AEP

BIODIVERSITY | BUSHFIRE | ARBORICULTURE

NEWCASTLE SYDNEY CENTRAL COAST

Biodiversity Development Assessment Report

Proposed Datacentre at 3 Brookhollow Avenue, Norwest NSW



Prepared for: GreensquareDC

December 2025

AEP Ref: 5749

Revision: 01

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Document Control

Document Name	Biodiversity Development Assessment Report: Proposed Datacentre at 3 Brookhollow Avenue, Norwest NSW
Project Number	5749
Client Name	GreensquareDC

Revision

Revision	Date	Authors	BAAS No.
00	15/11/2025	Joelan Sawyer	23016
01	14/12/2025	Joelan Sawyer	23016

Distribution

Revision	Date	Name
00	15/11/2025	Mark Turner
01	14/12/2025	Mark Turner

SUMMARY

Anderson Environment & Planning (AEP) was commissioned by GreensquareDC to undertake a Biodiversity Development Assessment Report (BDAR) over land identified as 3 Brookhollow Avenue, Norwest NSW 2153, legally described as Lot 2021 DP831173 on SP4 – Enterprise zoned land and located within The Hills Shire Council Local Government Area (LGA) of New South Wales.

GreensquareDC are proposing a datacentre and associated structures in Lot 2021 DP831173. The proposal is classified as a State Significant Development (SSD-81928961). This report has been developed in response to the Secretary's Environmental Assessment Requirements (SEARs) issued for the project on 08/04/2025.

This report has been prepared to meet the requirements of the Biodiversity Assessment Method 2020 (BAM) established under Section 6.7 of the *Biodiversity Conservation Act 2016* (NSW) (BC Act), to identify biodiversity values inherent within the site, including known and potentially occurring threatened species and ecological communities, and quantifies impacts of the proposal upon these values, utilising the BAM (DPIE 2020a). Fieldwork completed for this BDAR was completed by ARCH Artifex and AEP, with all data and observations recorded, provided within the report.

The Subject Land contains highly degraded ground cover and native canopy. Within the Subject Land, one (1) Plant Community Type (PCT) was identified which is associated with state or federally listed threatened ecological communities (TECs).

- PCT 3320 – *Cumberland Shale Plains Woodland* (0.36ha)

PCT 3320 is commensurate with the BC Act listed Critically Endangered Ecological Community (CEEC) *Cumberland Plain Woodland in the Sydney Basin Bioregion.*

Other areas of native vegetation within the Subject Land have been classified as 'Planted Native' in accordance with Appendix D of the BAM.

The development has largely been located within a previously disturbed/ cleared area to reduce the need for clearing native vegetation. Areas containing native vegetation have been excluded from the development footprint where feasible to ensure impacts to biodiversity values have been avoided and minimised.

No hollow- bearing trees or key habitat features will be removed, and the site does not function as a wildlife corridor due to its highly urbanised surroundings. While some prescribed impacts are unavoidable due to site constraints, mitigation measures will be implemented to reduce their extent. Suitable erosion and sediment control measures to protect soil stability, water quality and adjacent vegetation will be applied.

Impacts requiring assessment are identified below in Table E1.

Table E1: Impacts that require an offset – ecosystem credits

Vegetation zone	PCT	TEC/EC	Impact area (ha)	Number of ecosystem credits required
PCT 3320 Poor	3320	Cumberland Plain Woodland	0.36	7

Table E2: Impacts that require an offset – species credits

Common name	Scientific name	Loss of habitat (ha) or individuals	Number of species credits required
Southern Myotis	*Myotis macropus*	0.14	3

