 km of the Survey Area: BUSMETR002 (WTBC and FRTBC), BUSQUIR003 (FRTBC) and BUSQUIR004 (FRTBC) (highlighted blue in Table 3-3). Most recent roosting records occur in 2019 for BUSMETR002, 2018 for BUSQUIR004, and 2016 for BUSQUIR003 (DBCA, 2025c).

Table 3-3 DBCA roosts within 10 km of the Survey Area (roosts highlighted blue occur within 1 km)

Site code	Distance from SA (km)	WTBC total	WTBC max	FRTBC total	FRTBC max	Surveys
AUGCOWR001	4.70	0	0	0	0	1
AUGCOWR002	7.19	0	0	0	0	1

Site code	Distance from SA (km)	WTBC total	WTBC max	FRTBC total	FRTBC max	Surveys
AUGCOWR003	3.49	0	0	0	0	1
AUGCOWR004	6.82	0	0	4	4	2
AUGGRAR002	9.32	268	89	0	0	7
AUGGRAR003	7.16	7	7	0	0	1
AUGMARR006	9.15	21	19	0	0	3
BUSCARR001	2.70	233	121	0	0	3
BUSDUNR001	9.18	223	99	0	0	7
BUSJINR001	5.77	40	30	0	0	3
BUSJINR002	4.80	1	1	2	2	3
BUSJINR003	4.85	0	0	0	0	1
BUSMETR001	1.18	0	0	0	0	1
BUSMETR002	0.52	175	150	27	27	3
BUSQUIR001	2.80	691	251	0	0	7
BUSQUIR002	4.45	0	0	0	0	2
BUSQUIR003	0.98	0	0	5	5	1
BUSQUIR004	0.96	0	0	9	9	1
BUSWILR001	7.18	0	0	0	0	2
BUSWILR002	7.74	55	45	0	0	2
BUSYALR001	6.69	57	57	0	0	3
BUSYALR002	7.53	0	0	0	0	2
BUSYALR003	8.45	0	0	0	0	2
BUSYALR004	6.47	38	30	0	0	4
BUSYALR005	7.66	30	30	0	0	3
BUSYALR006	6.34	3	3	0	0	1
BUSYELR001	2.50	0	0	7	7	1

3.7 Western Ringtail Possum

3.7.1 Profile

Critical habitat for WRP is defined below from the Western Ringtail Possum (*Pseudocheirus occidentalis*) Recovery Plan (DPaW, 2017). An evaluation of WRP likelihood of occurrence and species profile is provided in Appendix G.

Critical habitat for WRP is not well understood and is therefore based on the habitat variables observed where WRP possums are most recorded. These appear to vary between key management zones. The common themes however are high nutrient foliage availability for food, suitable structures for protection/nesting, and canopy continuity to avoid/escape predation and other threats. Long-term survival of the species requires linkages between suitable habitat patches and as such habitat critical to survival incorporates this. Vegetation communities critical to the species include long unburnt mature remnants of Peppermint (*Agonis flexuosa*) woodlands with high canopy continuity and high foliage nutrients (high in nitrogen and low toxin levels); Jarrah / Marri forests and

woodlands with limited anthropogenic disturbance (unlogged or lightly logged, and a low intensity and low frequency fire history), that are intensively fox-baited and have low indices of fragmentation; coastal heath, Jarrah / Marri woodland and forest, Peppermint woodlands, myrtaceous heaths and shrublands, Bullich (*Eucalyptus megacarpa*) dominated riparian zones and Karri forest. Any habitat where WRP occur naturally are considered critical and worthy of protection.

3.7.2 Local Context and Records

Three key management zones are established in the Recovery Plan (DPaW 2017), comprising areas known to currently, or previously support large numbers of WRP. They include the Swan Coastal Plain zone, Southern Forest zone and South Coast zone. The Wadandi Track falls within the Swan Coastal Plain management zone, intersecting both the Cape to Cape and Swan Coastal Plain sub-populations (Biota, 2020; DPaW, 2017).

A regional survey of WRP was undertaken by Biota (2020). Using density sampling, WRP abundance was estimated at approximately 21,800 individuals within the surveyed footprint (approximately 113,000 ha) (across the three management zones). Within surveyed areas, population estimates included approximately 9,364 individuals in the Southern Swan Coastal Plain, 9,205 individuals in the Southern Forests, and 3,240 individuals in the South Coast management zones.

During the Biota (2020) regional population assessment, eight sites were surveyed within the Cape to Cape subpopulation, all occurring on Crown Land. The closest Biota (2020) study site to the proposed track was Yelverton (0.68 WRP / ha), occurring <500 m west of the Survey Area at the nearest point. Western Ringtail Possum had a general trend of decreasing encounter rates from 3 WRP / ha in the northern sites (Big Rock and Yallingup) to 0 to <0.3 in the southern sites (Boranup and Augusta North). The Yelverton site, in the central Capes region and closest to the track, had a 4–5-fold density decrease than the higher numbers in the north. Detections were largely recorded within either Jarrah or Marri trees, with others within Peppermint (*Agonis flexuosa*), and to a lesser extent in Pine (*Pinus sp.*), Wandoo, *Melaleuca sp., Persoonia, Banksia* sp. and *Allocasuarina* sp.

Based on the Biota (2020) WRP regional assessment results, the following considerations are made:

- Western Ringtail Possum had a general trend of decreasing encounter rate from north to south sites within the Cape to Cape region. Mean densities of WRP / ha were as follows, from north to south:
    - Big Rock NR (2.76 / ha)
    - Yallingup (Leewin Naturaliste NP) (3.15 / ha)
    - Canal Rocks (2.55 / ha)
    - Yelverton (0.68 / ha)

DBCA (2025c) database contains 1103 WRP records within 5 km of the Survey Area, and 43 records within 1 km. Western Ringtail Possum are locally prevalent within the City of Busselton LGA, particularly in Peppermint woodland surrounding / {Citation}between Busselton and Dunsborough towns.

A Department of Parks and Wildlife (DPaW) report prepared by Shedley and Williams (2014) assesses WRP habitat in the southern Swan Coastal Plain between Binningup and Dunsborough, providing a habitat classification and GIS mapping dataset that can be used for prioritising habitat. Habitat suitability classes were based on an assessment of habitat quality from soil and vegetation data and sometimes survey data. Habitat suitability classes aim to estimate the number of WRP that may occur within a

habitat patch and can be used as a guide to the relative carrying capacity of different soil landform mapping units, with caveats. Habitat suitability is described in Table 3-4.

Table 3-4 Habitat suitability classes with expected WRP densities summarised by Proposal type (Shedley and Williams 2014).

Habitat suitability class	WRP density (No./ha)	Rail Reserve Area (ha)
A – Very high	>10	0
B – High	5–10	18.82
C – Medium	2–5	126.56
D – Low	0.5–2	9.18
E – Very low	<0.5	0

The rail reserve is mapped as *D - Low* to *B – High* habitat suitability, with over 50% of the *High* habitat suitability (9.59 ha) occurring within the northern section of the alignment coinciding with the Swan Coastal Plain IBRA mapped areas.

4 Field Results and Discussion

4.1 Flora

A total of 158 vascular flora taxa were recorded within the Survey Area, of which 139 were native and nine were introduced (Appendix K). Flora species were recorded opportunistically during the reconnaissance and targeted flora survey, and this does not represent a comprehensive census. Survey effort focused primarily on the detection and assessment of conservation significant flora taxa and naturally occurring native flora species, with introduced taxa and weeds recorded opportunistically were considered significant, dominant or locally invasive.

4.1.1 Conservation Significant Flora

No Threatened flora taxa were recorded during the survey. Eight Priority flora taxa were recorded within the Survey Area:

- *Acacia flagelliformis* (Priority 4);
- *Acacia semitrullata* (Priority 4);
- *Dillwynia* sp. Capel (P.A. Jurjevich 1771) (Priority 3);
- *Gahnia sclerioides* (Priority 4);
- *Jacksonia gracillima* (Priority 3);
- *Johnsonia inconspicua* (Priority 3);
- *Loricobbia pinifolia* (Priority 3); and
- *Netrostylis* sp. Blackwood River (A.R. Annels 3043) (Priority 3).

These species were recorded within suitable habitat along the alignment (Figure 3, Appendix A). Individuals were generally located within intact vegetation adjacent to the former rail formation.

An additional species of significance, *Synaphea* aff. *obtusata*, has been identified by the WA Herbarium. *Synaphea obtusata* is known from the Darling Scarp and South Coast, with this collection representing the first record west of these landforms. Pending taxonomic confirmation, this taxon should be treated as a potential new species of conservation significance.

Cyathochaeta teretifolia (Priority 3) has also been previously identified as occurring within drainage lines and creekline habitats in the Survey Area. However, individuals observed during the survey period were sterile, and the presence of this species could not be confirmed.

While targeted surveys were undertaken during an appropriate survey period, some flora species, particularly those with variable emergence or flowering (e.g. geophytes), may not be detectable in a single survey season. However, based on the level of survey effort and habitat assessment, it is unlikely that additional conservation significant flora occur within the Survey Area. Locations of significant flora are presented in Figure 3 (Appendix A).

Acacia flagelliformis – Priority Four

Acacia flagelliformis (Priority 4) was recorded north of Metricup Road, corresponding with a previously documented population, where approximately five individuals were recorded in 2005 (DBCA, 2025d). Individuals recorded during the current survey occur adjacent to the proposed alignment, within areas of relatively intact vegetation. In this section, the alignment is proposed to divert to an existing firebreak to the east, and impacts to these individuals are therefore considered unlikely.

This taxon is an uncommon species of seasonally wet habitats, typically occurring in shrubland or heath on sandy flats. *Acacia flagelliformis* superficially resembles *A. extensa,* a more common species that can occur in similar habitats. It can be distinguished by the lower number of flowers per head (2-6, compared to 12-24 in *A. extensa*) and the presence of conspicuous, imbricate brown bracts enclosing the young inflorescences (Court, 1978).



Photo 1 - *Acacia flagelliformis* (Priority 4), showing conspicuous imbricate bracts and 2 – 6 flowers per head.

Acacia semitrullata – Priority Four

Acacia semitrullata (Priority 4) was recorded to the south west of Hayes Road, corresponding with a previously documented population (Ekologica, 2012). Individuals recorded during the current survey occur adjacent to the proposed alignment, with some plants within the disturbance footprint.

The populations of this species within this northern part of the Capes region are known to occur on white / grey sandy flats, often in areas that are seasonally damp. It is part of the *A. horridula* group, and closely related to *A. uliginosa*, which also occurs in this area. *Acacia semitrullata* can be distinguished by the lower number of flowers per head (5-8, compared to 8-15 in *A. uliginosa*), puberlous 1-nerved petals, and spreading, often incurved stipules (Maslin, 1978)



Photo 2 - *Acacia semitrullata* (Priority 4), showing spreading stipules and 8 – 12 flowers per head.

Dillwynia sp. Capel (P.A. Jurevich 1771) – Priority Three

Dillwynia sp. Capel (P.A. Jurjevich 1771) (Priority 3) was also recorded southwest of Hayes Road. The eight individuals recorded during the current survey form part of a known local population scattered throughout this area, with additional plants occurring less than 100 m to the north. The individuals recorded during the current survey occur to the north of the proposed alignment, and impacts to these plants are therefore considered unlikely.

Dillwynia sp. Capel (P.A. Jurjevich 1771) is morphologically similar to the more common species *Dillwynia uncinata*, but can be distinguished by its relatively sparse, appressed calyx hairs and more slender growth form (Wheeler et al., 2002b). Most populations of *Dillwynia* sp. Capel (P.A. Jurjevich 1771) are confined to the Whicher Scarp and Blackwood Plateau region, with the present population population representing the westernmost known occurrence of this taxon. It is also considered likely that the record of *D. uncinata* from Yelverton represents *D*. sp. Capel (P.A. Jurjevich 1771); however, this cannot currently be confirmed, as the specimen has been on loan to New South Wales since 1997 (WA Herbarium, pers. comm, 23 September 2025).



Photo 3 – *Dillwynia* sp. Capel (P.A. Jurjevich 1771) (Priority 3), showing the appressed hairs on the calyx.

Gahnia sclerioides – Priority Four

Gahnia sclerioides was recorded from two locations within the Survey Area, to the west of the junction of Vasse Yallingup Siding Road and Quindalup Siding Road, and south of Wildwood Road. *Gahnia sclerioides* is known from scattered records between Dunsborough and Margaret River, although the majority of known records occur along the south coast. The species occurs in moist, shaded habitats, including in sandy soils within wet areas and along river banks (Wilson, 1997).

The individuals recorded during the current survey occur along the margins of the proposed alignment, within damp areas adjacent to the raised railway hardstand, and impacts to these plants are therefore considered unlikely. This species is diminutive and can be difficult to detect amongst the dense grasses and sedges typically associated with its preferred habitat. It is therefore likely to be under-represented in herbarium collections. However, its reliance on consistently moist and shaded habitat may increase its susceptibility to hydrological alteration and the impacts of climate change, and impacts to individual plants and associated habitat should be avoided where possible.



Photo 4 – *Gahnia sclerioides* (Priority 4) within the Survey Area.

Jacksonia gracillima- Priority Three

Jacksonia gracillima was likely recorded at one location within the Survey Area, along Vasse Yallingup Siding Road, to the west of Anniebrook Drain. This species can be difficult to distinguish from low, spreading forms of *Jacksonia furcellata* (WA Herbarium, pers. comm. 10 March 2026); however, the individuals recorded within the Survey Area were consistently less than 1 m high and therefore considered most likely to represent *J. gracillima*. The proposed alignment within this section has been diverted to a cleared area associated with an existing firebreak to the south, and impacts to these individuals are therefore considered unlikely.



Photo 5 – Likely *Jacksonia gracillima* (Priority 3) within a nearby area.

Johnsonia inconspicua - Priority Three

Johnsonia inconspicua was recorded from three locations within the Survey Area. One plant was recorded southwest of Hayes Road, with a further 23 plants recorded within the reserve north of Metricup Road. These occurrences correspond with previously known populations (DBCA, 2025d). An additional plant was recorded 340 m further south, to the east of Walburra Siding Road.

Johnsonia inconspicua occurs in grey-white sandy soils, typically within seasonally damp habitats. The species has a highly restricted distribution centred around the Yelverton, Metricup and Yallingup Siding areas, with an additional disjunct population recorded from Julimar Conservation Park that may be genetically distinct (Keighery, 2001). DBCA surveys conducted in 2021 monitored all known southwest populations, with a total of 275 plants recorded across 10 populations (B. Lullfitz, pers. comm., 12 May 2026). Due to its highly restricted distribution, this species is particularly susceptible to habitat loss and degradation associated with clearing, grazing, weed invasion and hydrological alteration. It is considered to be of high conservation significance and is being considered for nomination as a Threatened species. Impacts to individual plants and associated habitat should be avoided where possible, and consultation with DBCA should occur if impacts are anticipated.

The proposed alignment has been deviated along an existing firebreak to avoid the large population north of Metricup Road. The individual within the Hayes Road section occurs approximately 20 m north of the proposed alignment and is unlikely to be impacted. However, the individual to the east of Walburra Siding Road occurs within approximately 4 metres of the alignment. This species is diminutive and can be difficult to detect, particularly outside the flowering period. A suitably qualified botanist should be engaged immediately prior to works, to locate and demarcate nearby individuals, to reduce the risk of inadvertent damage or destruction.



Photo 6 – *Johnsonia inconspicua* (Priority 3) within the Survey Area.

Loricobbia pinifolia- Priority Three

Loricobbia pinifolia was recorded from two locations within the Survey Area, a previously known population along the western portion of Vasse Yallingup Siding Road (DBCA, 2025d), and a new population south Metricup Road, east of Walburra Siding Road. *Loricobbia pinifolia* is a tall, slender shrub growing between 1-3 m high, with yellow-orange flowers in spring. The species is endemic to the Blackwood Plateau, Margaret River Plateau, Leeuwin-Naturaliste Coast, the Yelverton area of the Whicher Scarp and adjacent parts of the Swan Coastal Plain, where it occurs within wetlands and creekline systems associated with freshwater seepages (B. J. Keighery et al., 2008). Given its association with freshwater seepages and seasonally wet habitats, this species may be susceptible to hydrological alteration. The plants recorded at both locations within the Survey Area are set back from the proposed alignment, and impacts to these individuals are therefore considered unlikely.



Photo 7 – *Loricobbia pinifolia* (Priority 4) within a nearby area.

Netrostylis sp. Blackwood River (A.R. Annels 3043) - Priority Three

Netrostylis sp. Blackwood River (A.R. Annels 3043) was likely recorded to the south of a seasonal creekline, east of Metricup-Yelverton Road; however, the inflorescence was immature at the time of survey and identification could not be confirmed with certainty. Based on morphology and habitat, the specimen is considered most likely to represent this taxon (WA Herbarium, pers. comm. 10 March 2026). This taxon is typically associated with creeklines and drainage systems, growing in loamy soils and often in association with *Eucalyptus patens* and *Lepidosperma tetraquetrum*. The species generally flowers during autumn, with inflorescences becoming dry and brittle by spring, which can reduce detectability during surveys. It also typically occurs within dense understorey vegetation and is relatively fine in stature compared to many co-occurring sedge species. As a result, the taxon may be under-represented in herbarium collections (WA Herbarium, 1998-).

Netrostylis sp. Blackwood River (A.R. Annels 3043) can be distinguished from other *Netrostylis* taxa in the area by its relatively tall growth form (up to 1.6 m) and branched, pendulous inflorescence bearing 14 - 72 spikelets. The inflorescence is open and sparse, with long pedicels and a pseudo-lateral arrangement of spikelets. In contrast, the commonly occurring *Netrostylis* sp. Jarrah Forest is typically stiffly erect, generally well under 1 m in height, and occurs in drier, sandier habitats. Identification characteristics are based on available taxonomic descriptions and draft identification keys (Barrett et al., 2012; R. L. Barrett, pers. comm. 2021), supported by field observations made during the current survey and previous surveys undertaken by the authors.

The individual observed during the current survey was on the edge of the existing railway hardstand, in close proximity to the proposed alignment. To reduce the risk of inadvertent damage or destruction, a suitably qualified botanist should be engaged immediately prior to works, to locate and demarcate nearby individuals.



Photo 8 Likely *Netrostylis* sp. Blackwood River (A.R. Annels 3043) (Priority 3) from within the Survey Area.

Cyathochaeta teretifolia - Priority Three

Several seasonal creeklines and drainage channels within the Survey Area supported a *Cyathochaeta* species, which may represent *C. teretifolia* (Priority 3). *Cyathochaeta teretifolia* is a rhizomatous perennial sedge that typically forms clumps up to approximately 1 m in width and 1.5 m in height, occasionally reaching 2 m. The species is locally associated with seasonal creeklines and wetland habitats, and it has previously been recorded from the Survey Area.

The species is distinguishable from other *Cyathochaeta* taxa by reproductive characteristics, including spikelets extending beyond the sheathing bracts and a style base approximately 1.5 mm long above the nut. As all individuals recorded during the survey were sterile, it was not possible to confirm identification to species level, and the plants may represent either *C. teretifolia* or the more common *C. clandestina*.

Based on vegetative characteristics, the specimens are unlikely to represent *C. avenacea*, which is distinguished by a crescent-shaped to hemispherical leaf blade cross-section. In contrast, the observed specimens exhibited leaf blades that were slightly compressed to circular or ellipsoid in cross-section. However, it is noted that vegetative characteristics alone are insufficient to reliably distinguish between *C. teretifolia* and *C. clandestina*, and definitive identification requires fertile material, including examination of the style base, nut and spikelet arrangement (Wheeler et al., 2002a).



Photo 9 Possible *Cyathochaeta teretifolia* (Priority 3) within a creekline of the Survey Area.

Synaphea aff. *obtusata* – Potential new species of conservation significance

A *Synaphea* taxon, currently not well resolved under existing taxonomy and considered most closely allied to *Synaphea obtusata,* was recorded to the north of a seasonal creekline adjacent to Metricup-Yelverton Road. Following consultation with DBCA, the taxon should be treated as a potential new species of conservation significance, until its taxonomy can be determined. An additional individual considered likely to represent the same taxon was observed outside the current Survey Area, approximately 1.2 km to the northwest.

Given the potential conservation significance of this taxon, impacts to individuals and associated habitat should be avoided where possible. A suitably qualified botanist should be engaged immediately prior to works, to locate and demarcate nearby individuals to reduce the risk of inadvertent damage or destruction.



Photo 10 *Synaphea* sp. (aff. *obtusata*) within the Survey Area.

4.1.2 Weeds

A range of introduced plant species were recorded within the Survey Area, primarily associated with disturbed areas along the former rail alignment and other localised disturbance nodes. Weeds were recorded opportunistically during the reconnaissance-level survey, with survey effort focused on identifying significant environmental weeds, declared pests and notable infestations. A comprehensive weed census was not undertaken as part of the scope of works, and additional introduced taxa are likely to occur within the Survey Area. The number and type of weeds recorded are considered representative of the disturbance gradient present along the alignment. The most significant weed species recorded included Watsonia (*Watsonia* spp.), Blackberry (*Rubus* spp.) and Arum Lily (*Zantedeschia aethiopica*), all of which are recognised as high-impact environmental weeds. Blackberry and Arum Lily are both listed as Declared Pests under the *Biosecurity and Agriculture Management Act 2007* (BAM Act), with Blackberry also listed as a Weed of National Significance (WoNS).

Weed occurrences were generally localised, becoming more pronounced in areas of historical disturbance, including sections of the rail alignment associated with former station locations, gravel extraction and informal dumping. These areas supported higher weed cover and reduced native understorey diversity compared to less disturbed sections of the alignment.

Overall, weed distribution reflected historical land use and disturbance patterns, with higher weed cover generally corresponding to areas of previous clearing, earthworks and dumping. Drainage lines and seasonally wet areas were also particularly susceptible to weed invasion, likely due to increased moisture availability, disturbances associated with drainage modification, and dispersal via water flow. Full weed species records are provided in Appendix K.

4.2 Vegetation

4.2.1 Vegetation Units

Eight vegetation units (VU) were mapped within the Survey Area (Figure 4, Appendix A):

- VU 1: Jarrah-Marri open forest (upland) - *Eucalyptus marginata* subsp. *marginata* (Jarrah) and *Corymbia calophylla* (Marri) open forest over a mixed mid to tall shrubland including *Acacia pulchella, Bossiaea* spp., *Hovea elliptica,* and *Hakea* spp., over a diverse low shrub and herb layer including *Conostylis* spp., *Dampiera* spp., *Hibbertia hypericoides* and *Patersonia* spp. The ground layer comprised a mixture of sedges, grasses and herbs, including *Mesomelaena tetragona, Tetrarrhena laevis* and *Pteridium esculentum,* with occasional *Xanthorrhoea* spp.

  This vegetation unit occurs on upland positions along the alignment and represents typical Jarrah-Marri forest of the region.

- VU 2: Banksia woodland / Kunzea scrub complex – *Agonis flexuosa* low woodland over *Kunzea glabrescens* and scattered *Banksia attenuata* tall shrubland, with *Hakea ruscifolia*, *Dasypogon hookeri*, *Acacia extensa*, *Gompholobium tomentosum* and *Acacia pulchella* over *Lindsaea linearis*, *Tremulina tremula* and *Mesomelaena tetragona* sedge and herbland.

  This vegetation unit occurs on elevated sandy soils and includes both relatively intact Banksia woodland and more degraded or structurally simplified scrub vegetation dominated by *Kunzea glabrescens* and *Agonis flexuosa*. Reduced representation of *Banksia* species and other disturbance-sensitive taxa within degraded areas may reflect the influence of *Phytophthora* dieback, altered hydrology, historical disturbance and/or weed invasion. Parts of this vegetation unit are mapped as occurrences of the Banksia Woodlands of the Swan Coastal Plain ecological community.

- VU 3: *Eucalyptus rudis* open forest – *Eucalyptus rudis* subsp*. rudis* and *Corymbia calophylla* open forest over dense *Agonis flexuosa* and *Banksia* spp. low woodland, over a degraded understorey including *Watsonia* spp., and introduced grasses and herbs, with isolated naturally occurring species including *Hardenbergia comptoniana* and *Eutaxia parviflora.*

  This vegetation unit occurs within the north eastern portion of the Survey Area, and is associated with seasonally wet sandy flats of the Swan Coastal Plain.

- VU 4: Marri open forest - *Corymbia calophylla* (Marri) open forest with *Agonis flexuosa, Banksia grandis, Xanthorrhoea brunonis* and *Kingia australis* over a low open heath dominated by *Pteridium esculentum,* with *Machaerina* spp. and *Cyathochaeta* spp. sedgeland occurring within associated drainage channels.

  This vegetation unit is associated with seasonally damp soils and commonly intergrades into wetter areas supporting *Melaleuca rhaphiophylla, M. preissiana* and other dampland species. Parts of this vegetation unit are characteristic of the *Corymbia calophylla* woodlands on heavy soils of the southern Swan Coastal Plain (floristic community type 1b as originally described in Gibson et al. 1994).

- VU 5: *Eucalyptus patens* open forest - Open forest dominated by *Eucalyptus patens* and *Agonis flexuosa,* with occasional *Eucalyptus megacarpa. Taxandria linearifolia, Mirbelia dilatata, Trymalium odoratissimum, Xanthorrhoea preissii* shrubland over *Pteridium esculentum* low open heath, with *Machaerina* spp.*, Cyathochaeta* spp.*, Lepidosperma* spp. and Restionaceae spp. sedgeland, within seasonally wet creekline and wetland areas.

This vegetation unit occurs along drainage lines in the central to southern extent of the Survey Area, and is associated with seasonally moist soils and drainage lines. Parts of this vegetation unit are likely to represent priority ecological communities, Shrublands of near permanent wetlands in creeklines of the Whicher Scarp (Whicher Scarp community G2) or Swan Coastal Plain Paluslope Wetlands.

- VU 6: Kunzea and Nuytsia wetlands – Low open heath on grey, seasonally wet soils. Large portions of the vegetation unit are degraded due to invasion by *Watsonia* spp.; however, where intact, the community comprises a low shrubland dominated by *Kunzea rostrata, Xanthorrhoea preissii* and *Conostylis aculeata,* with broad and floristically diverse sedgeland areas. Sedgeland species include *Leptocarpus denmarkicus* (regionally significant), *Mesomelaena tetragona, Anarthria prolifera, Melanostachya ustulata,* and a diverse assemblage of herbs and low shrubs. The margins of the shrubland transition into Marri woodland, with scattered *Corymbia calophylla* and *Nuytsia floribunda* concentrated around the edges of the wetland system.

  This vegetation unit is restricted to the southern portion of the Survey Area and supports populations of the conservation significant flora species *Johnsonia inconspicua* (Priority 3) and *Acacia flagelliformis* (Priority 4). *Johnsonia inconspicua* is considered to have a highly restricted distribution centred around the Yelverton, Metricup and Yallingup Siding areas, with an additional disjunct population recorded from Julimar Conservation Park that may be genetically distinct (Keighery, 2001). The species may warrant further research and potential consideration for listing under the EPBC Act (B. Lullfitz pers. comm.).

- VU 7: Melaleuca forest – Low open forest characterised by *Melaleuca rhaphiophylla* or *M. preissiana,* over a characteristic dampland understorey including *Banksia littoralis, Hakea varia, Exocarpos odoratus,* with *Corymbia calophylla, Acacia saligna* and patches of *Kingia australis*. Adjacent drainage channels are dominated by sedges, including *Machaerina juncea, Cyathochaeta avenacea, Mesomelaena tetragona* and other Cyperaceae and Restionaceae species.

  This vegetation unit provides a transition between the Marri Forest (VU4) and Claypans (VU 8) vegetation communities, to the north of the Survey Area.

- VU 8: Claypan – *Melaleuca rhaphiophylla* low forest with emergent *Eucalyptus rudis* subsp. *rudis* and *Corymbia calophylla,* over *Hakea varia* and *Exocarpos* odoratus shrubland over dense infestations of **Watsonia* sp., introduced grasses and other weed species, with pockets of intact naturally occurring sedges.

  This vegetation unit represents an occurrence of Dense shrublands on clay flats (floristic community type 9 as originally described in Gibson et al. 1994) threatened ecological community.

The vegetation units relate to landscape position, soil moisture and disturbance history. Upland areas and elevated sandy soils support Jarrah-Marri forest and Banksia woodland vegetation, including degraded and transitional Kunzea scrub communities (VU 1 and VU 2). Seasonally wet sandy flats of the Swan Coastal Plain support *Eucalyptus rudis* subsp. *rudis* forest and dense peppermint woodland vegetation (VU 3), which intergrades into Marri forest and other moisture-influenced vegetation on lower slopes and damp flats (VU 4). Wetter creekline and dampland systems are dominated by *Eucalyptus patens*, *Melaleuca* spp. and sedgeland communities (VU 5–8). These lower landscape positions are associated with heavier, more moisture-retentive, seasonally waterlogged soils, including clay-rich substrates associated with the Claypan community and more organic-rich soils within paluslope and creekline systems.

The remnant vegetation within the Survey Area represents an important transition between upland forest and seasonally wet dampland and creekline environments characteristic of the Whicher Scarp–Swan Coastal Plain interface. Despite the fragmented surrounding landscape, most of the broader rail reserve remains relatively intact.

Table 4-1 Vegetation unit descriptions

Vegetation Unit / Habitat type	Description	Representative Photos
VU1 - Jarrah-Marri open forest	Open forest associated with upland positions and elevated sandy soils Area: 22.23 ha	
VU2 – Banksia Woodland / Kunzea scrub complex	Scrub vegetation associated with elevated sandy soils, including degraded and transitional forms Area: 12.89 ha	

Vegetation Unit / Habitat type	Description	Representative Photos
VU3 - *Eucalyptus rudis* open forest	Open forest on sandy flats Area: 0.22 ha	
VU4 – Marri Forest	Moisture-influenced vegetation associated with lower slopes and seasonally damp flats Area: 2.63 ha	
VU 5 – *Eucalyptus patens* open forest	Seasonal creekline and wetland vegetation Area: 4.02 ha	

Vegetation Unit / Habitat type	Description	Representative Photos
VU 6 – Kunzea and Nuytsia wetlands	Seasonally wet shrublands with sedgeland communities Area: 5.08 ha	
VU 7 – Melaleuca forest	Dampland forest Area: 1.78 ha	
VU 8 - Claypan	Seasonally waterlogged soils and drainage systems Area: 0.48 ha	

Vegetation Unit / Habitat type	Description	Representative Photos
Cleared - Paddocks and / or Hardstand	Degraded / cleared / grazed	
	Maintained or existing infrastructure (e.g. road / parking / sealed track or verge areas).	

4.2.2 Vegetation Condition

Vegetation condition within the reserve was assessed using the Keighery (1994) scale, as adopted by the EPA (2016). Vegetation condition across the reserve ranged from Excellent to Completely Degraded (Table 4-2; Figure 5, Appendix A), reflecting variation in disturbance history and land use.

- Areas of Excellent to Very Good condition were typically located along the edges of the alignment and within intact remnant vegetation, where native species diversity and vegetation structure were largely retained with minimal weed invasion.
- Vegetation in Good to Degraded condition was more common along sections of the alignment subject to edge effects, historical disturbance and weed encroachment, where native structure was retained but with reduced diversity and increased presence of introduced species.
- Areas of Completely Degraded condition were associated with highly disturbed sections of the alignment, including areas subject to historical clearing, gravel extraction and informal dumping. These areas were characterised by sparse native vegetation, high weed cover and a substantially altered vegetation structure.

The vegetation condition reflects a clear disturbance pattern associated with the former rail corridor and localised compaction, with more intact vegetation occurring away from disturbed areas and more degraded vegetation associated with areas of past clearing and land use.

The proposed track being mostly co-located with the rail formation was generally significantly more degraded than the broader reserve and had already been constructed in some sections. The vegetation condition within such a narrow corridor (4 m formation) and batters (2 m either side) is difficult to map at the site scale due to highly localised (micro) variation along the track formation, and grading of vegetation condition through the transition of the batters into the adjacent vegetation. For this reason, a nominal width of 4 m plus 2 m batters each side (total 13.46 ha) has been used to capture representative areas of vegetation type and condition, rather than an exact proposed impact area. These areas may include canopy and transition of the batter areas, based on the condition of the adjacent reserve, and not representative of the proposed track width (most 2.5 m wide total without batters) therefore should not be used as the proposed impact.

Within the 13.46 ha track alignment corridor, most of the vegetation was in Completely Degraded (6.33 ha) and Degraded (3.00 ha) condition. This reflects the historical disturbance associated with the former rail alignment. Areas mapped as Very Good and Good condition account for 1.80 ha and 1.03 ha respectively and were concentrated on the edges of the track, while 1.30 ha has been previously cleared or comprises areas of existing hardstand or path infrastructure (Table 4-3). A comprehensive breakdown of the vegetation units and vegetation condition across the track alignment is presented in Appendix M.

Table 4-2 Vegetation units, condition and areas of the rail reserve

Vegetation Unit Condition	Sum of Area (ha)
Banksia Woodland Kunzea Scrub (VU2)	**12.89**
Cleared	0.08
Completely Degraded	0.09
Degraded	0.74
Good	2.09
Very Good	9.88
Claypan TEC (VU8)	**0.48**
Degraded	0.48
Cleared	**4.64**
Cleared	0.68
Completely Degraded	3.96
Cleared with paddock trees	**33.93**
Cleared	0.09
Completely Degraded	33.85
Cleared with scattered trees	**0.68**
Cleared	0.57
Completely Degraded	0.11
Eucalyptus patens forest (VU5)	**4.02**
Degraded	0.90
Excellent	0.33
Good	0.66
Very Good	2.13
Eucalyptus rudis Forest (VU3)	**0.22**
Degraded	0.22
Jarrah Marri Forest (VU1)	**22.23**
Cleared	0.00
Completely Degraded	0.19
Degraded	8.86
Good	3.89
Very Good	9.28
Kunzea Nuytsia wetland (VU6)	**5.08**
Completely Degraded	1.53
Very Good	3.55
Marri Forest (VU4)	**2.63**
Cleared	0.01
Degraded	1.96
Good	0.66
Melaleuca Forest (VU7)	**1.78**
Degraded	1.74
Good	0.04
Not NV / Disturbed shrubland (VU9)	**2.69**
Completely Degraded	2.69
Road hardstand	**5.21**
Cleared	5.21
Total	**96.49**

Table 4-3 Vegetation condition and areas of the Survey Area, and the proposed track environment (nominal 8 m total width) including canopy and batters

Vegetation Condition	Area (ha)	
	Rail Reserve	Track alignment (8m width)
Very Good	24.85	1.80
Good	7.35	1.03
Degraded	14.99	3.00
Completely Degraded	43.08	6.33
Cleared	5.89	1.30
Total	**96.49**	**13.46**

4.2.3 Conservation Significant Vegetation

There are several existing occurrences of TECs and PECs mapped within or near the Survey Area, some of which were confirmed during the current survey.

The VU8 – Claypan vegetation unit represents a known occurrence of the Seasonal rainfall-filled wetlands with an impeding substrate of the Swan Coastal Plain and Jarrah Forest in transitional rainfall zones, listed as Critically Endangered under the EPBC Act. This ecological community is also recognised by DBCA as a Priority 1 Ecological Community at the State level.

Mapped occurrences of the Banksia Woodlands of the Swan Coastal Plain (listed as Endangered under the EPBC Act) also intersect the Survey Area. This ecological community is recognised by DBCA as a Priority 3 Ecological Community at the State level. These mapped occurrences correspond with portions of VU 2 – Banksia Woodland / Kunzea Scrub Complex. However, the mapped extent of the ecological community requires ground truthing, to verify if a particular site meets the required key diagnostic characteristics and minimum condition threshold to meet the key diagnostic criteria of the community (Commonwealth of Australia, 2016).

Based on field observations undertaken during the current survey, the vegetation within the Survey Area does not appear to meet the diagnostic criteria for the ecological community, primarily due to the limited representation of diagnostic *Banksia* species. This may reflect historical disturbance, including potential impacts associated with *Phytophthora* spp. and hydrological alteration. Accordingly, the *Banksia Woodlands of the Swan Coastal Plain* ecological community was not confirmed within the Survey Area.

There is a mapped occurrence of Whicher Scarp G2 ecological community within the Survey Area, comprising shrublands of near-permanent wetlands in creeklines of the Whicher Scarp and Blackwood region. This ecological community is recognised by DBCA as a Priority 1 ecological community, and corresponds with VU 5 – *Eucalyptus patens* open forest. Other areas of this vegetation unit across the Survey Area are also considered likely to be broadly consistent with the Whicher Scarp G2 PEC, and may also share affinities with the Swan Coastal Plain Paluslope Wetland Priority Ecological Community (Priority 1, DBCA).

Definitive assignment to a specific PEC would require detailed floristic quadrat analysis. Given the reconnaissance-level nature of the survey and absence of detailed floristic analysis, these additional areas have not been formally classified as a PEC. Notwithstanding this, the drainage line vegetation represents a higher ecological value component of the Survey Area due to its hydrological function, structural complexity, and role in supporting fauna habitat and landscape connectivity.

The VU 4 – Marri Forest vegetation unit is likely representative of *Corymbia calophylla* woodlands on heavy soils of the southern Swan Coastal Plain (floristic community type 1b as originally described in Gibson et al. 1994), listed as Critically Endangered under the BC Act. This ecological community is known to occur immediately west of the mapped areas of VU 4.

No other TECs, PECs or other vegetation of conservation significance were identified within the Survey Area.

4.3 Fauna

4.3.1 Fauna Habitat

Fauna habitat quality within the 8m nominal track Survey Area (13.46 ha) varied in response to vegetation type, condition and disturbance history. Fauna habitat types (HT) were generally synonymous with Table 4-2, being:

- HT1 (VU1): Jarrah-Marri Open Forest (2.67 ha)
- HT2 (VU2): Banksia Woodland / Kunzea Scrub (1.90 ha)
- HT3 (VU3): Flooded Gum-Marri Open Forest over Peppermint-Banksia spp. Woodland (0 ha)
- HT4 (VU4): Marri Open Forest with Peppermint (0.74 ha)
- HT5 (VU5): Blackbutt Open Forest with Peppermint (0 ha)
- HT6 (VU6): *Kunzea rostrata-Nuytsia floribunda* Wetland (0 ha)
- HT7 (VU7): *Melaleuca rhaphiophylla-Melaleuca preissiana* Low Open Forest (0.27 ha)
- HT8 (VU8): Claypan – *Melaleuca rhaphiophylla* Low Forest with Flooded Gum and Marri (0.10 ha)
- HT9 (VU9): Disturbed Open Shrubland / Not Native Vegetation (1.19 ha)
- Cleared areas (including paddock and scattered trees) (6.05 ha).

Habitat quality varied significantly within vegetation types - nearly all areas of the proposed track had a much lower fauna habitat quality than the adjacent areas as the formation had been previously disturbed / compacted, resulting in lower plant diversity and cover. Habitat quality has been described rather than mapped due to being highly variable across the track.

Areas of good quality habitat (Appendix C-3) were mostly small patchy areas associated with relatively intact vegetation, particularly

- within drainage lines and creeklines,
- where vegetation structure, canopy connectivity and understorey complexity were retained (for example small pockets of new alignment),
- or where long-term native regrowth has re-established these values.

These areas provide suitable habitat supporting habitat for a range of fauna species linking vegetation each side of the track in good habitat connectivity.

Moderate fauna habitat quality was recorded where vegetation adjacent to the track remained relatively intact, although the track itself was sparsely vegetated. Habitat values in these areas were mostly associated with site-scale connectivity, with lower stratum regrowth linking midstorey vegetation within and beyond the track.

Lower quality habitat, coinciding with most of the track, was associated with disturbed sections of the alignment, including areas of historical clearing, weed invasion and reduced vegetation structure. These areas provide limited habitat value and are unlikely to support a diverse assemblage of native fauna.

Overall, highest habitat values are associated with remnant vegetation and drainage features with most of the track providing low fauna habitat quality.

4.3.2 Suitable DBH Trees

No hollow bearing trees were recorded within the 8 m wide proposed track area. Sixty-six trees were of a suitable DBH for developing black cockatoo breeding hollows (>50 cm) along with track alignment, with approximately five of those on the formation. The remaining trees 61 trees were on the shoulder of the formation (Table 4-4) (Figure 5, Appendix A).

Table 4-4 Suitable DBH (>50 cm) and supporting habitat trees (30 - 49 cm) within the formation or on the shoulder within the 2025/26 Survey Area

Category Tree sp	Count
7. Suitable DBH Tree without hollows	**66**
Formation	***5***
Blackbutt	1
Marri	4
Shoulder	***61***
Blackbutt	7
Eastern states Euc	2
Jarrah	3
Karri	1
Marri	48
Supporting habitat tree	**81**
Formation	***18***
Marri	18
Shoulder	***63***
Blackbutt	3
Dead	1
Flooded gum	2
Jarrah	4
Marri	53
Total	**147**

An additional 81 supporting habitat trees were recorded, with a DBH between 30 – 49 cm. These trees have the potential to become hollow-bearing trees in the future. Eighteen supporting habitat trees may require clearing (all Marri). All recorded trees are listed in Appendix L.