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Shortened Terms

APZ	Asset Protection Zone
Assessment Area	Area within a 1500m buffer of the Subject Land
BAM	Biodiversity Assessment Method Order (2020) that determines: • Methodology applicable to quantifying biodiversity values inherent within a development site; • Avoid and mitigation efforts required to be employed as part of any development proposal; and • Number and class of credits required to offset residual impacts of the proposal upon the biodiversity values therein.
BAM Calculator	The online tool used to interpret site survey data and regional location information to quantify ecosystem and species credits required / generated at a development / stewardship site.
BC Act	*Biodiversity Conservation Act 2016* (NSW)
BC Regulation	*Biodiversity Conservation Regulation 2017 (NSW)*
BDAR	Biodiversity Development Assessment Report
Biodiversity Credit Report	Specifies the number and type of biodiversity credits required to offset the impacts of a development.
Biodiversity credits	Ecosystem or Species Credits required to offset the loss of biodiversity values on a development site.
Biodiversity offsets	Specific measures that are put in place to compensate for impacts on biodiversity values.
Biodiversity values	The composition, structure, and function of ecosystems, and threatened species, populations and ecological communities, and their habitats.
BOS	Biodiversity Offsets Scheme
BRW	Biodiversity Risk Weighting
CEEC	Critically Endangered Ecological Community
Council	Hills Shire Council
Cth DCCEEW	Commonwealth Department of Climate Change, Energy, the Environment and Water
DAWE	Former Commonwealth Department of Agricultural, Water and Environment
DBH	Diameter at breast height over bark
DCCEEW	State Department of Climate Change, the Environment and Water
DoEE	Former Commonwealth Department of Energy and the Environment.
DPE	Former NSW Department of Planning and Environment
DPI	NSW Department of Primary Industries
DPIE	Former NSW Office of Environment and Heritage.

Ecosystem credit	The class of biodiversity credits created or required for the impact on EECs, CEECs and threatened species habitat for species that can be reliably predicted to occur within a vegetation type.
EEC	Endangered Ecological Community
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
HBT	Hollow-bearing tree as defined in the BAM.
HTW	High threat weed
IBRA	Interim Biogeographic Regionalisation for Australia
Important Wetland	An Important Wetland is a wetland listed under the Directory of Important Wetlands of Australia (DIWA, Environment Australia 2001) or an area included under the *State Environmental Planning Policy (Resilience and Hazards) 2021 – Chapter 2 Coastal Management.*
LLS Act	*Local Land Services Act 2013*
Local Wetland	Local Wetland is defined as an area of land that is wet by surface water or ground water, or both, for long enough periods that the plants and animals in it are adapted to, and depend on, moist conditions for at least part of their life cycle (DPIE 2017a).
MNES	Matters of national environmental significance
NSW	New South Wales
PCT	Plant community type
PFC	Projected Foliage Cover
SAII	Serious and irreversible impact
SEARs	Secretary's Environmental Assessment Requirements
Species Credit	Class of biodiversity credits created or required for the impact on threatened species that cannot be reliably predicted to use an area based on habitat surrogates.
SSD	State Significant Development
Study Area	The Study Area consists of land within Lot 2021 DP 831173.
Subject Land	The Subject Land consists of the proposed development footprint.
SVTM	NSW State Vegetation Type Map 2024
TBDC	Threatened Biodiversity Data Collection.
TEC	Threatened Ecological Community
VIS	Vegetation Integrity Score

Declarations

i. Certification under clause 6.15 *Biodiversity Conservation Act 2016*

I certify that this report has been prepared based on the requirements of, and information provided under, the Biodiversity Assessment Method and clause 6.15 of the *Biodiversity Conservation Act 2016* (BC Act).



Signature:

Date: 15 December 2025

BAM Assessor Accreditation no: 23016

This BDAR has been prepared to meeting the requirements of BAM 2020. **Appendix A** provides an assessment of compliance with the minimum information requirements outlined in BAM Appendix L.

Research was conducted under the following licences:

- NSW National Parks and Wildlife Service Scientific Investigation Licence SL101313;
- Animal Research Authority (Trim File No: 14/600(2)) issued by NSW Agriculture; and
- Animal Research Establishment Accreditation Number 80700.

As the principal author and certifier, I, Joelan Sawyer (BAAS: 23016), make the following certification:

- This report has been written to comply with the requirements of the BAM 2020 and obligations outlined within the BAM Assessor Code of Conduct and includes, in the opinion of the writer, a true and accurate account of the species recorded, or considered likely to occur within the Survey Area, and inferences of such for biodiversity credit calculations;
- Anderson Environment and Planning have no actual, potential or perceived conflicts of interest with Lands Advisory Services. Anderson Environment and Planning has received commercial payment for consulting services and assessment by Lands Advisory Services for this project;
- BAM Assessment methodology, as well as Commonwealth, state and local government policies and guidelines formed the basis of project surveying methodology, unless specified departures from industry standard guidelines are justified for scientific and/or animal ethics reasons;
- All research workers have complied with relevant laws and codes relating to the conduct of flora and fauna research, including the *Animal Research Act 1995*, *Biodiversity Conservation Act 2016* and the *Australian Code of Practice for the Care* and *Use of Animals for Scientific Purposes*; and
- This report has been written to comply with the requirements of the *Biodiversity Conservation Act 2016* and *Biodiversity Conservation Regulation 2017* as outlined in the below Table.