4.3.3 Fauna Detected

Forty-three fauna taxa were detected during field surveys, including 27 birds, six mammals, seven frogs and three reptiles (Table 4-5). Adjacent, intact vegetation was deemed likely to support numerous additional fauna taxa that may frequent the site (that were not recorded during surveys). Additional fauna taxa may occur that are cryptic, nocturnal or difficult to detect during a brief reconnaissance visit (including volant mammals - bats, other reptiles - lizards and snakes and frogs).

Table 4-5 Vertebrate terrestrial fauna taxa recorded during the surveys

Class	Family	Taxon	Vernacular Name	BC Status	EPBC Status
Amphibia	Limnodynastidae	*Limnodynastes dorsalis*	Western Banjo Frog		
		Heleioporus eyrei	Moaning Frog		
	Myobatrachidae	*Crinia georgiana*	Tschudi's Froglet		
		Crinia glauerti	Glauert's Froglet		
		Crinia insignifera	Squelching Froglet		
		Pseudophryne guentheri	Crawling Toadlet		
	Pelodryadidae	*Litoria moorei*	Motorbike Frog		
Aves	Acanthizidae	*Acanthiza inornata*	Western Thornbill		
		Sericornis frontalis maculatus	Spotted Scrubwren		
	Alcedinidae	*Dacelo novaeguineae*	Laughing Kookaburra		
	Anatidae	*Chenonetta jubata*	Australian Wood Duck		
	Artamidae	*Artamus cyanopterus*	Dusky Woodswallow		
		Gymnorhina tibicen	Australian Magpie		
	Cacatuidae	*Calyptorhynchus banksii naso*	Forest Red-tailed Black Cockatoo	VU	VU
		Eolophus roseicapilla	Galah		
		Zanda baudinii	Baudin's Cockatoo	EN	EN
	Columbidae	*Phaps chalcoptera*	Common Bronzewing		
		Spilopelia senegalensis	*Laughing Turtle-dove		
	Corvidae	*Corvus coronoides*	Australian Raven		
	Cuculidae	*Chalcites lucidus*	Shining Bronze-cuckoo		
	Falconidae	*Falco cenchroides*	Nankeen Kestrel		
	Hirundinidae	*Petrochelidon ariel*	Fairy Martin		
	Maluridae	*Malurus splendens*	Splendid Fairy-wren		
	Meliphagidae	*Anthochaera carunculata*	Red Wattlebird		
		Lichmera indistincta	Brown Honeyeater		
		Phylidonyris novaehollandiae	New Holland Honeyeater		
	Pachycephalidae	*Colluricincla harmonica*	Grey Shrike-thrush		
		Pachycephala pectoralis	Golden Whistler		
		Pachycephala rufiventris	Rufous Whistler		
	Psittacidae	*Barnardius zonarius*	Australian Ringneck		
		Platycercus icterotis	Western Rosella		
		Purpureicephalus spurius	Red-capped Parrot		
	Strigidae	*Ninox boobook*	Southern Boobook		
	Rhipiduridae	*Rhipidura albiscapa*	Grey Fantail		
Mammalia	Canidae	*Vulpes vulpes*	*Fox		
	Leporidae	*Oryctolagus cuniculus*	*Rabbit		
	Macropodidae	*Macropus fuliginosus*	Western Grey Kangaroo		
	Peramelidae	*Isoodon fusciventer*	Quenda, Southwestern Brown Bandicoot	P4	
	Phalangeridae	*Trichosurus vulpecula*	Common Brushtail Possum		

Class	Family	Taxon	Vernacular Name	BC Status	EPBC Status
	Pseudocheiridae	*Pseudocheirus occidentalis*	Western Ringtail Possum	CR	CR
Reptilia	Agamidae	*Pogona minor*	Dwarf Bearded Dragon		
	Scincidae	*Menetia greyii*	Grey's Menetia		
		Tiliqua rugosa	Bobtail		

Note: Species prefixed with * indicate the taxon is introduced

Bird observations were typical of the range of woodland and edge-associated species found in the south-west of Western Australia. Reptile species recorded were also considered common in the area. Nocturnal, arboreal mammals, including Common Brushtail Possum (CBP) and WRP were recorded during spotlighting surveys, indicating active use of the alignment as part of a broader habitat area.

Fauna taxa recorded are considered typical of what is expected in the disturbed and partially vegetated linear corridor, supporting species associated with remnant woodland, edge habitats and modified environments. Numerous additional fauna species are likely to utilise the Survey Area as part of the broader habitat network, particularly within more intact vegetation and drainage line habitats.

4.3.4 Conservation Significant Fauna Detected

Four conservation significant fauna taxa were detected within the Survey Area: Baudin's Cockatoo (Endangered; State and Commonwealth), FRTBC (Vulnerable; State and Commonwealth), Western Ringtail Possum (Critically Endangered; State and Commonwealth) and Quenda (Priority 4; State).

Baudin's Cockatoo and (abundant) FRTBC foraging residue was observed, with Marri fruit displaying characteristic chew marks attributed to each species. No evidence of Carnaby's cockatoo was found. Cockatoo results are discussed in Section 4.4.

WRP are discussed in Section 4.5. No South-western Brush-tailed Phascogales (Conservation Dependant) were recorded. WRP results are discussed in in Section 4.5. Quenda (P4) diggings and runnels were recorded at three locations in north Swan Coastal Plan IBRA portion of the alignment.

Overall, conservation significant fauna may utilise the Survey Area as part of the broader habitat network, particularly within areas of intact vegetation and along drainage lines where habitat structure and connectivity are greatest. While suitable habitat is present and may be actively be used by some species, the narrow linear and disturbance history of most of the alignment indicates that the area functions primarily as supporting foraging habitat and a movement corridor, rather than core (breeding or refuge) habitat.

4.3.5 Likelihood of Occurrence - Conservation Significant Fauna

Based on habitat assessment and desktop review, several conservation significant fauna taxa may utilise the Survey Area (8 m width) as a component of the broader rail reserve, as listed below:

- FRTBC and Baudin's Cockatoo were detected; discussed in Section 4.4.
- WRP were detected; discussed in Section 4.5.
- Quenda (*Isoodon fusciventer*) were detected and likely to occur in adjacent habitat along the alignment where suitable remnant vegetation is present (potentially all HT/VUs).
- Carter's Freshwater Mussel (*Westralunio carteri*) was not detected but may occur in areas of running or standing water, not within the formation or in dry or upland areas. These areas will not be impacted by the project.

- Dunsborough Burrowing Crayfish (*Engaewa reducta*) were not detected, nor likely to occur where the formation is intact or in upland areas. Potential areas they may occur include seasonally waterlogged areas or drainage lines
    - either side of Vasse Yallingup Siding Road (11.9 – 13.5 SLK) but surveys did not detect the species at this location.
    - Potentially within the drainage line or upstream or downstream at 2.42 SLK Metricup Yelverton Road, however this would be spanned over and no impacts proposed at the time of survey.
    - Other locations where there is dense drainage line vegetation may be suitable however no impacts are proposed (spanning from formation to formation).
    - The species is known to occur within the rail reserve along Blythe Road to Yelverton Road, however this was outside of the 2025/26 Survey Area.
- South-western Brush-tailed Phascogale (*Phascogale tapoatafa wambenger*) were not detected but may occur in adjacent habitat where suitable remnant vegetation is present (most likely in VU1 but possibly the other VUs as part of a large area of occupancy).
- Rakali (*Hydromys chrysogaster*) were not detected but are associated with drainage lines and creekline habitats. Rakali may occur along creeklines however no impacts are proposed (spanning from formation to formation).
- Peregrine Falcon (*Falco peregrinus*) and Masked Owl (*Tyto novaehollandiae*) may utilise the area opportunistically for hunting, as part of a much larger range.

Suitable habitat for the taxa above is generally limited to areas of more intact surrounding vegetation, or drainage lines. Disturbed sections of the alignment provide lower quality habitat and forms a component of a broader habitat mosaic. Target fauna habitat usage is likely to be transient or associated with movement through the landscape, rather than long-term occupancy. The loss of habitat associated with the proposed impact footprint would be minor, with surrounding vegetation likely to absorb any foraging pressure and provide the same extent of resources. For target species that may be utilising drainage lines, impacts will be negligible, as the proposed track will span over inundated areas, protecting the habitat type. Likelihood of Occurrence assessment results (specifically regarding target fauna that may occur or were detected) are summarised in Table 4-6.

Table 4-6 Conservation significant fauna that may occur within the Survey Area, based on habitat suitability.

CLASS Family	*Genus species*	Vernacular	EPBC Status	BC Status	Presence of habitat	Likelihood of occurrence
AVES Cacatuidae	*Calyptorhynchus banksii naso*	Forest Red-tailed Black Cockatoo	VU	VU	Present - supporting	Present
	Zanda baudinii	Baudin's Cockatoo	EN	EN	Present - supporting	Present
	Zanda latirostris	Carnaby's Cockatoo	EN	EN	Present - supporting	Possible
AVES Falconidae	*Falco peregrinus*	Peregrine Falcon	-	OS	Present - supporting	Possible
AVES Tytonidae	*Tyto novaehollandiae*	Masked Owl (Southwest)	-	P3	Present - supporting	Possible

CLASS Family	*Genus species*	Vernacular	EPBC Status	BC Status	Presence of habitat	Likelihood of occurrence
BIVALVIA **Hyriidae**	*Westralunio carteri*	Carter's Freshwater Mussel	VU	VU	Present - supporting	Possible
MALACOSTRATA **Parastacidae**	*Engaewa reducta*	Dunsborough Burrowing Crayfish	CR	CR	Present - supporting	Possible
MAMMALIA **Dasyuridae**	*Phascogale tapoatafa*	South-western Brush-tailed Phascogale	-	CD	Present - supporting	Possible
MAMMALIA **Muridae**	*Hydromys chrysogaster*	Rakali		P4	Present - supporting	Possible
MAMMALIA **Peramelidae**	*Isoodon obesulus fusciventer*	Quenda		P4	Present - supporting	Present
MAMMALIA **Pseudocheiridae**	*Pseudocheirus occidentalis*	Western Ringtail Possum	CR	CR	Present - supporting	Present

4.4 Black Cockatoos

4.4.1 Field Survey Results

FRTBC foraging residue was common within the Survey Area where Marri was present. Baudin's Cockatoo foraging residue was also observed in Marri fruit, to a lesser extent. No evidence of Carnaby's cockatoo was recorded. Table I-1 in Appendix I provides a list of key black cockatoo foraging plants that were observed across habitat types. The paucity of Baudin's and Carnaby's cockatoo feed residue is more likely a function of seasonal survey timing (including seasonal movements of different black cockatoo flocks) and local conditions. Baudin's and Carnaby's Cockatoos may frequent the Survey Area at different times. It is likely that more extensive evidence black cockatoo feeding residue would occur within the broader area of surrounding habitat, with higher-quality foraging areas observed in the adjacent reserve.

Black cockatoos would not be breeding within the 8 m wide targeted Survey Area, given that no hollow-bearing trees were recorded. Numerous large, senescent, hollow-bearing trees (including Marri), occur elsewhere within the reserve. These were not located near the proposed track. No evidence of roosting activity within the Survey Area was recorded during surveys.

Overall, the Survey Area provides supporting habitat for black cockatoos, rather than core habitat. The narrow, linear and disturbed nature of the alignment further reduces the likelihood of the Survey Area (track portion) providing important black cockatoo habitat.

4.4.2 Foraging Scoring Tool Assessment Results

The VU with total foraging score (out of 10) is provided in Table I-4, calculated from vegetation composition, condition and structure, site context and species stocking rate, as detailed in Section 2.3.3 and Appendix H. Foraging habitat quality scores of the reserve are mapped in Figure 6 (Appendix A), based on the highest score of any black cockatoo taxa. Foraging scores will be lower along the track alignment due to the track being only a small, disturbed portion of the broader reserve and consisting of young regrowth, sparse or low canopy cover of feed species.

Of the total 96.49 ha rail reserve, approximately 45.24 ha of native vegetation was classified as high quality foraging habitat (max score) (Table 4-7).

Table 4-7 Black cockatoo Foraging Scoring Tool Assessment Results - Vegetation Units with Final Max Score ≥5 (High)

VU	Vegetation Unit	Max Final Score	Area with Final Max ≥5 (ha)
Trees	Cleared with scattered trees (canopy only)	5	0.68
VU1	Jarrah Marri Forest	8	22.22
VU2	Banksia Woodland Kunzea Scrub	5	9.88
VU3	Eucalyptus rudis Forest	5	0.22
VU4	Marri Forest	7	2.62
VU5	Eucalyptus patens Forest	6	4.02
VU6	Kunzea Nuytsia Wetland	5	5.08
VU7	Melaleuca Forest	5	0.04
VU8	Claypan TEC	6	0.48
		TOTAL	**45.24**

4.5 Western Ringtail Possum

Eighteen WRP and four CBP were recorded within the rail reserve of the ~18 km 2025/26 Survey Area length. An additional 11 WRP and 3 CBP were recorded, also within rail reserve, between the 2025/26 survey patches (to be the subject of future surveys). No South-western Brush-tailed Phascogale were found. Detections were largely recorded within either Jarrah or Marri trees, with additional observations found in Peppermint (*Agonis flexuosa*) and to a lesser extent, *Melaleuca* sp. and *Allocasuarina* sp.

Of possums observed, eighteen WRP and 7 CBP (within the broader Survey Area including additional patches of the rail reserve between 2025/26 Survey Area) were located north of Cowrang Loop (Vasse Yallingup Siding Road 13.0 SLK) within the northern third of the alignment. This aligned almost exactly with the Swan Coastal Plain IBRA bioregion. The encounter rate along the northern portion of the proposed track (described above) was 2.66 WRP / km (along a length of 6.76 km). Survey results were consistent with trends observed in Biota (2020) surveys, where encounter rates decreased from 3 WRP / ha in northern sites (Big Rock and Yallingup) to 0 - <0.3 in southern sites (Boranup and Augusta North).

The remaining WRP records, apart from one on Wildwood Rd, were all in proximity of Yelverton NP or Walburra Nature Reserve, and nearly all within <250 m from a drainage line or within connected, contiguous vegetation such as Yelverton Reserve. The number of observations in the Jarrah Forest IBRA bioregion were less than the Biota (2020) survey results of 2.82 ± 0.37 detections of individual WRP / km in the closest survey site, Yelverton NP bordering part of the current Survey Area. The current survey detected 1.25 detections of individual WRP / km over the 4 km of suitable habitat along the edge of the Yelverton NP between Yelverton Road and Todd Road. The lower value may have been attributed to local vegetation structure in the vicinity of the track having less midstorey, and parts of the track being very dense limiting view distances and the surveys being conducted in winter in this area.

Shedley and Williams (2014) mapped the rail reserve as *D - Low* to *B – High* habitat suitability, with over 50% of the *High* habitat suitability (9.59 ha), occurring within the northern section of the alignment and coinciding with Swan Coastal Plain IBRA mapped areas. Within the current, nominal 8 m-wide track alignment and based on the Shedley and Williams (2014) estimations (0.15 ha in *B – High*, 3.69 ha in *C*

– *Medium* and 0.12 ha D – Low), these areas would account for a maximum of 20 animals, potentially encountered along the 2025/26 Survey Area. This comes with significant caveats, particularly given the alignment itself is significantly more degraded than adjacent vegetation, both narrow and lineal. Site-specific survey results provide a more conservative estimate.

Six WRP dreys were observed close to the proposed alignment; one within the southern portion of the alignment and three north of Yelverton Road. Dreys can typically be difficult to observe opportunistically, given that they normally occur within the densest vegetation and can be well hidden within any given area (Author pers obs.) (Figure 7 Appendix A). Vegetation within the broader reserve provides good-quality WRP habitat, despite WRP density falling below what has been recorded further north.

The highest densities of WRP recorded within the Survey Area align with all vegetated areas (including planted shrubs) within the Swan Coastal Plain IBRA bioregion, along with areas of intact midstorey or contiguous vegetation in the southern Jarrah Forest IBRA bioregion, or those near (<500 m from) drainage lines. Numbers of WRP encounters are likely to significantly decrease moving further to the south, along the alignment. In most areas, the partially disturbed and narrow, linear nature of the corridor suggests that the area functions primarily as supporting habitat and a movement corridor, rather than core habitat within the track alignment itself.

5 Conclusions and Recommendations

The following conclusions are drawn from the flora, vegetation and fauna assessment of the proposed Wadandi Track alignment, spanning between Carbunup River, Marybrook and Gardiner Road, Cowaramup.

- Eight vegetation units were mapped within the Survey Area, comprising:
    - Jarrah-Marri open forest, associated with upland positions and elevated sandy soils;
    - *Banksia* woodland and *Kunzea* scrub vegetation, associated with elevated sandy soils, including degraded and transitional forms;
    - Seasonally wet *Eucalyptus rudis* and peppermint woodland on sandy flats;
    - Marri forest and moisture-influenced vegetation associated with lower slopes and seasonally damp flats;
    - *Eucalyptus patens* seasonal creekline and wetland vegetation;
    - Seasonally wet *Kunzea* and *Nuytsia* shrublands with sedgeland communities;
    - *Melaleuca* dampland forest; and
    - Claypan vegetation associated with seasonally waterlogged soils and drainage systems.

  Additional cleared and highly disturbed areas were recorded, associated with the former rail alignment and historical land uses.
- Vegetation condition ranged from Excellent to Completely Degraded. More intact vegetation occurred along the edges of the alignment and within remnant areas, while highly degraded vegetation was associated with the former rail alignment, historical clearing, gravel extraction and informal dumping.
- No Threatened flora taxa were recorded. Eight Priority flora taxa were recorded within the Survey Area - *Acacia flagelliformis* (Priority 4), *Acacia semitrullata* (Priority 4), *Dillwynia* sp. Capel (P.A. Jurjevich 1771) (Priority 3), *Gahnia sclerioides* (Priority 4), *Jacksonia gracillima*

(Priority 3), *Johnsonia inconspicua* (Priority 3), *Loricobbia pinifolia* (Priority 3), and *Netrostylis* sp. Blackwood River (A.R. Annels 3043) (Priority 3).

- An additional Priority species, *Cyathochaeta teretifolia* (Priority 3), is considered likely to occur within creekline habitats but could not be confirmed due to sterile material at the time of survey. It has previously been recorded within the Survey Area.
- An additional species of significance, *Synaphea* aff. *obtusata*, has been identified by the WA Herbarium. *Synaphea obtusata* is known from the Darling Scarp and South Coast, with this collection representing the first record west of these landforms. Pending taxonomic confirmation, this taxon should be treated as a potential new species of conservation significance.
- A known occurrence of the *Seasonal rainfall-filled wetlands with an impeding substrate of the Swan Coastal Plain and Jarrah Forest in transitional rainfall zones* ecological community (Critically Endangered under the EPBC Act; Priority 1 PEC) was confirmed within the Survey Area, corresponding with the VU 8: Claypan vegetation unit.
- Mapped occurrences of the *Banksia Woodlands of the Swan Coastal Plain* ecological community (Endangered under the EPBC Act; Priority 3 PEC) also intersect the Survey Area; however, vegetation within the Survey Area did not meet the diagnostic criteria required to confirm the ecological community.
- The VU 4 – Marri Forest vegetation unit is considered likely to represent *Corymbia calophylla* woodlands on heavy soils of the southern Swan Coastal Plain (floristic community type 1b as originally described in Gibson et al. 1994), listed as Critically Endangered under the BC Act.
- The VU 5: *Eucalyptus patens* open forest vegetation, associated with drainage lines and other seasonally wet areas, exhibited characteristics consistent with Whicher Scarp G2 and/or Swan Coastal Plain Paluslope Wetlands ecological community (both Priority 1 PECs). While not formally classified as a PEC, these areas are considered to represent a higher ecological value component of the Survey Area due to their hydrological function, structural complexity and role in supporting fauna habitat and landscape connectivity.
- Weed taxa were present throughout the Survey Area, with highest densities associated with localised disturbance nodes along the former rail alignment, including areas of historical infrastructure, gravel extraction and dumping.
- No hollow bearing trees were recorded within the 8 m wide proposed track area. Sixty-three trees were of a suitable DBH for developing black cockatoo breeding hollows (>50 cm). These included 49 Marri, eight Blackbutt, three Jarrah, two introduced Eucalyptus spp., and one Karri. Five suitable DBH trees were likely to require clearing.
- Forty-three fauna taxa were detected during surveys, including two Threatened species and one Priority 4-listed taxon. Numerous additional fauna species are likely to utilise the Survey Area as part of a broader habitat network.
- Fauna habitat quality varied across the proposed track alignment and was generally much lower within the track formation itself compared to adjacent vegetation. This was primarily due to previous disturbance and compaction associated with the existing track, resulting in reduced native plant diversity, lower vegetation cover and simplified habitat structure.
- Areas of higher-quality habitat were generally limited to small, patchy sections associated with more intact native vegetation, particularly within drainage lines and creeklines, areas retaining

canopy connectivity and understorey, and locations where long-term native regrowth had occurred. These areas provide important local habitat, contributing to fauna movement and connectivity between vegetation on either side of the track.

- Moderate habitat quality occurred where adjacent vegetation remained relatively intact, despite sparse vegetation occurring within the track itself. Habitat values were largely related to site-scale connectivity and presence of some groundcover. Most of the track alignment comprised lower-quality habitat, associated with historical disturbances, weed invasion and reduced vegetation structure. These areas provided limited habitat value for native fauna.
- The proposed track forms part of a broader, fauna habitat mosaic. While habitat suitable for some conservation significant fauna taxa is present and may be periodically used, the narrow, linear extent of the alignment and disturbance history indicates that the area primarily functions as supporting foraging habitat and a movement corridor, rather than core (breeding or refuge) habitat.
- No breeding trees or roosts were recorded along the track alignment. Baudin's Cockatoo and FRTBC foraging residue was observed, with Marri fruit displaying characteristic chew marks attributable to each species. No evidence of Carnaby's cockatoo was found but may use the site at other times. Approximately 45.24 ha of native vegetation was classified as high-quality black cockatoo foraging habitat (max score). Foraging scores will be lower along the track alignment due to the track being only a small, disturbed portion of the broader reserve and consisting of young regrowth, sparse or low canopy cover of feed species.
- A total of 18 WRP and four CBP were recorded within the ~18 km 2025/26 Survey Area, with an additional 11 WRP and three CBP recorded in adjacent sections of the rail reserve. WRP records were concentrated in the northern portion of the alignment (coinciding with areas of the Swan Coastal Plain IBRA bioregion), where highest encounter rates and habitat suitability occurred, consistent with regional studies showing higher WRP densities in northern coastal habitats.
- Outside the northern section, WRP observations were generally associated with intact and connected vegetation near Yelverton National Park, Walburra Nature Reserve and drainage lines. Although the broader rail reserve contains suitable WRP habitat, the narrow, partially disturbed and linear nature of the track alignment indicates that most of the Survey Area functions primarily as supporting habitat and a fauna movement corridor rather than core habitat. Highest habitat values were associated with intact midstorey vegetation, contiguous vegetation and areas located near drainage features. WRP encounter rates were likely to decrease moving further south along the alignment.
- Other conservation significant fauna taxa (Quenda - detected, Carter's Freshwater Mussel, Dunsborough Burrowing Crayfish, South-western Brush-tailed Phascogale, Rakali and Peregrine Falcon) may occur. Species may be transient or associate the track with movement through the landscape rather than long-term occupation, due to the narrow, linear extent of the Survey Area.
- Overall, the proposed works are not expected to result in significant impacts to local biodiversity values, provided that the above avoidance and management measures are implemented.

Recommendations:

- Clearing should be minimised and confined to the defined disturbance footprint, with avoidance of remnant native vegetation where practicable.
- Priority flora species should be retained wherever possible.
- Impacts to Threatened and Priority Ecological Communities should be avoided wherever possible.
- Drainage lines and creekline vegetation is of high conservation value due to its hydrological function, structural complexity, and role in supporting fauna habitat and landscape connectivity. Impacts should be avoided, with bridge structures utilised to span these features and maintain natural hydrological processes.
- An authorised fauna spotter should be present during clearing to manage risks to fauna, particularly WRP and other arboreal species. A risk-based approach could be adopted.
- Where practicable, clearing should be scheduled outside of peak fauna breeding periods.
- Weed hygiene and management measures should be implemented during construction to prevent the spread of high-impact environmental weeds along the alignment.
- Disturbed areas should be rehabilitated where practicable, including infill planting of locally native species, particularly adjacent to higher-value vegetation.
- Clearing of native vegetation will require a permit under Part V Division 2 of the EP Act, unless exemptions apply (noting that exemptions do not apply within ESAs).
- Potential impacts to MNES should be reviewed against the Significant Impact Guidelines under the EPBC Act.

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Appendix A Figures

Figure 1 Survey Area location and Desktop Study Area

Figure 2 Survey Area

Figure 3 Conservation Significant Flora

Figure 4 Vegetation Units Across the Survey Area

Figure 5 Vegetation Condition Across the Survey Area

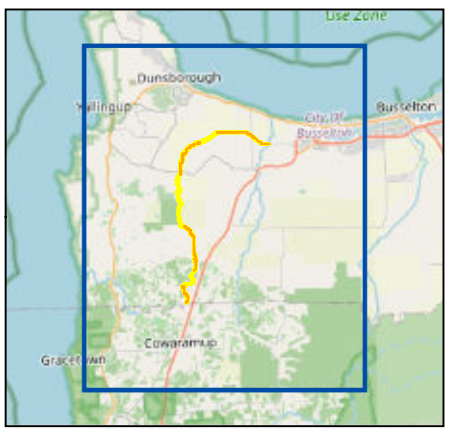
Figure 6 Suitable DBH Trees, Black Cockatoo Foraging Scores and WRP Dreys Along the Proposed Track

Figure 7 Nocturnal Survey Effort and Results

FIGURE 1 SURVEY AREA AND DESKTOP STUDY AREA

WADANDI TRACK

- Section start
- Section start
- Desktop Study Area 5 km
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Major watercourse
- Minor drainage line
- DBCA managed land



Ref: SW709 SP Fauna
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Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

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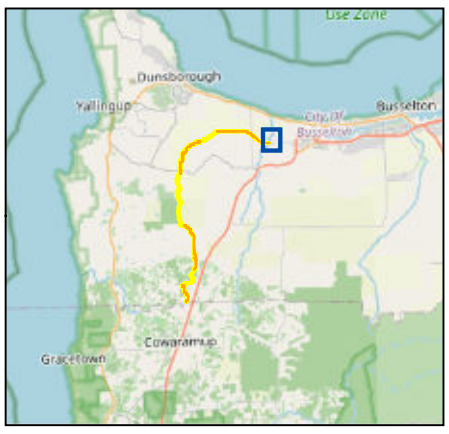
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FIGURE 2 SURVEY AREA

WADANDI TRACK: PAGE 1 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Minor drainage line
- Cadastral boundary



Ref: SW709 SP Fauna
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Source: Base map © Esri and its data suppliers.
SLIP Landgate (2026)

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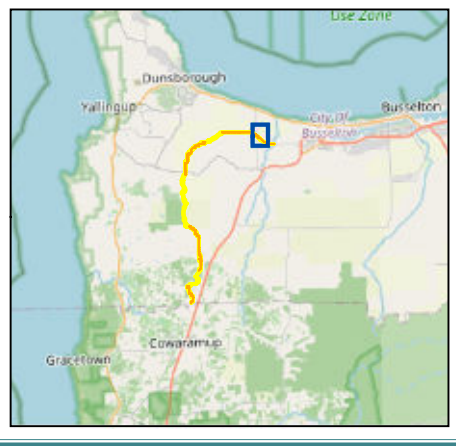
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FIGURE 2 SURVEY AREA

WADANDI TRACK: PAGE 2 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Cadastral boundary



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Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

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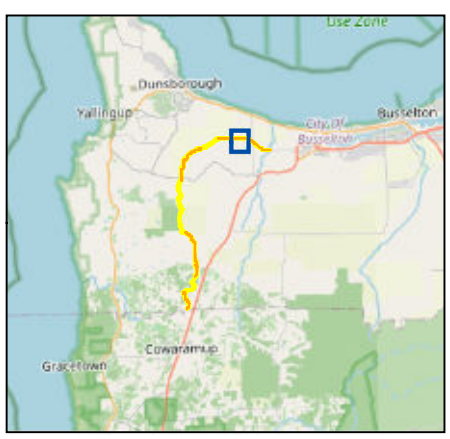
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FIGURE 2 SURVEY AREA

WADANDI TRACK: PAGE 3 OF 14

- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Minor drainage line
- Cadastral boundary



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6000

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FIGURE 2 SURVEY AREA

WADANDI TRACK: PAGE 4 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Minor drainage line
- Cadastral boundary



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers.
SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6000

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FIGURE 2 SURVEY AREA

WADANDI TRACK: PAGE 5 OF 14

- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Minor drainage line
- Cadastral boundary



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

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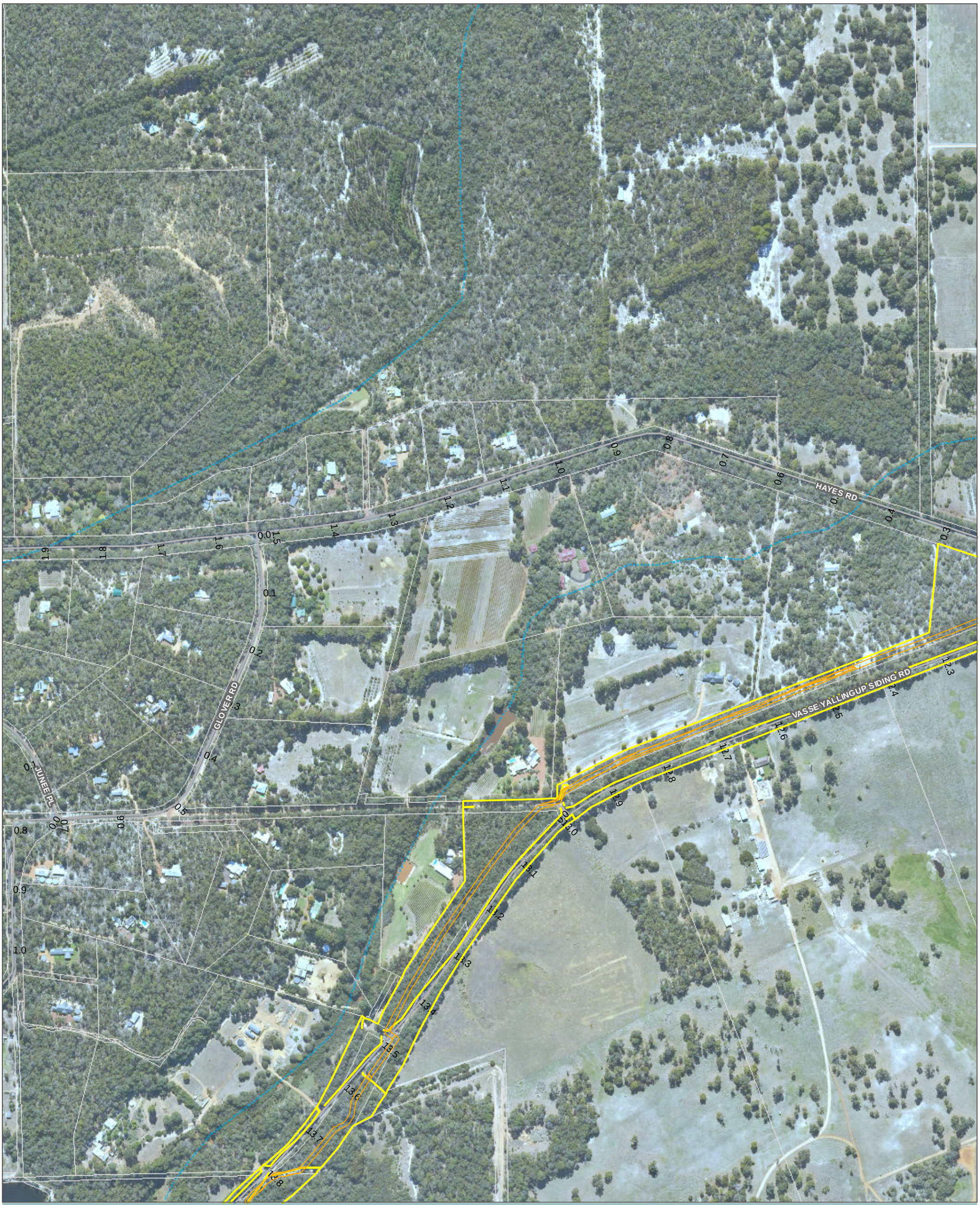
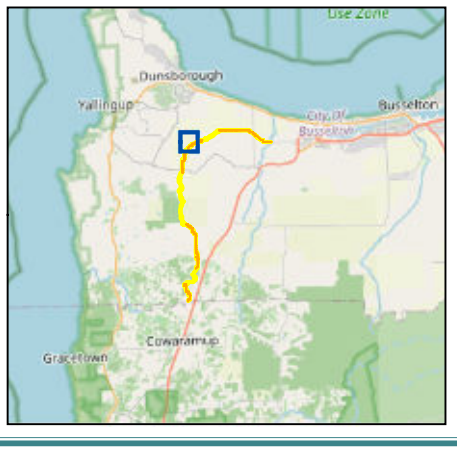


FIGURE 2 SURVEY AREA

WADANDI TRACK: PAGE 6 OF 14

- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Minor drainage line
- Cadastral boundary



Ref: SW709 SP Fauna
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Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

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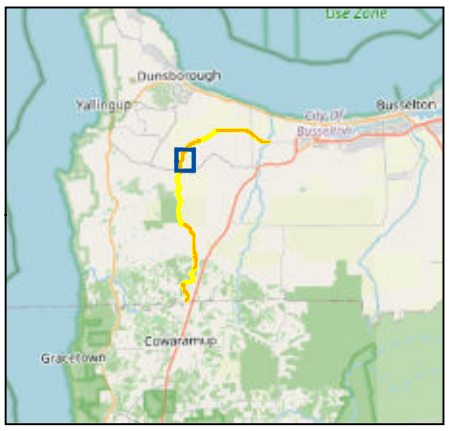
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FIGURE 2 SURVEY AREA

WADANDI TRACK: PAGE 7 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Minor drainage line
- Cadastral boundary



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

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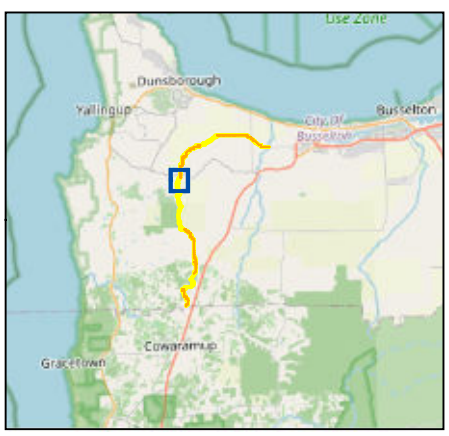
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FIGURE 2 SURVEY AREA

WADANDI TRACK: PAGE 8 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Minor drainage line
- Cadastral boundary



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6000

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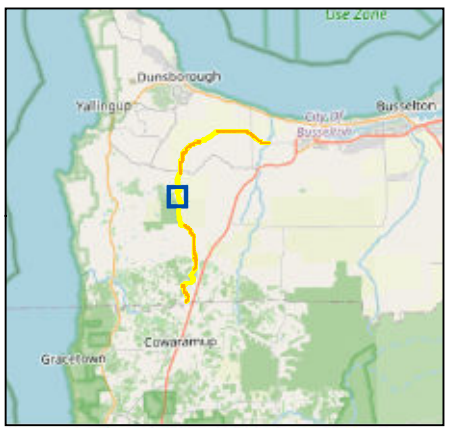
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FIGURE 2 SURVEY AREA

WADANDI TRACK: PAGE 9 OF 14

- Section start
- Rail reserve Survey Area
- Road
- Minor drainage line
- DBCA managed land
- Cadastral boundary



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Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

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A3 @ 1:6000

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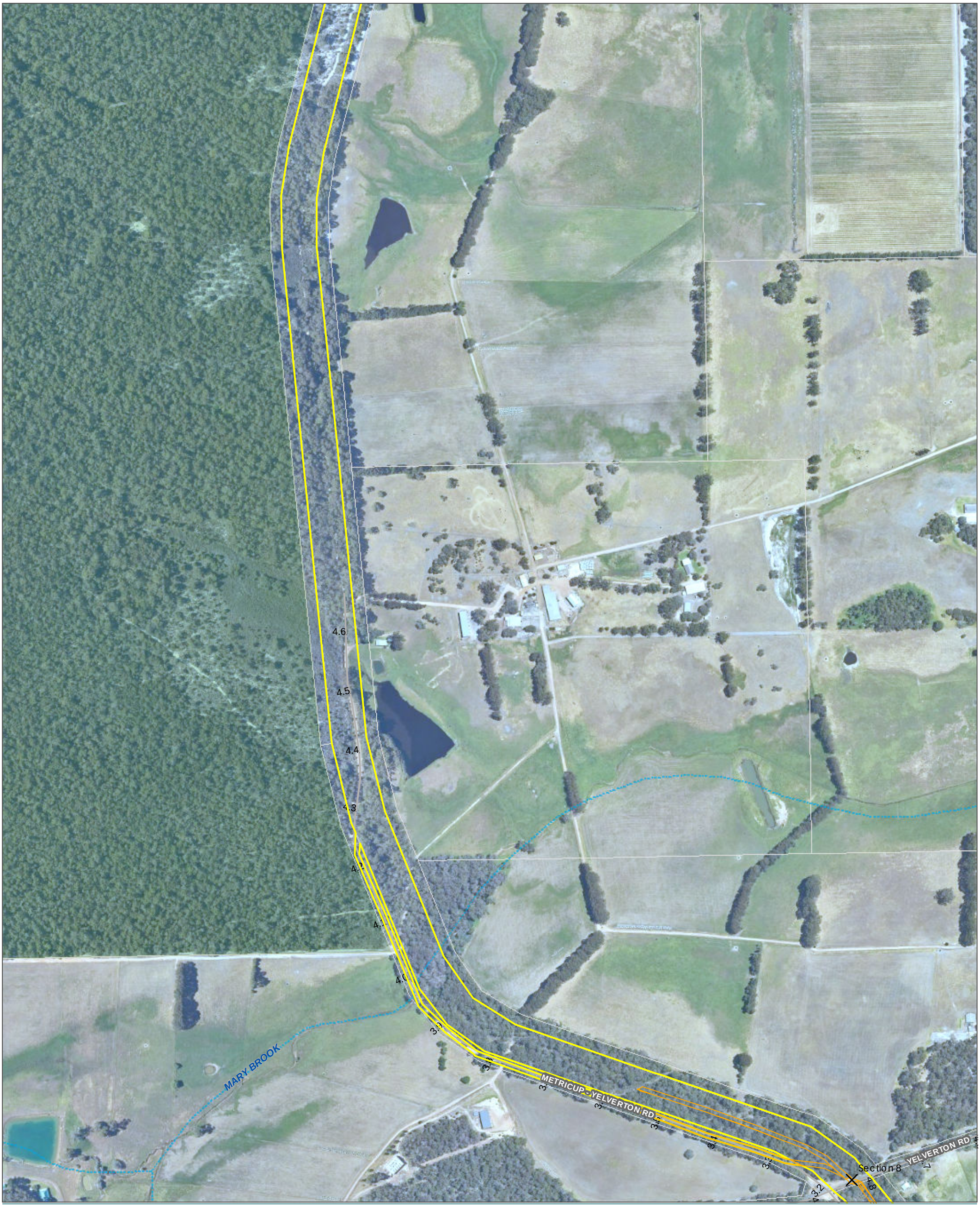
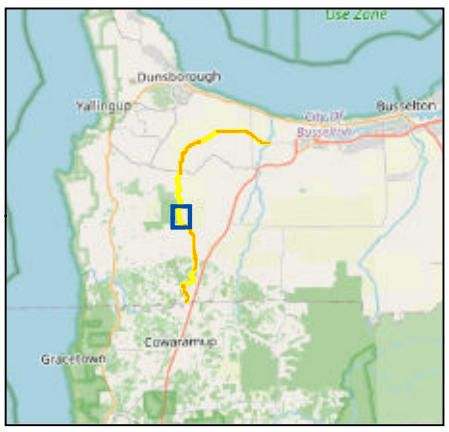


FIGURE 2 SURVEY AREA

WADANDI TRACK: PAGE 10 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Minor drainage line
- DBCA managed land
- Cadastral boundary



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0 50 100 200 m

A3 @ 1:6000

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FIGURE 2 SURVEY AREA

WADANDI TRACK: PAGE 11 OF 14

- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Minor drainage line
- DBCA managed land
- Cadastral boundary



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers.
SLIP Landgate (2026)

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A3 @ 1:6000

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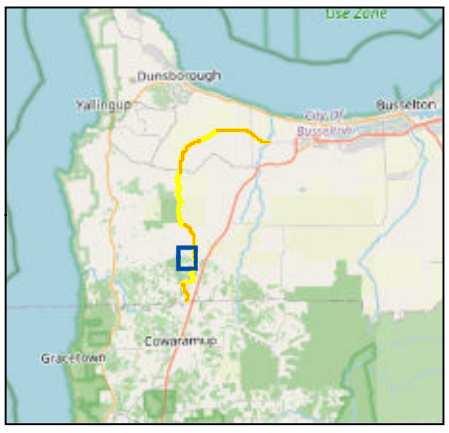
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FIGURE 2 SURVEY AREA

WADANDI TRACK: PAGE 12 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Minor drainage line
- DBCA managed land
- Cadastral boundary