Principal Author and Certifier:

Joelan Sawyer

Senior Botanist

Anderson Environment & Planning

BAAS no. 23016

Calculator Ref: 00059908/BAAS23016/25/00059909

Date: 15 December 2025

Biodiversity Conservation Act, 2016 (BC, Act) Section 6.15 Currency of biodiversity assessment report	
1. A biodiversity assessment report cannot be submitted in connection with a relevant application unless the accredited person certifies in the report that the report has been prepared on the basis of the requirements of (and information provided under) the biodiversity assessment method as at a specified date and that date is within 14 days of the date the report is so submitted.	I, Joelan Sawyer (BAAS: 23016) declare that I prepared the BDAR and all BDAR amendments for the relevant application on the basis of the requirements within BAM 2020 as at the specified date (below).
2. A relevant application is an application for planning approval, for vegetation clearing approval, for biodiversity certification or in respect of a biodiversity stewardship agreement.	Not applicable to this application.
Biodiversity Conservation Regulation, 2017 (BC Regulations) Clause 6.8 Content of biodiversity development assessment reports (section 6.16)	
A biodiversity development assessment report must include—	
1. the number and classes of biodiversity credits required to be retired in accordance with the like-for-like requirements of the offset rules, and	Addressed within Section 11 of this BDAR.
2. the number and classes of biodiversity credits that could be retired in accordance with the variation rules (in any case in which the proponent of the development proposes to use the variation rules), and	Not applicable to this application.
3. details of any proposal to fund a biodiversity conservation action in accordance with the offset rules, and	Not applicable to this application.
4. details of any ecological rehabilitation of a site impacted by mining under a mining lease that is proposed as a measure to offset or compensate for those impacts, and	Not applicable to this application
5. the date of the report and the requisite certification under section 6.15 of the Act, and	As below.
6. details of the accreditation of the person preparing the report and of the qualifications and experience of any other person commissioned to conduct research or investigations that are relied on in preparing the report, and	As above and **Appendix J**
7. any other information required by the biodiversity assessment method or ancillary rules to be included in the report.	Refer Appendices for contributing investigations, results and contributing reports prepared by other Professional consultants
6.5 Ancillary rules of Environment Agency Head for purposes of biodiversity offset and variation rules	
(4) If the ancillary rules are changed, a biodiversity assessment report may, during the period of 90 days after the rules were changed, be prepared on the basis of the rules in force before the change, but only if the report states that it has been prepared on that basis.	This report has been prepared in accordance with all ancillary rules prior to 90 days from the date of certification. All ancillary rules after the 90 days have not been included in this assessment.

ii. Details and experience of author/s and contributors

This report was written and certified by Joelan Sawyer (BAAS: 23016) of Anderson Environment & Planning.

The below table acknowledges the Contributing Ecologists who undertook, fieldwork, research or investigations, data analysis, and mapping that are relied on in preparing the report.

Staff	Title/Qualification	Tasks
Joelan Sawyer	Senior Botanist BSc (Bio) BAAS: 23016	BAM Plots Accredited Assessor Author and Certifier
Charlotte Brown	Botanist BSc (ConsBio)	Flora Transects Koala SAT Diurnal Snail Surveys Nocturnal Surveys Contributing Author GIS
Alessandro Roncolato	Ecologist BEnvSc	Flora Transects Diurnal Snail Surveys Habitat Assessment Nocturnal Surveys
Jeremy Burrill	Senior Ecologist BEnvSc (MS)	Nocturnal Surveys Project Management Contributing Author
Darcy Kilvert	Senior Ecologist & Sydney Office Manager BSc (Bio)	Scientific Advice Project Management
Geoff Turner	Ecologist / GIS Officer BSc (EnvBio)	GIS Nocturnal Surveys

iii. Conflict of interest

I declare that I have considered the circumstances and there is no actual, perceived or potential conflict of interest.