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

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A3 @ 1:6000

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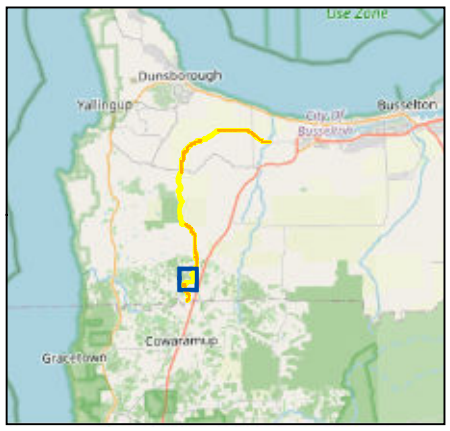
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FIGURE 2 SURVEY AREA

WADANDI TRACK: PAGE 13 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Minor drainage line
- DBCA managed land
- Cadastral boundary



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
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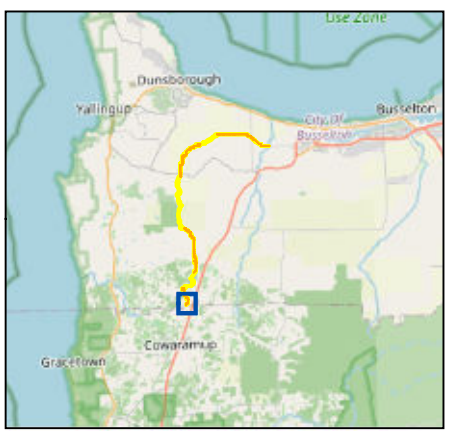
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FIGURE 2 SURVEY AREA

WADANDI TRACK: PAGE 14 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Minor drainage line
- Cadastral boundary



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
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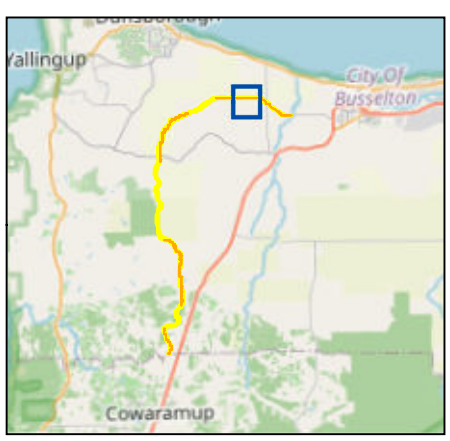
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PEARCE RD
VASSE YALLINGUP SIDING RD
STATION GULLY
ANNIE BROOK
ANNIE BROOK RD
MARY BROOK

FIGURE 3 CONSERVATION SIGNIFICANT FLORA

WADANDI TRACK: PAGE 1 OF 8

- *Jacksonia gracillima*, P3
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Minor drainage line
- Cadastral boundary



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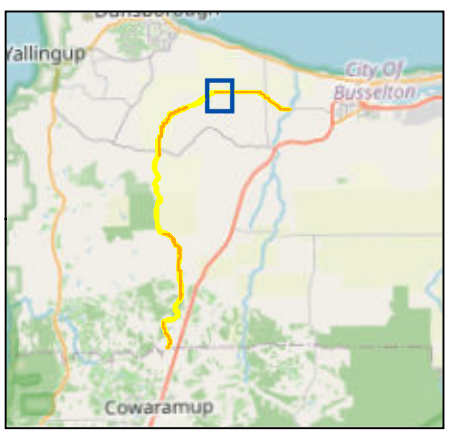
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FIGURE 3 CONSERVATION SIGNIFICANT FLORA

WADANDI TRACK: PAGE 2 OF 8

- Section start
- *Gahnia sclerioides*, P4
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Minor drainage line
- Cadastral boundary



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Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

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FIGURE 3 CONSERVATION SIGNIFICANT FLORA

WADANDI TRACK: PAGE 3 OF 8

- *Acacia flagelliformis*, P4
- *Acacia semitrullata*, P4
- *Dillwynia sp.* Capel (P.A. Jurjevich 1771), P3
- *Johnsonia inconspicua*, PT
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Minor drainage line
- Cadastral boundary



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Date: 26/05/2026 Author: SP
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0 50 100 200 m

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FIGURE 3 CONSERVATION SIGNIFICANT FLORA

WADANDI TRACK: PAGE 4 OF 8

- *Acacia semitrullata*, P4
- *Loricobbia pinifolia*, P3
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Minor drainage line
- Cadastral boundary



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Date: 26/05/2026 Author: SP
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0 50 100 200 m

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FIGURE 3 CONSERVATION SIGNIFICANT FLORA

WADANDI TRACK: PAGE 5 OF 8

- Section start
- *Gahnia sclerioides*, P4
- *Loricobbia pinifolia*, P3
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Minor drainage line
- Cadastral boundary

Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

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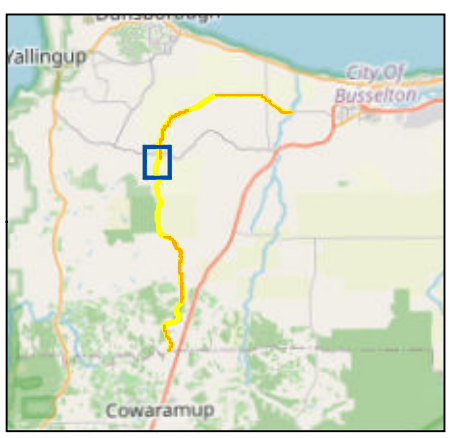
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FIGURE 3 CONSERVATION SIGNIFICANT FLORA

WADANDI TRACK: PAGE 6 OF 8

- Section start
- *Gahnia sclerioides*, P4
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Minor drainage line
- Cadastral boundary



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0 50 100 200 m

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FIGURE 3 CONSERVATION SIGNIFICANT FLORA

WADANDI TRACK: PAGE 7 OF 8

- *Netrostylis sp. Blackwood River*, P3
- *Synaphea sp.* (aff. obtusata), CS
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Minor drainage line
- DBCA managed land
- Cadastral boundary



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Date: 26/05/2026 Author: SP
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0 50 100 200 m

A3 @ 1:6000

N

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FIGURE 3 CONSERVATION SIGNIFICANT FLORA

WADANDI TRACK: PAGE 8 OF 8

- Section start
- *Acacia flagelliformis*, P4
- *Johnsonia inconspicua*, PT
- *Loricobbia pinifolia*, P3
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Minor drainage line
- DBCA managed land
- Cadastral boundary



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
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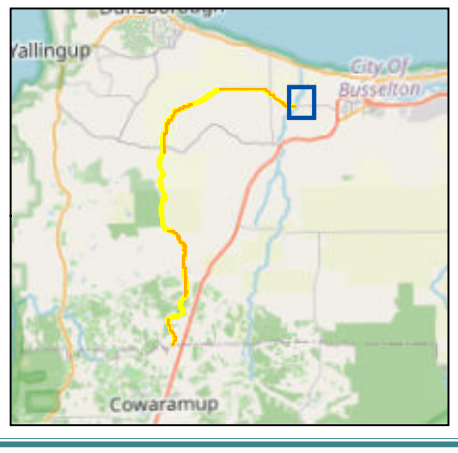
FIGURE 4 VEGETATION UNITS ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 1 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area

Vegetation unit
- Cleared with paddock trees
- Jarrah Marri Forest
- Not assessed

- Road hardstand
- Road
- Minor drainage line
- Cadastral boundary



Ref: SW709 SP Fauna
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Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

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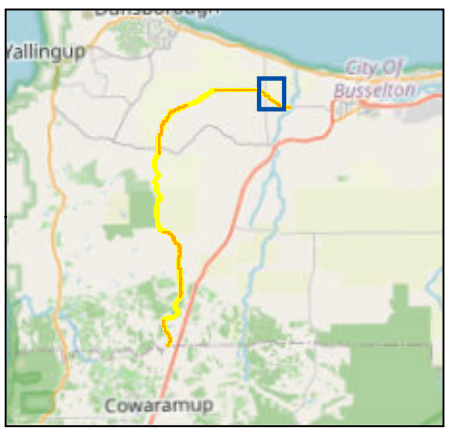


FIGURE 4 VEGETATION UNITS ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 2 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area

Vegetation unit
- Cleared
- Cleared with paddock trees
- Eucalyptus rudis Forest
- Jarrah Marri Forest
- Road hardstand
- Road
- Cadastral boundary



Ref: SW709 SP Fauna
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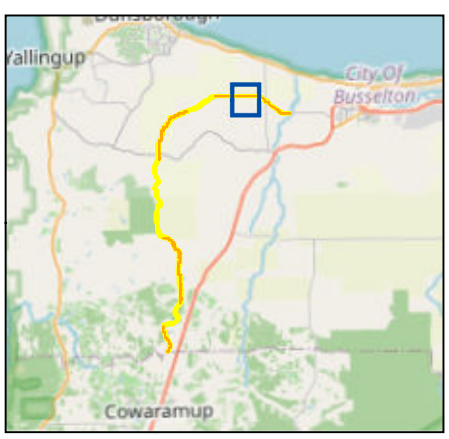
FIGURE 4 VEGETATION UNITS ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 3 OF 14

- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area

Vegetation unit

- Cleared with paddock trees
- Cleared with scattered trees
- Jarrah Marri Forest
- Marri Forest
- Melaleuca Forest
- Road hardstand
- Road
- Minor drainage line
- Cadastral boundary



Ref: SW709 SP Fauna
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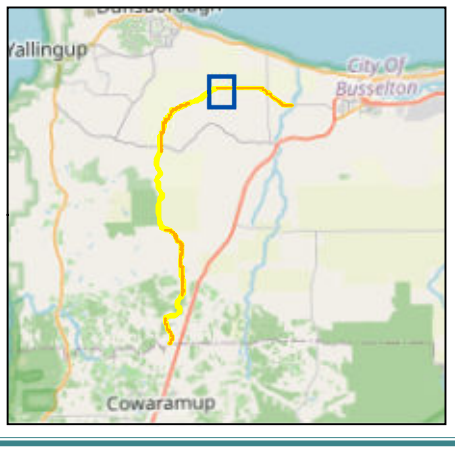


FIGURE 4 VEGETATION UNITS ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 4 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area

Vegetation unit
- Claypan TEC
- Cleared
- Cleared with paddock trees
- Cleared with scattered trees
- Jarrah Marri Forest
- Marri Forest
- Melaleuca Forest
- Not assessed
- Road hardstand
- Road
- Minor drainage line
- Cadastral boundary



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FIGURE 4 VEGETATION UNITS ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 5 OF 14

- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area

Vegetation unit

- Banksia Woodland Kunzea Scrub
- Cleared
- Cleared with scattered trees
- Jarrah Marri Forest
- Not assessed
- Road hardstand
- Road
- Minor drainage line
- Cadastral boundary



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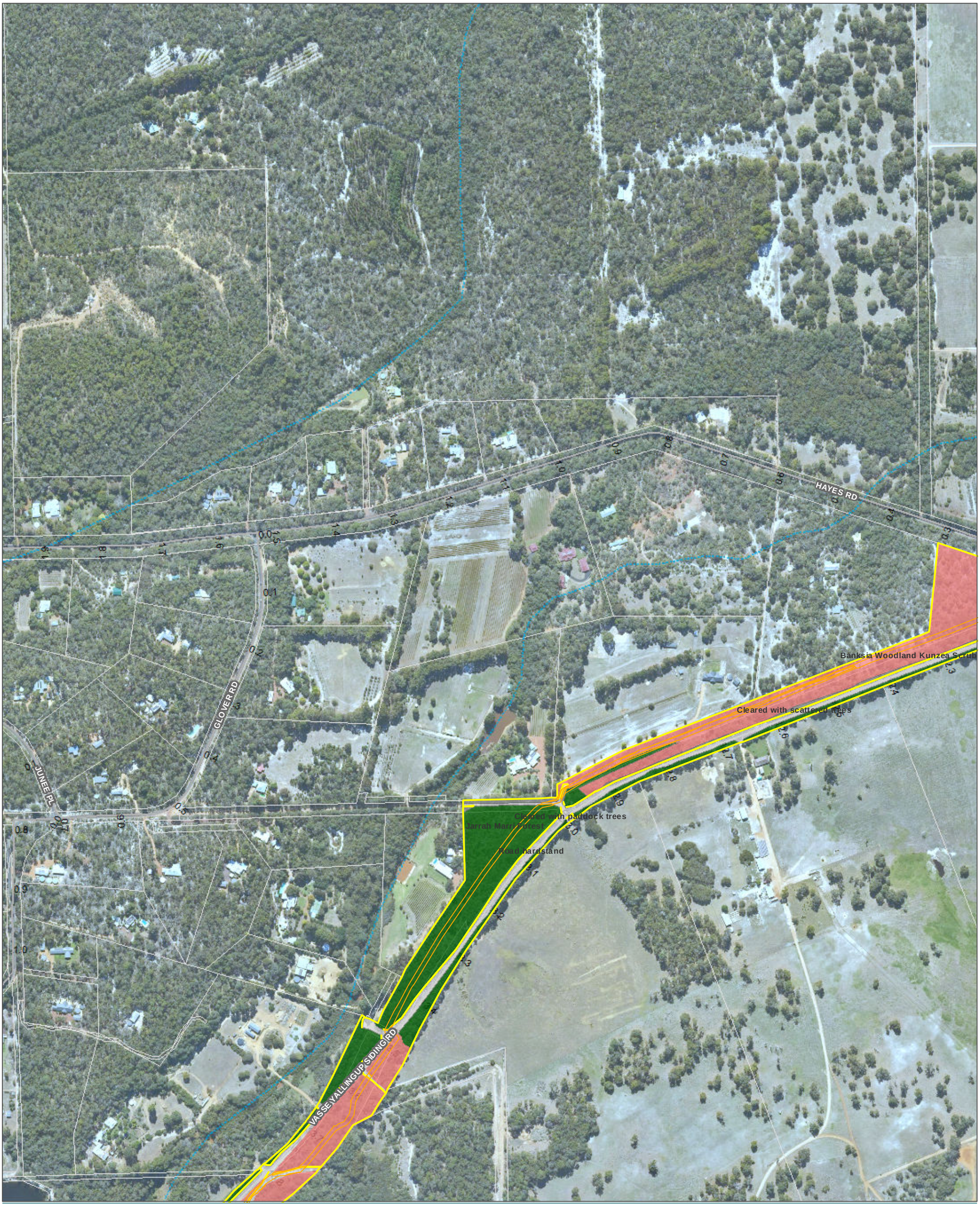


FIGURE 4 VEGETATION UNITS ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 6 OF 14

- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area

Vegetation unit

- Banksia Woodland Kunzea Scrub
- Cleared with paddock trees
- Cleared with scattered trees
- Jarrah Marri Forest
- Road hardstand
- Road
- Minor drainage line
- Cadastral boundary



Ref: SW709 SP Fauna
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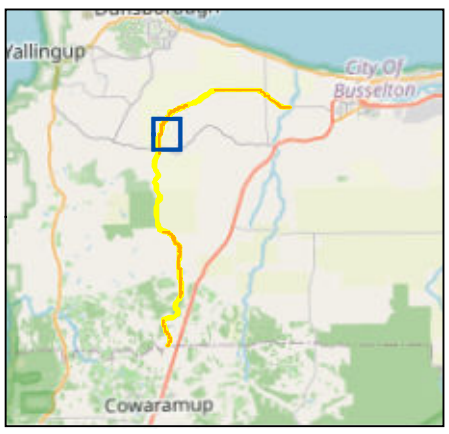
FIGURE 4 VEGETATION UNITS ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 7 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area

Vegetation unit

- Banksia Woodland Kunzea Scrub
- Cleared
- Cleared with paddock trees
- Cleared with scattered trees
- Eucalyptus patens forest
- Jarrah Marri Forest
- Not NV
- Road hardstand
- Road
- Minor drainage line
- Cadastral boundary



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
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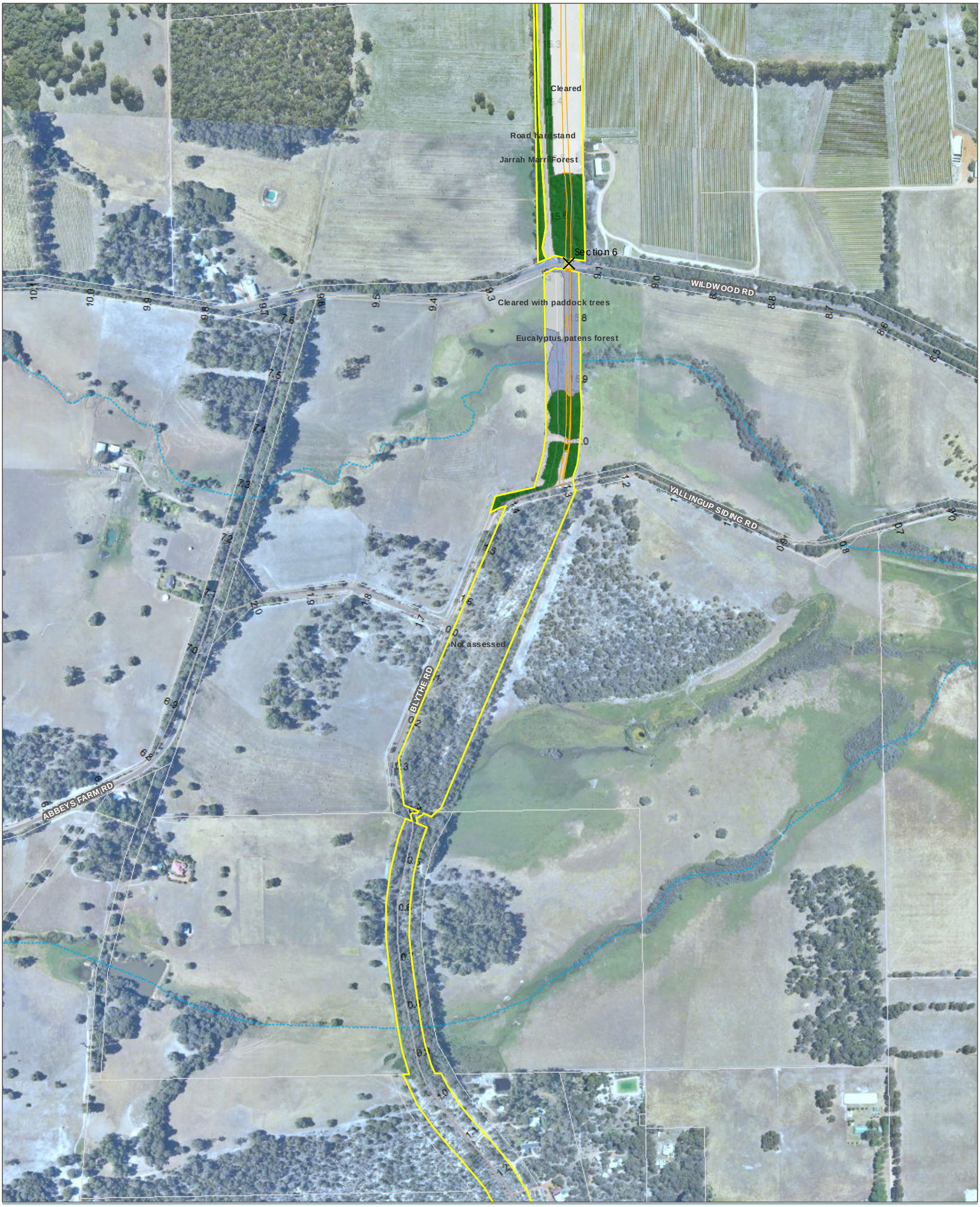
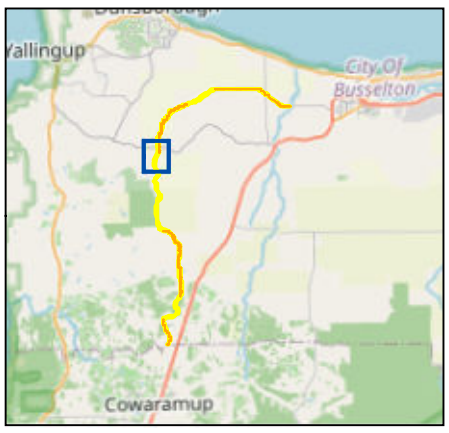


FIGURE 4 VEGETATION UNITS ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 8 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area

Vegetation unit
- Cleared
- Cleared with paddock trees
- Eucalyptus patens forest
- Jarrah Marri Forest
- Not assessed
- Road hardstand
- Road
- Minor drainage line
- Cadastral boundary



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
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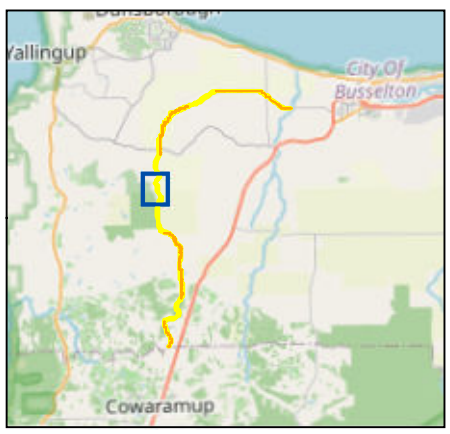
FIGURE 4 VEGETATION UNITS ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 9 OF 14

- Section start
- Rail reserve Survey Area
- Cadastral boundary

Vegetation unit

- Not assessed
- Road
- Minor drainage line
- DBCA managed land



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0 50 100 200 m

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FIGURE 4 VEGETATION UNITS ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 10 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area

Vegetation unit

- Cleared with paddock trees
- Jarrah Marri Forest
- Not assessed
- Road hardstand
- Road
- Minor drainage line
- DBCA managed land
- Cadastral boundary



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FIGURE 4 VEGETATION UNITS ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 11 OF 14

- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area

Vegetation unit

- Banksia Woodland Kunzea Scrub
- Cleared
- Cleared with paddock trees
- Cleared with scattered trees
- Eucalyptus patens forest
- Jarrah Marri Forest
- Road hardstand
- Road
- Minor drainage line
- DBCA managed land
- Cadastral boundary



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0 50 100 200 m

A3 @ 1:6000

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FIGURE 4 VEGETATION UNITS ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 12 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area

Vegetation unit

- Banksia Woodland Kunzea Scrub
- Cleared
- Cleared with paddock trees
- Eucalyptus patens forest
- Jarrah Marri Forest
- Kunzea Nuytsia wetland
- Road hardstand
- Road
- Minor drainage line
- DBCA managed land
- Cadastral boundary



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0 50 100 200 m

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FIGURE 4 VEGETATION UNITS ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 13 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area

Vegetation unit
- Cleared with paddock trees
- Eucalyptus patens forest
- Jarrah Marri Forest
- Not assessed
- Road hardstand
- Road
- Minor drainage line
- DBCA managed land
- Cadastral boundary



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0 50 100 200 m

A3 @ 1:6000

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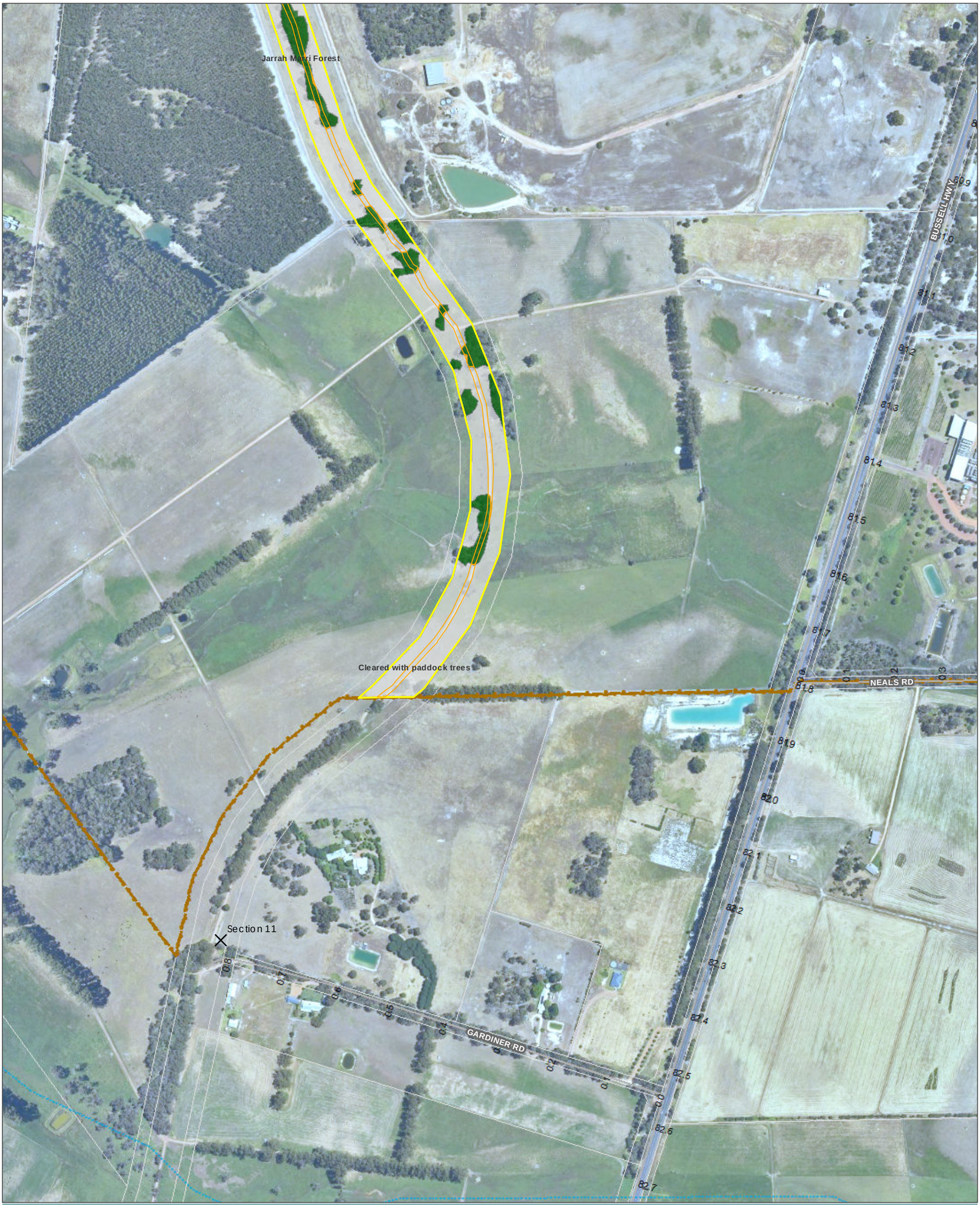


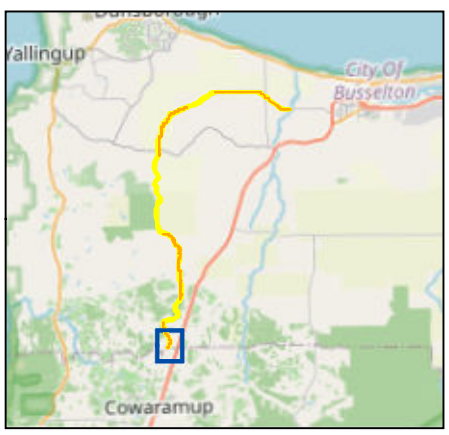
FIGURE 4 VEGETATION UNITS ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 14 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Minor drainage line
- Cadastral boundary

Vegetation unit

- Cleared with paddock trees
- Jarrah Marri Forest
- Road



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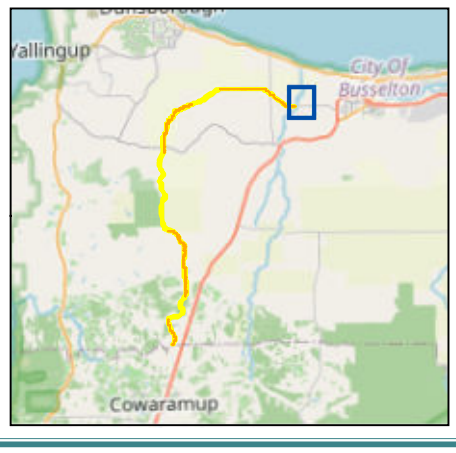
FIGURE 5 VEGETATION CONDITION ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 1 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area

Vegetation condition
- Degraded
- Completely Degraded

- Cleared
- Road
- Minor drainage line
- Cadastral boundary



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

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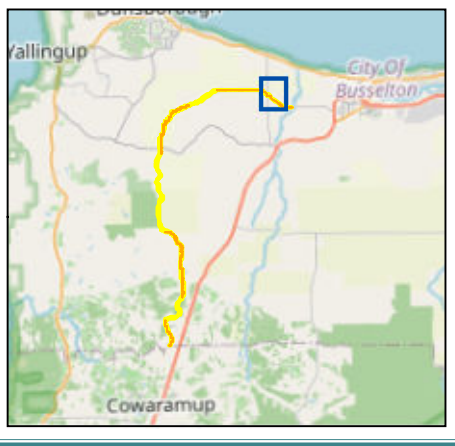
FIGURE 5 VEGETATION CONDITION ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 2 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Cleared
- Road
- Cadastral boundary

Vegetation condition

- Degraded
- Completely Degraded



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

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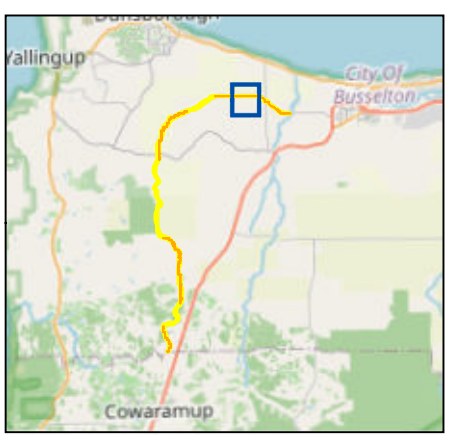
FIGURE 5 VEGETATION CONDITION ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 3 OF 14

- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Minor drainage line
- Cadastral boundary

Vegetation condition

- Degraded
- Completely Degraded
- Cleared



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6000

N

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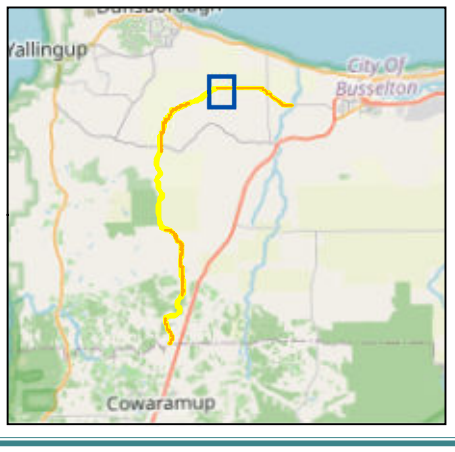
FIGURE 5 VEGETATION CONDITION ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 4 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area

Vegetation condition

- Very Good
- Good
- Degraded
- Completely Degraded
- Cleared
- Road
- Minor drainage line
- Cadastral boundary



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6000

N

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FIGURE 5 VEGETATION CONDITION ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 5 OF 14

- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area

Vegetation condition
- Very Good
- Good
- Degraded
- Completely Degraded
- Cleared
- Road
- Minor drainage line
- Cadastral boundary



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6000

N

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HAYES RD
GLOVER RD
JUNEE PL
VASSE YALLINGUP SIDING RD
Degrad
Completely Degrad
Cleared
Very Good
Good

FIGURE 5 VEGETATION CONDITION ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 6 OF 14

- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area

Vegetation condition
- Very Good
- Good
- Degraded
- Completely Degraded
- Cleared
- Road
- Minor drainage line
- Cadastral boundary



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6000

N

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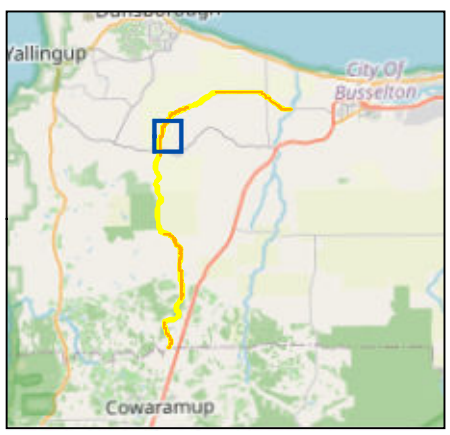


FIGURE 5 VEGETATION CONDITION ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 7 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area

Vegetation condition
- Excellent
- Very Good
- Good
- Degraded
- Completely Degraded
- Cleared
- Road
- Minor drainage line
- Cadastral boundary



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6000

N

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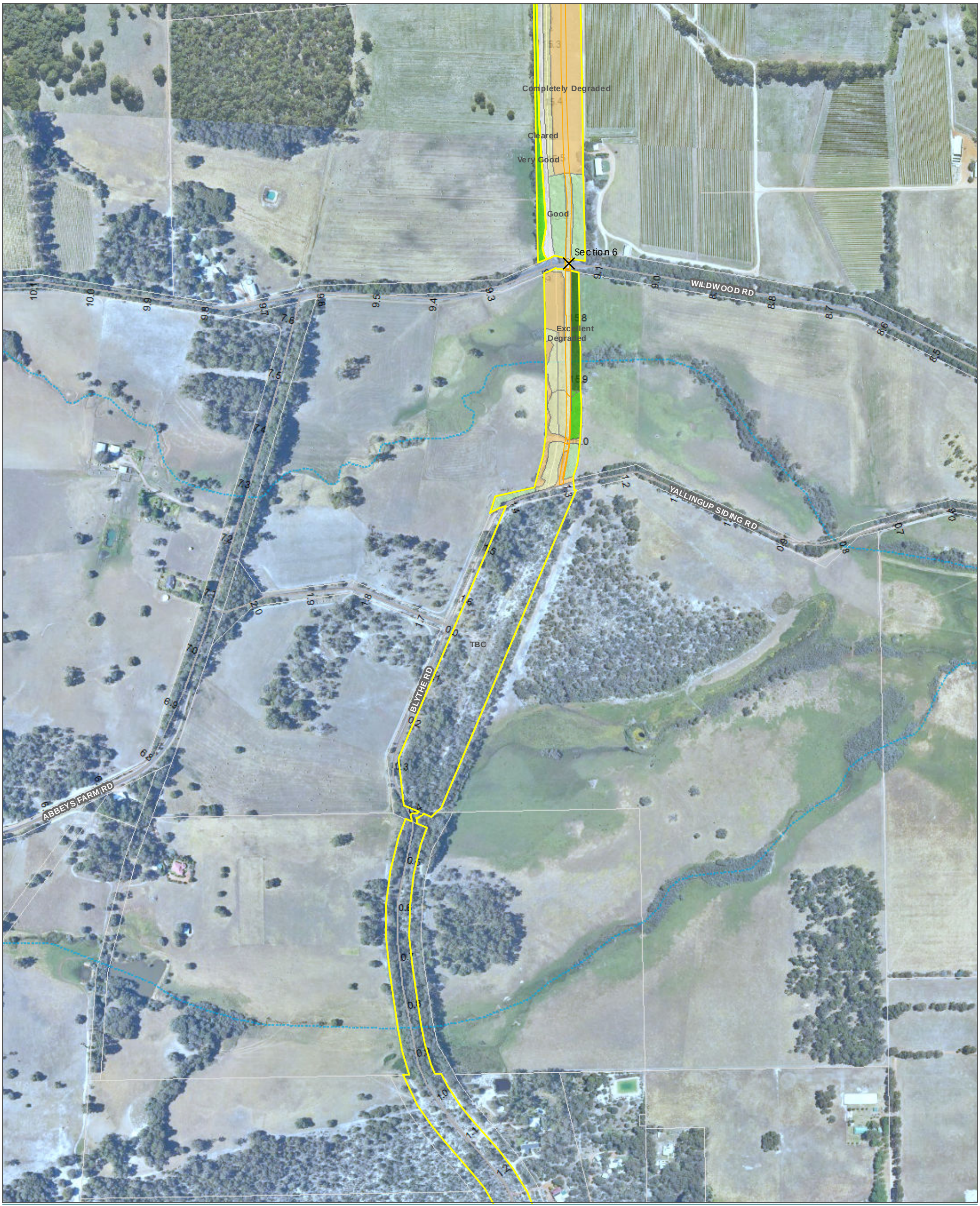
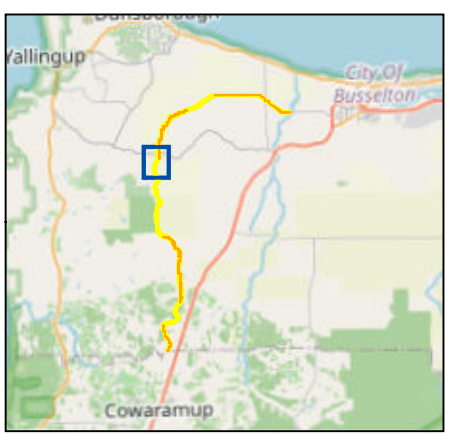


FIGURE 5 VEGETATION CONDITION ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 8 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area

Vegetation condition
- Excellent
- Very Good
- Good
- Degraded
- Completely Degraded
- Cleared
- Road
- Minor drainage line
- Cadastral boundary



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6000

N

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FIGURE 5 VEGETATION CONDITION ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 9 OF 14

- Section start
- Rail reserve Survey Area
- Road
- Minor drainage line
- DBCA managed land
- Cadastral boundary



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Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6000

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FIGURE 5 VEGETATION CONDITION ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 10 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area

Vegetation condition

- Very Good
- Good
- Completely Degraded
- Cleared
- Road
- Minor drainage line
- DBCA managed land
- Cadastral boundary



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6000

N

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FIGURE 5 VEGETATION CONDITION ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 11 OF 14

- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area

Vegetation condition

- Very Good
- Good
- Degraded
- Completely Degraded
- Cleared
- Road
- Minor drainage line
- DBCA managed land
- Cadastral boundary



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

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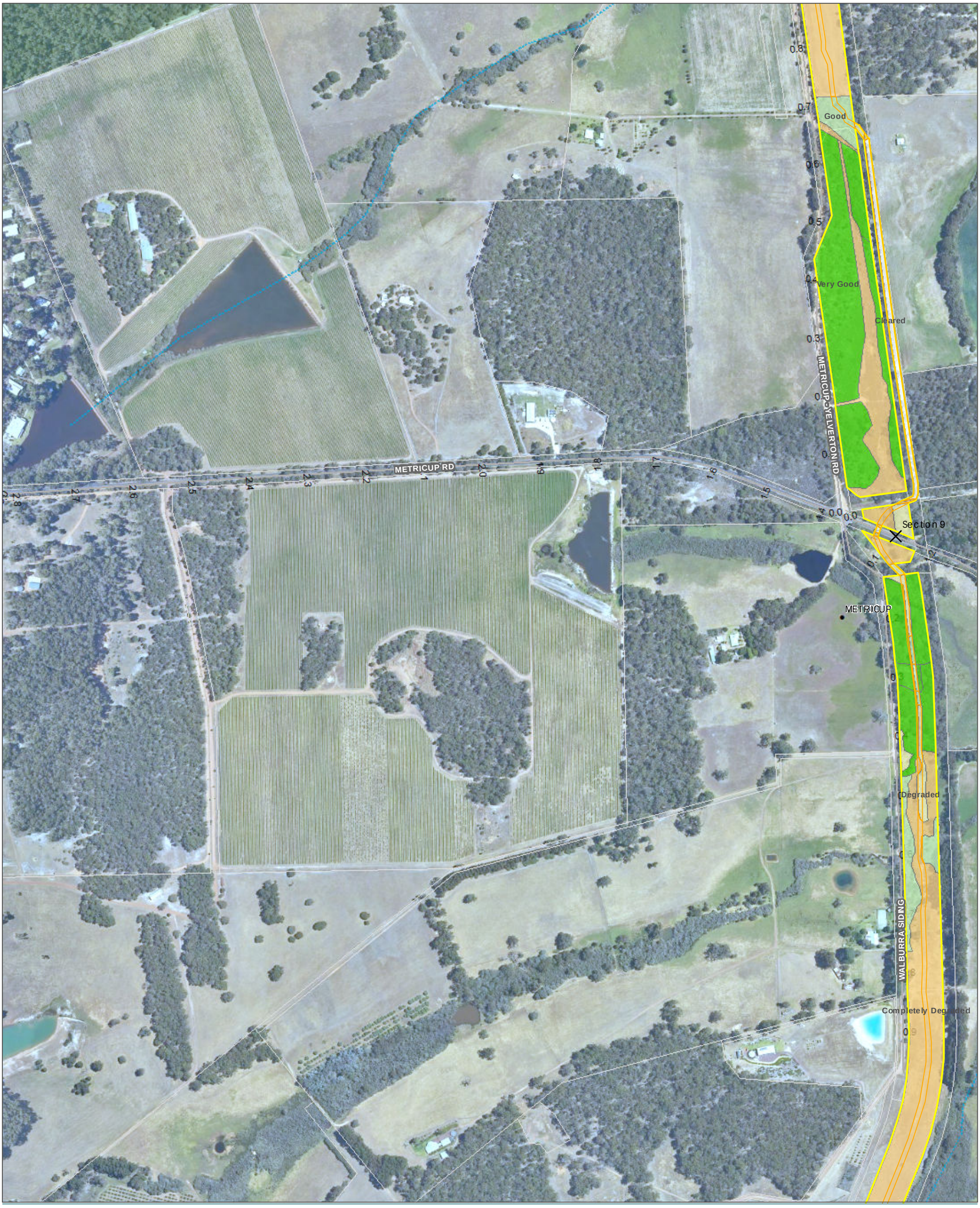
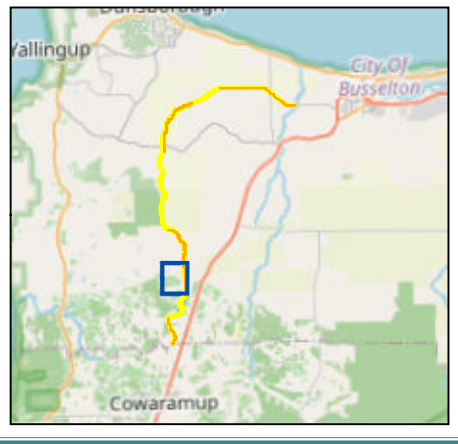