There are no known conflicts of interest between AEP staff or Directors and the proponent of the development or their agents. AEP has received commercial payment from GreensquareDC for provision of professional consulting services in the assessment and production of this BDAR and other associated documents.

This declaration has been made in the interests of full disclosure to the decision-maker. Full disclosure has also been provided to the client.



Signature:

Date: 15 December 2025

BAM Assessor Accreditation no: 23016

Stage 1 – Biodiversity assessment

1.0 Introduction

1.1 Proposed development

1.1.1 Development overview

Greensquare DC propose to construct a datacentre and associated structures within lands known as Lot 2021 DP831173 located on 3 Brookhollow Avenues, Norwest, in The Hills Shire LGA.

This SSDA seeks development consent for the construction and operation of a data centre, with a total power consumption of approximately 96MW. The proposal will form part of a broader state-of-the-art data centre campus, equipped to cater for growing data storage needs within Australia and the emergence of artificial intelligence (AI).

1.1.2 Location

The proposed development is located within 3 Brookhollow Avenue, Norwest NSW (as Lot 2021 DP831173) (**Figure 1**). The Subject Land is situated within The Hills Shire Local Government Area (LGA) located in the Sydney Basin of NSW (**Figure 2**). Currently, the Subject Land is zoned SP4 - Enterprise, primarily comprising disturbed native vegetation with a sparse understorey and managed lawns. The proposal is surrounded by urban development and bordered by developed roads. The location of the Subject Land in relation to the wider area is shown in **Figure 2.**

1.1.3 Proposed development

This SSDA seeks development consent for the construction and operation of a data centre, with a total power consumption of approximately 96MW. The proposal will form part of a broader state-of-the-art data centre campus, equipped to cater for growing data storage needs within Australia and the emergence of artificial intelligence (AI).

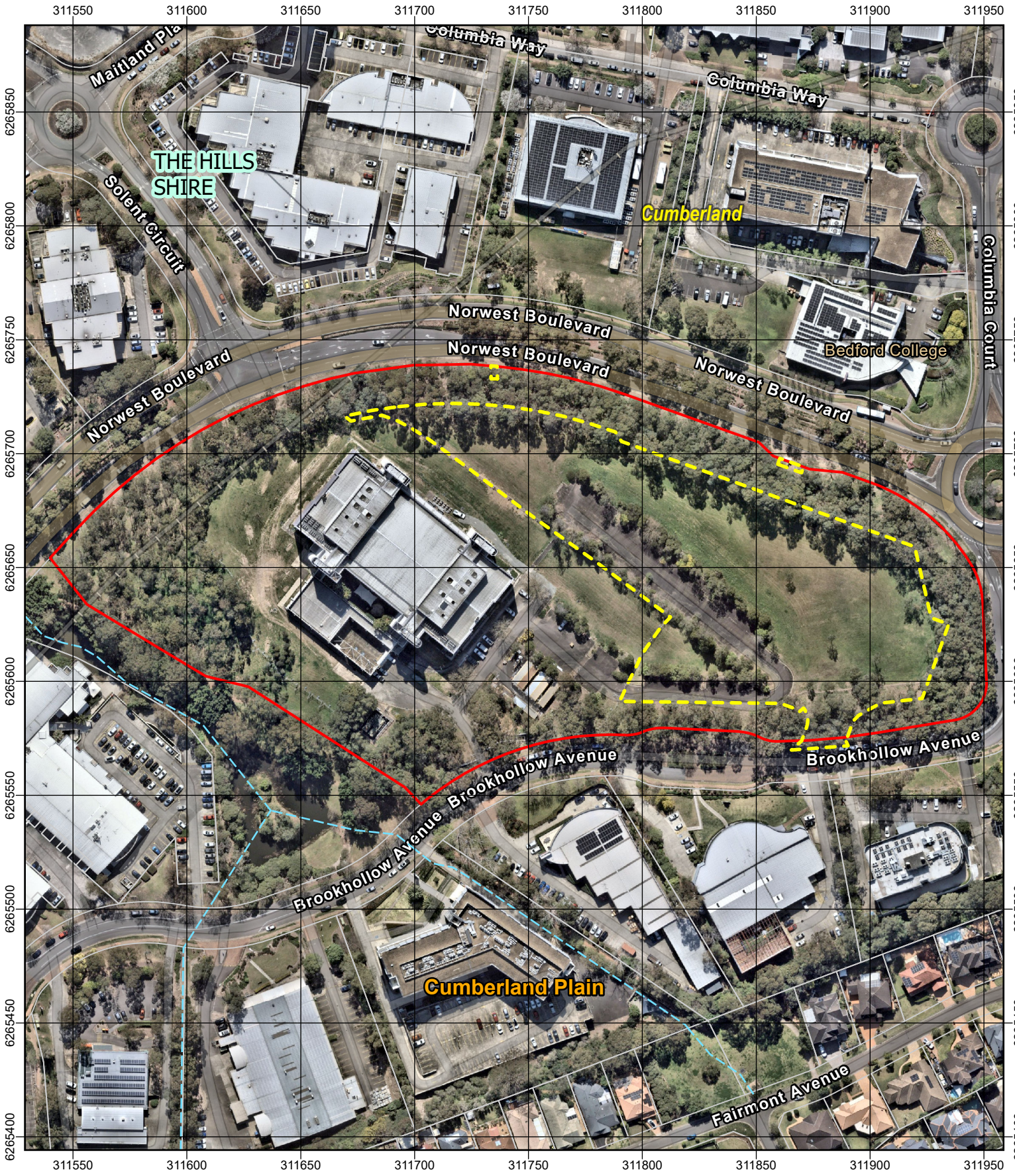
The development layout is shown in **Figure 3**.