FIGURE 5 VEGETATION CONDITION ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 12 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area

Vegetation condition
- Very Good
- Good
- Degraded
- Completely Degraded
- Cleared
- Road
- Minor drainage line
- DBCA managed land
- Cadastral boundary



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6000

N

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FIGURE 5 VEGETATION CONDITION ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 13 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area

Vegetation condition
- Excellent
- Very Good
- Degraded
- Completely Degraded
- Cleared
- Road
- Minor drainage line
- DBCA managed land
- Cadastral boundary



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6000

N

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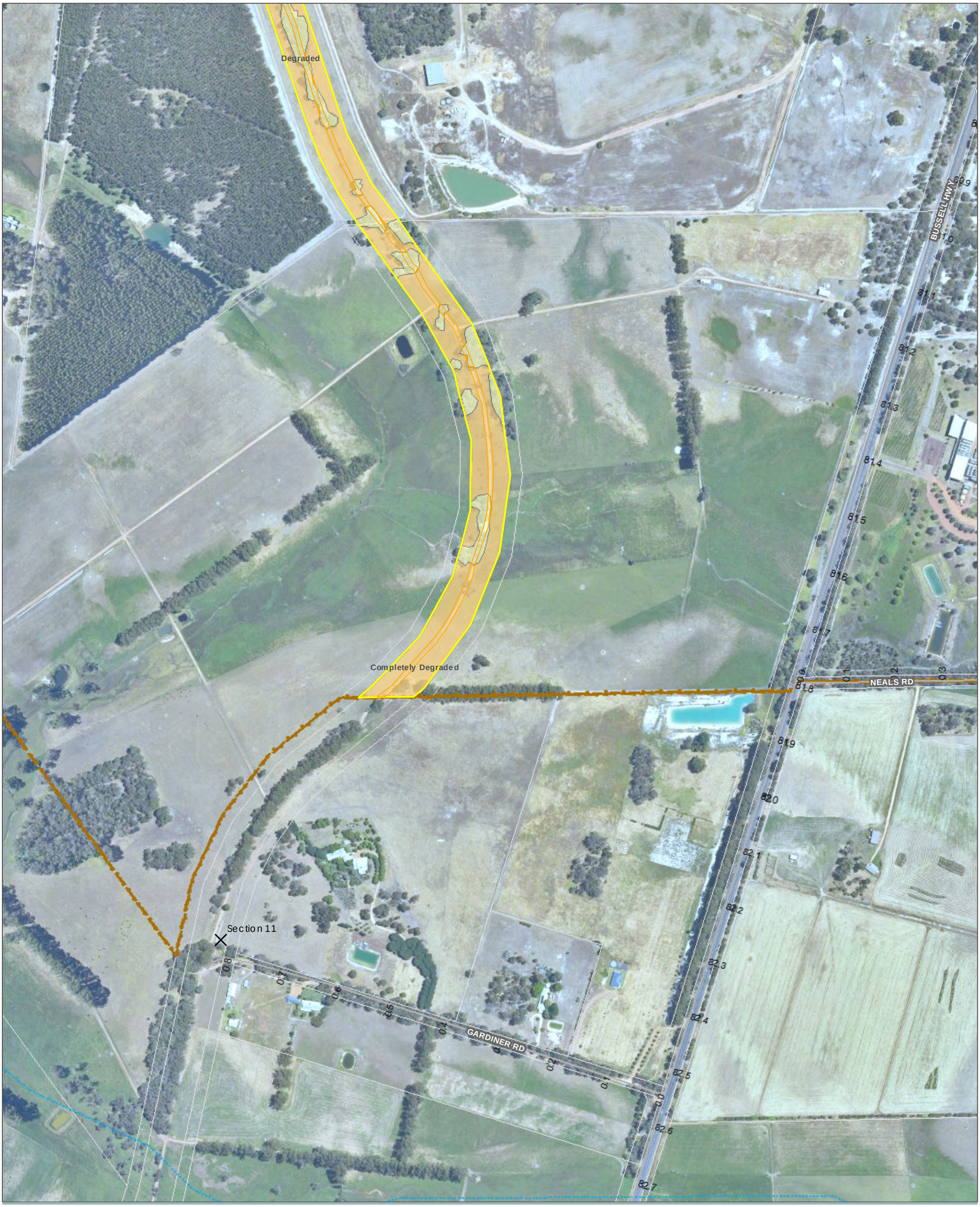


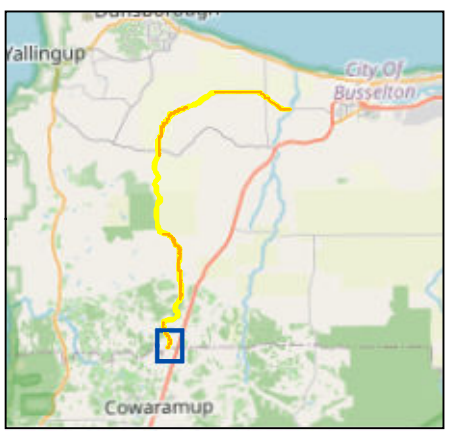
FIGURE 5 VEGETATION CONDITION ACROSS THE SURVEY AREA

WADANDI TRACK: PAGE 14 OF 14

- Section start
- Nominal 8 m wide track Survey Area
- Rail reserve Survey Area
- Road
- Minor drainage line
- Cadastral boundary

Vegetation condition

- Degraded
- Completely Degraded



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6000

N

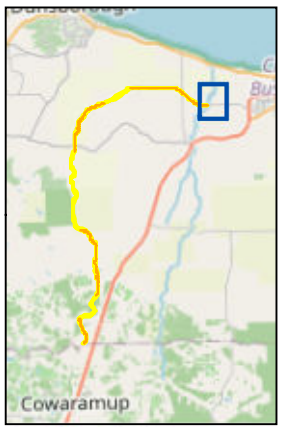
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FIGURE 6 SUITABLE DBH TREES, BLACK COCKATOO FORAGING SCORES AND WRP DREYS ALONG THE PROPOSED TRACK

WADANDI TRACK: PAGE 1 OF 14

Suitable DBH tree no hollows, Location	Black cockatoo max foraging score
Eastern states Euc, Shoulder	5
Karri, Shoulder	4
Marri, Shoulder	0
WRP drey	Rail reserve Survey Area
Nominal track Survey Area	Road
	Minor drainage line



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

N

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FIGURE 6 SUITABLE DBH TREES, BLACK COCKATOO FORAGING SCORES AND WRP DREYS ALONG THE PROPOSED TRACK

WADANDI TRACK: PAGE 2 OF 14

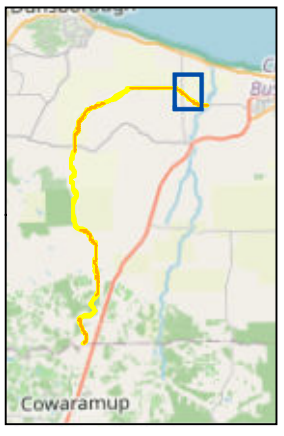
Suitable DBH tree no hollows, Location
- Blackbutt, Shoulder
- Eastern states Euc, Shoulder
- Jarrah, Shoulder
- Karri, Shoulder
- Marri, Shoulder
- WRP drey

Nominal track Survey Area

Black cockatoo max foraging score
- 5
- 4
- 1
- 0

Rail reserve Survey Area

Road



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

N

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FIGURE 6 SUITABLE DBH TREES, BLACK COCKATOO FORAGING SCORES AND WRP DREYS ALONG THE PROPOSED TRACK

WADANDI TRACK: PAGE 3 OF 14

Nominal track Survey Area

Minor drainage line

Black cockatoo max foraging score

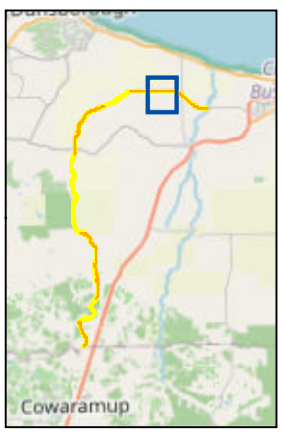
5

4

0

Rail reserve Survey Area

Road



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

N

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FIGURE 6 SUITABLE DBH TREES, BLACK COCKATOO FORAGING SCORES AND WRP DREYS ALONG THE PROPOSED TRACK

WADANDI TRACK: PAGE 4 OF 14

Suitable DBH tree no hollows, Location
- Marri, Shoulder

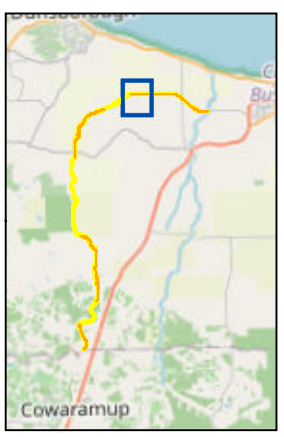
Nominal track Survey Area

Black cockatoo max foraging score
- 7
- 6
- 5
- 4
- 3
- 1
- 0

Rail reserve Survey Area

Road

Minor drainage line



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers.
SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

N

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FIGURE 6 SUITABLE DBH TREES, BLACK COCKATOO FORAGING SCORES AND WRP DREYS ALONG THE PROPOSED TRACK

WADANDI TRACK: PAGE 5 OF 14

Nominal track Survey Area

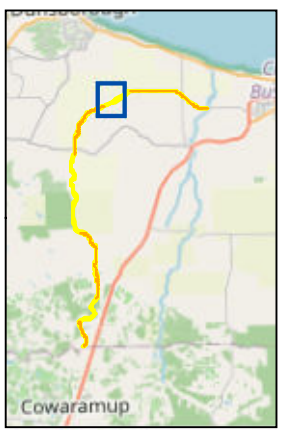
Black cockatoo max foraging score

- 7
- 6
- 5
- 4
- 3
- 1
- 0

Rail reserve Survey Area

Road

Minor drainage line



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

N

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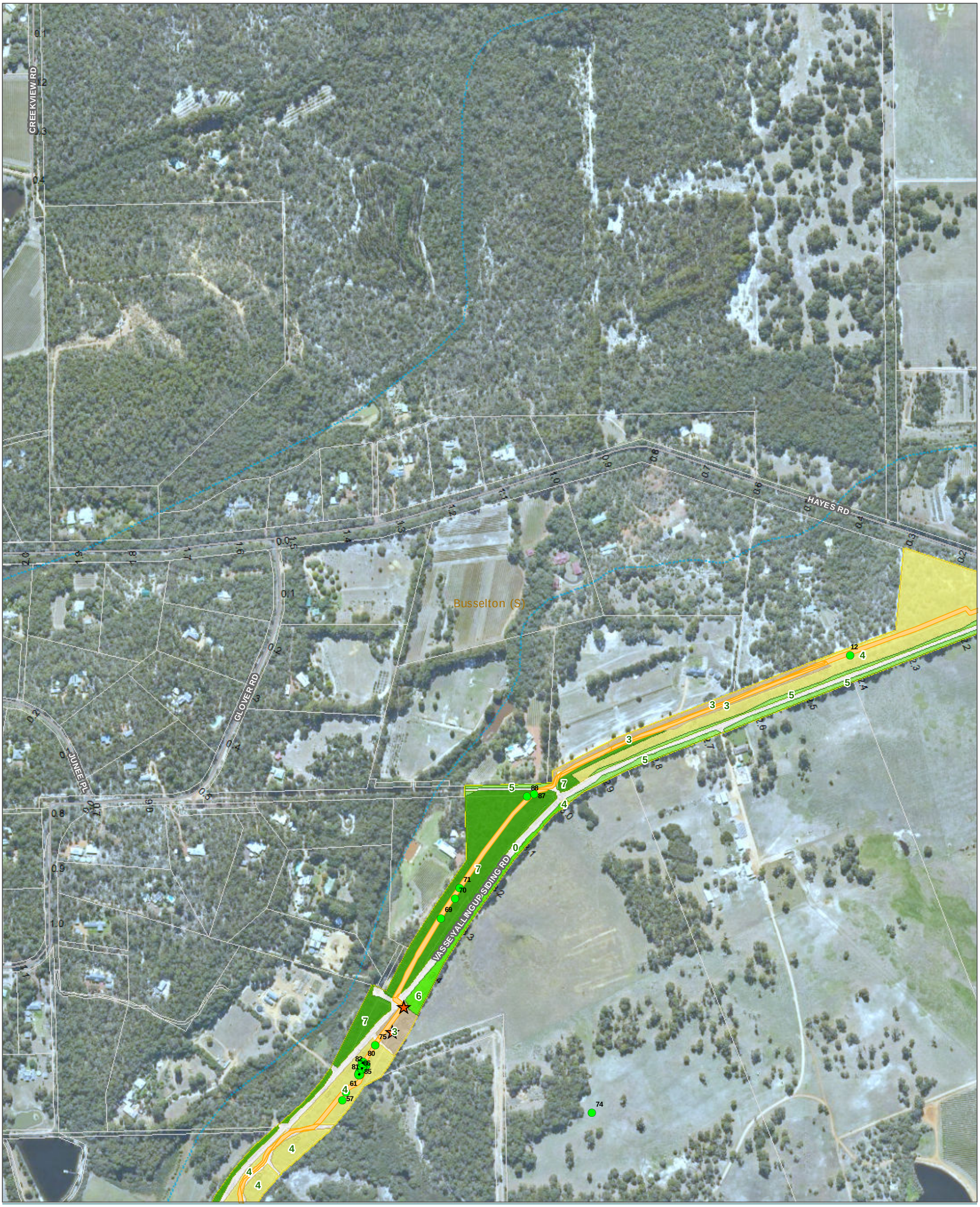


FIGURE 6 SUITABLE DBH TREES, BLACK COCKATOO FORAGING SCORES AND WRP DREYS ALONG THE PROPOSED TRACK

WADANDI TRACK: PAGE 6 OF 14

Suitable DBH tree no hollows, Location
- 6
- 5
- 4
- 3
- 0

Marri, Footprint

Marri, Shoulder

WRP drey

Nominal track Survey Area

Black cockatoo max foraging score
- 7

Minor drainage line

Rail reserve Survey Area

Road

Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

N

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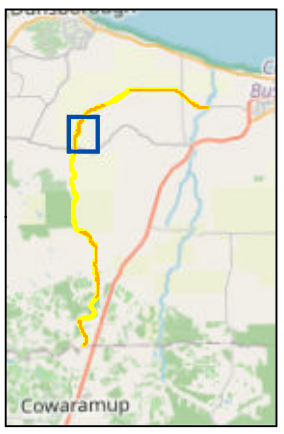


FIGURE 6 SUITABLE DBH TREES, BLACK COCKATOO FORAGING SCORES AND WRP DREYS ALONG THE PROPOSED TRACK

WADANDI TRACK: PAGE 7 OF 14

Suitable DBH tree no hollows, Location
- Marri, Footprint
- Jarrah, Shoulder
- Marri, Shoulder
- WRP drey
- Nominal track Survey Area

Black cockatoo max foraging score
- 7
- 6
- 5
- 4
- 3
- 2
- 1
- 0
- Rail reserve Survey Area
- Road
- Minor drainage line



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

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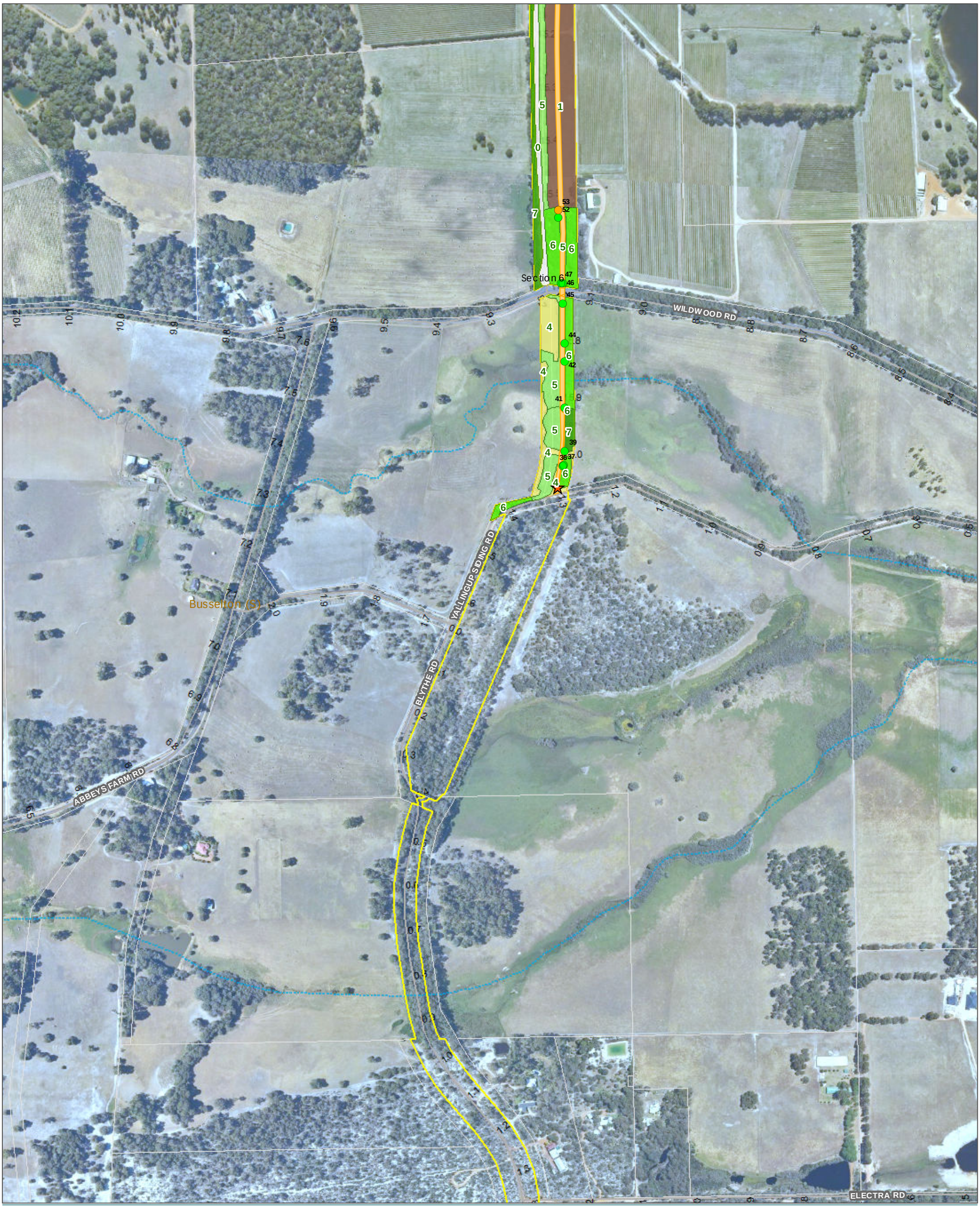


FIGURE 6 SUITABLE DBH TREES, BLACK COCKATOO FORAGING SCORES AND WRP DREYS ALONG THE PROPOSED TRACK

WADANDI TRACK: PAGE 8 OF 14

Suitable DBH tree no hollows, Location
- Jarrah, Shoulder
- Marri, Shoulder
- WRP drey

Nominal track Survey Area

Black cockatoo max foraging score
- 7
- 6
- 5
- 4
- 1
- 0

Rail reserve Survey Area

Road

Minor drainage line

Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

N

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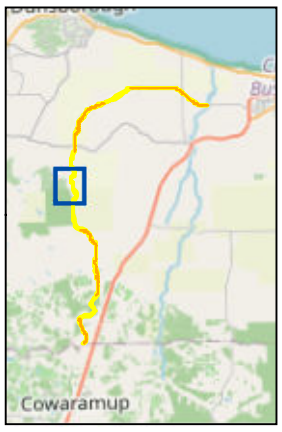
FIGURE 6 SUITABLE DBH TREES, BLACK COCKATOO FORAGING SCORES AND WRP DREYS ALONG THE PROPOSED TRACK

Rail reserve Survey Area

Road

Minor drainage line

DBCA managed land



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

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FIGURE 6 SUITABLE DBH TREES, BLACK COCKATOO FORAGING SCORES AND WRP DREYS ALONG THE PROPOSED TRACK

WADANDI TRACK: PAGE 10 OF 14

Nominal track Survey Area

Rail reserve Survey Area

Black cockatoo max foraging score

Road

7

Minor drainage line

6

DBCA managed land

4

3

0

Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

N

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FIGURE 6 SUITABLE DBH TREES, BLACK COCKATOO FORAGING SCORES AND WRP DREYS ALONG THE PROPOSED TRACK

WADANDI TRACK: PAGE 11 OF 14

Nominal track Survey Area

Black cockatoo max foraging score

- 7
- 6
- 5
- 4
- 3
- 1
- 0

Rail reserve Survey Area

Road

Minor drainage line

DBCA managed land

Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

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FIGURE 6 SUITABLE DBH TREES, BLACK COCKATOO FORAGING SCORES AND WRP DREYS ALONG THE PROPOSED TRACK

WADANDI TRACK: PAGE 12 OF 14

Suitable DBH tree no hollows, Location
- Marri, Footprint
- Blackbutt, Shoulder
- Eastern states Euc, Shoulder
- Marri, Shoulder
- Nominal track Survey Area

Black cockatoo max foraging score
- 7
- 6
- 5
- 4
- 3
- 1
- 0

- Rail reserve Survey Area
- Road
- Minor drainage line
- DBCA managed land

Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

N

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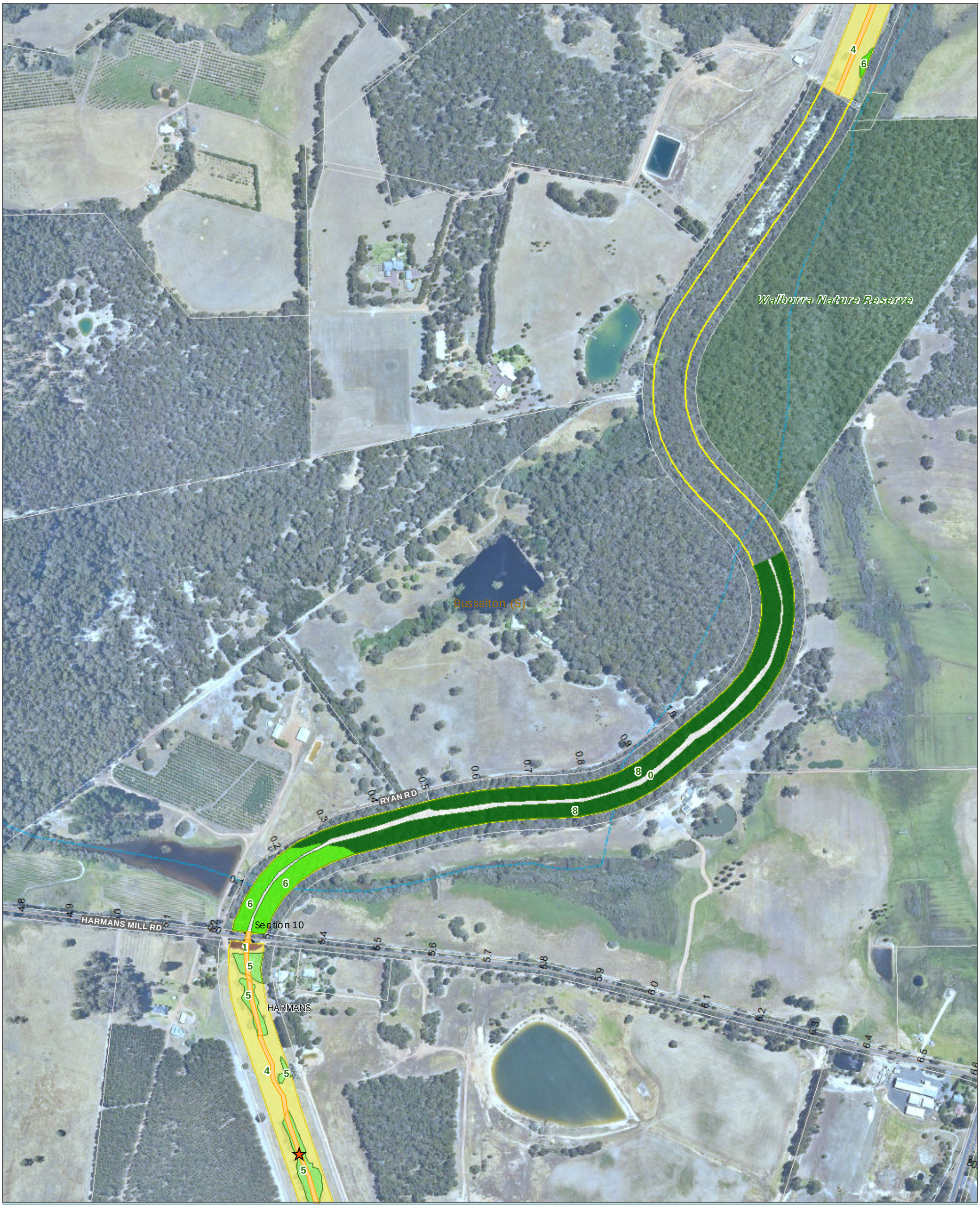


FIGURE 6 SUITABLE DBH TREES, BLACK COCKATOO FORAGING SCORES AND WRP DREYS ALONG THE PROPOSED TRACK

WADANDI TRACK: PAGE 13 OF 14

Suitable DBH tree no hollows, Location
- 4
- 1
- 0

WRP drey

Nominal track Survey Area

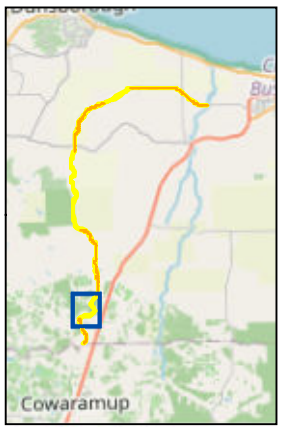
Rail reserve Survey Area

Road

Minor drainage line

DBCA managed land

Black cockatoo max foraging score
- 8
- 6
- 5



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

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FIGURE 6 SUITABLE DBH TREES, BLACK COCKATOO FORAGING SCORES AND WRP DREYS ALONG THE PROPOSED TRACK

WADANDI TRACK: PAGE 14 OF 14

Suitable DBH tree no hollows, Location
- Blackbutt, Footprint
- Blackbutt, Shoulder
- WRP drey
- Nominal track Survey Area

Black cockatoo max foraging score
- 5
- 4

- Rail reserve Survey Area
- Road
- Minor drainage line

Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

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FIGURE 7 NOCTURNAL SURVEY EFFORT AND RESULTS

WADANDI TRACK: PAGE 1 OF 14

Western Ringtail Possum

Common Brushtail Possum

Minor drainage line

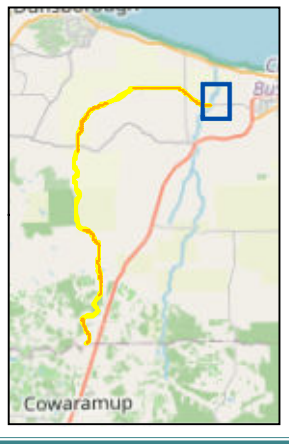
Nocturnal survey effort

28/10/2025

Road

Nominal track Survey Area

Rail reserve Survey Area



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

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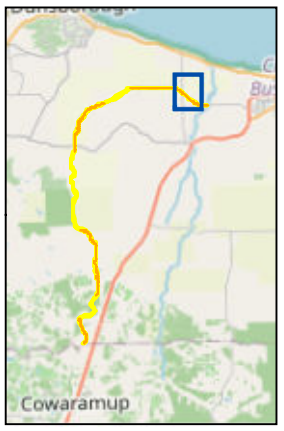
FIGURE 7 NOCTURNAL SURVEY EFFORT AND RESULTS

WADANDI TRACK: PAGE 2 OF 14

- Western Ringtail Possum
- Common Brushtail Possum

Nocturnal survey effort

- 28/10/2025
- Road
- Nominal track Survey Area
- Rail reserve Survey Area



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

N

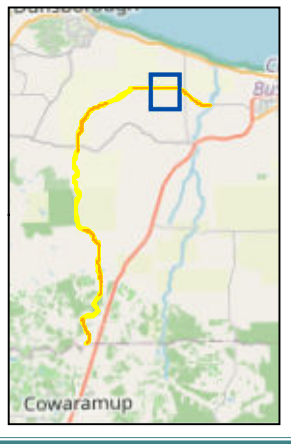
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FIGURE 7 NOCTURNAL SURVEY EFFORT AND RESULTS

WADANDI TRACK: PAGE 3 OF 14

Common Brushtail Possum
Minor drainage line
Nocturnal survey effort
28/10/2025
20/05/2026
Road
Nominal track Survey Area
Rail reserve Survey Area



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers.
SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

N

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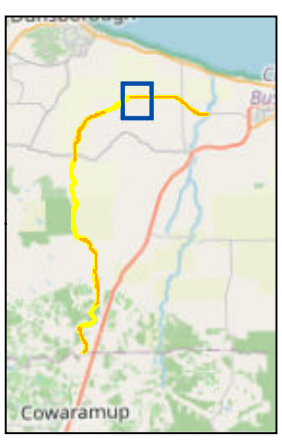
FIGURE 7 NOCTURNAL SURVEY EFFORT AND RESULTS

WADANDI TRACK: PAGE 4 OF 14

- Western Ringtail Possum
- Common Brushtail Possum
- Rail reserve Survey Area
- Minor drainage line

Nocturnal survey effort

- 28/10/2025
- 20/05/2026
- Road
- Nominal track Survey Area



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers.
SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

N

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FIGURE 7 NOCTURNAL SURVEY EFFORT AND RESULTS

WADANDI TRACK: PAGE 5 OF 14

Western Ringtail Possum

Common Brushtail Possum

Minor drainage line

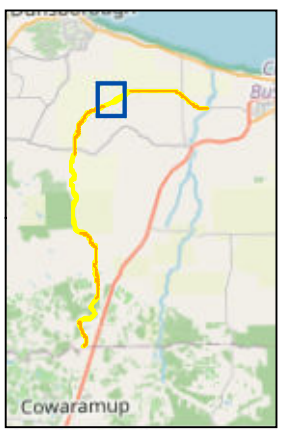
Nocturnal survey effort

28/10/2025

Road

Nominal track Survey Area

Rail reserve Survey Area



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

N

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FIGURE 7 NOCTURNAL SURVEY EFFORT AND RESULTS

WADANDI TRACK: PAGE 6 OF 14

Western Ringtail Possum

Nocturnal survey effort

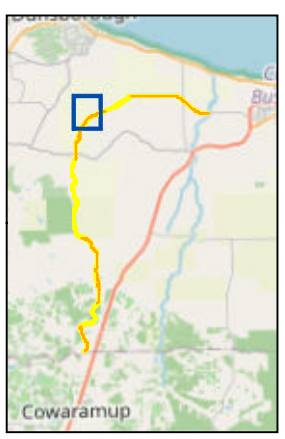
28/10/2025

Road

Nominal track Survey Area

Rail reserve Survey Area

Minor drainage line



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers.
SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

N

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FIGURE 7 NOCTURNAL SURVEY EFFORT AND RESULTS

WADANDI TRACK: PAGE 7 OF 14

Western Ringtail Possum

Minor drainage line

Nocturnal survey effort

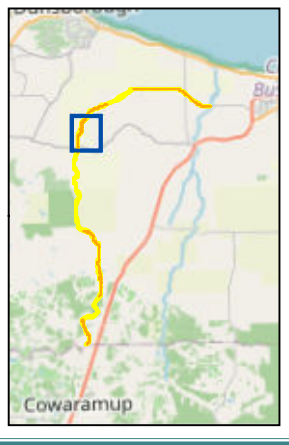
16/07/2025

28/10/2025

Road

Nominal track Survey Area

Rail reserve Survey Area



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

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FIGURE 7 NOCTURNAL SURVEY EFFORT AND RESULTS

WADANDI TRACK: PAGE 8 OF 14

Western Ringtail Possum

Nocturnal survey effort

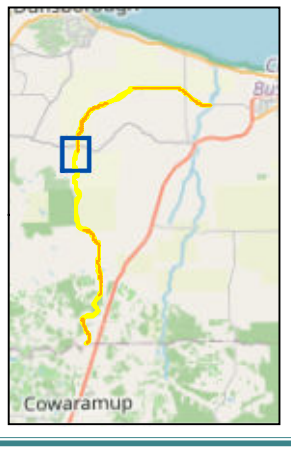
16/07/2025

Road

Nominal track Survey Area

Rail reserve Survey Area

Minor drainage line



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers.
SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

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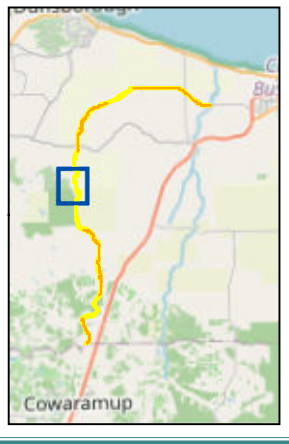
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FIGURE 7 NOCTURNAL SURVEY EFFORT AND RESULTS

WADANDI TRACK: PAGE 9 OF 14

Nocturnal survey effort
- 16/07/2025
- Road
- Rail reserve Survey Area
- Minor drainage line
- DBCA managed land



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

N

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FIGURE 7 NOCTURNAL SURVEY EFFORT AND RESULTS

WADANDI TRACK: PAGE 10 OF 14

Western Ringtail Possum

Nocturnal survey effort

16/07/2025

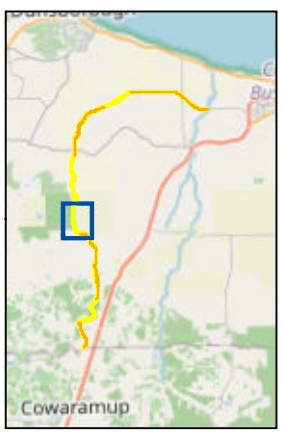
Road

Nominal track Survey Area

Rail reserve Survey Area

Minor drainage line

DBCA managed land



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

N

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FIGURE 7 NOCTURNAL SURVEY EFFORT AND RESULTS

WADANDI TRACK: PAGE 11 OF 14

Nocturnal survey effort
- 16/07/2025
- Road
- Nominal track Survey Area
- Rail reserve Survey Area
- Minor drainage line
- DBCA managed land

Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

N

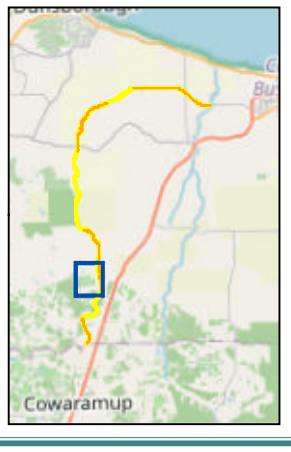
SW Environmental
www.swenvironmental.com.au



FIGURE 7 NOCTURNAL SURVEY EFFORT AND RESULTS

WADANDI TRACK: PAGE 12 OF 14

Nocturnal survey effort
16/07/2025
29/10/2025
Road
Nominal track Survey Area
Rail reserve Survey Area
Minor drainage line
DBCA managed land



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

N

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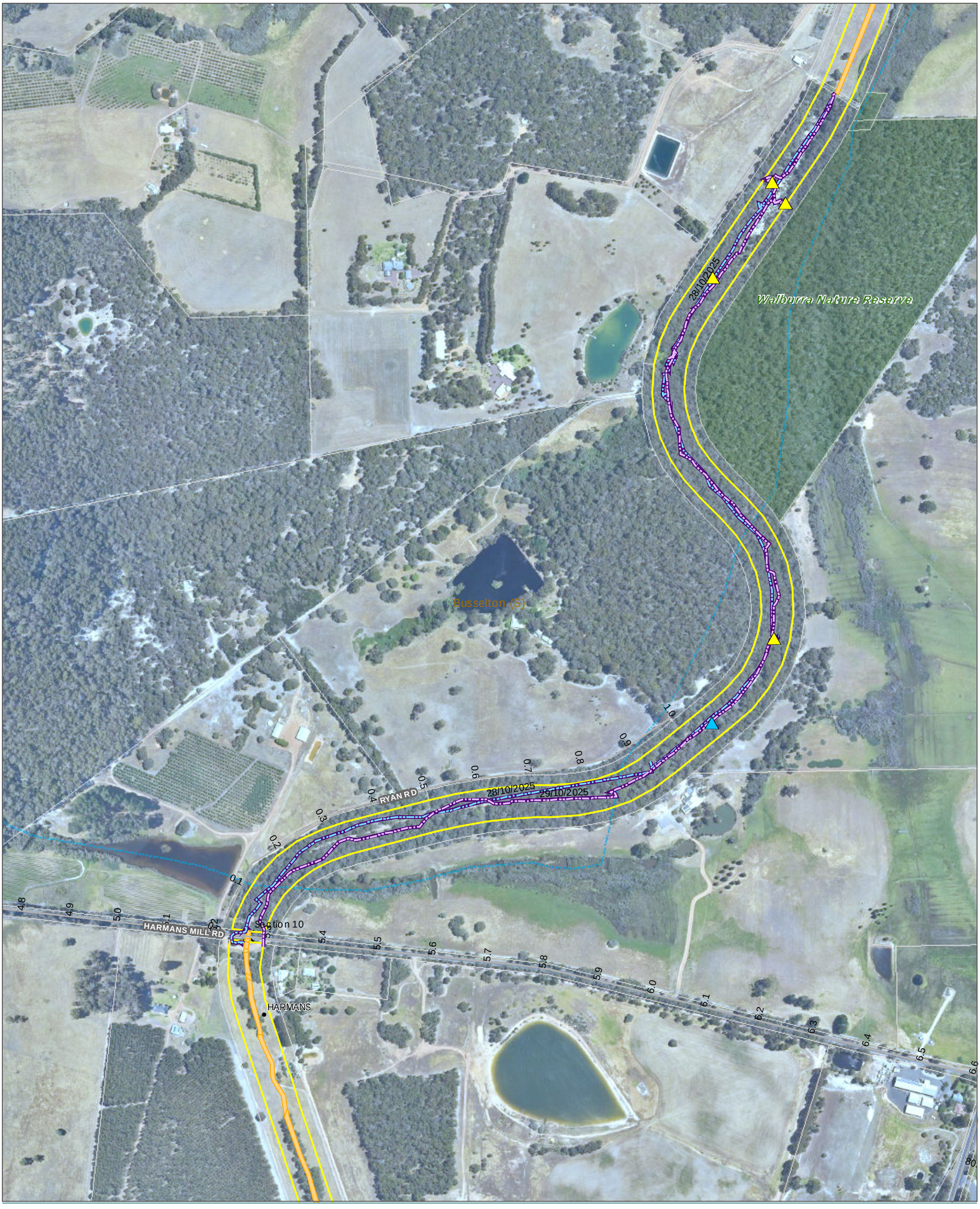
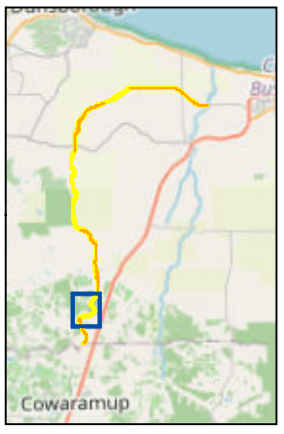


FIGURE 7 NOCTURNAL SURVEY EFFORT AND RESULTS

WADANDI TRACK: PAGE 13 OF 14

- Western Ringtail Possum
- Common Brushtail Possum

Nocturnal survey effort
- 28/10/2025
- 29/10/2025
- Road
- Nominal track Survey Area
- Rail reserve Survey Area
- Minor drainage line
- DBCA managed land



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

N

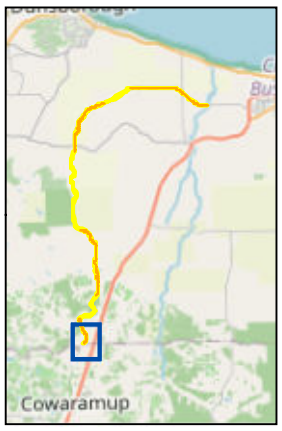
SW Environmental
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FIGURE 7 NOCTURNAL SURVEY EFFORT AND RESULTS

WADANDI TRACK: PAGE 14 OF 14

- Road
- Nominal track Survey Area
- Rail reserve Survey Area
- Minor drainage line



Ref: SW709 SP Fauna
Date: 26/05/2026 Author: SP
Source: Base map © Esri and its data suppliers. SLIP Landgate (2026)

0 50 100 200 m

A3 @ 1:6500

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Appendix B Conservation Codes

Flora, fauna and ecological communities in WA may be afforded protection under the WA BC Act and or Commonwealth EPBC Act. Species listed as threatened or migratory under the above legislation are referred to collectively in this document as being 'conservation significant' or 'target' species. These terms include species and communities listed under the DBCA Priority lists.

BC Act

The WA BC Act and associated Regulations provide for the licensing and management of activities that affect biodiversity. The BC Act provides for the listing of threatened native animals (fauna) that need protection as critically endangered, endangered or vulnerable species because they are under identifiable threat of extinction (species).

The *Biodiversity Conservation (Listing of Native Species) (Fauna) Order 2023)* under the *Biodiversity Conservation Regulations 2018* contain the lists of Threatened, Extinct and Specially Protected species under Part 2 of the BC Act. These are described below.

Threatened species and communities

- PD: Presumed totally destroyed (TECs only)
- CR: Critically endangered species
- EN: Endangered species
- VU: Vulnerable species

Extinct species

- EX: Extinct species
- EW: Extinct in the wild species

Specially protected species

- MI: Migratory species
- CD: Species of special conservation interest (conservation dependent fauna)
- OS: Other specially protected species

EPBC Act

In accordance with Commonwealth legislation, the EPBC Act provides a list of 'Matters of National Environmental Significance' (NES), which includes significant fauna. Under the EPBC Act fauna matters of NES may be listed in any one of the following categories as defined in *Section 179* of the Act:

- Extinct,
- *Extinct in the wild,
- *Critically endangered,
- *Endangered,
- *Vulnerable,
- Conservation Dependent.

*Only these categories are matters of NES under the Act.

The EPBC Act also lists migratory species that are recognized under international treaties including the Japan Australia Migratory Bird Agreement (JAMBA), the China Australia Migratory Bird Agreement (CAMBA) and the Bonn Convention (The Convention on the conservation of Migratory Species of Wild Animals). The EPBC Act is regulated by the DCCEEW.

IUCN Red List

The IUCN Red List is an inventory of the global conservation status of species and used to assist DBCA and other agencies in attributing a given threatened species status. It does not have any statutory authority and is not considered in detail in this assessment.

Appendix C Methodology Tables

Table C-1 Desktop sources interrogated for the Desktop Assessment

Source	Search Buffer	Purpose
Atlas of Living Australia (ALA, 2026)	~5 km around Survey Area	Obtain records of local fauna taxa that may occur within the Survey Area
Birdata (BirdLife Australia, 2025)	~5 km around Survey Area	Obtain locations and records of local birds that may occur within Survey Area
DBCA Threatened, Specially Protected, and Priority Fauna Database (DBCA, 2025c)	5 km around Survey Area	Obtain locations and records of conservation significant fauna taxa that may occur within the Survey Area
DBCA Black Cockatoo Breeding and Roosting Records (DBCA, 2025c)	10 km around Survey Area	Obtain locations and records of Black Cockatoo Breeding and Roosting sites within general range that black cockatoos travel from a nesting site to forage (maximum 12 km)
DBCA Significant Flora Database (WA Herbarium specimen and Threatened and Priority Flora (TPFL) databases) (DBCA, 2025d)	5 km around Survey Area	Obtain locations and records of local conservation significant flora taxa that may occur within the Survey Area
DBCA Threatened and Priority Ecological Communities Database (DBCA, 2025b)	5 km around Survey Area	Obtain locations and records of both Threatened and Priority Ecological Communities that occur locally
DBCA NatureMap (WA Herbarium and TPFL databases) (DBCA, 2025a)	5 km around Survey Area	Obtain records of local conservation significant flora and fauna taxa (ensuring that no additional records to the DBCA database searches have been missed)
Department of Climate Change, Energy, the Environment and Water (DCCEEW) Species Profile and Threats (SPRAT) Database (interrogated using the Protected Matters Search Tool (PMST)) (DCCEEW, 2025)	5 km around Survey Area	Identify Matters of Environmental Significance (MNES) that occur or have the potential to occur locally
2018 South West Vegetation Complex Statistics Report incorporating the CAR Reserve Analysis and DBCA-047 spatial dataset (DBCA, 2019, 2018a)	Survey Area	Identify the extent of Vegetation Complexes that intersect the Survey Area
Bureau of Meteorology Climate Data Online (BoM, 2025)	The most relevant meteorological station to the study area	Review long-term and current climate data that may be relevant to survey results
Soil Landscape Mapping (Best Available DPIRD-027) spatial dataset (DPIRD, 2025c)	Survey Area	Identify Soil Landscape Mapping within the Survey Area

Table C-2 Vegetation condition scale (Keighery, 1994)

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

Table C-3 Fauna habitat quality categories and descriptions (SW Environmental, n.d.).

Quality	Description
Good	• Native vegetation with intact and diverse habitat structure. Different vegetation age classes present at most stratum levels (ground, understorey, midstory, canopy). • Forest/woodland: abundant hollow-bearing trees, including those with or likely to develop large hollows. Mature trees offer more foraging resources (nectar/seed). • Presence of shelter/refuges at ground level (dense understorey plants, tussock, rocky outcrop, hollow logs). • High habitat complexity (ecotones between vegetation types or habitat mosaic). This increases the range of foraging and shelter opportunities within a habitat. • Presence of key foraging and microhabitat components for target species. • Little to no obvious weed invasion or evidence of grazing. • May be large patch and/or connected to other areas of native vegetation.
Moderate	• Native flora species dominant with moderate habitat structure complexity appropriate to vegetation type. Ground litter intact or slightly disturbed. More than one age class present. • Forest/woodland: low to moderate abundance of hollow-bearing trees or trees likely to develop hollows. • Some shelter and refuge present for ground dwelling fauna. • Some habitat complexity (ecotones between vegetation types or areas forming a habitat mosaic). • Marginal presence of key microhabitat components for target species. • May be small or large in scale, and isolated or well connected.
Poor	• Habitat highly disturbed and simplified with low structural complexity. Ground litter layer absent or highly modified. Complexity reduced by only one age class present. • Little or no shelter and refuge for ground dwelling fauna. • Forest/woodland: not likely to support hollow-bearing trees. • Lack of key foraging and microhabitat components for target species. • May have evidence of weed invasion or grazing. • May be narrow or small area and substantially influenced by edge effects, isolated from other areas of native vegetation.

Appendix D Local Flora and Fauna Lists

Table D-1 Listed significant flora taxa returned from database searches

Taxon	Status (WA)	Status (EPBC)	Flowering Period (WA Herbarium, 1998)	Habitat (WA Herbarium, 1998)	Source			
					DBCA TPFL (DBCA, 2025d)	DBCA WAHerb (DBCA, 2025d)	NatureMap (DBCA, 2026)	PMST (DCCEEW, 2025)
Acacia flagelliformis	P4		May – Sep	Sandy soils. Winter-wet areas.	x	x	x	
Acacia inops	P3		Sep – Nov	Black peaty sand, clay. Swamps, creeks.	x	x	x	
***Acacia lateriticola* var. Glabrous variant (B.R. Maslin 6765)**	P3		Aug or Oct	Lateritic soils.		x	x	
Acacia semitrullata	P4		May – Oct	White/grey sand, sometimes over laterite. Open heath frequently fringing seasonally dry swamps, and in sand over laterite in shallow depressions in open Eucalyptus marginata forest (WA Herbarium, 2022)	x	x	x	
***Andersonia* sp. Echidna (A.R. Annels ARA 5500)**	P2		Nov - Dec	Lateritic brown sandy loam, gravelly sand.		x	x	
Banksia mimica	T	EN	Dec or Jan - Feb	White or grey sand over laterite, sandy loam.				x
Banksia nivea* subsp. *uliginosa	T	EN	Aug – Sep	Sandy clay, gravel. Ironstone.				x
Banksia squarrosa* subsp. *argillacea	T	VU	Jun – Nov	White/grey sand, gravelly clay or loam. Winter-wet flats, clay flats.	x		x	x
Boronia capitata* subsp. *gracilis	P3		Jun – Nov.	Winter-wet swamps, or gentle hillslopes.	x	x	x	

				White/grey or black sand.				
***Boronia* sp. Leeuwin (J. Scott 235)**	P2		Aug – Dec	Seaonally wet areas, brown/grey/black loam, sand, peat, clay, with granite.		x	x	
Brachyscias verecundus	T	CR	Oct – Dec	Near outcrops. Sand over laterite/Ironstone/granite				x
Caladenia busselliana	T	EN	Sep – Oct.	Winter wet swamps. Sandy loam over clay.	x	x	x	x
Caladenia excelsa	T	EN	Sep – Nov	Sandy soils in Banksia, Jarrah (Eucalyptus marginata) and marri (Corymbia calophylla) woodlands.	x		x	x
Caladenia huegelii	T	EN	Sep – Oct.	Grey or brown sand, clay loam. Sandy soils in near coastal woodlands and shrublands.				x
Caladenia procera	T	CR	Sep – Oct	Rich clay loam, alluvial loamy flats, jarrah/marri/peppermint woodland, dense heath, sedges.	x	x	x	x
Caladenia viridescens	T	EN	Sep – Oct	Loam, grey sand.	x		x	x
Chamelaucium roycei	T	VU	May, Jul, Sep – Jan	Brown sandy loam or sandy clay over ironstone or laterite, seasonally inundated areas, flats.				x
Cyathochaeta teretifolia	P3		Jul – Nov	Grey sand, sandy clay. Swamps, creek edges.	x	x	x	
Dampiera heteroptera	P3		Sep – Oct	Sandy soils. Swampy areas.		x	x	

Daviesia elongata	T	VU	Sep – Dec	Well drained soils, undulating plains. Grey sand over laterite/ ironstone.	x	x	x	x
***Dillwynia* sp. Capel (P.A. Jurjevich 1771)**	P3		Sep – Oct.	Littered grey loamy sand, rocky soils. Valleys, rangelands.		x	x	
Diuris micrantha	T	VU	Sept – Oct	Winter-wet depressions. Brown loamy clay. Winter wet swamps, in shallow water.				x
Drakaea elastica	T	EN	Oct – Nov.	White or grey sand. Low-lying situations adjoining winter-wet swamps.				x
Drakaea micrantha	T	VU	Sep – Oct.	Edge of swamps, often found in clearings and tracks. White-grey sand.	x	x	x	x
Drosera fimbriata	P4		Sep – Oct	White sand, granite.		x	x	
Eucalyptus x phylacis	T	EN	May and Oct	Laterite, loam over granite. Coastal areas.				x
Gahnia sclerioides	P4		Feb, Apr, Jun, Aug – Sep, Nov	Loam, sandy soils. Moist shaded situations	x	x	x	
Gastrolobium argyrotrichum	T	CR	Oct	Dry orange/brown lateritic loam over granite, upper slopes and hillsides.	x	x	x	x
Gastrolobium papilio	T	EN	Oct – Dec.	Flat plains or gentle slopes, sandy clay over ironstone and laterite.				x
Gonocarpus pusillus	P4		Oct – Dec, Feb	Grey sandy loam, sandy clay loam, wetlands or seasonally inundated areas.		x	x	
Grevillea brachystylis* subsp. *brachystylis	P3		Jun – Nov	Black sand, sandy clay. Swampy situations.		x	x	

Grevillea brachystylis* subsp. *grandis	T	CR	Jul – Oct or Dec – Jan	Plains or flats, brown sandy loam, lateritic clay.				x
***Grevillea brachystylis* subsp. Yelverton (A. Webb AW09122)**	P2		Sep - Oct	Shallow loamy soils, granite outcrops.	x	x	x	
Grevillea bronweniae	P3		Jul – Nov	Lateritic gravelly loam, grey sand or brown sand/loam. Slopes, drainage lines and watercourses		x	x	
Johnsonia inconspicua	P3		Oct – Nov	White-grey or black sand. Low dunes, winter-wet flats.	x	x	x	
Lambertia echinata* subsp. *occidentalis	T	EN	Feb – Apr or Dec	White sandy soils over laterite, orange/brown-red clay over ironstone. Flats to foothills, winter-wet sites.				x
Lasiopetalum laxiflorum	P3		Oct or Nov	Brown/grey sandy clay, clayey loam sand over laterite, slopes.		x	x	
Leptomeria furtiva	P2		Aug – Oct	Grey or black peaty sand. Winter-wet flats.		x	x	
Lepyrodia heleocharoides	P3		Dec	Moist peaty sand. Dry or seasonally inundated heath or woodland, swamps.	x	x	x	
Loricobbia pinifolia	P3		Sep - Nov, Feb	Seasonally inundated areas, sand over laterite, sandy clay, riparian vegetation.	x	x	x	
Loxocarya magna	P3		Sep or Nov.	Sand, loam, clay, ironstone. Seasonally inundated or damp habitats.		x	x	

***Netrostylis* sp. Blackwood River (A.R. Annels 3043)**	P3		April/May	Swampy areas, dark peaty clay loam.		x	x	
***Netrostylis* sp. Nannup (P.A. Jurjevich 1133)**	1		Unknown	Creeklines, dark grey clay loam.		x	x	
Olearia strigosa	P3		Dec or Jan – May	Sandy loam. Open forest.		x	x	
Petrophile latericola	T	EN	Nov	Red lateritic clay. Winter-wet flats				x
Pimelea ciliata* subsp. *longituba	P3		Oct – Dec	Grey sand over clay, loam.		x	x	
Synaphea decumbens	P3		Sept – Nov	Grey-brown loam over laterite		x	x	
***Synaphea* sp. Fairbridge Farm (D.Papenfus 696)**	T	CR	Oct	Sandy with lateritic pebbles. Near winter-wet flats, in low woodland with weedy grasses.				x
Thysanotus glaucus	P4		Oct – Mar	White, grey or yellow sand, sandy gravel.	x	x	x	
***Tripterococcus* sp. Brachylobus (A.S. George 14234)**	P4		Nov – Dec	Plains, winter damp flats with grey sand or clay		x	x	
Verticordia lehmannii	P4		Jan or Apr – Jun or Aug or Dec.	Winter wet flats or lowlands. Sandy clay		x	x	
Verticordia plumosa* var. *ananeotes	T	EN	Nov – Dec	Sandy loam. Seasonally inundated plains.				x
Verticordia plumosa* var. *vassensis	T	EN	Sep – Dec or Jan – Feb.	Winter wet flats or lowlands. White/grey sand or clay over laterite.				x

Appendix D.2 Fauna taxa returned from desktop database searches within 5 km of the Survey Area

Class Family Vernacular Name	*Taxon*	Observed	Status (WA)	Status (EPBC)	ALA	Birdata	Dandjoo	DBCA	PMST, 10 km
Actinopterygii									
Galaxiidae									
Mud Minnow	*Galaxiella munda*		VU	VU			X		
Nannopercidae									
Balston's pygmy Perch	*Nannatherina balstoni*		VU	VU			X		X
Amphibia									
Limnodynastidae									
Moaning Frog	*Heleioporus eyrei*	X			X		X		
Plain Frog	*Heleioporus inornatus*						X		
Sand Frog	*Heleioporus psammophilus*				X		X		
Western Banjo Frog	*Limnodynastes dorsalis*	X			X		X		
Myobatrachidae									
Bleating Froglet	*Crinia pseudinsignifera*				X		X		
Glauert's Froglet	*Crinia glauerti*	X			X		X		
Crawling Toadlet	*Pseudophryne guentheri*	X			X		X		
Lea's Frog	*Geocrinia leai*				X		X		
Nicholl's Toadlet	*Metacrinia nichollsi*				X		X		
Squelching Froglet	*Crinia insignifera*	X			X		X		
Tschudi's Froglet	*Crinia georgiana*	X			X		X		
Pelodryadidae									
Motorbike Frog	*Litoria moorei*	X			X		X		
Slender Tree Frog	*Litoria adelaidensis*				X		X		
Arachnida									
Migidae									
Western pygmy trapdoor spider	*Bertmainius opimus*		P3				X		

Class Family Vernacular Name	*Taxon*	Observed	Status (WA)	Status (EPBC)	ALA	Birdata	Dandjoo	DBCA	PMST, 10 km
Aves									
Acanthizidae									
Brown Thornbill	*Acanthiza pusilla*				X				
Inland Thornbill	*Acanthiza apicalis*				X	X	X		
Spotted Scrubwren	*Sericornis frontalis maculatus*	X			X				
Weebill	*Smicrornis brevirostris*				X	X			
Western Gerygone	*Gerygone fusca*				X	X			
Western Thornbill	*Acanthiza inornata*	X			X	X			
Yellow-rumped Thornbill	*Acanthiza chrysorrhoa*				X	X			
Accipitridae									
Black-shouldered Kite	*Elanus axillaris*				X	X			
Brown Goshawk	*Accipiter fasciatus*				X	X			
Collared Sparrowhawk	*Accipiter cirrocephalus*				X	X			
Little Eagle	*Hieraaetus morphnoides*				X	X			
Osprey	*Pandion haliaetus*		MI	MI	X	X	X	X	
Square-tailed Kite	*Lophoictinia isura*				X	X			
Swamp Harrier	*Circus approximans*				X	X			
Wedge-tailed Eagle	*Aquila audax*				X	X			
Whistling Kite	*Haliastur sphenurus*				X	X			
White-bellied Sea-eagle	*Haliaeetus leucogaster*				X	X	X		
Acrocephalidae									
Australian Reed Warbler	*Acrocephalus australis*				X	X	X		
Aegothelidae									
Australian Owlet-nightjar	*Aegotheles cristatus*				X	X			
Alcedinidae									
Laughing Kookaburra	*Dacelo novaeguineae*	X			X	X			
Sacred Kingfisher	*Todiramphus sanctus*				X	X			

Class Family Vernacular Name	*Taxon*	Observed	Status (WA)	Status (EPBC)	ALA	Birdata	Dandjoo	DBCA	PMST, 10 km
Anatidae									
Australasian Shoveler	*Spatula rhynchotis*				X	X			
Australian Shelduck	*Tadorna tadornoides*				X	X			
Australian Wood Duck	*Chenonetta jubata*	X			X	X			
Black Swan	*Cygnus atratus*				X	X			
blue-billed duck	*Oxyura australis*		P4		X	X		X	
Chestnut Teal	*Anas castanea*				X	X			
Common Mallard	*Anas platyrhynchos*				X	X			
Freckled Duck	*Stictonetta naevosa*				X				
Grey Teal	*Anas gracilis*				X	X			
Hardhead	*Aythya australis*				X	X			
Musk Duck	*Biziura lobata*				X	X			
Pacific Black Duck	*Anas superciliosa*				X	X			
Pink-eared Duck	*Malacorhynchus membranaceus*				X				
Anhingidae									
Australasian Darter	*Anhinga novaehollandiae*				X	X			
Ardeidae									
Australasian Bittern	*Botaurus poiciloptilus*		EN	EN					X
Black Bittern	*Botaurus flavicollis*								
Cattle Egret	*Bubulcus ibis*				X	X			
Eastern Reef Egret	*Egretta sacra*				X				
Great Egret	*Ardea alba*				X	X			
Little Egret	*Egretta garzetta*				X	X			
Nankeen Night-heron	*Nycticorax caledonicus*				X				
White-faced Heron	*Egretta novaehollandiae*				X	X			
White-necked Heron	*Ardea pacifica*				X	X			
Artamidae									

Class Family Vernacular Name	*Taxon*	Observed	Status (WA)	Status (EPBC)	ALA	Birdata	Dandjoo	DBCA	PMST, 10 km
Australian Magpie	*Gymnorhina tibicen*	X			X	X			
Black-faced Woodswallow	*Artamus cinereus*				X	X			
Dusky Woodswallow	*Artamus cyanopterus*	X			X	X			
Grey Butcherbird	*Cracticus torquatus*				X	X	X		
Grey Currawong	*Strepera versicolor*				X	X			
Pied Butcherbird	*Cracticus nigrogularis*				X				
Burhinidae									
Bush Stone-curlew	*Burhinus grallarius*				X				
Cacatuidae									
Baudin's cockatoo	*Zanda baudinii*	X	EN	EN	X	X	X	X	X
Carnaby's cockatoo	*Zanda latirostris*		EN	EN	X	X	X	X	X
forest red-tailed black cockatoo	*Calyptorhynchus banksii naso*	X	VU	VU	X		X	X	X
Galah	*Eolophus roseicapilla*	X			X	X			
Little Corella	*Cacatua sanguinea*				X	X			
Campephagidae									
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*				X	X			
White-winged Triller	*Lalage tricolor*					X			
Casuariidae									
Emu	*Dromaius novaehollandiae*				X				
Charadriidae									
Banded Lapwing	*Vanellus tricolor*				X	X			
Black-fronted Dotterel	*Elseyornis melanops*				X	X			
greater sand plover, large sand plover	*Charadrius leschenaultii*		VU	VU & MI	X	X		X	X
Grey Plover	*Pluvialis squatarola*		MI	VU & MI	X				
Hooded Plover	*Thinornis cucullatus*				X				
hooded plover, hooded dotterel	*Charadrius cucullatus*		P4				X	X	
Masked Lapwing	*Vanellus miles*				X	X			

Class Family Vernacular Name	*Taxon*	Observed	Status (WA)	Status (EPBC)	ALA	Birdata	Dandjoo	DBCA	PMST, 10 km
Red-capped Plover	*Charadrius ruficapillus*				X	X			
Red-kneed Dotterel	*Erythrogonys cinctus*				X	X			
Climacteridae									
Rufous Treecreeper	*Climacteris rufus*				X	X			
Columbidae									
Brush Bronzewing	*Phaps elegans*				X	X			
Common Bronzewing	*Phaps chalcoptera*	X			X	X			
Crested Pigeon	*Ocyphaps lophotes*				X	X			
Laughing Turtle-dove	*Spilopelia senegalensis*	X			X	X			
Rock Dove	*Columba livia*				X	X			
Spotted Turtle-dove	*Spilopelia chinensis*				X	X			
Corvidae									
Australian Raven	*Corvus coronoides*	X			X	X	X		
Cuculidae									
Fan-tailed Cuckoo	*Cacomantis flabelliformis*				X	X			
Horsfield's Bronze-cuckoo	*Chalcites basalis*				X	X			
Pallid Cuckoo	*Heteroscenes pallidus*				X	X			
Shining Bronze-cuckoo	*Chalcites lucidus*	X			X	X			
Dicaeidae									
Mistletoebird	*Dicaeum hirundinaceum*				X	X			
Estrildidae									
Red-eared Firetail	*Stagonopleura oculata*				X	X			
Falconidae									
Australian Hobby	*Falco longipennis*				X	X			
Brown Falcon	*Falco berigora*				X	X			
Grey Falcon	*Falco hypoleucos*		VU	VU					X
Nankeen Kestrel	*Falco cenchroides*	X			X	X	X		

Class Family Vernacular Name	*Taxon*	Observed	Status (WA)	Status (EPBC)	ALA	Birdata	Dandjoo	DBCA	PMST, 10 km
peregrine falcon	*Falco peregrinus*		OS		X	X	X	X	
Falcunculidae									
Western Shrike-tit	*Falcunculus frontatus*								
Haematopodidae									
Sooty Oystercatcher	*Haematopus fuliginosus*				X				
Hirundinidae									
Fairy Martin	*Petrochelidon ariel*	X			X				
Tree Martin	*Petrochelidon nigricans*				X	X			
Welcome Swallow	*Hirundo neoxena*				X	X			
Laridae									
Bridled tern	*Onychoprion anaethetus*		MI	MI				X	
Caspian tern	*Hydroprogne caspia*		MI	MI				X	
Common tern	*Sterna hirundo*		MI	MI				X	
Crested tern	*Thalasseus bergii*		MI	MI				X	
Silver Gull	*Chroicocephalus novaehollandiae*				X				
Locustellidae									
Brown Songlark	*Cincloramphus cruralis*				X				
Little Grassbird	*Poodytes gramineus*				X	X			
Rufous Songlark	*Cincloramphus mathewsi*				X				
Maluridae									
Blue-breasted Fairy-wren	*Malurus pulcherrimus*				X		X		
Red-winged Fairy-wren	*Malurus elegans*				X	X	X		
Southern Emu-wren	*Stipiturus malachurus*				X	X			
Splendid Fairy-wren	*Malurus splendens*	X			X	X			
Megapodiidae									
Malleefowl	*Leipoa ocellata*		VU	VU	X		X	X	
Meliphagidae									

Class Family Vernacular Name	*Taxon*	Observed	Status (WA)	Status (EPBC)	ALA	Birdata	Dandjoo	DBCA	PMST, 10 km
Brown Honeyeater	*Lichmera indistincta*	X			X	X			
Brown-headed Honeyeater	*Melithreptus brevirostris*					X			
Gilbert's Honeyeater	*Melithreptus chloropsis*				X		X		
New Holland Honeyeater	*Phylidonyris novaehollandiae*	X			X	X			
Red Wattlebird	*Anthochaera carunculata*	X			X	X			
Singing Honeyeater	*Gavicalis virescens*				X	X			
Tawny-crowned Honeyeater	*Gliciphila melanops*				X	X			
Western Spinebill	*Acanthorhynchus superciliosus*				X	X			
Western Wattlebird	*Anthochaera lunulata*				X	X			
White-cheeked Honeyeater	*Phylidonyris niger*				X	X			
White-fronted Chat	*Epthianura albifrons*				X	X			
White-naped Honeyeater	*Melithreptus lunatus*				X	X			
Yellow-throated Miner	*Manorina flavigula*				X		X		
Meropidae									
Rainbow Bee-eater	*Merops ornatus*				X	X			
Monarchidae									
Magpie-lark	*Grallina cyanoleuca*				X	X			
Restless Flycatcher	*Myiagra inquieta*				X				
Motacillidae									
Australian Pipit	*Anthus novaeseelandiae*				X	X			
Neosittidae									
Varied Sittella	*Daphoenositta chrysoptera*				X	X			
Pachycephalidae									
Golden Whistler	*Pachycephala pectoralis*	X			X	X			
Grey Shrike-thrush	*Colluricincla harmonica*	X			X	X			
Rufous Whistler	*Pachycephala rufiventris*	X			X	X			
Pardalotidae									

Class Family Vernacular Name	*Taxon*	Observed	Status (WA)	Status (EPBC)	ALA	Birdata	Dandjoo	DBCA	PMST, 10 km
Spotted Pardalote	*Pardalotus punctatus*				X	X			
Striated Pardalote	*Pardalotus striatus*				X	X			
Pelecanidae									
Australian Pelican	*Pelecanus conspicillatus*				X	X			
Petroicidae									
Hooded Robin	*Melanodryas cucullata*				X				
Jacky Winter	*Microeca fascinans*					X			
Red-capped Robin	*Petroica goodenovii*				X				
Scarlet Robin	*Petroica boodang*				X	X			
Western Yellow Robin	*Eopsaltria griseogularis*				X	X			
White-breasted Robin	*Quoyornis georgianus*					X			
Phalacrocoracidae									
Great Cormorant	*Phalacrocorax carbo*				X	X			
Little Black Cormorant	*Phalacrocorax sulcirostris*				X	X			
Little Pied Cormorant	*Microcarbo melanoleucos*				X	X			
Pied Cormorant	*Phalacrocorax varius*				X	X			
Phasianidae									
Brown Quail	*Synoicus ypsilophora*				X				
Stubble Quail	*Coturnix pectoralis*				X				
Podargidae									
Tawny Frogmouth	*Podargus strigoides*				X	X			
Podicipedidae									
Australasian Grebe	*Tachybaptus novaehollandiae*				X	X			
Great Crested Grebe	*Podiceps cristatus*				X	X			
Hoary-headed Grebe	*Poliocephalus poliocephalus*				X	X			
Psittacidae									
Australian Ringneck	*Barnardius zonarius*	X			X	X			

Class Family Vernacular Name	*Taxon*	Observed	Status (WA)	Status (EPBC)	ALA	Birdata	Dandjoo	DBCA	PMST, 10 km
Elegant Parrot	*Neophema elegans*				X	X			
Red-capped Parrot	*Purpureicephalus spurius*	X			X	X			
Regent Parrot	*Polytelis anthopeplus*				X	X			
Rock Parrot	*Neophema petrophila*				X	X			
Western Rosella	*Platycercus icterotis*	X			X	X			
Psittaculidae									
Purple-crowned Lorikeet	*Glossopsitta porphyrocephala*					X			
Rallidae									
Australian Spotted Crake	*Porzana fluminea*				X	X			
Black-tailed Native-hen	*Tribonyx ventralis*				X	X			
Buff-banded Rail	*Hypotaenidia philippensis*				X	X			
Dusky Moorhen	*Gallinula tenebrosa*				X	X			
Eurasian Coot	*Fulica atra*				X	X			
Lewin's Rail	*Lewinia pectoralis*				X				
Purple Swamphen	*Porphyrio porphyrio*				X	X			
Spotless Crake	*Zapornia tabuensis*				X	X			
Torresian Baillon's Crake	*Zapornia pusilla palustris*				X		X		
Recurvirostridae									
Banded Stilt	*Cladorhynchus leucocephalus*					X			
Black-winged Stilt	*Himantopus himantopus*				X				
Pied Stilt	*Himantopus himantopus leucocephalus*				X				
Red-necked Avocet	*Recurvirostra novaehollandiae*				X	X			
Rhipiduridae									
Grey Fantail	*Rhipidura albiscapa*	X			X	X			
Willie Wagtail	*Rhipidura leucophrys*				X	X			
Scolopacidae									
Bar-tailed Godwit	*Limosa lapponica*		MI	MI	X	X			

Class Family Vernacular Name	*Taxon*	Observed	Status (WA)	Status (EPBC)	ALA	Birdata	Dandjoo	DBCA	PMST, 10 km
Common greenshank	*Tringa nebularia*		MI	MI	X	X		X	X
Common sandpiper	*Actitis hypoleucos*		MI	MI	X	X		X	
Curlew Sandpiper	*Calidris ferruginea*		CR	CR & MI					X
Eastern curlew	*Numenius madagascariensis*		CR	CR & MI		X		X	X
Great Knot	*Calidris tenuirostris*		CR	VU & MI	X				
Marsh sandpiper	*Tringa stagnatilis*		MI	MI	X	X		X	
Pectoral sandpiper	*Calidris melanotos*		MI	MI	X	X		X	
Red Knot	*Calidris canutus*		EN	VU & MI	X				X
Red-necked stint	*Calidris ruficollis*		MI	MI	X	X		X	
Sanderling	*Calidris alba*		MI	MI	X	X		X	
Sharp-tailed Sandpiper	*Calidris acuminata*		MI	VU & MI	X				X
Wood Sandpiper	*Tringa glareola*		MI	MI	X				
Strigidae									
Barking Owl	*Ninox connivens*				X				
Southern Boobook	*Ninox boobook*	X			X	X			
Threskiornithidae									
Australian White Ibis	*Threskiornis moluccus*				X	X			
Glossy Ibis	*Plegadis falcinellus*		MI	MI	X				
Royal Spoonbill	*Platalea regia*				X	X			
Straw-necked Ibis	*Threskiornis spinicollis*				X	X			
Yellow-billed Spoonbill	*Platalea flavipes*				X	X			
Tytonidae									
Barn Owl	*Tyto alba*					X			
Masked Owl (southwest)	*Tyto novaehollandiae novaehollandiae*		P3				X		
Zosteropidae									
Silvereye	*Zosterops lateralis*				X	X			
Bivalvia									

Class Family Vernacular Name	*Taxon*	Observed	Status (WA)	Status (EPBC)	ALA	Birdata	Dandjoo	DBCA	PMST, 10 km
Hyriidae									
Carter's freshwater mussel	*Westralunio carteri*		VU	VU	X		X	X	X
Gastropoda									
Assimineidae									
Cape Leeuwin freshwater snail	*Austroassiminea letha*		VU				X		
Bothriembryontidae									
Irvine's Bothriembryontid Land Snail	*Bothriembryon irvineanus*		P2		X		X		
Insecta									
Carabidae									
Ground beetle (Margaret River)	*Trichosternus relictus*		P3				X		
Tettigoniidae									
Grey vernal katydid (southwest)	*Kawanaphila pachomai*		P1				X		
Vasse pachysaga (Busselton-Donnybrook)	*Pachysaga strobila*		P1				X	X	
Malacostraca									
Parastacidae									
Dunsborough burrowing crayfish	*Engaewa reducta*		EN	CR	X		X	X	X
Margaret River Burrowing Crayfish	*Engaewa pseudoreducta*		CR	CR	X		X		X
Margaret River hairy marron	*Cherax tenuimanus*		CR	CR			X		X
Mammalia									
Burramyidae									
Western Pygmy-possum	*Cercartetus concinnus*				X		X		
Canidae									
Fox	*Vulpes vulpes*	X			X				
Dasyuridae									
Brush-tailed Phascogale	*Phascogale tapoatafa*				X				
chuditch, western quoll	*Dasyurus geoffroii*		VU	VU			X	X	X
Gilbert's dunnart	*Sminthopsis gilberti*						X		

Class Family Vernacular Name	*Taxon*	Observed	Status (WA)	Status (EPBC)	ALA	Birdata	Dandjoo	DBCA	PMST, 10 km
Grey-bellied dunnart	*Sminthopsis griseoventer*						X		
South-western brush-tailed phascogale	*Phascogale tapoatafa wambenger*		CD		X		X	X	
Yellow-footed antechinus	*Antechinus flavipes*								
Felidae									
Cat	*Felis catus*				X				
Leporidae									
Rabbit	*Oryctolagus cuniculus*	X			X				
Macropodidae									
Quokka	*Setonix brachyurus*		VU	VU	X		X	X	
Western brush wallaby	*Notamacropus irma*		P4		X		X	X	
Western Grey Kangaroo	*Macropus fuliginosus*	X			X				
Molossidae									
White-striped Freetail bat	*Austronomus australis*						X		
Muridae									
Black Rat	*Rattus rattus*				X		X		
House Mouse	*Mus musculus*								
Water-rat, rakali	*Hydromys chrysogaster*		P4		X		X	X	
Myrmecobiidae									
Numbat	*Myrmecobius fasciatus*		EN	EN			X		
Peramelidae									
Quenda, southwestern brown bandicoot	*Isoodon fusciventer*	X	P4		X		X	X	
Phalangeridae									
Common Brushtail Possum	*Trichosurus vulpecula*	X			X		X		
Potoroidae									
Woylie	*Bettongia penicillata ogilbyi*		CR	EN	X		X	X	X
Pseudocheiridae									
Western ringtail possum, ngwayir	*Pseudocheirus occidentalis*	X	CR	CR	X		X	X	X

Class Family Vernacular Name	*Taxon*	Observed	Status (WA)	Status (EPBC)	ALA	Birdata	Dandjoo	DBCA	PMST, 10 km
Tarsipedidae									
Honey Possum	*Tarsipes rostratus*				X		X		
Thylacomyidae									
Bilby	*Macrotis lagotis*		VU	VU			X		
Vespertilionidae									
Chocolate wattled bat	*Chalinolobus morio*						X		
Gould's wattled bat	*Chalinolobus gouldii*						X		
Southern Forest Bat	*Vespadelus regulus*				X		X		
Vespertilionid Bat	*Nyctophilus geoffroyi*						X		
Western long-eared bat	*Nyctophilus major major*				X				
Reptilia									
Agamidae									
Dwarf bearded dragon	*Pogona minor*	X							
Chelidae									
Southern Snake-necked Turtle	*Chelodina oblonga*				X				
Elapidae									
Dugite	*Pseudonaja affinis*				X				
Mitchell's Short-tailed Snake	*Suta nigriceps*				X				
Muller's Snake	*Rhinoplocephalus bicolor*				X				
Short-nosed Snake	*Elapognathus minor*		P2				X		
Tiger Snake	*Notechis scutatus*				X				
Western Brown Snake	*Pseudonaja mengdeni*				X				
Western Crowned Snake	*Elapognathus coronatus*				X				
Gekkonidae									
Marbled Gecko	*Christinus marmoratus*				X				
Pygopodidae									
Heath Delma	*Delma hebesa*				X				

Class Family Vernacular Name	*Taxon*	Observed	Status (WA)	Status (EPBC)	ALA	Birdata	Dandjoo	DBCA	PMST, 10 km
Scincidae									
Bobtail	*Tiliqua rugosa*	X			X		X		
Coastal Plains Skink	*Ctenotus ora*		P3		X		X		
Elegant Slider	*Lerista elegans*				X		X		
Four-toed Earless Skink	*Hemiergis peronii*				X				
Grey's Menetia	*Menetia greyii*	X			X		X		
King's Skink	*Egernia kingii*				X		X		
Lowlands Earless Skink	*Hemiergis peronii*				X				
Red-legged Ctenotus	*Ctenotus labillardieri*				X				
South-western Crevice-skink	*Egernia napoleonis*				X		X		
South-western Orange-tailed Slider	*Lerista distinguenda*						X		
South-western Rock-skink	*Liopholis pulchra pulchra*				X		X		
West Coast Morethia Skink	*Morethia lineoocellata*				X		X		
Typhlopidae									
Southern blind snake	*Anilios australis*						X		
Varanidae									
Heath Monitor	*Varanus rosenbergi*				X		X		

* Sources as per outlined in Table C-1

Appendix E Local Significant Vegetation Records

Community		Description	Status (WA)	Status (EPBC)	Source
Banksia Woodlands of the Swan Coastal Plain		Canopy is most commonly dominated or co-dominated by *Banksia attenuata* and/or *B. menziesii*. Other Banksia species that can dominate in the community are *B. prionotes* or *B. ilicifolia*. It typically occurs on well drained, low nutrient soils on sandplain landforms, particularly deep Bassendean and Spearwood sands and occasionally on Quindalup sands; it is also common on sandy colluvium and aeolian sands of the Ridge Hill Shelf, Whicher Scarp and Dandaragan Plateau and can occur in other less common scenarios. The description, area and condition thresholds that apply to the EPBC-listed TEC of the same name, also apply to this Priority ecological community.	Priority 3	Endangered	(DBCA, 2025b; DCCEEW, 2025)
***Corymbia calophylla* woodlands on heavy soils of the southern Swan Coastal Plain (floristic community type 1b as originally described in Gibson et al. 1994)**		The community has been recorded from heavy fertile soils of the southern Swan Coastal Plain south of Dardanup. It consists largely of *Corymbia calophylla* (marri) forests and woodlands. *Eucalyptus marginata* (jarrah) is also common in the tree layer. Common understorey species include *Acacia extensa* (wiry wattle), *Gompholobium polymorphum*, *Billardiera variifolia*, *Hibbertia hypericoides* (yellow buttercups), *Hypocalymma angustifolium* (white myrtle) and *Xanthorrhoea preissii* (balga) over a rich herb layer including *Scaevola calliptera, Agrostocrinum scabrum* (blue grass lily), *Austrostipa semibarbata*, *Dampiera linearis* (common dampiera), *Mesomelaena tetragona* (semaphore sedge), *Morelotia octandra* and *Lomandra purpurea* (purple mat rush). The community is also known as 'floristic community type 1b' as originally described in Gibson N., Keighery B.J., Keighery G.J., Burbidge A.H. and Lyons M.N. (1994) A floristic survey of the southern Swan Coastal Plain (unpublished report for the Australian Heritage Commission prepared by the Department of Conservation and Land Management and the Conservation Council of Western Australia (Inc.)).	Critically Endangered	-	(DBCA, 2025e, 2025b)
Claypans of the Swan Coastal Plain (EPBC-listed TEC)	Dense shrublands on clay flats (floristic community type 9 as originally described in	The community occurs as shrublands or open woodlands on clay flats that are inundated for long periods. It has been recorded between Moore River National Park and Dunsborough. Sedges are more apparent in the community than in other claypans, generally with moderate frequencies of *Chorizandra enodis* (black bristlerush), *Cyathochaeta avenacea*, *Lepidosperma longitudinale* (pithy sword-sedge) and *Leptocarpus coangustatus*. The community has a lower species richness and weed frequency than other claypan threatened ecological communities. The	Endangered	Critically Endangered	(DBCA, 2025e, 2025b; DCCEEW, 2025)

Community		Description	Status (WA)	Status (EPBC)	Source
	Gibson et al. 1994) (synonymous with subtypes of Claypans of the Swan Coastal Plain EPBC-listed TEC)	community is also known as 'floristic community type 9' as originally described in Gibson N., Keighery B.J., Keighery G.J., Burbidge A.H. and Lyons M.N. (1994) A floristic survey of the southern Swan Coastal Plain (unpublished report for the Australian Heritage Commission prepared by the Department of Conservation and Land Management and the Conservation Council of Western Australia (Inc.)).			
	Seasonal rainfall filled wetlands with impeding substrate of the Swan Coastal Plain and Jarrah Forest in transitional rainfall zones (synonymous with subtypes of Claypans of the Swan Coastal Plain EPBC-listed TEC)	This listing encompasses Claypan Group 1, 2 and 3 (as defined by Gibson *et.al*. 2005: Threatened plant communities of Western Australia. 2 The seasonal clay-based wetland communities of the South West. Pacific Conservation Biology 11:287-301) that are included under the EPBC-listed TEC and are not listed as a TEC at the state level ie while floristic community types 7, 8, 9, and 10a (as defined in Gibson *et al*. 1994; A floristic survey of the southern Swan Coastal Plain) are also part of the synonymous EPBC-listed claypan TEC, those claypans have existing state TEC status: Group 1: Claypans of the Swan Coastal Plain and plateau with a damp terrestrial phase of the pool cycle. Common overstorey taxa include *Casuarina obesa, Melaleuca viminea* and *Melaleuca cuticularis*. Taxa of this group often reflect a higher salinity of the claypan substrate. Group 2: Seasonally inundated flats largely confined to the Swan Coastal Plain in high rainfall areas. Generally characterised by *Hypocalymma angustifolium, Kunzea micrantha, Kunzea recurva* and *Viminaria juncea.* Group 3*:* Predominantly claypans of deeper basins of the Swan Coastal Plain and Jarrah Forest Bioregion (plateau). Generally dominated by *Melaleuca lateritia* and characterised by aquatic and amphibious taxa (eg: *Hydrocotyle lemnoides* P4, *Glossostigma diandrum*, *Liparophyllum capitatum,* and *Eleocharis keigheryi* VU).	Priority 1	Critically Endangered	(DBCA, 2025b, 2025e)
Empodisma peatlands of southwestern Australia		The assemblage of plants, animals and other organisms associated with a type of freshwater, peat-based wetland (including within damplands, troughs, paluslopes, palusplains and palusmonts floodplains as per (Semeniuk, 1987)) that is found in the High Rainfall Province of the south-west of Western Australia (BoM, 2022; Hopper & Gioia, 2004). It is typically a sedgeland to shrubland vegetation complex on peaty substrates that almost always includes the perennial grass-like twig rush *Empodisma gracillimum* (tanglefoot). Empodisma peatlands provide	Priority 1	Endangered	(DBCA, 2025b; DCCEEW, 2025)