1.1.4 Other Documentation

The Secretary's Environmental Assessment Requirements (SEARs) relating to biodiversity and the relevant sections in this report are listed in **Table 1**.

Table 1: Agency Requirements

Assessment requirement	Relevant section
SEARs	
Assess any biodiversity impacts associated with the development in accordance with the Biodiversity Conservation Act 2016 and the Biodiversity Assessment Method 2020, including the preparation of a Biodiversity Development Assessment Report (BDAR), unless a waiver is granted, or the site is on biodiversity certified land.	Assessment has been undertaken in accordance with the Biodiversity Conservation Act 2016, the BAM and documented in this BDAR.
If the development is on biodiversity certified land, provide information to identify the site (using associated mapping) and demonstrate the proposed development is consistent with the relevant biodiversity measure conferred by the biodiversity certification.	The development is not located on biodiversity certified land.



Study Area
Subject Land
Cadastre
NSW HydroLine
Local Government Area
NSW (Mitchell) Landscapes v3.1
IBRA Subregions

Figure 1 - Site Map

0 30 60 m

Scale: 1:2,200

N

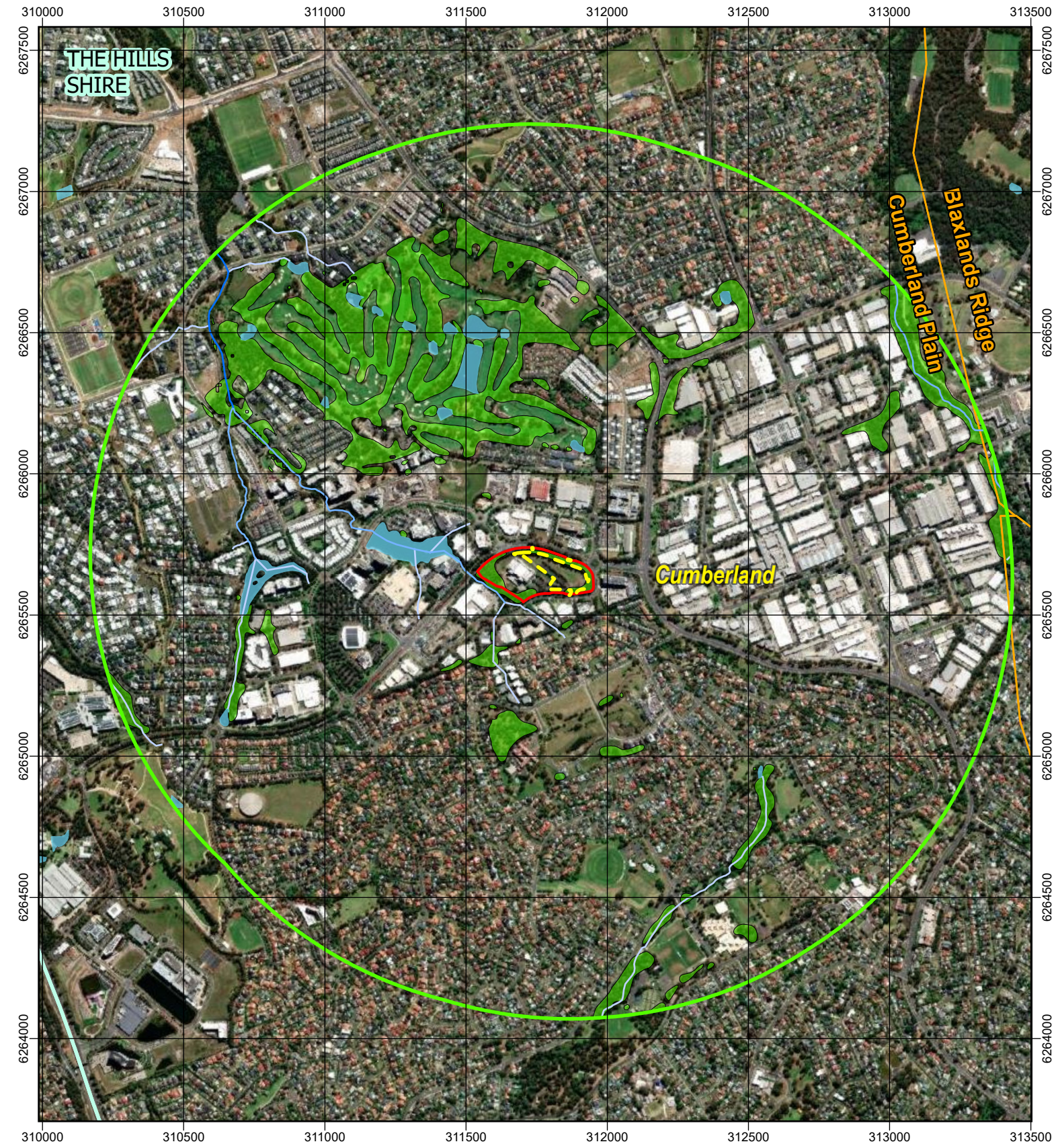
AEP

Address: 3 Brookhollow Avenue, Norwest NSW