Community	Description	Status (WA)	Status (EPBC)	Source
	habitat for a diverse range of hydrophilic species, including threatened, regionally endemic, and relictual flora and fauna species (DCCEEW, 2023a).			
***Eucalyptus patens, Corymbia calophylla, Agonis flexuosa* Closed Low Forest (near Busselton)**	*Eucalyptus patens* on loamy brown sands over limestone. Species present include *Eucalyptus patens, Corymbia calophylla* and *Agonis flexuosa* over understorey species including *Bossiaea linophylla, Hibbertia hypericoides, Gastrolobium praemorsum, Leucopogon propinquus, Phyllanthus calycinus, Lomandra micrantha, Lepidosperma longitudinale, Mesomelaena tetragona, Cyathochaeta avenacea* and *Tetraria octandra*. The community is likely to have similarities to community type 1b 'Southern Corymbia calophylla woodlands on heavy soils'.	Priority 1	-	(DBCA, 2025e, 2025b)
Shrublands of near permanent wetlands in creeklines of the Whicher Scarp (Whicher Scarp community G2)	Community is species poor and included the following taxa: *Astartea scoparia, Homalospermum firmum, Taxandria fragrans, *Anthoxanthum odoratum, Machaerina rubiginosa, Cyathochaeta teretifolia, Isolepis cernua, Taraxis grossa.*	Priority 1	Not listed	(DBCA, 2025b)
Shrublands on southern Swan Coastal Plain Ironstones (Busselton area) (floristic community type 10b as originally described in Gibson et al. 1994)	This species-rich plant community is a seasonal wetland on ironstone sheet rock overlain by shallow loam soils on the Swan Coastal Plain and Whicher Scarp near Busselton. Much of the species diversity comes from annuals and geophytes (plants with an underground storage organ). Typical and common shrubs include *Kunzea rostrata*, *Pericalymma ellipticum* (swamp teatree), *Hakea oldfieldii*, *Hemiandra pungens* (snakebush) and *Viminaria juncea* (swishbush). Aphelia cyperoides (hairy aphelia) and *Centrolepis aristata* (pointed centrolepis) also commonly occur. Many taxa in the community are endemic to this unusual geology including a suite of threatened flora. The community is also known as 'floristic community type 10b' as originally described in Gibson et al. (1994).	Critically Endangered	Endangered	(DBCA, 2025b; DCCEEW, 2025)
Swan Coastal Plain Paluslope Wetlands	These wetlands are very wet all year round and are associated with areas of groundwater seepage from the sandy low hills at the base of the Whicher Scarp. At times these wetlands are contiguous with areas of Pinjarra Plain wetlands, and the wetlands of the two landforms merge. Combinations of the following species are typically found in the type: *Melaleuca preissiana*, *Taxandria linearifolia*, *Taxandria fragrans*, *Melaleuca incana*, and *Cyathochaeta teretifolia*. Other species include: *Eucalyptus patens*, *Homalospermum firmum*, *Gahnia decomposita*,	Priority 1	-	(DBCA, 2025e, 2025b)

Community		Description	Status (WA)	Status (EPBC)	Source
		Callistachys lanceolata, *Hakea linearis*, *Melanostachya ustulata*, *Evandra aristata*, *Beaufortia sparsa*, *Callistemon glaucus* and *Pultenaea pinifolia*.			
Subtropical and Temperate Coastal Saltmarsh		Consists of the assemblage of plants, animals and micro-organisms associated with saltmarsh in coastal regions of sub-tropical and temperate Australia (south of 23oS latitude). It occurs on the coastal margin, along estuaries and coastal embayments and on low wave energy coast in places with at least some tidal connection, including rarely-inundated supratidal areas, intermittently opened or closed lagoons, and groundwater tidal influences. The community occurs on sandy or muddy substrate and may include coastal clay pans and similar habitats. It consists of dense to patchy areas of characteristic coastal saltmarsh plant species that include salt- tolerant herbs, succulent shrubs or grasses, and may also include bare sediment as part of the mosaic. It can occur where the proportional cover by tree canopy such as mangroves, Melaleucas or Casuarinas or seagrass is not greater than 50%. The description, area and condition thresholds that apply to the EPBC-listed TEC of the same name, also apply to this Priority ecological community.	Priority 3	Vulnerable	(DBCA, 2025b; DCCEEW, 2025)
Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain	Quindalup *Eucalyptus gomphocephala* and/or *Agonis flexuosa* woodlands (Can form a component of the Tuart woodlands and forests of the Swan Coastal Plain EPBC listed TEC	Mostly confined to Quindalup Dunes and Spearwood Dunes but can also occur on the Bassendean dunes and Pinjarra Plain. It can occur on the banks of rivers and wetlands. Tuart is the key upper canopy species although it may co-occur with trees of other species. Trees commonly co-occurring with Tuart include *Agonis flexuosa* (peppermint), *Banksia grandis*, *Banksia attenuata*, *Eucalyptus marginata*; and less commonly, *Corymbia calophylla*, *Banksia menziesii* and *Banksia prionotes*. An understorey of native plants is typically present, which may include grasses, herbs and shrubs. The description, area and condition thresholds that apply to the EPBC-listed TEC of the same name, also apply to this Priority ecological community.	Priority 3 (iii)	Critically Endangered	(DCCEEW, 2025)

Appendix F Likelihood of Occurrence for Conservation Significant Flora

Taxon	Status (WA)	Status (EPBC)	Flowering Period (WA Herbarium, 1998-)	Habitat (WA Herbarium, 1998-)	Nearest Known Location (km)*	Identifiable During Survey Period**	Likelihood of Further Occurrence
Acacia flagelliformis	P4		May – Sep	Sandy soils. Winter-wet areas.	0.05	Y	**Recorded**
Acacia inops	P3		Sep – Nov	Black peaty sand, clay. Swamps, creeks.	0.15	Y	**Unlikely to occur** – Some habitat within the Survey Area is broadly consistent with the species' documented habitat preferences; however, the species would have been identifiable during the survey period based on its growth form and/or phenology. It was not recorded despite targeted survey effort and is therefore considered unlikely to occur within the Survey Area.
Acacia lateriticola **var. Glabrous variant (B.R. Maslin 6765)**	P3		Aug or Oct	Lateritic soils.	0.48	Y	**Unlikely to occur** - Habitat within the Survey Area is broadly consistent with the species' documented habitat preferences; however, the species would have been identifiable during the survey period based on its growth form and/or phenology. It was not recorded despite targeted survey effort and is therefore considered unlikely to occur within the Survey Area.
Acacia semitrullata	P4		May – Oct	White/grey sand, sometimes over laterite. Open heath frequently fringing seasonally dry swamps, and in sand over laterite in shallow depressions in open Eucalyptus marginata forest (WA Herbarium, 2022)	Recorded	Y	**Recorded**
Andersonia **sp. Echidna (A.R. Annels ARA 5500)**	P2		Nov - Dec	Lateritic brown sandy loam, gravelly sand.	2.94	Y	**Unlikely to occur** - Habitat within the Survey Area is broadly consistent with the species' documented habitat preferences; however, the species would have been identifiable during the survey period based on its growth form and/or phenology. It was not recorded despite targeted survey effort and is therefore considered unlikely to occur within the Survey Area.
Banksia mimica	T	EN	Dec or Jan - Feb	White or grey sand over laterite, sandy loam.	NA	Y	**Unlikely to occur** - Habitat within the Survey Area does not align with the species' documented habitat preferences, and the

Taxon	Status (WA)	Status (EPBC)	Flowering Period (WA Herbarium, 1998-)	Habitat (WA Herbarium, 1998-)	Nearest Known Location (km)*	Identifiable During Survey Period**	Likelihood of Further Occurrence
							species would have been identifiable at the time of survey based on its growth form and/or phenology.
Banksia squarrosa* subsp. *argillacea	T	VU	Jun – Nov	White/grey sand, gravelly clay or loam. Winter-wet flats, clay flats.	3.81	Y	**Unlikely to occur** - Habitat within the Survey Area does not align with the species' documented habitat preferences, and the species would have been identifiable at the time of survey based on its growth form and/or phenology.
Boronia capitata* subsp. *gracilis	P3		Jun – Nov.	Winter-wet swamps, or gentle hillslopes. White/grey or black sand.	0.08	Y	**Unlikely to occur** - Habitat within the Survey Area is broadly consistent with the species' documented habitat preferences; however, the species would have been identifiable during the survey period based on its growth form and/or phenology. It was not recorded despite targeted survey effort and is therefore considered unlikely to occur within the Survey Area.
***Boronia* sp. Leeuwin (J. Scott 235)**	P2		Aug – Dec	Seaonally wet areas, brown/grey/black loam, sand, peat, clay, with granite.	3.34	Y	**Unlikely to occur** - Habitat within the Survey Area does not align with the species' documented habitat preferences, and the species would have been identifiable at the time of survey based on its growth form and/or phenology.
Brachyscias verecundus	T	CR	Oct – Dec	Near outcrops. Sand over laterite/Ironstone/granite	NA	Y	**Unlikely to occur** - Habitat within the Survey Area does not align with the species' documented habitat preferences, and the species would have been identifiable at the time of survey based on its growth form and/or phenology.
Caladenia busselliana	T	EN	Sep – Oct.	Winter wet swamps. Sandy loam over clay.	0.48	Y	**Unlikely to occur** - Some habitat within the Survey Area is broadly consistent with the species' documented habitat preferences, and the species is known from nearby areas. However, extensive previous surveys have been undertaken within suitable habitat surrounding the Survey Area, in addition to the current targeted survey effort. While it is acknowledged that some *Caladenia* species may exhibit variable emergence and flowering between seasons, the species has not been recorded despite repeated survey effort and is therefore considered unlikely to occur within the Survey Area.
Caladenia excelsa	T	EN	Sep – Nov	Sandy soils in Banksia, Jarrah (Eucalyptus	1.72	Y	**Unlikely to occur** - Some habitat within the Survey Area is broadly consistent with the species' documented habitat

Taxon	Status (WA)	Status (EPBC)	Flowering Period (WA Herbarium, 1998-)	Habitat (WA Herbarium, 1998-)	Nearest Known Location (km)*	Identifiable During Survey Period**	Likelihood of Further Occurrence
				marginata) and marri (Corymbia calophylla) woodlands.			preferences; however, the species was not recorded during targeted surveys undertaken within the known flowering period. While it is acknowledged that some *Caladenia* species may exhibit variable emergence and flowering between seasons, and may not be detectable in all years, the absence of observations during the survey and the limited extent and condition of suitable habitat indicate the species is unlikely to occur within the Survey Area
Caladenia huegelii	T	EN	Sep – Oct.	Grey or brown sand, clay loam. Sandy soils in near coastal woodlands and shrublands.	NA	Y	**Unlikely to occur** - Some habitat within the Survey Area is broadly consistent with the species' documented habitat preferences; however, the species was not recorded during targeted surveys undertaken within the known flowering period. While it is acknowledged that some *Caladenia* species may exhibit variable emergence and flowering between seasons, and may not be detectable in all years, the absence of observations during the survey and the limited extent and condition of suitable habitat indicate the species is unlikely to occur within the Survey Area.
Caladenia procera	T	CR	Sep – Oct	Rich clay loam, alluvial loamy flats, jarrah/marri/peppermint woodland, dense heath, sedges.	1.87	Y	**Unlikely to occur -** Some habitat within the Survey Area is broadly consistent with the species' documented habitat preferences; however, the species was not recorded during targeted surveys undertaken within the known flowering period. While it is acknowledged that some *Caladenia* species may exhibit variable emergence and flowering between seasons, and may not be detectable in all years, the absence of observations during the survey and the limited extent and condition of suitable habitat indicate the species is unlikely to occur within the Survey Area.
Caladenia viridescens	T	EN	Sep – Oct	Loam, grey sand.	0.48	Y	**Unlikely to occur** - Some habitat within the Survey Area is broadly consistent with the species' documented habitat preferences, and the species is known from nearby areas. However, extensive previous surveys have been undertaken within suitable habitat surrounding the Survey Area, in addition to the current targeted survey effort. While it is acknowledged

Taxon	Status (WA)	Status (EPBC)	Flowering Period (WA Herbarium, 1998-)	Habitat (WA Herbarium, 1998-)	Nearest Known Location (km)*	Identifiable During Survey Period**	Likelihood of Further Occurrence
							that some *Caladenia* species may exhibit variable emergence and flowering between seasons, the species has not been recorded despite repeated survey effort and is therefore considered unlikely to occur within the Survey Area.
Chamelaucium roycei	T	VU	May, Jul, Sep – Jan	Brown sandy loam or sandy clay over ironstone or laterite, seasonally inundated areas, flats.	NA	Y	**Unlikely to occur** - Habitat within the Survey Area does not align with the species' documented habitat preferences, and the species would have been identifiable at the time of survey based on its growth form and/or phenology.
Cyathochaeta teretifolia	P3		Jul – Nov	Grey sand, sandy clay. Swamps, creek edges.	Likely recorded	Y	**Likely recorded**
Dampiera heteroptera	P3		Sep – Oct	Sandy soils. Swampy areas.	3.34	Y	**Unlikely to occur** - Habitat within the Survey Area is broadly consistent with the species' documented habitat preferences; however, the species would have been identifiable during the survey period based on its growth form and/or phenology. It was not recorded despite targeted survey effort and is therefore considered unlikely to occur within the Survey Area.
Daviesia elongata	T	VU	Sep – Dec	Well drained soils, undulating plains. Grey sand over laterite/ ironstone.	2.67	Y	**Unlikely to occur** - Habitat within the Survey Area does not align with the species' documented habitat preferences, and the species would have been identifiable at the time of survey based on its growth form and/or phenology.
***Dillwynia* sp. Capel (P.A. Jurjevich 1771)**	P3		Sep – Oct.	Littered grey loamy sand, rocky soils. Valleys, rangelands.	0.74	Y	**Recorded**
Diuris micrantha	T	VU	Sept – Oct	Winter-wet depressions. Brown loamy clay. Winter wet swamps, in shallow water.	NA	Y	**Unlikely to occur** - Some habitat within the Survey Area is broadly consistent with the species' documented habitat preferences; however, the species would have been identifiable during the survey period based on its growth form and/or phenology. It was not recorded despite targeted survey effort and is therefore considered unlikely to occur within the Survey Area.

Taxon	Status (WA)	Status (EPBC)	Flowering Period (WA Herbarium, 1998-)	Habitat (WA Herbarium, 1998-)	Nearest Known Location (km)*	Identifiable During Survey Period**	Likelihood of Further Occurrence
Drakaea elastica	T	EN	Oct – Nov.	White or grey sand. Low-lying situations adjoining winter-wet swamps.	NA	Y	**Unlikely to occur** - Habitat within the Survey Area does not align with the species' documented habitat preferences, and the species would have been identifiable at the time of survey based on its growth form and/or phenology.
Drakaea micrantha	T	VU	Sep – Oct.	Edge of swamps, often found in clearings and tracks. White-grey sand.	0.81	P	**Unlikely to occur** - Some habitat within the Survey Area is broadly consistent with the species' documented habitat preferences; however, the species was not recorded during targeted surveys undertaken within the known flowering period. While it is acknowledged that some orchid species may exhibit variable emergence and flowering between seasons, and may not be detectable in all years, the absence of observations during the survey, together with the limited extent and condition of suitable habitat, indicates the species is unlikely to occur within the Survey Area.
Drosera fimbriata	P4		Sep – Oct	White sand, granite.	3.05	Y	**Unlikely to occur** - Habitat within the Survey Area does not align with the species' documented habitat preferences, and the species would have been identifiable at the time of survey based on its growth form and/or phenology.
Eucalyptus x phylacis	T	EN	May and Oct	Laterite, loam over granite. Coastal areas.	NA	Y	**Unlikely to occur** - Habitat within the Survey Area does not align with the species' documented habitat preferences, and the species would have been identifiable at the time of survey based on its growth form and/or phenology.
Gahnia sclerioides	P4		Feb, Apr, Jun, Aug – Sep, Nov	Loam, sandy soils. Moist shaded situations	1.34	Y	**Recorded**
Gastrolobium argyrotrichum	T	CR	Oct	Dry orange/brown lateritic loam over granite, upper slopes and hillsides.	2.23	Y	**Unlikely to occur** - Habitat within the Survey Area does not align with the species' documented habitat preferences, and the species would have been identifiable at the time of survey based on its growth form and/or phenology.
Gastrolobium papilio	T	EN	Oct – Dec.	Flat plains or gentle slopes, sandy clay over ironstone and laterite.	NA	Y	**Unlikely to occur** - Habitat within the Survey Area does not align with the species' documented habitat preferences, and the

Taxon	Status (WA)	Status (EPBC)	Flowering Period (WA Herbarium, 1998-)	Habitat (WA Herbarium, 1998-)	Nearest Known Location (km)*	Identifiable During Survey Period**	Likelihood of Further Occurrence
							species would have been identifiable at the time of survey based on its growth form and/or phenology.
Gonocarpus pusillus	P4		Oct – Dec, Feb	Grey sandy loam, sandy clay loam, wetlands or seasonally inundated areas.	2.94	Y	**Unlikely to occur** - Habitat within the Survey Area is broadly consistent with the species' documented habitat preferences; however, the species would have been identifiable during the survey period based on its growth form and/or phenology. It was not recorded despite targeted survey effort and is therefore considered unlikely to occur within the Survey Area.
Grevillea brachystylis* subsp. *brachystylis	P3		Jun – Nov	Black sand, sandy clay. Swampy situations.	4.64	Y	**Unlikely to occur** - Habitat within the Survey Area does not align with the species' documented habitat preferences, and the species would have been identifiable at the time of survey based on its growth form and/or phenology.
Grevillea brachystylis* subsp. *grandis	T	CR	Jul – Oct or Dec – Jan	Plains or flats, brown sandy loam, lateritic clay.	NA	Y	**Unlikely to occur** - Some habitat within the Survey Area is broadly consistent with the species' documented habitat preferences; however, the species would have been identifiable during the survey period based on its growth form and/or phenology. It was not recorded despite targeted survey effort and is therefore considered unlikely to occur within the Survey Area.
***Grevillea brachystylis* subsp. Yelverton (A. Webb AW09122)**	P2		Sep - Oct	Shallow loamy soils, granite outcrops.	1.69	Y	**Unlikely to occur** - Habitat within the Survey Area does not align with the species' documented habitat preferences, and the species would have been identifiable at the time of survey based on its growth form and/or phenology.
Grevillea bronweniae	P3		Jul – Nov	Lateritic gravelly loam, grey sand or brown sand/loam. Slopes, drainage lines and watercourses	3.45	Y	**Unlikely to occur** – Some parts of the Survey Area may be broadly consistent with the species' documented habitat preferences; however, the species would have been identifiable during the survey period based on its growth form and/or phenology. It was not recorded despite targeted survey effort and is therefore considered unlikely to occur within the Survey Area.
Jacksonia gracillima	P3		Sep - Nov	Sandy soils, sandplains, swampy depressions,	NA	Y	**Likely recorded**

Taxon	Status (WA)	Status (EPBC)	Flowering Period (WA Herbarium, 1998-)	Habitat (WA Herbarium, 1998-)	Nearest Known Location (km)*	Identifiable During Survey Period**	Likelihood of Further Occurrence
				shrublands on the edges of winter wet swamps			
Johnsonia inconspicua	P3		Oct – Nov	White-grey or black sand. Low dunes, winter-wet flats.	0.03	Y	**Recorded**
Lambertia echinata* subsp. *occidentalis	T	EN	Feb – Apr or Dec	White sandy soils over laterite, orange/brown-red clay over ironstone. Flats to foothills, winter-wet sites.	NA	Y	**Unlikely to occur** - Habitat within the Survey Area does not align with the species' documented habitat preferences, and the species would have been identifiable at the time of survey based on its growth form and/or phenology.
Lasiopetalum laxiflorum	P3		Oct or Nov	Brown/grey sandy clay, clayey loam sand over laterite, slopes.	3.34	Y	**Unlikely to occur** - Some habitat within the Survey Area is broadly consistent with the species' documented habitat preferences; however, the species would have been identifiable during the survey period based on its growth form and/or phenology. It was not recorded despite targeted survey effort and is therefore considered unlikely to occur within the Survey Area.
Leptomeria furtiva	P2		Aug – Oct	Grey or black peaty sand. Winter-wet flats.	3.33	Y	**Unlikely to occur** - Some habitat within the Survey Area is broadly consistent with the species' documented habitat preferences; however, the species would have been identifiable during the survey period based on its growth form and/or phenology. It was not recorded despite targeted survey effort and is therefore considered unlikely to occur within the Survey Area.
Lepyrodia heleocharoides	P3		Dec	Moist peaty sand. Dry or seasonally inundated heath or woodland, swamps.	1.46	Y	**Unlikely to occur** - Some habitat within the Survey Area is broadly consistent with the species' documented habitat preferences; however, the species would have been identifiable during the survey period based on its growth form and/or phenology. It was not recorded despite targeted survey effort and is therefore considered unlikely to occur within the Survey Area.

Taxon	Status (WA)	Status (EPBC)	Flowering Period (WA Herbarium, 1998-)	Habitat (WA Herbarium, 1998-)	Nearest Known Location (km)*	Identifiable During Survey Period**	Likelihood of Further Occurrence
Loricobbia pinifolia	P3		Sep - Nov, Feb	Seasonally inundated areas, sand over laterite, sandy clay, riparian vegetation.	0.03	Y	**Recorded**
Loxocarya magna	P3		Sep or Nov.	Sand, loam, clay, ironstone. Seasonally inundated or damp habitats.	4.54	Y	**Unlikely to occur** - Habitat within the Survey Area does not align with the species' documented habitat preferences, and the species would have been identifiable at the time of survey based on its growth form and/or phenology.
***Netrostylis* sp. Blackwood River (A.R. Annels 3043)**	P3		April/May	Swampy areas, dark peaty clay loam.	3.88	Y	**Recorded**
***Netrostylis* sp. Nannup (P.A. Jurjevich 1133)**	1		Unknown	Creeklines, dark grey clay loam.	3.34	Y	**Unlikely to occur** - Some habitat within the Survey Area is broadly consistent with the species' documented habitat preferences; however, the species would have been identifiable during the survey period based on its growth form and/or phenology. It was not recorded despite targeted survey effort and is therefore considered unlikely to occur within the Survey Area.
Olearia strigosa	P3		Dec or Jan – May	Sandy loam. Open forest.	3.01	Y	**Unlikely to occur** - Some habitat within the Survey Area is broadly consistent with the species' documented habitat preferences; however, the species would have been identifiable during the survey period based on its growth form and/or phenology. It was not recorded despite targeted survey effort and is therefore considered unlikely to occur within the Survey Area.
Petrophile latericola	T	EN	Nov	Red lateritic clay. Winter-wet flats	NA	Y	**Unlikely to occur** - Habitat within the Survey Area does not align with the species' documented habitat preferences, and the species would have been identifiable at the time of survey based on its growth form and/or phenology.
Pimelea ciliata* subsp. *longituba	P3		Oct – Dec	Grey sand over clay, loam.	2.94	Y	**Unlikely to occur** - Some habitat within the Survey Area is broadly consistent with the species' documented habitat preferences; however, the species would have been identifiable

Taxon	Status (WA)	Status (EPBC)	Flowering Period (WA Herbarium, 1998-)	Habitat (WA Herbarium, 1998-)	Nearest Known Location (km)*	Identifiable During Survey Period**	Likelihood of Further Occurrence
							during the survey period based on its growth form and/or phenology. It was not recorded despite targeted survey effort and is therefore considered unlikely to occur within the Survey Area.
Synaphea decumbens	P3		Sept – Nov	Grey-brown loam over laterite	2.79	Y	**Unlikely to occur** - Some habitat within the Survey Area is broadly consistent with the species' documented habitat preferences; however, the species would have been identifiable during the survey period based on its growth form and/or phenology. It was not recorded despite targeted survey effort and is therefore considered unlikely to occur within the Survey Area.
***Synaphea* sp. Fairbridge Farm (D.Papenfus 696)**	T	CR	Oct	Sandy with lateritic pebbles. Near winter-wet flats, in low woodland with weedy grasses.	NA	Y	**Unlikely to occur** - Habitat within the Survey Area does not align with the species' documented habitat preferences, and the species would have been identifiable at the time of survey based on its growth form and/or phenology.
Thysanotus glaucus	P4		Oct – Mar	White, grey or yellow sand, sandy gravel.	1.27	Y	**Unlikely to occur** - Some habitat within the Survey Area is broadly consistent with the species' documented habitat preferences; however, the species would have been identifiable during the survey period based on its growth form and/or phenology. It was not recorded despite targeted survey effort and is therefore considered unlikely to occur within the Survey Area.
***Tripterococcus* sp. Brachylobus (A.S. George 14234)**	P4		Nov – Dec	Plains, winter damp flats with grey sand or clay	1.04	Y	**Unlikely to occur** - Habitat within the Survey Area does not align with the species' documented habitat preferences, and the species would have been identifiable at the time of survey based on its growth form and/or phenology.
Verticordia lehmannii	P4		Jan or Apr – Jun or Aug or Dec.	Winter wet flats or lowlands. Sandy clay	2.81	Y	**Unlikely to occur** - Habitat within the Survey Area does not align with the species' documented habitat preferences, and the species would have been identifiable at the time of survey based on its growth form and/or phenology.
Verticordia plumosa* var. *ananeotes	T	EN	Nov – Dec	Sandy loam. Seasonally inundated plains.	5.65	Y	**Unlikely to occur** - Habitat within the Survey Area does not align with the species' documented habitat preferences, and the

Taxon	Status (WA)	Status (EPBC)	Flowering Period (WA Herbarium, 1998-)	Habitat (WA Herbarium, 1998-)	Nearest Known Location (km)*	Identifiable During Survey Period**	Likelihood of Further Occurrence
							species would have been identifiable at the time of survey based on its growth form and/or phenology.
Verticordia plumosa* var. *vassensis	T	EN	Sep – Dec or Jan – Feb.	Winter wet flats or lowlands. White/grey sand or clay over laterite.	4.10	Y	**Unlikely to occur** - Habitat within the Survey Area does not align with the species' documented habitat preferences, and the species would have been identifiable at the time of survey based on its growth form and/or phenology.

*Nearest known location for records returned by the DBCA WA Herbarium specimen and Threatened and Priority Flora (TPFL) database interrogation (DBCA, 2025d)

**Y = Yes, N = No, P = Potentially

Appendix G Likelihood of Occurrence for Conservation Significant Fauna

Table G.1 provides an evaluation of the presence of habitat and the likelihood of occurrence for conservation significant fauna taxa within the Survey Area. The potential to be impacted depends on the nature of the impacts proposed, habitat utilised by the target species and the likelihood of occurrence. The presence of habitat is broken into four categories:

- **Present - core:** Potential or known habitat present within the Survey Area. Consists of "habitat critical to the survival of a species" which refers to core areas that are necessary for activities such as foraging, breeding, roosting, or dispersal, necessary for the long-term maintenance of the species to maintain genetic diversity and long-term evolutionary development (DoE, 2013) or habitat types recognised in Recovery Plans or guidelines.
- **Present - supporting:** Likely to provide dispersal, transitory or supporting habitat that may support core / critical habitat areas, such as small areas of lesser quality habitat where an animal has a large home range.
- **Marginal:** Habitat present is not typical but may be suitable, or habitat is typical, but condition and microhabitat requirements of species are not present.
- **Absent:** No potential or known habitat is present within the project area.

There are four categories for likelihood of occurrence:

- **Present:** Species was recorded during the field investigations.
- **Possible:** Suitable habitat present and the species could occur in the Survey Area based on the proximity of nearest records.
- **Unlikely:** Species known or predicted within the locality. Suitable habitat may be present in the Survey Area, but the proximity of nearest records suggests it is unlikely to occur.
- **Nil:** Species known or predicted to occur within the locality but no suitable habitat within the Survey Area.

Some taxa have been excluded from the likelihood of occurrence assessment as they are not relevant to the proposal or would not be impacted:

- Species considered regionally extinct (potentially with only few historical records) misidentified from current records or outside of the known distribution (e.g. Malleefowl, Quokka, Bilby and Numbat).
- Marine (e.g. seals, dolphins, whales) or marine migratory species (e.g. Albatrosses).
- Migratory species where breeding is in the northern hemisphere, and Migratory waders such those in the family Scolopacidae - shorebirds or waders.

Caspian Tern	Curlew Sandpiper	Eastern Curlew
Bridled Tern	Pectoral Sandpiper	Wood Sandpiper
Common Tern	Hooded Plover	Common Greenshank
Crested Tern	Greater Sand Plover	Marsh Sandpiper
Common Sandpiper	Grey Plover	Glossy Ibis
Sharp-tailed Sandpiper	Red-necked Stint	
Sanderling	Great Knot	
Red Knot	Bar-tailed Godwit	

Conservation status is as per the (federal) EPBC Act and (WA) DBCA Parks and Wildlife Service's Threatened and Priority Fauna List last updated in January 2025. Refer to Appendix B for Conservation Codes.

Table G.1 Evaluation of the presence of habitat and the likelihood of occurrence for conservation fauna significant species within the Survey Area

CLASS - Family	*Genus species*	Vernacular	Stat. WA	Status Federal	Habitat and Distribution	Presence of habitat	Likelihood of occurrence
ACTINOPTERYGII - Galaxiidae	*Galaxiella munda*	Western Mud Minnow	VU	VU	Its centre of distribution is in the small lakes and streams around Windy Harbour in the 'Entrecasteaux National Park (Morgan et al., 1998a). Within the Margaret River mud minnows are essentially restricted to a few pools in the upper reaches, habitats that were previously free from introduced fishes (Morgan & Beatty, 2003). Morgan and Beatty (2004) reported the first record of mud minnows in the lower Margaret River, downstream of Canebreak Pool. Unable to tolerate marginally saline or eutrophic waters (characteristic of the larger rivers and wetlands of southwestern Australia) (Wetland Research & Management, 2007). No DBCA (2026a) records within 5 km. No areas mapped by the Healthy Rivers project as "species found" or "species likely to be found" intersect the Survey Area or occur within 5 km, despite the presence of survey sites in this vicinity (DWER, 2026).	Absent	Nil
ACTINOPTERYGII - Nannopercidae	*Nannatherina balstoni*	Balston's Pygmy Perch	VU	VU	Known from a small area of coastal peat flats in south-western Western Australia that extends from Margaret River to Two Peoples Bay. Two additional populations have recently been found to the north of this area in the Collie River and the Moore River (Morgan et al., 1998b). In winter and spring Balston's Pygmy Perch is typically found among inundated riparian vegetation where it presumably feeds and spawns. In summer, Balston's Pygmy Perch has been found to be moderately abundant in pools and creeks that often dry up, such as those found between Windy Harbour and Walpole (Morgan et al., 1998b).	Absent	Nil

CLASS - Family	*Genus species*	Vernacular	Stat. WA	Status Federal	Habitat and Distribution	Presence of habitat	Likelihood of occurrence
					No DBCA (2026a) records within 5 km. No areas mapped by the Healthy Rivers project as "species found" or "species likely to be found" intersect the Survey Area or occur within 5 km, despite the presence of survey sites in this vicinity (DWER, 2026).		
ARACHNIDA - Migidae	*Bertmainius opimus*	Western pygmy trapdoor spider	P3		These spiders construct shallow burrows on the bark of tingle trees (*Eucalyptus guilfoylei*, *E. jacksonii* and *E. brevistylis*) or in soil on the banks of creek lines and gullies. The burrows are capped with a thin lid that serves to retain moisture and keep out predators such as ants. The lids are sealed with silk when the spiders moult, or when eggs or juveniles are in the burrow with the female. The spiders seem to prefer moist, shaded areas. Burrows are often clustered in appropriate microhabitats. Life history information is limited, and the age structure of the populations is unknown. However, most mygalomorph spiders are relatively long lived (>5 years) (Harvey et al., 2015). No DBCA (2026a) records within 5 km.	Absent	Nil
AVES - Accipitridae	*Pandion haliaetus*	Osprey	MI	MI	Generally coastal species that feeds on fish. Nests in large trees or on islands, pilons etc (Pizzey & Knight, 2007). Sixteen DBCA (2026a) records within 5 km, of which 15 are on the coast. Unlikely to venture inland to Survey Area location.	Absent	Nil
AVES - Anatidae	*Oxyura australis*	Blue-Billed Duck	P4		Deep, densely vegetated freshwater lakes, swamps when breeding; winters on more open waters (Morcombe, 2011). One DBCA (2026a) record within 5 km.	Marginal	Unlikely
AVES - Ardeidae	*Botaurus poiciloptilus*	Australasian Bittern	EN	EN	The Australasian Bittern occurs in terrestrial freshwater wetlands and, rarely, estuarine habitats. In the south-west it is found in beds of	Absent	Nil

CLASS - Family	*Genus species*	Vernacular	Stat. WA	Status Federal	Habitat and Distribution	Presence of habitat	Likelihood of occurrence
					tall rush mixed with, or near, short fine sedge or open pools. The species also occurs around swamps, lakes, pools, rivers and channels fringed with lignum (*Muehlenbeckia* sp.), canegrass (*Eragrostis* sp.) or other dense vegetation. The species occasionally ventures into areas of open water or onto banks. In the SW WA, it is confined to a relatively small number of regularly occupied locations. These locations probably number less than 70, including: less than five north of Perth; less than 10 in the greater Perth metropolitan area; less than 10 south to Busselton; less than 10 in the Lake Muir district; less than 10 from Augusta to Walpole; less than 10 around Albany; and less than 10 around Esperance and Cape Arid. Most of these sites are discrete basin/sumpland wetlands with local catchments, and many depend on the surface expression of groundwater (SPRAT, n.d.). No DBCA (2026a) records within 5 km.		
AVES - Cacatuidae	*Calyptorhynchus banksii naso*	Forest Red-tailed Black Cockatoo	VU	VU	The FRTBC is a large forest cockatoo, endemic to the SW of WA. FRTBC occurs throughout the jarrah marri karri forested areas and more recently on the Swan Coastal Plain. Group sizes vary from small family groups and pairs to larger gatherings at roost sites. FRTBC generally breed in remnant woodland or forest but may also breed in partially cleared areas, including isolated trees. They nest in hollows in live or dead trees particularly marri, karri, wandoo, bullich, blackbutt, tuart and jarrah (DAWE, 2022; Johnstone et al., 2013). FRTBC have been recorded breeding in all months, but with peaks in Spring and Autumn following marri (or jarrah) fruit flushes. There are also years	Present - Supporting	Present

CLASS - Family	*Genus species*	Vernacular	Stat. WA	Status Federal	Habitat and Distribution	Presence of habitat	Likelihood of occurrence
					when very little breeding takes place (Johnstone and Kirkby, unpublished data). FRTBC diet is mostly (90%) seeds of jarrah and marri in woodlands and forest, and in the edges of karri forests, with the remainder made up of blackbutt, *E. staeri* (Albany blackbutt), bullich, *Hakea* spp, tuart, western sheoak *(Allocasuarina fraseriana)*, snottygobble (*Persoonia longifolia*) and the non-indigenous Australian native *Melia azederach* (cape lilac) (Johnstone & Kirkby, 1999). The species forage on cones, the fruits of snottygobble and mountain marri. On the Swan Coastal Plain, the species often feed on introduced *Corymbia maculata* (spotted gum), *Eucalyptus caesia*, *Eucalyptus erythrocorys*, and lemon-scented gum (DAWE, 2022). FRTBC are known to roost within any tall trees that may provide roosting habitat, particularly tall jarrah, marri, blackbutt, tuart and introduced *Eucalyptus* spp. trees or large trees on the edges of forests (DAWE, 2022). Detected during the survey.		
AVES - Cacatuidae	*Zanda baudinii*	Baudin's Cockatoo	EN	EN	The FRTBC is a large forest cockatoo, endemic to the SW of WA. FRTBC occurs throughout the jarrah marri karri forested areas and more recently on the Swan Coastal Plain. Group sizes vary from small family groups and pairs to larger gatherings at roost sites. FRTBC generally breed in remnant woodland or forest but may also breed in partially cleared areas, including isolated trees. They nest in hollows in live or dead trees particularly Marri, Karri, Wandoo, Bullich, Blackbutt, Tuart and	Present - Supporting	Present

CLASS - Family	*Genus species*	Vernacular	Stat. WA	Status Federal	Habitat and Distribution	Presence of habitat	Likelihood of occurrence
					Jarrah (DAWE, 2022; Johnstone et al., 2013). FRTBC have been recorded breeding in all months, but with peaks in Spring and Autumn following Marri (or Jarrah) fruit flushes. There are also years when very little breeding takes place (Johnstone and Kirkby, unpublished data). FRTBC diet is mostly (90%) seeds of Jarrah and Marri in woodlands and forest, and in the edges of Karri forests, with the remainder made up of Blackbutt, *E. staeri* (Albany blackbutt), Bullich, *Hakea* spp, tuart, Western Sheoak *(Allocasuarina fraseriana)*, Snottygobble (*Persoonia longifolia*) and the non-indigenous Australian native *Melia azederach* (cape lilac) (Johnstone & Kirkby, 1999). The species forage on cones, the fruits of Snottygobble and Mountain Marri. On the Swan Coastal Plain, the species often feed on introduced *Corymbia maculata* (Spotted Gum), *Eucalyptus caesia*, *Eucalyptus erythrocorys*, and Lemon-scented Gum (DAWE, 2022). FRTBC are known to roost within any tall trees that may provide roosting habitat, particularly tall Jarrah, Marri, Blackbutt, Tuart and introduced *Eucalyptus* spp. trees or large trees on the edges of forests (DAWE, 2022). Detected during the survey.		
AVES - Cacatuidae	*Zanda latirostris*	Carnaby's Cockatoo	EN	EN	Carnaby's cockatoo mainly occurs in or near eucalypt woodlands, especially those dominated by wandoo or salmon gum, and sometimes in forests of marri, jarrah, karri or tuart. Nesting occurs mainly in the Wheatbelt but is increasingly occurring on the west and south coast. It is a postnuptial nomad, moving west	Present - Supporting	Possible

CLASS - Family	*Genus species*	Vernacular	Stat. WA	Status Federal	Habitat and Distribution	Presence of habitat	Likelihood of occurrence
					after breeding. This species is currently expanding its breeding range westward and south into the jarrah marri forests of the Darling Scarp and into the tuart forests of the Swan Coastal Plain along with the Capes Region (Author pers obs.). This may be due to climate change (Cale, 2003; SPRAT, n.d.; WA Museum, 2010). Breeding occurs mainly from early July to mid-December normally in remnant woodland or forest, but also in partially cleared areas, including isolated trees. Nests are in hollows in live or dead trees, particularly salmon gum, wandoo, tuart, jarrah, flooded gum, york gum, powderbark, blackbutt and marri (DAWE, 2022). Breeding success is largely dependent on suitable feeding habitat near the nest site to provide food required for the survival of the chick (Johnstone et al., 2011). The species forages in native shrubland, kwongan heathland and woodland dominated by proteaceous plant species, on seeds, flowers and nectar of *Banksia* spp., *Hakea* spp. and *Grevillea* spp., as well as *Callistemon* spp. and marri, and in eucalypt woodland and forest that contains foraging species, individual trees and small stands of these species. It also feeds on seeds of introduced species including *Pinus* spp., *Erodium* spp., wild radish, canola, almonds, macadamia and pecans; insects and insect larvae; occasionally apples and persimmons; and liquidambar (DAWE, 2022).		

CLASS - Family	*Genus species*	Vernacular	Stat. WA	Status Federal	Habitat and Distribution	Presence of habitat	Likelihood of occurrence
					Carnaby's cockatoos roost near riparian environments or other natural or artificial permanent water sources. Any tall trees may provide roosting habitat, but particularly Flat-topped Yate, Salmon Gum, Wandoo, Marri, Karri, Blackbutt, Tuart, introduced *Eucalyptus* spp. and introduced *Pinus* spp. (DAWE, 2022). Thirty-eight DBCA (2026a) records occur within 5 km of the Survey Area.		
AVES - Falconidae	*Falco hypoleucos*	Grey Falcon	VU	VU	Frequents timbered lowland plains, particularly *Acacia* shrublands that are crossed by tree-lined water courses (Garnett et al., 2011; Ley & Tynan, 2016; Schoenjahn, 2013, 2018; Watson, 2011). Has been observed hunting in treeless areas and frequents tussock grassland and open woodland, especially in winter (P. Olsen & Olsen, 1986; Schoenjahn, 2018). No DBCA (2026a) records occur within 5 km of the Survey Area.	Marginal	Unlikely
AVES - Falconidae	*Falco peregrinus*	Peregrine Falcon	OS	-	Peregrine Falcons occur in woodland, plains, gorges, wetlands but tend to breed either in stick-nests in trees or nest on cliff ledges. It appears that hollows and large abandoned nests of other birds may be used where cliff ledges are limited. Breeds Aug-Dec. Where good habitat occurs, and the density of Peregrine Falcons is high, active nests may occur within 2.5km of each other. The diet of the Peregrine Falcon includes wood duck, pigeons and doves, galahs, rosellas and cockatoo, starlings and larks (J. Olsen et al., 2006). Three DBCA (2026a) records occur within 5 km of the Survey Area. Peregrine Falcons are wide ranging, and Survey Area occurs within known distribution.	Present – supporting	Possible

CLASS - Family	*Genus species*	Vernacular	Stat. WA	Status Federal	Habitat and Distribution	Presence of habitat	Likelihood of occurrence
AVES - Tytonidae	*Tyto novaehollandiae*	Masked Owl (Southwest)	P3	–	Inhabits forests, open woodlands and farmlands with large trees, including timber watercourses paperbark woodlands. Widespread but very sparse, they breed any time of the year when conditions are favourable with a nesting period of about three months (Pizzey & Knight, 2007). No DBCA (2026a) records occur within 5 km of the Survey Area, however the taxon has a wide range and may utilise the Survey Area periodically.	Present – supporting	Possible
BIVALVIA - Hyriidae	*Westralunio carteri*	Carter's Freshwater Mussel	VU	VU	Patchily distributed in sandy/muddy sediments of freshwater lakes, rivers and streams with greatest densities associated with woody debris and overhanging riparian vegetation near stream banks and edges of lakes/dams (DAWE, 2017). Adults mostly sessile, but do move through sediments with a muscular foot, creating visual tracks; Juveniles much more mobile, moving in a similar fashion as a caterpillar (DAWE, 2017). When in burrowed, filter-feeding position, siphons extended, mantle and siphons have a mottled red/black appearance; inhalant siphon lined with papillae (DAWE, 2017). Six DBCA (2026a) records occur within 5 km, with the closest records located in the Carbanup River, ~500 m from the eastern Survey Area extent. Areas mapped by the Healthy Rivers Project for Carter's Freshwater Mussel as "species found" intersect the southern portion of the Survey Area (DWER, 2026).	Present – supporting	Possible
GASTROPODA - Assimineidae	*Austroassiminea letha*	Cape Leeuwin Freshwater Snail	-	VU	Known from six sites between Cape Leeuwin in the south to Cape Naturaliste in the north, though was once more widely spread throughout the Leeuwin-Naturaliste Ridge (Burbidge, 2004; Solem et al., 1982). Found in seepage films or splash zones alongside small freshwater streams	Absent	Nil

CLASS - Family	*Genus species*	Vernacular	Stat. WA	Status Federal	Habitat and Distribution	Presence of habitat	Likelihood of occurrence
					and springs draining from limestone near the coast (Burbidge, 2004). Grows up to 5.4 mm, considered a short-range endemic as it is confined to small areas of discontinuous habitat and has poor powers of dispersal (Harvey, 2002; Solem et al., 1982). No DBCA (2026a) records occur within 5 km of the Survey Area.		
GASTROPODA - Bothriembryontidae	*Bothriembryon irvineanus*	Irvine's Bothriembryontid Land Snail	P2		On bushes, open scrub, open heath. Among loose leaf litter and on limestone pebbles. Plain with dark grey, sandy soil. Burned within previous 5 years. Open Marri (*Corymbia calophylla*) woodland with scattered Jarrah (*Eucalyptus marginata)*, over *Xanthorrhoea preissii, Kingia australis, Hypocalymma angustifolium* and *Hibbertia cf. hypericoides,* over sedges and herbs. They were found on grey sandy soils in open Marri-Jarrah woodland, often under fallen branches or among leaf litter near small grasses. *Bothriembryon irvineanus* was observed on damp, decomposing Marri leaf litter that appeared to have been rasped (Whisson, 2019). No DBCA (2026a) records occur within 5 km of the Survey Area.	Marginal	Unlikely
INSECTA - Carabidae	*Trichosternus relictus*	Margaret River Pterostichid Ground Beetle	P3	-	Has been found under logs in *Eucalyptus* sp. woods (Bennelongia Pty Ltd, 2013). No DBCA (2026a) records within 5 km.	Marginal	Unlikely
INSECTA – Tettigoniidae	*Kawaniphila pachomai*	Vernal Grey Katydid	P1	-	A cricket known from only two records on NatureMap, one in Karragullen and the other from heathland in Margaret River (DBCA, 2026b). No DBCA (2026a) records within 5 km.	Absent	Unlikely
INSECTA – Tettigoniidae	*Pachysaga strobila*	Vasse pachysaga	P1		Heath or mixed woodland, found near Vasse, confined to southwest Australia. Known from only one type specimen. Likely to occur in	Marginal	Unlikely

CLASS - Family	*Genus species*	Vernacular	Stat. WA	Status Federal	Habitat and Distribution	Presence of habitat	Likelihood of occurrence
		(Busselton-Donnybrook)			patches of natural vegetation near the coast (Rentz, 2023). One DBCA (2026a) record occurs within 5 km, located ~3.1 km northeast of the eastern Survey Area extent.		
MALACOSTRACA - Parastacidae -	*Cherax tenuimanus*	Margaret River Hairy Marron	CR	CR	Very restricted distribution, only known from a few locations in a small section of the Margaret River (DWER, 2026). Preference for highly oxygenated, clear-water habitats with complex shelter, inclusive of large, woody debris (also a food source). Intolerant of high salinity and temperature (DWER, 2026). No DBCA (2026a) records occur within 5 km of the Survey Area. No areas mapped by the Healthy Rivers project as "species found" or "species likely to be found" intersect the Survey Area or occur within 5 km, despite the presence of survey sites in this vicinity (DWER, 2026).	Absent	Nil
MALACOSTRACA - Parastacidae -	*Engaewa reducta*	Dunsborough Burrowing Crayfish	CR	CR	The Dunsborough Burrowing Crayfish uses a variety of habitats that provide moist sandy/loamy soils and an accessible water table. These include vegetated seepages, swamp plains and swampy headwaters of streams (CALM 2008) (Burnham, 2012). Sixty-four DBCA (2026a) records occur within 5 km of the Survey Area. The closest record occurs <200 m west of the Survey Area in a non-perennial minor watercourse. Areas of potentially suitable habitat occur in multiple places along the alignment.	Present – supporting	Possible
MALACOSTRACA - Parastacidae -	*Engaewa pseudoreducta*	Margaret River Burrowing Crayfish	CR	CR	The Margaret River Burrowing Crayfish is endemic to south-west WA and occurs in two subpopulations, Treeton and Payne Road (Burnham, 2012) (Burnham, 2014). At Treeton, it occurs in and adjoining State Forest No. 62 (Burnham 2014), in swampy	Absent	Nil

CLASS - Family	*Genus species*	Vernacular	Stat. WA	Status Federal	Habitat and Distribution	Presence of habitat	Likelihood of occurrence
					headwaters of a tributary of the Margaret River, Osmington. It is known from two sites in the area with individuals collected in 2003 and 2007 (Burnham et al. 2012). At Payne Road, the species occurs in Carbunup River catchment (south-east of Dunsborough). No DBCA (2026a) records occur within 5 km of the Survey Area.		
MAMMALIA - Dasyuridae	*Phascogale tapoatafa*	Southern Brush-tailed Phascogale	CD	-	This arboreal species is found in a variety of forest types. Ideal habitat for this species consists of dry sclerophyll forest and open woodland (Jarrah, Marri, and mixed Jarrah Karri) that contain hollow bearing trees and sparse ground cover. Their many nesting sites include hollow tree limbs, rotten stumps and even birds' nests. Lactating females prefer a large tree cavity with a small entrance with a nest made of bark, feathers and fur. A female's home range covers 20 to 70 hectares, a male's home range overlaps females and increases during breeding season. It is predominantly carnivorous, foraging on arthropods, invertebrates, small vertebrates and nectar (Strahan, 1995). Locally prevalent, with 49 DBCA (2026a) records returned within 5 km of the Survey Area. Taxon may utilise habitat within Survey Area as part of a larger area of inhabitancy.	Present – supporting	Possible
MAMMALIA - Dasyuridae	*Dasyurus geoffroii*	Chuditch	VU	VU	Quolls may occupy a range of habitats including forest, woodland and desert, though in the SW they are largely restricted to Jarrah forest or scattered through the southern and eastern wheat belt (DEC, 2010). Current records indicated that this only represents approximately 5% of their former range. Habitat critical to Western Quoll are large areas of undisturbed habitat which a sufficient variety of key food and other resources such as large hollow logs,	Marginal	Unlikely

CLASS - Family	*Genus species*	Vernacular	Stat. WA	Status Federal	Habitat and Distribution	Presence of habitat	Likelihood of occurrence
					burrows or small caves at ground level for denning. To be suitable as den sites, logs must have a diameter of at least 30 cm but usually greater than 50 cm, a hollow diameter of 7–20 cm and generally 1m long (Orell & Morris, 1994). Annually, an adult female Chuditch will utilise an estimated average of 66 logs and 110 burrows within her home range. A large amount of den sites is required for both sexes. They occupy relatively large home ranges, with males utilizing over 15 km2 and females, 3-4 km^2 (Orell & Morris, 1994). Three DBCA (2026a) records known from within 5 km, all within 2 km of the Survey Area. The closet record is located ~1.6 km west in Yelverton National Park. Available habitat not sufficiently connected and unlikely to host taxon.		
MAMMALIA - Macropodidae	*Notamacropus irma*	Western Brush Wallaby	P4	-	Optimum habitat for the Western Brush Wallaby includes open Jarrah forest or woodland and seasonally wet flats with low grasses and scrubby thickets, but also areas of mallee and heathland. Common dietary flora includes *Carpobrotus edulis*, *Cynodon dactylon* and *Nuytsia floribunda* (DEC, 2010). Needs large areas of habitat. The Survey Area only supports fragmented sections of habitat, unlikely to be large enough to support Western Brush Wallaby populations. Three DBCA (2026a) records occur within 5 km, with the closest ~150 m south of the Survey Area along Vasse Yallingup Siding Road.	Marginal	Unlikely
MAMMALIA - Muridae	*Hydromys chrysogaster*	Rakali	P4		Rakali are usually found in permanent fresh or brackish water but can be found in marine environments. Fresh water habitats include swamps, lakes, dams even urban drainage swamps. Typically forages close to the shoreline,	Present – supporting	Possible

CLASS - Family	*Genus species*	Vernacular	Stat. WA	Status Federal	Habitat and Distribution	Presence of habitat	Likelihood of occurrence
					restricting its movements to shallow water (up to 2 m in depth) (CSIRO, 2004). Eleven DBCA (2026a) records returned within 10 km, with the closest just under 2 km southeast of the southern Survey Area extent. Creekline habitat may support taxon, with multiple water-inundated areas intersecting the Survey Area.		
MAMMALIA - Peramelidae	*Isoodon obesulus fusciventer*	Quenda	P4	-	Bandicoot habitat consists of dense scrubby, often swampy vegetation with a dense cover up to one metre high particularly near watercourses/wetlands. It often feeds in adjacent forest (Jarrah and Wandoo) and woodlands that are burnt on a regular basis. Nests can be concealed next to or under old logs, shrubs or piles of debris and are made up of ground litter piled up over a shallow depression providing internal chambers. Home ranges vary with population density and range from 5-8.6 ha for males and 1-6 ha for females (DEC, 2010). Feed on a variety of ground-dwelling invertebrates and the fruit-bodies of hypogeous fungi. Their searches for food often create distinctive conical holes in the soil (DBCA, n.d.). Diggings observed. Detected during survey.	Present – supporting	Present
MAMMALIA - Potoroidae	*Bettongia penicillata ogilgyi*	Woylie	CR	EN	Tall eucalypt forest and woodland, dense myrtaceous shrubland, kwongan (proteaceous) or mallee heath (Christensen & Leftwich, 1980; Sampson, 1971). Thickets and other suitable habitat types such as heath, provide refuges for woylies against predators. One DBCA (2026a) record known from 5 km of the Survey Area, located ~5.3 km east of where the alignment intersects Yelverton Road. Record is of a translocated animal, released in 2011 onto Yelverton Eco Retreat Property. The	Absent	Nil

CLASS - Family	*Genus species*	Vernacular	Stat. WA	Status Federal	Habitat and Distribution	Presence of habitat	Likelihood of occurrence
					translocation site is isolated by predator-proof fencing. No other populations occur within 5 km.		
MAMMALIA - Pseudocheiridae	*Pseudocheirus occidentalis*	Western Ringtail Possum	CR	CR	In dense, coastal Peppermint forest, home ranges are about 0.5 hectares to 1.5 ha and in eucalypt forests about 2.5 ha. In the northern jarrah forests, home ranges are larger and have been recorded to at least 5.6 ha. Peppermint leaves form the basis of the WRP diet in coastal areas (between 79-100% based on a study of WRP near Busselton by Jones et al. (1994), but when unavailable, the dominant myrtaceous species are preferred. In the inland forest, Jarrah and Marri the main food source. Garden plant varieties are also exploited in urban areas. WRP use a range of nest and shelter sites to avoid predators and exposure to the weather. Dreys are constructed in the canopy if hollows are not available. Adequate nest and shelter sites are necessary components of good quality habitat (Jones et al., 1994; Shedley & Williams, 2014). Detected during survey, locally prevalent (DBCA, 2026a).	Present – supporting	Present
REPTILIA - Elapidae	*Elapognathus minor*	Short-nosed Snake	P2	-	Cryptic and uncommon. Occurs in heaths along swamp margins, in sedgeland and wet sclerophyll forests growing on sandy soil. Associated with ephemeral wetlands. Utilises low, dense vegetation such as tussocks and sedges for shelter (Craig et al., 2017). No DBCA (2026a) records within 5 km.	Marginal	Unlikely
REPTILIA - Scincidae	*Ctenotus ora*	Coastal Plains Skink	P3	-	*Ctenotus ora* is a species of medium sized (6 cm) skink with a restricted range within the southern Swan Coastal Plain and Cape Naturaliste area, as far north as Pinjarra and south as far as Yallingup (Kay & Keogh, 2012) and Dunsborough (Ecoscape, 2012). It has previously been recorded within Armstrong Reserve in areas with sandy substrates and low	Marginal	Unlikely

CLASS - Family	*Genus species*	Vernacular	Stat. WA	Status Federal	Habitat and Distribution	Presence of habitat	Likelihood of occurrence
					vegetation (including heath) in open Eucalyptus/Corymbia woodland over Banksia in the sandy coastal plain and coastal dunes (Kay & Keogh, 2012). The Armstrong Reserve sections align with suitable habitat modelling by Ecoscape (2012). *Ctenotus* species are diurnal, terrestrial lizards that rely on solar radiation to maintain activity and therefore favour habitats that provide regular opportunities for basking and rapid movement between sun-exposed areas and shelter (Greer, 1989). As a result, their distribution is closely linked to environments that allow sufficient ground-level sunlight. Suitable habitat is typically characterised by relatively open vegetation structure, often with areas of bare soil or rock (Greer, 1989). Distribution is likely to within densely vegetated landscapes is patchy and largely confined to edges, tracks, rocky outcrops or other naturally open microhabitats (Ecoscape, 2012). No DBCA (2026a) records within 5 km.		

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Appendix H Black Cockatoo Survey Methodology

Black cockatoo habitat surveys include an assessment of potential breeding trees, along with the presence and quality of roosting and foraging habitat. Field survey methodology was based on both the Main Roads factsheet (D19#1011841), a document nesting under the Commonwealth referral guidelines for black cockatoos (DAWE, 2022), and the species profile provided in the Desktop Study.

Twelve km is the maximum range that black cockatoos travel from a nesting site to forage (DAWE, 2022). A closer distance generally associates with more important foraging habitat. This desktop review is based on a 10 km distance, incorporating the local site context and nearby vegetation/habitat values.

Suitable DBH tree and hollow survey

Black cockatoos nest in hollows that are formed in large, generally over 50 cm Diameter at Breast Height (DBH) native eucalypt trees; "*Suitable DBH trees*". In the SW of WA, these are normally marri (*Corymbia calophylla*), tuart *(Eucalyptus gomphocephala)* or karri (*Eucalyptus diversicolor*). Sometimes blackbutt / yarri (*Eucalyptus patens*), flooded gum (*Eucalyptus rudis*), jarrah *(Eucalyptus marginata)*, or other native trees, may be used.

Trees between 30 - 49 cm DBH were also recorded as recruitment trees. Whilst not of suitable size to develop black cockatoo hollows (>50 cm), they may support black cockatoo breeding in the future and were provided for context. They are also required to support an EPBC Act Referral.



Photo 11 Example of a multi-stemmed *Eucalyptus decipiens* tree, where the main trunk has split at ground level and only the largest trunk would be measured.

Notes on recorded trees: Trees with a suitable DBH include those with a ≥ 50 cm DBH for most trees in the SW, ≥ 30 cm DBH for most Wheatbelt species e.g. wandoo *(Eucalyptus wandoo)* or salmon gum *(Eucalyptus salmonopholia*), and ≥75 cm for fast growing trees, such as non-endemic eucalypts or karri.

Mallee or multi-stemmed trees are measured by the largest stem. Multi-stemmed trees around head height or beyond with an under sized DBH on the main stem, unless the branch is large enough to develop large hollows, are not recorded as DBH trees (may still be a recruitment tree).

Planted non endemic eucalypts such as blue gums, e.g. *Eucalyptus saligna* or *Eucalyptus globulus,* are unlikely to develop hollows unless they are at an advanced age (author, pers obs.). There are no known records of black cockatoos breeding in non-endemic eucalypts in WA. They are not recorded unless they were visibly senescing, ≥75cm DBH or observed with large hollows. Trees laying over or considered to have no potential to develop hollows (burnt or close to falling) are not recorded.

Trees were mapped by a handheld Garmin Global Positioning System (GPS) (~3 m accuracy). Trees were assessed using binoculars if required. Notes were made on tree species, DBH and hollows. If a tree contained numerous hollows, records were restricted to the three most suitable, based on attributes including: hollow type, angle, estimated aperture size (mm), height (m), chamber size, and evidence of use (including from other fauna taxa). Assessment criteria are provided in Table H-1.

European honeybee (*Apis mellifera*) hives may render a hollow unsuitable for the short term, so bees were noted if observed. Hollows that were potentially suitable or likely to provide breeding habitat were further assessed by drone or pole camera, where possible. Hollow records noted as *confirmed* or *not confirmed* indicate whether pole camera or drone inspection was conducted. Pole camera and/or drone operation was conducted in line with animal ethics and license requirements.

Hollow assessment limitations

Known limitations inherent in the survey of hollows include bias with surveyors, times, differing familiarity with tree types, levels of expertise, survey conditions such as weather and time of day, and survey technique (Gorrod & Keith, 2008; Rayner et al., 2011)

Ground counts of hollows are subjective. Some obscured hollows may be missed, particularly hollows in branches and vertical hollows. As well as providing inaccurate counts of hollow abundance, ground surveys provide incomplete or inaccurate information on hollow dimensions and use of hollows by fauna (Koch, 2008). Generally, ground-based surveys lead to overestimation of hollows (Rayner et al. 2011, Author pers obs.). This limitation was reduced by checking hollows with a pole camera or drone for suitability where possible.

Hollow characteristics may change over time. There is a low risk that black cockatoos may breed in a hollow where evidence of use is not visible or hollow characteristics are atypical. Not all active cockatoo hollows show signs of heavy chewing, and active or past breeding hollows may be missed. Other animals such as Little Corella (*Cacatua sanguinea*) or Galah (*Eolophus roseicapilla*) may use black cockatoo hollows at other times of the year or between years.

The lead surveyor has extensive experience in the identification and assessment of hollows and is considered competent in relation to this skill. The results are provided based on experience and professional judgement though certainty of use cannot be guaranteed without hollow watching during the breeding season.

Table H-1 Suitable DBH tree and hollow classifications

Cat No.	Tree Category	Description
1	**Suitable DBH Tree with Known Nesting Hollows.**	**Hollow where breeding has been recorded (i.e. bird/s observed in hollow) or there is evidence of previous use (i.e. hollow contains black cockatoo feathers or eggs).**
2	**Suitable DBH Tree with a potential suitably hollow with signs of use (not confirmed).**	**Hollows that appear to have a suitably sized entry and display signs of use, however internal dimensions have not been assessed.** Although signs of use may be present, the signs, such as chew marks, could be from prospecting black cockatoos or other birds such as galahs, which leave very distinctive marks on hollow and trees (impacted potentially suitably sized hollows should be confirmed by competent observer). Where hollows cannot be avoided, the status of Category 2 hollows must be reassessed during the assessment process to determine whether it is a Category 1, 3, 4 or 6 hollow.
3	**Suitable DBH Tree with a suitable hollow with no signs of use (confirmed).**	**Hollows that appear to have a suitably sized entry, with internal dimensions assessed.** Category usually based on follow up hollow assessment with pole camera or drone. Although hollow appears to be suitable, there is no evidence of black cockatoo use. Where hollows cannot be avoided, status of Category 3 hollows should be reassessed within 48 hours of clearing.
4	**Suitable DBH Tree with a marginally unsuitable hollow with no signs of use (confirmed)**	**Hollows that are not currently suitable but have the potential to become suitable within five years.** Where hollows cannot be avoided and have not been checked within 5 years, the hollow status must be reassessed to determine whether it has become suitable (Category 3 hollows) or a Known Nesting Hollow (Category 1 hollows).
5	**Suitable DBH Tree with a potential suitable hollow with no signs of use (not confirmed).**	**Hollows that appear to have a suitably sized entry, however internal dimensions have not been assessed.** Category usually based on ground observation only. Where hollows cannot be avoided, status of Category 5 hollows must be reassessed during the assessment process to determine whether it is a Category 1, 3, 4 or 6 hollow.
6	**Suitable DBH Tree with unsuitable hollows (confirmed).**	**Hollows that have a hollow entry greater than 100 mm that is not suitable due to the size of its entry, internal dimensions, angle and/or height off ground**.
7	**Suitable DBH Tree without hollows.**	**Trees with a 500 mm DBH (or 300 mm for Wandoo or Salmon Gum) that do not have visible hollows (hollows with an entry opening below 50 mm not considered a hollow).** Note - multiple stemmed trees that branch above DBH may not be suitable.

Foraging Habitat Assessment

Black cockatoo foraging habitat quality was scored out of 10 - **Lower (0-4)** or **High (5-10),** foraging value, aligning with the Commonwealth Offset Assessment Guide (offsets guide). The Offset Guide accompanies the EPBC Act environmental offsets policy and has been developed to align with the policy's requirements, enabling DCCEEW to assess impact significance and offset requirements.

Habitat Score	Interpretation	Typical Referral Risk
<3	Low quality habitat	Usually low risk unless large area/cumulative impacts
3–5	Moderate quality habitat	Context dependent
>5	Moderate-high quality habitat	Referral commonly recommended
>6	High quality habitat	Referral generally expected if clearing is material
>7	Very high quality habitat	Significant impact risk likely

The foraging value score reflects the significance of vegetation as potential foraging habitat for black cockatoos. It depends upon type, density and condition of vegetation in an area and can be influenced by contextual factors such as availability of foraging habitat nearby. This assessment uses methodology derived from the BCE (2020) scoring system (methodology below). Calculation of foraging habitat quality (score out of 10) includes the following steps:

- ***Site condition***. Determining a score out of six for the vegetation composition, condition and structure. *Site condition* was described using structural vegetation mapping, with presence or absence of key feed species. Key feed species are defined in the species' profiles in the Desktop Study and from the plant list classified as primary or secondary foraging plants as assessed in Appendix I.
- ***Site context***. Determining a score out of three for the context of the site, based on the proportion of site vegetation against the total native vegetation within the DSA.
- ***Species stocking rate***. Determining a score out of one for species density/occurrence.
- ***Score*.** 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. Foraging habitat scores are a high-level guide and used with consideration of site context, timing and other factors. For example:
    - Lower quality foraging habitat may be important during breeding periods if it is located near breeding habitat (the closer the resource the more important it may be).
    - Certain feed species may may be used in some regions but not in others due to a preference for other plants that may be available - feed species in the Jarrah Forest may not be used as heavily on the Swan Coastal Plain.
    - Primary feed plants may flower or fruit at certain times. Secondary plants may become as important as primary plants when primary resources become unavailable, potentially providing high quality foraging habitat.

Black cockatoo feed residue was noted during field surveys.

Roosting Habitat Survey

Direct and indirect evidence of black cockatoo roosting was noted. Evidence includes the presence of moulted, preened feathers or down, clipped branches and/or whitewash under trees. Roost searches were undertaken during the diurnal survey. Roosting birds are likely to have been observed during nocturnal surveys.

Site condition. Vegetation composition, condition and structure scoring

Table H-2

Site Score	Description of Vegetation Values		
	Carnaby's cockatoo	Baudin's cockatoo	Forest Red-tailed Black Cockatoo
0	**No foraging value.** • Dead trees. • Plant species that are not known to be fed on. • Water bodies (e.g. salt lakes, dams, rivers); • Bare ground, mown or pasture grass. • Developed sites devoid of vegetation (e.g. infrastructure, roads, gravel pits).	**No foraging value.** • Dead trees. • Plant species that are not known to be fed on. • Water bodies (e.g. dams, rivers). • Bare ground, mown or pasture grass. • Developed sites devoid of vegetation (e.g. infrastructure, roads, gravel pits).	**No foraging value.** • Dead trees. • Plant species that are not known to be fed on. • Water bodies (e.g. dams, rivers). • Bare ground, mown or pasture grass. • Developed sites devoid of vegetation (e.g. infrastructure, roads, gravel pits).
1	**Nil to Low foraging value.** • 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).	**Nil 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.	**Nil 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.
2	**Low foraging value.** • 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. • Primary feed species that are isolated or disease affected. • Some secondary foraging species that are not frequently fed on or are not considered a sustaining resource, • Vegetation in a Completely Degraded or Degraded condition or relatively small areas relative to other higher quality surrounding habitat. • Examples include dieback (e.g. *Phytophthora* spp.) affected Jarrah or *Banksia* or severe canker	**Low foraging value.** • Woodland with scattered specimens of known food plants (e.g. Marri and Jarrah) 1-5% projected foliage cover. • Urban areas with scattered foraging trees. • Some secondary foraging species that are not frequently fed on or are not considered a sustaining resource, • Vegetation in a Completely Degraded or Degraded condition or relatively small areas relative to other higher quality surrounding habitat. • Examples include dieback (e.g. *Phytophthora* spp.) affected Jarrah or *Banksia* or severe canker (*Quambalaria coyrecup*) affected Marri or very sparse primary or secondary feed species.	**Low foraging value.** • 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*. • Some secondary foraging species that are not frequently fed on or are not considered a sustaining resource. • Vegetation in a Completely Degraded or Degraded condition or relatively small areas relative to other higher quality surrounding habitat. • Examples include dieback (e.g. *Phytophthora* spp.) affected Jarrah or *Banksia* or severe canker (*Quambalaria*

Site Score	Description of Vegetation Values		
	Carnaby's cockatoo	**Baudin's cockatoo**	**Forest Red-tailed Black Cockatoo**
	(*Quambalaria coyrecup*) affected Marri or very sparse primary or secondary feed 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.		*coyrecup*) affected Marri or very sparse primary or secondary feed species.
3	**Low to Moderate foraging value.** • 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.** • 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.** • 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).
4	**Moderate foraging value.** • 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. • Primary feed species (e.g., Hakea, Jarrah, Marri or pine trees) present but patchy or as paddock trees, • Habitat dominated by secondary feed species - vegetation communities with very few primary feed species present. • Native vegetation where few primary or secondary feed species are present in Degraded or Good condition.	**Moderate foraging value.** • 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). • Primary feed species (e.g., Hakea, Jarrah, Marri or pine trees) present but patchy or as paddock trees, • Habitat dominated by secondary feed species - vegetation communities with very few primary feed species present. • Native vegetation where few primary or secondary feed species are present in Degraded or Good condition.	**Moderate foraging value.** • 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. • Primary feed species (e.g., Hakea, Jarrah, Marri or pine trees) present but patchy or as paddock trees, • Habitat dominated by secondary feed species - vegetation communities with very few primary feed species present. • Native vegetation where few primary or secondary feed species are present in Degraded or Good condition.

Site Score	Description of Vegetation Values		
	Carnaby's cockatoo	**Baudin's cockatoo**	**Forest Red-tailed Black Cockatoo**
5	**Moderate to High foraging value.** • 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. • Eucalypt Woodland/Forest with Marri 40- 60% projected foliage cover. • Pine plantations with trees more than 10 years old (but see pine note below in moderation section).	**Moderate to High foraging value.** • 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.** • 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.
6	**High foraging value.** • 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). Eucalypt Woodland/Forest with Marri 40- 60% projected foliage cover. • Primary feed species e.g. *Hakea*, Jarrah, Marri or pine trees dominant as patches, or components of a larger patch.	**High foraging value.** • 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). • Primary feed species e.g. *Hakea*, Jarrah, or Marri dominant as paddock trees, patches, or components of a larger patch.	**High foraging value.** • 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). • Primary feed species e.g. *Hakea*, Jarrah, or Marri dominant patches, or components of a larger patch.

Structure and condition as per scale presented in EPA (2016) Technical Guidance – Flora and Vegetation Surveys.

Site context

Table H-3

Site Context Score	Site as a percentage of the existing native vegetation suitable for foraging within the DSA (10 km)	
	Local breeding known/likely	Local breeding unlikely (foraging habitat only)
3	> 5%	> 10%
2	1 - 5%	5 - 10%
1	0.1 - 1%	1 - 5%
0	< 0.1%	< 1%

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.

Table H-3 provides a guide to site context scoring. The maximum score for site context is 3, being a function of presence/absence of nearby breeding and the distribution of foraging habitat across the landscape. Note that Desktop Study Area (DSA) is defines the 'Local area' within a 10 km [5] radius of the centre point of the Survey Area.

Table H-3 provides weighting for known (or suspected) nearby breeding and for the proportion of foraging habitat in the site against available foraging habitat within 10 km (within the DSA). Some adjustments may be needed. For example, a small area of foraging habitat (e.g. 0.5% of such habitat within 10 km) 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.

Stocking rate (species density) (derived from BCE (2020))

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 highly mobile black cockatoos. Assignation of the species density score (0 or 1) is based upon the 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.

[5] Note BCE use 15 km.

Score

The calculation out of 10 requires the *Site condition* score (out of 6) to be combined with the scores given for *Site context* and *Stocking rate* to provide a High (5-10) or Lower (0-4) final foraging quality score.

BCE (2020) notes: 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 (>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 **Site condition**	Assessed as per **Site context**
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.

Appendix I Black Cockatoo Foraging Assessment Results

Foraging Plants Within the Survey Area

Table I-1 Black cockatoo foraging species across habitat types within the rail reserve

Black cockatoo foraging species across habitat types within the rail reserve and track (8 m nominal width)
VU 1: Jarrah-Marri open forest (upland) - *Eucalyptus marginata* subsp. *marginata* (Jarrah) and *Corymbia calophylla* (Marri) open forest over a mixed mid to tall shrubland including *Acacia pulchella, Bossiaea* spp., *Hovea elliptica,* and *Hakea* spp., over a diverse low shrub and herb layer including *Conostylis* spp., *Dampiera* spp., *Hibbertia hypericoides* and *Patersonia* spp. The ground layer comprised a mixture of sedges, grasses and herbs, including *Mesomelaena tetragona, Tetrarrhena laevis* and *Pteridium esculentum,* with occasional *Xanthorrhoea* spp.
VU 2: Banksia woodland / Kunzea Scrub Complex – *Agonis flexuosa* low woodland over *Kunzea glabrescens* and scattered *Banksia attenuate* tall shrubland, with *Hakea ruscifolia*, *Dasypogon hookeri*, *Acacia extensa*, *Gompholobium tomentosum* and *Acacia pulchella* over *Lindsaea linearis*, *Tremulina tremula* and *Mesomelaena tetragona* sedge and herbland.
VU 3: *Eucalyptus rudis* open forest – *Eucalyptus rudis* subsp*. rudis* and *Corymbia calophylla* open forest over dense *Agonis flexuosa* and *Banksia* spp. low woodland, over a degraded understorey including *Watsonia* spp., and introduced grasses and herbs, with isolated naturally occurring species including *Hardenbergia comptoniana* and *Eutaxia parviflora.*
VU 4: Marri open forest - *Corymbia calophylla* (Marri) open forest with *Agonis flexuosa, Banksia grandis, Xanthorrhoea brunonis* and *Kingia australis* over a low open heath dominated by *Pteridium esculentum,* with *Machaerina* spp. and *Cyathochaeta* spp. sedgeland occurring within associated drainage channels.
VU 5: *Eucalyptus patens* open forest - Open forest dominated by *Eucalyptus patens* and *Agonis flexuosa,* with occasional *Eucalyptus megacarpa. Taxandria linearifolia, Mirbelia dilatata, Trymalium odoratissimum, Xanthorrhoea preissii* shrubland over *Pteridium esculentum* low open heath, with *Machaerina* spp*., Cyathochaeta* spp*., Lepidosperma* spp. and Restionaceae spp. sedgeland, within seasonally wet creekline and wetland areas.
VU 6: Kunzea and Nuytsia wetlands – Low open heath on grey, seasonally wet soils. Large portions of the vegetation unit are degraded due to invasion by *Watsonia* spp.; however, where intact, the community comprises a low shrubland dominated by *Kunzea rostrata, Xanthorrhoea preissii* and *Conostylis aculeata,* with broad and floristically diverse sedgeland areas. Sedgeland species include *Leptocarpus denmarkicus* (regionally significant), *Mesomelaena tetragona, Anarthria prolifera, Melanostachya ustulata,* and a diverse assemblage of herbs and low shrubs. The margins of the shrubland transition into Marri woodland, with scattered *Corymbia calophylla* and *Nuytsia floribunda* concentrated around the edges of the wetland system.
VU 7: Melaleuca forest – Low open forest characterised by *Melaleuca rhaphiophylla* or *M. preissiana,* over a characteristic dampland understorey including *Banksia littoralis, Hakea varia, Exocarpos odoratus,* with *Corymbia calophylla, Acacia saligna* and patches of *Kingia australis*. Adjacent drainage channels are dominated by sedges, including *Machaerina juncea, Cyathochaeta avenacea, Mesomelaena tetragona* and other Cyperaceae and Restionaceae species.
VU 8: Claypan – *Melaleuca rhaphiophylla* low forest with emergent *Eucalyptus rudis* subsp. *rudis* and *Corymbia calophylla,* over *Hakea varia* and *Exocarpos odoratus* shrubland over dense infestations of **Watsonia* sp., introduced grasses and other weed species, with pockets of intact naturally occurring sedges.