Client: GreensquareDC c/- ARCH Artifex
AEP Ref: 5749 | Date: 15 December 2025

Imagery: Nearmap (July 2025)
Spatial Reference: GDA2020 MGA Zone 56

Disclaimer: While reasonable care has been taken to ensure the information on this map is accurate and up-to-date, errors or omissions may still occur. Please verify the accuracy of all information before use. Note that boundaries are not survey accurate and do not scale off this plan.

Path: D:\!!! Workspaces\5749 Norwest\5749 Workspace.aprx



- Study Area
- Subject Land
- 1500m Assessment Buffer
- Local Government Area
- NSW (Mitchell) Landscapes v3.1
- IBRA Subregions
- NSW HydroArea
- Native Vegetation Extent

Strahler Stream Order

- 1st Order
- 2nd Order
- 3rd Order

Figure 2 - Site Location

0 310 620 m

Scale: 1:18,000

N

AEP

Address: 3 Brookhollow Avenue, Norwest NSW
Client: GreensquareDC c/- ARCH Artifex
AEP Ref: 5749 | Date: 15 December 2025

Imagery: ESRI
Spatial Reference: GDA2020 MGA Zone 56

Disclaimer: While reasonable care has been taken to ensure the information on this map is accurate and up-to-date, errors or omissions may still occur. Please verify the accuracy of all information before use. Note that boundaries are not survey accurate and do not scale off this plan.