Table I-2 Black cockatoo foraging species within each VU

VU	Vegetation Unit	Foraging Species Present	Foraging Value	Supporting References
Cleared	Cleared	No significant foraging species recorded	Low to negligible foraging value	
Road	Road hardstand	No foraging habitat present	Nil	
Trees	Cleared with scattered trees	Scattered remnant trees may provide opportunistic foraging habitat	Potential secondary foraging habitat	
Trees	Cleared with paddock trees	Isolated paddock trees may provide opportunistic foraging habitat	Potential secondary foraging habitat	
VU1	Jarrah Marri Forest	*Corymbia calophylla*	Primary for Baudin's, Carnaby's and FRTBC	(DoEE, 2017; Johnstone et al., 2010a, 2010b, 2010c, 2017; Johnstone & Kirkby, 1999, 2008; Johnstone & Storr, 1998; Saunders, 1979; SEWPaC, 2012; Valentine & Stock, 2008)
VU1	Jarrah Marri Forest	*Eucalyptus marginata*	Secondary for Baudin's; Primary for Carnaby's and FRTBC	(Birds Australia, n.d.; DoEE, 2017; Groom, 2011; Johnstone et al., 2010a, 2010b, 2010c, 2017; Johnstone & Kirkby, 1999; Johnstone & Storr, 1998; Saunders, 1979; SEWPaC, 2012; Valentine & Stock, 2008)
VU1	Jarrah Marri Forest	*Hakea spp.*	Secondary for Baudin's; Primary for Carnaby's	(Birds Australia, n.d.; Groom, 2011; Johnstone et al., 2010a, 2010b; Saunders, 1979; Valentine & Stock, 2008)
VU1	Jarrah Marri Forest	*Hakea spp.*	Secondary for Baudin's; Primary for Carnaby's	(Birds Australia, n.d.; Groom, 2011; Johnstone et al., 2010a, 2010b; Saunders, 1979; Valentine & Stock, 2008)
VU1	Jarrah Marri Forest	*Hakea spp.*	Secondary for Baudin's; Primary for Carnaby's	(Birds Australia, n.d.; Groom, 2011; Johnstone et al., 2010a, 2010b; Saunders, 1979; Valentine & Stock, 2008)
VU2	Banksia Woodland Kunzea Scrub	*Banksia attenuata*	Secondary for Baudin's; Primary for Carnaby's	(Birds Australia, n.d.; DoEE, 2017; Groom, 2011; Johnstone et al., 2010a, 2010b, 2010c; Johnstone & Storr, 1998; Saunders, 1979; Valentine & Stock, 2008)
VU2	Banksia Woodland Kunzea Scrub	*Agonis flexuosa*	Secondary for Carnaby's	(DoEE, 2017; Groom, 2011; Saunders, 1979; Valentine & Stock, 2008)
VU2	Banksia Woodland Kunzea Scrub	*Hakea ruscifolia*	Secondary for Baudin's; Primary for Carnaby's	(Birds Australia, n.d.; Groom, 2011; Johnstone et al., 2010a, 2010b; Saunders, 1979; Valentine & Stock, 2008)
VU2	Banksia Woodland Kunzea Scrub	*Mesomelaena tetragona*	Primary for Carnaby's	(Groom, 2011; Johnstone et al., 2010b)
VU2	Banksia Woodland Kunzea Scrub	*Mesomelaena tetragona*	Primary for Carnaby's	(Groom, 2011; Johnstone et al., 2010b)

VU	Vegetation Unit	Foraging Species Present	Foraging Value	Supporting References
VU3	Eucalyptus rudis Forest	*Corymbia calophylla*	Primary for Baudin's, Carnaby's and FRTBC	(DoEE, 2017; Johnstone et al., 2010a, 2010b, 2010c, 2017; Johnstone & Kirkby, 1999, 2008; Johnstone & Storr, 1998; Saunders, 1979; SEWPaC, 2012; Valentine & Stock, 2008)
VU3	Eucalyptus rudis Forest	*Banksia spp.*	Secondary for Baudin's; Primary for Carnaby's	(Birds Australia, n.d.; DoEE, 2017; Groom, 2011; Johnstone et al., 2010a, 2010b, 2010c; Johnstone & Storr, 1998; Saunders, 1979; Valentine & Stock, 2008)
VU3	Eucalyptus rudis Forest	*Agonis flexuosa*	Secondary for Carnaby's	(DoEE, 2017; Groom, 2011; Saunders, 1979; Valentine & Stock, 2008)
VU4	Marri Forest	*Corymbia calophylla*	Primary for Baudin's, Carnaby's and FRTBC	(DoEE, 2017; Johnstone et al., 2010a, 2010b, 2010c, 2017; Johnstone & Kirkby, 1999, 2008; Johnstone & Storr, 1998; Saunders, 1979; SEWPaC, 2012; Valentine & Stock, 2008)
VU4	Marri Forest	*Banksia grandis*	Secondary for Baudin's; Primary for Carnaby's	(Birds Australia, n.d.; DoEE, 2017; Groom, 2011; Johnstone et al., 2010a, 2010b, 2010c; Johnstone & Storr, 1998; Saunders, 1979; Valentine & Stock, 2008)
VU4	Marri Forest	*Xanthorrhoea spp.*	Secondary for Baudin's; Primary for Carnaby's	(Groom, 2011)
VU5	Eucalyptus patens Forest	*Eucalyptus patens*	Primary for Carnaby's and FRTBC	(DoEE, 2017; Groom, 2011; Johnstone et al., 2010a, 2010b, 2010c; Johnstone & Storr, 1998; Saunders, 1979; SEWPaC, 2012; Valentine & Stock, 2008)
VU5	Eucalyptus patens Forest	*Agonis flexuosa*	Secondary for Carnaby's	(DoEE, 2017; Groom, 2011; Saunders, 1979; Valentine & Stock, 2008)
VU5	Eucalyptus patens Forest	*Agonis flexuosa*	Secondary for Carnaby's	(DoEE, 2017; Groom, 2011; Saunders, 1979; Valentine & Stock, 2008)
VU5	Eucalyptus patens Forest	*Agonis flexuosa*	Secondary for Carnaby's	(DoEE, 2017; Groom, 2011; Saunders, 1979; Valentine & Stock, 2008)
VU6	Kunzea Nuytsia Wetland	*Corymbia calophylla*	Primary for Baudin's, Carnaby's and FRTBC	(DoEE, 2017; Johnstone et al., 2010a, 2010b, 2010c, 2017; Johnstone & Kirkby, 1999, 2008; Johnstone & Storr, 1998; Saunders, 1979; SEWPaC, 2012; Valentine & Stock, 2008)
VU6	Kunzea Nuytsia Wetland	*Mesomelaena tetragona*	Primary for Carnaby's	(Groom, 2011; Johnstone et al., 2010b)
VU6	Kunzea Nuytsia Wetland	*Xanthorrhoea preissii*	Secondary for Baudin's; Primary for Carnaby's	(Groom, 2011)
VU7	Melaleuca Forest	*Banksia littoralis*	Secondary for Baudin's; Primary for Carnaby's	(Birds Australia, n.d.; DoEE, 2017; Groom, 2011; Johnstone et al., 2010a, 2010b, 2010c; Johnstone & Storr, 1998; Saunders, 1979; Valentine & Stock, 2008)
VU7	Melaleuca Forest	*Corymbia calophylla*	Primary for Baudin's, Carnaby's and FRTBC	(DoEE, 2017; Johnstone et al., 2010a, 2010b, 2010c, 2017; Johnstone & Kirkby, 1999, 2008; Johnstone & Storr, 1998; Saunders, 1979; SEWPaC, 2012; Valentine & Stock, 2008)
VU7	Melaleuca Forest	*Acacia saligna*	Secondary for Carnaby's	(Groom, 2011)

VU	Vegetation Unit	Foraging Species Present	Foraging Value	Supporting References
VU7	Melaleuca Forest	*Mesomelaena tetragona*	Primary for Carnaby's	(Groom, 2011; Johnstone et al., 2010b)
VU8	Claypan TEC	*Corymbia calophylla*	Primary for Baudin's, Carnaby's and FRTBC	(DoEE, 2017; Johnstone et al., 2010a, 2010b, 2010c, 2017; Johnstone & Kirkby, 1999, 2008; Johnstone & Storr, 1998; Saunders, 1979; SEWPaC, 2012; Valentine & Stock, 2008)
VU8	Claypan TEC	*Hakea varia*	Secondary for Baudin's; Primary for Carnaby's	(Birds Australia, n.d.; Groom, 2011; Johnstone et al., 2010a, 2010b; Saunders, 1979; Valentine & Stock, 2008)
VU9	Not NV / Disturbed shrubland	No significant foraging species recorded	Low to negligible foraging value	

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Foraging Habitat Available within the DSA

Table I-3 Areas of native vegetation remaining within a 10 km foraging distance from the Survey Area (DPIRD, 2023, 2025a)

Foraging range	Total area (ha)*	Native vegetation (including regrowth) remaining % of total area, Area (ha)
10 km	67,118	19,568 (29 %)

*Marine areas excluded

Table I-4 Black cockatoo Foraging Scoring Tool Assessment Results

VU	Vegetation Unit	Vegetation Condition	Area (ha)	BC site score	CC site score	FRTBC site score	BC breeding	CC breeding	FRTBC breeding	BC residue	CC residue	FRTBC residue	Final BC	Final CC	Final FRTBC forage	Final Max
Cleared	Cleared	Completely Degraded	**4.64**	0	0	0	0	0	1	0	0	0	0	0	**1**	**1**
Road	Road hardstand	Cleared	**5.21**	0	0	0	0	0	1	0	0	0	0	0	**1**	**1**
Trees	Cleared with scattered trees	Cleared	**0.68**	3	3	3	0	0	1	1	0	1	**4**	**3**	**5**	**5**
Trees	Cleared with paddock trees	Completely Degraded	**33.94**	2	2	2	0	0	1	1	0	1	**3**	**2**	**4**	**4**
VU1	Jarrah Marri Forest	Cleared	**0**	1	1	1	0	0	1	1	0	1	**2**	**1**	**3**	**3**
VU1	Jarrah Marri Forest	Completely Degraded	**0.19**	3	3	3	0	0	1	1	0	1	**4**	**3**	**5**	**5**
VU1	Jarrah Marri Forest	Degraded	**8.86**	4	4	4	0	0	1	1	0	1	**5**	**4**	**6**	**6**
VU1	Jarrah Marri Forest	Good	**3.89**	5	5	5	0	0	1	1	0	1	**6**	**5**	**7**	**7**
VU1	Jarrah Marri Forest	Very Good	**9.28**	6	6	6	0	0	1	1	0	1	**7**	**6**	**8**	**8**
VU2	Banksia Woodland Kunzea Scrub	Cleared	**0.08**	1	1	0	0	0	1	0	0	0	**1**	**1**	**1**	**1**
VU2	Banksia Woodland Kunzea Scrub	Completely Degraded	**0.09**	2	3	2	0	0	1	0	0	0	**2**	**3**	**3**	**3**
VU2	Banksia Woodland Kunzea Scrub	Degraded	**0.74**	3	4	2	0	0	1	0	0	0	**3**	**4**	**3**	**4**
VU2	Banksia Woodland Kunzea Scrub	Good	**2.09**	4	4	2	0	0	1	0	0	0	**4**	**4**	**3**	**4**
VU2	Banksia Woodland Kunzea Scrub	Very Good	**9.88**	4	5	2	0	0	1	0	0	0	**4**	**5**	**3**	**5**
VU3	Eucalyptus rudis Forest	Degraded	**0.22**	4	4	3	0	0	1	1	0	1	**5**	**4**	**5**	**5**
VU4	Marri Forest	Cleared	**0.01**	1	1	1	0	0	1	1	0	1	**2**	**1**	**3**	**3**
VU4	Marri Forest	Degraded	**1.96**	5	5	5	0	0	1	1	0	1	**6**	**5**	**7**	**7**
VU4	Marri Forest	Good	**0.66**	5	5	5	0	0	1	1	0	1	**6**	**5**	**7**	**7**
VU5	Eucalyptus patens Forest	Degraded	**0.9**	1	4	4	0	0	1	0	0	0	**1**	**4**	**5**	**5**
VU5	Eucalyptus patens Forest	Excellent	**0.33**	2	5	5	0	0	1	0	0	0	**2**	**5**	**6**	**6**
VU5	Eucalyptus patens Forest	Good	**0.66**	1	4	4	0	0	1	0	0	0	**1**	**4**	**5**	**5**

VU	Vegetation Unit	Vegetation Condition	Area (ha)	BC site score	CC site score	FRTBC site score	BC breeding	CC breeding	FRTBC breeding	BC residue	CC residue	FRTBC residue	Final BC	Final CC	Final FRTBC forage	Final Max
VU5	Eucalyptus patens Forest	Very Good	**2.13**	2	5	5	0	0	1	0	0	0	**2**	**5**	**6**	**6**
VU6	Kunzea Nuytsia Wetland	Completely Degraded	**1.53**	3	5	3	0	0	1	1	0	1	**4**	**5**	**5**	**5**
VU6	Kunzea Nuytsia Wetland	Very Good	**3.55**	3	4	3	0	0	1	1	0	1	**4**	**4**	**5**	**5**
VU7	Melaleuca Forest	Degraded	**1.74**	3	4	2	0	0	1	1	0	1	**4**	**4**	**4**	**4**
VU7	Melaleuca Forest	Good	**0.04**	4	5	3	0	0	1	1	0	1	**5**	**5**	**5**	**5**
VU8	Claypan TEC	Degraded	**0.48**	4	4	4	0	0	1	1	0	1	**5**	**4**	**6**	**6**
VU9	Not NV / Disturbed shrubland	Completely Degraded	**2.69**	1	1	1	0	0	1	0	0	0	**1**	**1**	**2**	**2**

Appendix J Protected Matters Search Tool Results

EPBC Act Protected Matters Report

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

Report created: 08-Apr-2026

Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	4
Listed Threatened Species:	77
Listed Migratory Species:	49

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	66
Whales and Other Cetaceans:	13
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	21
Regional Forest Agreements:	1
Nationally Important Wetlands:	None
EPBC Act Referrals:	13
Key Ecological Features (Marine):	None
Biologically Important Areas:	6
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

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

Community Name	Threatened Category	Presence Text
Banksia Woodlands of the Swan Coastal Plain ecological community	Endangered	Community likely to occur within area
Empodisma peatlands of southwestern Australia	Endangered	Community likely to occur within area
Shrublands on southern Swan Coastal Plain ironstones	Endangered	Community likely to occur within area
Tuart (Eucalyptus gomphocephala) Woodlands and Forests of the Swan Coastal Plain ecological community	Critically Endangered	Community may occur within area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area
Phaethon rubricauda westralis Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]	Endangered	Species or species habitat may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche melanophris		
Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi		
White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area
Zanda baudinii listed as Calyptorhynchus baudinii		
Baudin's Cockatoo, Baudin's Black-Cockatoo, Long-billed Black-cockatoo [87736]	Endangered	Breeding known to occur within area
Zanda latirostris listed as Calyptorhynchus latirostris		
Carnaby's Black Cockatoo, Short-billed Black-cockatoo [87737]	Endangered	Species or species habitat known to occur within area
CRUSTACEAN		
Cherax tenuimanus		
Hairy Marron, Margaret River Hairy Marron, Margaret River Marron [78931]	Critically Endangered	Species or species habitat may occur within area
Engaewa pseudoreducta		
Margaret River Burrowing Crayfish [82674]	Critically Endangered	Species or species habitat known to occur within area
Engaewa reducta		
Dunsborough Burrowing Crayfish [82675]	Critically Endangered	Species or species habitat known to occur within area
FISH		
Galaxiella munda		
Western Dwarf Galaxias, Western Mud Minnow [79240]	Vulnerable	Species or species habitat may occur within area
Nannatherina balstoni		
Balston's Pygmy Perch [66698]	Vulnerable	Species or species habitat known to occur within area
MAMMAL		

Scientific Name	Threatened Category	Presence Text
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Bettongia penicillata ogilbyi Woylie [66844]	Endangered	Species or species habitat known to occur within area
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat known to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area
Pseudocheirus occidentalis Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Critically Endangered	Species or species habitat known to occur within area
Setonix brachyurus Quokka [229]	Vulnerable	Species or species habitat may occur within area
OTHER		
Westralunio carteri Carter's Freshwater Mussel, Ambiguus Mussel [86266]	Vulnerable	Species or species habitat known to occur within area
PLANT		
Banksia mimica Summer Honeypot [82765]	Endangered	Species or species habitat may occur within area
Banksia nivea subsp. uliginosa Swamp Honeypot [82766]	Endangered	Species or species habitat known to occur within area
Banksia squarrosa subsp. argillacea Whicher Range Dryandra [82769]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Brachyscias verecundus Ironstone Brachyscias [81321]	Critically Endangered	Species or species habitat likely to occur within area
Caladenia busselliana Bussell's Spider-orchid [24369]	Endangered	Species or species habitat likely to occur within area
Caladenia excelsa Giant Spider-orchid [56717]	Endangered	Species or species habitat likely to occur within area
Caladenia hoffmanii Hoffman's Spider-orchid [56719]	Endangered	Species or species habitat likely to occur within area
Caladenia huegelii King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid [7309]	Endangered	Species or species habitat may occur within area
Caladenia lodgeana Lodge's Spider-orchid [68664]	Critically Endangered	Species or species habitat likely to occur within area
Caladenia procera Carbunup King Spider Orchid [68679]	Critically Endangered	Species or species habitat may occur within area
Chamelaucium sp. S coastal plain (R.D.Royce 4872) Royce's Waxflower [87814]	Vulnerable	Species or species habitat likely to occur within area
Daviesia elongata subsp. elongata Long-leaved Daviesia [64883]	Vulnerable	Species or species habitat known to occur within area
Diuris micrantha Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat may occur within area
Drakaea elastica Glossy-leafed Hammer Orchid, Glossy-leaved Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Drakaea micrantha Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat known to occur within area
Eucalyptus x phylacis Meelup Mallee [87817]	Endangered	Species or species habitat may occur within area
Gastrolobium papilio Butterfly-leaved Gastrolobium [78415]	Endangered	Species or species habitat may occur within area
Grevillea brachystylis subsp. grandis Large-flowered Short-styled Grevillea [85001]	Critically Endangered	Species or species habitat known to occur within area
Lambertia echinata subsp. occidentalis Western Prickly Honeysuckle [64528]	Endangered	Species or species habitat likely to occur within area
Morelotia australiensis listed as Tetraria australiensis Southern Tetraria [92784]	Vulnerable	Species or species habitat may occur within area
Petrophile latericola Laterite Petrophile [64532]	Endangered	Species or species habitat likely to occur within area
Thelymitra variegata Queen of Sheba [12582]	Critically Endangered	Species or species habitat may occur within area
Verticordia plumosa var. ananeotes Tufted Plumed Featherflower [23871]	Endangered	Species or species habitat likely to occur within area
Verticordia plumosa var. vassensis Vasse Featherflower [55804]	Endangered	Species or species habitat may occur within area
REPTILE		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
SHARK		
Carcharias taurus (west coast population)		
Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat likely to occur within area
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Galeorhinus galeus		
Tope, Flake, Oil Shark, School Shark [68453]	Conservation Dependent	Species or species habitat may occur within area
Pristis pristis		
Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat may occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sphyrna lewini		
Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Hydroprogne caspia Caspian Tern [808]		Foraging, feeding or related behaviour known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Onychoprion anaethetus		
Bridled Tern [82845]		Foraging, feeding or related behaviour likely to occur within area
Phaethon rubricauda		
Red-tailed Tropicbird [994]		Species or species habitat may occur within area
Phoebetria fusca		
Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Thalassarche carteri		
Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta		
Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida		
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris		
Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi		
White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Migratory Marine Species		
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Caperea marginata Pygmy Right Whale [39]		Species or species habitat may occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharias taurus Grey Nurse Shark [64469]		Species or species habitat likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Congregation or aggregation known to occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Mobula birostris as Manta birostris		
Giant Manta Ray [90034]		Species or species habitat may occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca		
Killer Whale, Orca [46]		Species or species habitat may occur within area
Pristis pristis		
Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat may occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
Motacilla cinerea		
Grey Wagtail [642]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris canutus		
Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Charadrius leschenaultii		
Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica		
Bar-tailed Godwit [844]		Species or species habitat may occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus		
Osprey [952]		Species or species habitat known to occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous tenuirostris melanops		
Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Ardenna carneipes as Puffinus carneipes		
Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hydroprogne caspia as Sterna caspia Caspian Tern [808]		Foraging, feeding or related behaviour known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Onychoprion anaethetus as Sterna anaethetus Bridled Tern [82845]		Foraging, feeding or related behaviour likely to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Puffinus assimilis Little Shearwater [59363]		Foraging, feeding or related behaviour known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche steadi		
White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Thinornis cucullatus as Thinornis rubricollis		
Hooded Plover, Hooded Dotterel [87735]		Species or species habitat known to occur within area overfly marine area
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area
Fish		
Acentronura australe		
Southern Pygmy Pipehorse [66185]		Species or species habitat may occur within area
Campichthys galei		
Gale's Pipefish [66191]		Species or species habitat may occur within area
Heraldia nocturna		
Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
Hippocampus angustus		
Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
Hippocampus breviceps		
Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
Hippocampus subelongatus		
West Australian Seahorse [66722]		Species or species habitat may occur within area
Histiogamphelus cristatus		
Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area
Lissocampus caudalis		
Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Lissocampus fatiloquus Prophet's Pipefish [66250]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Mitotichthys meraculus Western Crested Pipefish [66259]		Species or species habitat may occur within area
Nannocampus subosseus Bonyhead Pipefish, Bony-headed Pipefish [66264]		Species or species habitat may occur within area
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area
Vanacampus poecilolaemus Longsnout Pipefish, Australian Long-snout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area
Mammal		
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area
Reptile		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area

Whales and Other Cetaceans		[Resource Information]
Current Scientific Name	Status	Type of Presence
Mammal		

Current Scientific Name	Status	Type of Presence
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Species or species habitat may occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Congregation or aggregation known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State
Bramley	National Park	WA
Haag	Nature Reserve	WA
Leeuwin-Naturaliste	National Park	WA
Ngari Capes	Marine Park	WA
NTWA Bushland covenant (0003)	Conservation Covenant	WA
NTWA Bushland covenant (0044A)	Conservation Covenant	WA
NTWA Bushland covenant (0044B)	Conservation Covenant	WA
NTWA Bushland covenant (0044C)	Conservation Covenant	WA
NTWA Bushland covenant (0065A)	Conservation Covenant	WA
NTWA Bushland covenant (0065B)	Conservation Covenant	WA
NTWA Bushland covenant (0130)	Conservation Covenant	WA
NTWA Bushland covenant (0148)	Conservation Covenant	WA
NTWA Bushland covenant (0149)	Conservation Covenant	WA
NTWA Bushland covenant (0152)	Conservation Covenant	WA
NTWA Bushland covenant (0164)	Conservation Covenant	WA
NTWA Bushland covenant (0168)	Conservation Covenant	WA
NTWA Bushland covenant (0186)	Conservation Covenant	WA
Sussex Location 2561	NRS Addition - Gazettal in Progress	WA
Unnamed WA45533	Nature Reserve	WA

Protected Area Name	Reserve Type	State
Walburra	Nature Reserve	WA
Yelverton	National Park	WA

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name	State
South-West Forest Region of Western Australia	Western Australia

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Gravel Extraction Project	2022/09278		Assessment
Controlled action			
Lot 32 Tom Cullity Drive, Wilyabrup	2020/8866	Controlled Action	Post-Approval
Shark Hazard Mitigation Drum Line Program, WA	2014/7174	Controlled Action	Completed
Not controlled action			
Bussell Highway (Bramley Section) SLK Upgrade	2012/6511	Not Controlled Action	Completed
Busselton to Flinders Bay Rails to Trails Project, WA	2013/6835	Not Controlled Action	Completed
Busselton to Margaret River Transmission Line	2008/3964	Not Controlled Action	Completed
Construction of the Margaret River bypass road		Not Controlled Action	Completed
Geo-science Investigations	2005/2069	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
Proposed Expansion of Existing Gracetown Townsite & Upgrade of Existing Associa	2010/5358	Not Controlled Action	Completed
West's gravel pit development, Cowaramup, WA	2015/7586	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Not controlled action (particular manner)			
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval

Biologically Important Areas

[Resource Information]

Scientific Name	Behaviour	Presence
Seabirds		
Ardenna carneipes		
Flesh-footed Shearwater [82404]	Foraging (in high numbers)	Known to occur
Onychoprion anaethetus		
Bridled Tern [82845]	Foraging (in high numbers)	Known to occur
Puffinus assimilis tunneyi		
Little Shearwater [59363]	Foraging (in high numbers)	Known to occur
Whales		
Eubalaena australis		
Southern Right Whale [40]	Migration	
Eubalaena australis		
Southern Right Whale [40]	Reproduction	
Megaptera novaeangliae		
Humpback Whale [38]	Migration (north and south)	Known to occur

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

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

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Appendix K Vascular Flora Taxa Recorded During Survey

Family	Taxon	Conservation status	Vegetation Unit							
			VU 1: Jarrah-Marri open forest	VU 2: Banksia woodland / Kunzea Scrub Complex	VU 3: *Eucalyptus rudis* open forest	VU 4: Marri open forest	VU 5: *Eucalyptus patens* open forest	VU 6: Kunzea and Nuytsia wetlands	VU 7: Melaleuca forest	VU 8: Claypan
Alliaceae	**Allium triquetrum*		X							
Amaranthaceae	*Alternanthera denticulata*		X			X				
Anarthriaceae	*Anarthria prolifera*		X	X				X		
	Lyginia imberbis		X	X						
Apiaceae	*Xanthosia candida*			X			X			
	Xanthosia ciliata			X						
	Xanthosia huegelii		X	X						
Araceae	**Zantedeschia aethiopica*		X		X	X	X	X		
Asparagaceae	**Asparagus asparagoides*		X							
	Chamaescilla corymbosa		X	X				X		
	Laxmannia sessiliflora subsp. *australis*			X						
	Lomandra pauciflora			X				X		
	Lomandra sericea		X							
	Lomandra suaveolens		X		X					
Asteraceae	**Ursinia anthemoides*			X						
Campanulaceae	*Lobelia anceps*						X			
Casuarinaceae	*Allocasuarina fraseriana*		X	X						
Celastraceae	*Stackhousia pubescens*			X						
Centrolepidaceae	*Aphelia cyperoides*			X						
Colchicaceae	*Burchardia congesta*		X			X				

Family	Taxon	Conservation status	Vegetation Unit							
			VU 1: Jarrah-Marri open forest	VU 2: Banksia woodland / Kunzea Scrub Complex	VU 3: *Eucalyptus rudis* open forest	VU 4: Marri open forest	VU 5: *Eucalyptus patens* open forest	VU 6: Kunzea and Nuytsia wetlands	VU 7: Melaleuca forest	VU 8: Claypan
	Burchardia multiflora			X				X	X	X
Cyperaceae	*Cyathochaeta avenacea*		X	X		X	X	X	X	X
Cyperaceae	*Cyathochaeta (teretifolia)*	P3				X	X			
	Gahnia sclerioides	P4				X	X			
	Lepidosperma effusum						X			
	Lepidosperma squamatum		X	X	X					
	Machaerina juncea				X	X	X		X	X
	Machaerina (vaginalis)						X			
	Mesomelaena gracilipes		X							
	Mesomelaena tetragona		X			X	X	X		
	Morelotia octandra		X	X						
	Netrostylis sp. Blackwood River (A.R. Annels 3043)	P3					X			
	Netrostylis sp. Jarrah Forest (R. Davis 7391)		X	X	X	X	X			
Dasypogonaceae	*Dasypogon bromeliifolius*		X	X				X		
	Dasypogon hookeri		X	X		X	X	X		
	Kingia australis		X			X			X	X
Dennstaedtiaceae	*Pteridium esculentum*		X	X	X	X	X	X	X	
Dilleniaceae	*Hibbertia cuneiformis*		X							
	Hibbertia cunninghamii			X		X	X			

Family	Taxon	Conservation status	Vegetation Unit							
			VU 1: Jarrah-Marri open forest	VU 2: Banksia woodland / Kunzea Scrub Complex	VU 3: *Eucalyptus rudis* open forest	VU 4: Marri open forest	VU 5: *Eucalyptus patens* open forest	VU 6: Kunzea and Nuytsia wetlands	VU 7: Melaleuca forest	VU 8: Claypan
	Hibbertia hypericoides		X			X				X
Elaeocarpaceae	*Tremandra diffusa*		X							
	Tremandra stelligera		X							
Ericaceae	*Leucopogon hirsutus*		X		X	X	X		X	
	Leucopogon verticillatus		X	X						
	Styphelia erubescens									
	Styphelia propinqua					X				
Fabaceae	*Acacia cochlearis*					X			X	X
	Acacia divergens						X			
	Acacia extensa							X		
	Acacia flagelliformis	P4						X		
	**Acacia iteaphylla*		X	X						
	**Acacia longifolia*									
	Acacia myrtifolia		X				X			
	Acacia pulchella		X	X	X					
	Acacia saligna								X	X
	Acacia semitrullata	P4		X						
	Bossiaea aquifolium		X							
	Bossiaea linophylla		X	X		X			X	X
	Bossiaea ornata		X							
	Callistachys lanceolata						X			

Family	Taxon	Conservation status	Vegetation Unit							
			VU 1: Jarrah-Marri open forest	VU 2: Banksia woodland / Kunzea Scrub Complex	VU 3: *Eucalyptus rudis* open forest	VU 4: Marri open forest	VU 5: *Eucalyptus patens* open forest	VU 6: Kunzea and Nuytsia wetlands	VU 7: Melaleuca forest	VU 8: Claypan
	Chorizema nanum		X							
	Dillwynia sp. Capel (P.A. Jurjevich 1771)			X						
	Eutaxia parvifolia		X							
	Gompholobium tomentosum			X					X	
	Hardenbergia comptoniana		X		X	X				
	Hovea chorizemifolia		X	X						
	Hovea elliptica		X		X		X			
	Hovea trisperma		X							
	Isotropis cuneifolia			X						
	Jacksonia (gracillima)	P3	X		X					
	Jacksonia furcellata								X	
	Loricobbia pinifolia	P3		X			X			
	Mirbelia dilatata		X	X			X			
	Pultenaea brachytropis						X			
	Viminaria juncea			X			X		X	X
Goodeniaceae	*Dampiera alata*		X							
	Dampiera leptoclada			X			X			
	Dampiera linearis		X							
	Scaevola calliptera		X	X						
Haemodoraceae	*Anigozanthos flavidus*		X			X				

Family	Taxon	Conservation status	Vegetation Unit							
			VU 1: Jarrah-Marri open forest	VU 2: Banksia woodland / Kunzea Scrub Complex	VU 3: *Eucalyptus rudis* open forest	VU 4: Marri open forest	VU 5: *Eucalyptus patens* open forest	VU 6: Kunzea and Nuytsia wetlands	VU 7: Melaleuca forest	VU 8: Claypan
	Anigozanthos manglesii			X						
	Conostylis aculeata		X	X				X		
	Conostylis setigera			X						
	Phlebocarya ciliata			X						
Hemerocallidaceae	*Agrostocrinum hirsutum*		X							
	Hodgsoniola junciformis							X		
	Johnsonia inconspicua	P3		X				X		
	Johnsonia lupulina		X	X		X				
Iridaceae	*Patersonia juncea*							X		
	Patersonia occidentalis			X				X		
	Patersonia umbrosa var. *xanthina*		X							
	**Watsonia* spp.		X		X			X	X	X
Lindsaeaceae	*Lindsaea linearis*			X			X	X		
Loganiaceae	*Logania vaginalis*		X							
Malvaceae	*Thomasia macrocarpa*		X							
Moraceae	**Ficus carica*		X				X			
Myrtaceae	*Agonis flexuosa*		X	X	X	X	X	X	X	
	Corymbia calophylla		X	X	X	X	X	X	X	X
	Eucalyptus marginata		X	X				X		
	Eucalyptus megacarpa						X			
	Eucalyptus patens					X	X		X	X

Family	Taxon	Conservation status	Vegetation Unit							
			VU 1: Jarrah-Marri open forest	VU 2: Banksia woodland / Kunzea Scrub Complex	VU 3: *Eucalyptus rudis* open forest	VU 4: Marri open forest	VU 5: *Eucalyptus patens* open forest	VU 6: Kunzea and Nuytsia wetlands	VU 7: Melaleuca forest	VU 8: Claypan
	Kunzea glabrescens		X	X		X	X		X	X
	Kunzea rostrata							X		
	Melaleuca preissiana					X			X	
	Melaleuca rhaphiophylla					X			X	X
	Pericalymma ellipticum						X			
	Taxandria linearifolia						X			
	Taxandria parviceps		X	X						
Orchidaceae	*Drakaea glyptodon*			X						
	Elythranthera brunonis									
	Lyperanthus serratus		X	X						
Pittosporaceae	*Billardiera fusiformis*		X	X						
	**Pittosporum undulatum*		X							
Poaceae	**Briza maxima*		X	X	X	X	X	X	X	X
	Microlaena stipoides		X			X	X			X
	Neurachne alopecuroidea		X							
	Tetrarrhena laevis		X							
Podocarpaceae	*Podocarpus drouynianus*		X				X			
Polygalaceae	*Comesperma virgatum*			X			X			
Polygonaceae	*Muehlenbeckia adpressa*									X
Proteaceae	*Adenanthos meisneri*		X	X		X		X		

Family	Taxon	Conservation status	Vegetation Unit							
			VU 1: Jarrah-Marri open forest	VU 2: Banksia woodland / Kunzea Scrub Complex	VU 3: *Eucalyptus rudis* open forest	VU 4: Marri open forest	VU 5: *Eucalyptus patens* open forest	VU 6: Kunzea and Nuytsia wetlands	VU 7: Melaleuca forest	VU 8: Claypan
	Adenanthos sp. Whicher Range (G.J. Keighery 9736)		X	X						
	Banksia attenuatta			X						
	Banksia grandis		X	X	X	X			X	
	Banksia littoralis			X	X	X			X	X
	Grevillea manglesioides					X				
	Grevillea quercifolia		X				X			
	Hakea amplexicaulis		X							
	Hakea lissocarpha		X							
	Hakea prostrata				X	X				
	Hakea ruscifolia			X						
	Hakea varia				X				X	X
	Persoonia longifolia		X			X				
	Synaphea gracillima									
	Synaphea petiolaris					X				
	Synaphea sp. aff. *obtusata*	CS								
	Xylomelum occidentale		X							
Restionaceae	*Desmocladus fasciculatus*		X	X				X		
	Desmocladus flexuosus		X	X						
	Empodisma gracillimum									
	Hypolaena exsulca		X	X				X		

Family	Taxon	Conservation status	Vegetation Unit							
			VU 1: Jarrah-Marri open forest	VU 2: Banksia woodland / Kunzea Scrub Complex	VU 3: *Eucalyptus rudis* open forest	VU 4: Marri open forest	VU 5: *Eucalyptus patens* open forest	VU 6: Kunzea and Nuytsia wetlands	VU 7: Melaleuca forest	VU 8: Claypan
	Leptocarpus denmarkicus									
	Leptocarpus (roycei)					X			X	X
	Melanostachya ustulata							X		
	Tremulina tremula			X						
Rhamnaceae	*Trymalium odoratissimum* subsp. *trifidum*					X				
Rosacea	**Rubus* sp.						X			
Rubiaceae	*Opercularia apiciflora*									
	Opercularia hispidula		X							
Rutaceae	*Philotheca spicata*		X							
Santalaceae	*Exocarpos odoratus*			X						
Stylidiaceae	*Stylidium amoenum*								X	X
	Stylidium neurophyllum		X							
Thymelaeaceae	*Pimelea spectabilis*			X						
Xanthorrhoeaceae	*Xanthorrhoea brunonis*		X							
	Xanthorrhoea gracilis					X				X
	Xanthorrhoea preissii		X		X					

Note: Species prefixed with * indicate that the taxon is introduced to the area found. () denotes tentative identification

Appendix L Tree Survey Results

Tree ID	Tree sp.	Site	Category	DBH (cm)
1	Marri	Shoulder	7. Suitable DBH Tree without hollows	**1280**
2	Karri	Shoulder	7. Suitable DBH Tree without hollows	**500**
3	Marri	Shoulder	7. Suitable DBH Tree without hollows	**630**
4	Marri	Shoulder	7. Suitable DBH Tree without hollows	**990**
5	Marri	Shoulder	7. Suitable DBH Tree without hollows	**650**
6	Marri	Shoulder	7. Suitable DBH Tree without hollows	**510**
7	Marri	Shoulder	7. Suitable DBH Tree without hollows	**570**
8	Marri	Shoulder	7. Suitable DBH Tree without hollows	**570**
9	Marri	Shoulder	7. Suitable DBH Tree without hollows	**590**
10	Marri	Shoulder	7. Suitable DBH Tree without hollows	**640**
11	Marri	Shoulder	Supporting habitat tree	450
12	Marri	Shoulder	7. Suitable DBH Tree without hollows	**780**
13	Marri	Shoulder	Supporting habitat tree	450
14	Jarrah	Shoulder	Supporting habitat tree	430
15	Jarrah	Shoulder	Supporting habitat tree	330
16	Jarrah	Shoulder	Supporting habitat tree	420
17	Jarrah	Shoulder	Supporting habitat tree	320
18	Marri	**Formation**	Supporting habitat tree	365
19	Marri	**Formation**	Supporting habitat tree	310
20	Marri	Shoulder	Supporting habitat tree	300
21	Blackbutt	**Formation**	7. Suitable DBH Tree without hollows	**650**
22	Blackbutt	Shoulder	7. Suitable DBH Tree without hollows	**650**
23	Marri	**Formation**	Supporting habitat tree	400
24	Marri	Shoulder	Supporting habitat tree	380
25	Marri	Shoulder	Supporting habitat tree	400
26	Marri	Shoulder	Supporting habitat tree	400
27	Blackbutt	Shoulder	Supporting habitat tree	350
28	Marri	Shoulder	7. Suitable DBH Tree without hollows	**680**
29	Marri	**Formation**	7. Suitable DBH Tree without hollows	**550**
30	Marri	**Formation**	Supporting habitat tree	430
31	Eastern states Euc	Shoulder	7. Suitable DBH Tree without hollows	**500**
32	Blackbutt	Shoulder	7. Suitable DBH Tree without hollows	**500**
33	Blackbutt	Shoulder	Supporting habitat tree	450
34	Blackbutt	Shoulder	Supporting habitat tree	350
35	Marri	Shoulder	Supporting habitat tree	400
36	Marri	Shoulder	7. Suitable DBH Tree without hollows	**600**
37	Marri	Shoulder	7. Suitable DBH Tree without hollows	**750**
38	Marri	Shoulder	Supporting habitat tree	350
39	Marri	Shoulder	7. Suitable DBH Tree without hollows	**600**
40	Dead	Shoulder	Supporting habitat tree	400
41	Marri	Shoulder	7. Suitable DBH Tree without hollows	**600**
42	Marri	Shoulder	7. Suitable DBH Tree without hollows	**550**
43	Marri	Shoulder	Supporting habitat tree	420
44	Marri	Shoulder	7. Suitable DBH Tree without hollows	**510**
45	Marri	Shoulder	7. Suitable DBH Tree without hollows	**520**
46	Marri	Shoulder	7. Suitable DBH Tree without hollows	**500**
47	Marri	Shoulder	7. Suitable DBH Tree without hollows	**850**
48	Marri	Shoulder	Supporting habitat tree	330
49	Marri	Shoulder	Supporting habitat tree	330
50	Marri	Shoulder	Supporting habitat tree	300

Tree ID	Tree sp.	Site	Category	DBH (cm)
51	Marri	Shoulder	Supporting habitat tree	300
52	Marri	Shoulder	7. Suitable DBH Tree without hollows	**700**
53	Jarrah	Shoulder	7. Suitable DBH Tree without hollows	**850**
54	Marri	Shoulder	Supporting habitat tree	310
55	Marri	**Formation**	Supporting habitat tree	300
56	Marri	Shoulder	Supporting habitat tree	370
57	Marri	Shoulder	7. Suitable DBH Tree without hollows	**600**
58	Marri	Shoulder	Supporting habitat tree	350
59	Marri	**Formation**	Supporting habitat tree	300
60	Marri	Shoulder	Supporting habitat tree	300
61	Marri	Shoulder	7. Suitable DBH Tree without hollows	**700**
62	Marri	**Formation**	Supporting habitat tree	300
63	Marri	**Formation**	Supporting habitat tree	300
64	Marri	Shoulder	Supporting habitat tree	300
65	Marri	Shoulder	Supporting habitat tree	300
66	Marri	Shoulder	Supporting habitat tree	400
67	Marri	Shoulder	Supporting habitat tree	450
68	Marri	Shoulder	Supporting habitat tree	430
69	Marri	Shoulder	7. Suitable DBH Tree without hollows	**500**
70	Marri	Shoulder	7. Suitable DBH Tree without hollows	**500**
71	Marri	Shoulder	7. Suitable DBH Tree without hollows	**500**
72	Marri	Shoulder	Supporting habitat tree	320
73	Marri	Shoulder	Supporting habitat tree	300
74	Marri	Shoulder	7. Suitable DBH Tree without hollows	**800**
75	Marri	Shoulder	7. Suitable DBH Tree without hollows	**600**
76	Marri	Shoulder	Supporting habitat tree	460
77	Marri	Shoulder	Supporting habitat tree	400
78	Marri	Shoulder	Supporting habitat tree	370
79	Marri	Shoulder	7. Suitable DBH Tree without hollows	**700**
80	Marri	**Formation**	7. Suitable DBH Tree without hollows	**600**
81	Marri	Shoulder	7. Suitable DBH Tree without hollows	**600**
82	Marri	**Formation**	7. Suitable DBH Tree without hollows	**550**
83	Marri	Shoulder	Supporting habitat tree	300
84	Marri	Shoulder	Supporting habitat tree	400
85	Marri	**Formation**	7. Suitable DBH Tree without hollows	**500**
86	Marri	Shoulder	7. Suitable DBH Tree without hollows	**600**
87	Marri	Shoulder	7. Suitable DBH Tree without hollows	**500**
88	Marri	Shoulder	7. Suitable DBH Tree without hollows	**500**
89	Marri	Shoulder	Supporting habitat tree	400
90	Marri	Shoulder	7. Suitable DBH Tree without hollows	**600**
91	Marri	Shoulder	Supporting habitat tree	300
92	Marri	**Formation**	Supporting habitat tree	320
93	Marri	**Formation**	Supporting habitat tree	400
94	Marri	Shoulder	Supporting habitat tree	350
95	Marri	Shoulder	Supporting habitat tree	380
96	Marri	**Formation**	Supporting habitat tree	400
97	Marri	Shoulder	Supporting habitat tree	300
98	Marri	Shoulder	7. Suitable DBH Tree without hollows	**520**
99	Marri	Shoulder	Supporting habitat tree	360
100	Marri	Shoulder	Supporting habitat tree	400
101	Marri	Shoulder	Supporting habitat tree	320
102	Marri	Shoulder	Supporting habitat tree	380
103	Marri	**Formation**	Supporting habitat tree	310
104	Marri	**Formation**	Supporting habitat tree	310
105	Marri	Shoulder	Supporting habitat tree	420

Tree ID	Tree sp.	Site	Category	DBH (cm)
106	Marri	Shoulder	7. Suitable DBH Tree without hollows	**550**
107	Marri	Shoulder	7. Suitable DBH Tree without hollows	**550**
108	Marri	Shoulder	7. Suitable DBH Tree without hollows	**500**
109	Marri	**Formation**	Supporting habitat tree	310
110	Marri	**Formation**	Supporting habitat tree	300
111	Marri	**Formation**	Supporting habitat tree	300
112	Marri	**Formation**	Supporting habitat tree	380
113	Marri	**Formation**	Supporting habitat tree	380
114	Marri	Shoulder	Supporting habitat tree	420
115	Marri	Shoulder	Supporting habitat tree	400
116	Marri	Shoulder	7. Suitable DBH Tree without hollows	**700**
117	Eastern states Euc	Shoulder	7. Suitable DBH Tree without hollows	**520**
118	Marri	Shoulder	7. Suitable DBH Tree without hollows	**650**
119	Blackbutt	Shoulder	7. Suitable DBH Tree without hollows	**700**
120	Blackbutt	Shoulder	7. Suitable DBH Tree without hollows	**600**
121	Blackbutt	Shoulder	7. Suitable DBH Tree without hollows	**800**
122	Blackbutt	Shoulder	7. Suitable DBH Tree without hollows	**980**
123	Marri	Shoulder	7. Suitable DBH Tree without hollows	**500**
124	Marri	Shoulder	7. Suitable DBH Tree without hollows	**500**
125	Blackbutt	Shoulder	7. Suitable DBH Tree without hollows	**650**
126	Flooded gum	Shoulder	Supporting habitat tree	450
127	Flooded gum	Shoulder	Supporting habitat tree	350
128	Marri	Shoulder	7. Suitable DBH Tree without hollows	**550**
129	Marri	Shoulder	7. Suitable DBH Tree without hollows	**550**
130	Jarrah	Shoulder	7. Suitable DBH Tree without hollows	**500**
131	Marri	Shoulder	Supporting habitat tree	300
132	Marri	Shoulder	Supporting habitat tree	350
133	Jarrah	Shoulder	7. Suitable DBH Tree without hollows	**500**
134	Marri	Shoulder	Supporting habitat tree	400
135	Marri	Shoulder	7. Suitable DBH Tree without hollows	**1000**
136	Marri	Shoulder	Supporting habitat tree	355
137	Marri	Shoulder	Supporting habitat tree	440
138	Marri	Shoulder	Supporting habitat tree	340
139	Marri	Shoulder	Supporting habitat tree	300
140	Marri	Shoulder	Supporting habitat tree	380
141	Marri	Shoulder	Supporting habitat tree	325
142	Marri	Shoulder	7. Suitable DBH Tree without hollows	**555**
143	Marri	Shoulder	7. Suitable DBH Tree without hollows	**600**
144	Marri	Shoulder	7. Suitable DBH Tree without hollows	**600**
145	Marri	Shoulder	Supporting habitat tree	400
146	Marri	Shoulder	Supporting habitat tree	320
147	Marri	Shoulder	Supporting habitat tree	300

Appendix M Vegetation Unit and Condition for the Track Alignment Area (8 m width)

Vegetation unit	Vegetation Condition rating (ha)						
	Cleared	Completely Degraded	Degraded	Excellent	Good	Very Good	Grand Total
VU1 – Jarrah Marri Forest		0.08	1.56		0.49	0.55	2.69
VU2 – Banksia Woodland Kunzea Scrub		0.01	0.31		0.44	1.13	1.90
VU3 – *Eucalyptus rudis* Forest			0.04				0.04
VU4 – Marri Forest			0.34		0.04		0.37
VU5 – *Eucalyptus patens* Forest			0.39	0.00	0.06	0.11	0.56
VU6 – Kunzea and Nuytsia wetlands	Not present within 8 m track alignment						0
VU7 – Melaleuca Forest			0.27				0.27
VU8 – Claypan TEC			0.10				0.10
Cleared, road hardstand, non-native vegetation etc							7.54
Grand Total (ha)	**1.30**	**6.33**	**3.00**	**0.00**	**1.03**	**1.80**	**13.46**