Path: D:\!!! Workspaces !!!\5749 Norwest\5749 Workspace.aprx

NORWEST BOULEVARD

PAVED FOOTPATH

METRO TUNNEL BELOW

BROOKHOLLOW AVENUE

PAVED TRAFFIC ISLAND

PAVED FOOTPATH

ELECTRICAL EASEMENT

EXISTING FENCE

FENCE

20000

BUS SHELTER

BUS BAY

ELECTRICAL EASEMENT

SUBSTATION

RESTRICTION ON THE USE OF LAND

A155

A150

A205

A206

A200

A152

A151

A210

A201

A153

ø 25000

6400

BRIDGE CONNECTING STAGE 1&STAGE 2

125800

130000

LINE OF PHASE 1

LINE OF PHASE 2

ELECTRICAL PLANT

GENERATORS/ ELECTRICAL PLANT

GENERATORS

SUBSTATION
NOT PART OF THIS SSDA

STAGE 1
NOT PART OF THIS SSDA

RAINWATER TANK AREA

FIRE SPRINKLER BOOSTER (11mx1.5m)

FIRE HYDRANT BOOSTER(2.8mx1.5m)

PAVED DRIVEWAY

FUEL TANK AREA

DRIVEWAY

RW

HYDRAULIC EASEMENT

PAVED FOOTPATH

DP 831173
STRANGERS CREEK

LEGEND:

20M SETBACK LINE

PROPOSED FENCE LINE

SITE AREA: 51867 SQM
STAGE 2 SITE AREA: 29063 SQM
CARPARK PROVIDED (TOTAL): 25
ACC: 2

SSDA

Issue	Date	Description
1	08/10/2025	ISSUED FOR INFORMATION
2	20/10/2025	ISSUED FOR INFORMATION
3	21/10/2025	INFORMATION
4	24/10/2025	INFORMATION
5	24/10/2025	INFORMATION
6	27/10/2024	INFORMATION
7	21/11/2025	ISSUE FOR INFORMATION
8	28/11/2025	ISSUE FOR INFORMATION
9	05/12/2025	ISSUE FOR SSDA

A1

Key Plan

Project Manager
area3 A BGIS Company

Client
Green SquareDC HOME OF AI

Services and Lead Consultant
aurecon
AURECON

Structural and Civil
TTW

Greenbox
A WOOLPERT COMPANY

+61 2 8069 8930
LEVEL 22
68 PITT STREET
SYDNEY NSW 2000 AUSTRALIA

GREENBOX ARCHITECTURE PTY LTD
ABN: 79 139 779 098
ISO 9001 CERTIFIED QUALITY SYSTEM

Notes
- Use written dimensions only
- Do not scale from drawing
- Contractors shall confirm all dimensions on-site prior to commencing any work or producing any shop drawings
- All materials to be used in accordance with the manufacturer's specifications and instructions and shall comply with the relevant Australian Standards
- Copyright of this drawing and design remain the property of Greenbox Architecture Pty Ltd
- Nominated Architect - Gerard Page; NSW reg No.7247, Vic reg No.17664, QLD reg No.4538

Client
GreenSquareDC™

Project
SYD1 STAGE2 Data Centre Expansion

3 Brookhollow Avenue
Baulkham Hills
NSW

Scale	1 : 500
Sheet	A1
Scale Bar	1:500 0 5 10 15 25m
Drawn By	SP, BC
Project Status	SSDA
Checked By	EX
Drawing Title	SITE PLAN
Approved By	GP
Job Number	230062
Drawing Number	A012
Issue	9

1.2 Site details

Table 2 outlines the site details used to identify the Subject Lands and surrounds.

Table 2: Site Details

Detail	Comments
Client	GreensquareDC c/- ARCH Artifex
Address	3 Brookhollow Avenue, Norwest NSW
Title(s)	Lot 2021 DP831173
Subject Land	The Subject Land consists of the proposed development footprint and associated impacts located within Lot 2021 DP831173.
LGA	The Hills Shire Council
Zoning	SP4 - Enterprise
Current Land Use	The Subject Land is currently privately owned land containing a datacentre, carpark, and managed lawns with a border of predominantly native canopy and mid-layer vegetation, with the ground layer consisting of both native and exotic species.
Surrounding Land Use	The surrounding land is also zoned as SP4 – Enterprise. The Subject Land is bordered by sealed roads to the north, east and south, and a vegetated hydroline and developed commercial buildings to the west. In the wider landscape, there is E1 – Local Centre and SP2 – Infrastructure to the west, R3 – Medium Density Residential and R4 – High Density Residential to the south, E3 – Productivity Support and E4 – General Industrial to the east, and RE2 – Private Recreation and R4 to the north.

1.3 Biodiversity offsets scheme entry

The development is being assessed as an SSD under the EP&A Act which triggers the BOS. The Subject Land does not contain BV mapped land.

1.4 Matters of national environmental significance

A Protected Matters Search of an area of 5km radius of the Subject Land was conducted in October 2025 for Matters of National Environmental Significance as relevant to the *Environment Protection & Biodiversity Conservation Act 1999* (EPBC Act). Results of the protected matters search are provided in **Appendix D**.

It is considered unlikely that the proposed development will impact MNES and a referral is not recommended.

1.5 Information sources

Information and spatial data provided within this BDAR has been compiled from various sources including:

- Biodiversity Assessment Method 2020 (DPIE)
- BioNet Threatened Biodiversity Profiles
- Aerial Photograph Interpretation (API) of the site and surrounding locality (Google 2024, NearMap and historical);
- Current and historical photographs of the Subject Land;
- Survey data collected within the Subject Land (surveys by ARCH Artifex in July and August 2025 and by AEP in October – November 2025);
- DPIE (2020c) *NSW Guide to Surveying Threatened Plants;*

- BAM Survey Guidelines for Koala (DPE 2022);
- *Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities. Working Draft* (DEC, 2004).
- NSW *State Vegetation Type Map* (DCCEEW 2024);
- MinView (https://minview.geoscience.nsw.gov.au)
- DCCEEW BAM – Important Areas Map to determine whether the site is mapped as Swift Parrot, Regent Honeyeater, Migratory Shorebird and Plains-wanderer Important Areas;
- The Bureau of Meteorology (BoM) Climate Data Online (http://www.bom.gov.au/climate/data)
- PlantNET NSW (http://plantnet.rbgsyd.nsw.gov.au/); and
- Anecdotal records.

In addition, database searches were carried out, namely:

- Review of flora and fauna records held by the DCCEEW Atlas of NSW Wildlife within 1500m of the site (October 2025) and within The Hills Shire LGA; and
- Review of flora and fauna records held by the Cth DCCEEW Protected Matters Search within a 5km radius of the site (October 2025).

2.0 Methods

2.1 Site context methods

2.1.1 Landscape features

Landscape features were identified according to Section 3.1 of the BAM using a combination of desktop review and field survey methods. This included:

- Review of International Biographic Regionalisation for Australia (IBRA) regions and subregions;
- Assessment of habitat connectivity;
- Assessment of rivers, streams, estuaries and wetlands;
- Review of the register of Areas of Outstanding Biodiversity Value;
- Identifying Plant Community types, dominant canopy, mid-storey and groundcover species;
- Defining vegetation formation and class; and
- Assessing landform and landscape design.

2.1.2 Native vegetation cover

The percentage native vegetation cover was assessed according to Section 3.2 of the BAM, and a 1500m buffer was applied to the Subject Land. Native vegetation was ground-truthed within the Subject Land and adjoining lands through field surveys by ARCH Artifex in July and August 2025 and by AEP in October and November 2025.

Native vegetation within the broader 1500m buffer was identified through the analysis of vegetation datasets (SVTM, 2024) and satellite imagery. Considering the urban setting of the assessment area, additional areas of native vegetation not mapped within the SVTM dataset, were identified from imagery analysis and have been included as part of native vegetation coverage.

2.2 Native vegetation

2.2.1 Existing information

Plant Community Types (PCTs) within the Subject Land were determined according to BAM Section 4.2. The State Vegetation Type Map (SVTM) was considered to determine the likely native vegetation extent within the site as shown in **Figure 4**. Ground-truthing of vegetation by ARCH Artifex in July 2025 and AEP in October and November 2025 was the primary source of data to determine the extent of native vegetation. This included an assessment of dominant species, landscape position, geomorphology, and vegetation structure. All vegetation communities within the Subject Land were identified and assessed against relevant threatened ecological communities (TECs).

An assessment of PCTS and TECs is provided in **Sections 4.2** and **4.3** of this report.

2.2.2 Mapping native vegetation extent

Flora surveys were undertaken by AEP to ground-truth native vegetation, determine PCTs and condition classes, derive vegetation community types, and meet relevant survey guidelines. This involved the use of plot-based surveys as described in **Section 2.2.3**.

Vegetation within the Subject Land is subject to change depending on activities within the property. The findings in this report are based on vegetation conditions at the time of assessment and are considered an accurate representation of the site's condition.

2.2.3 Plot-based floristics surveys

Plot-based floristic surveys were undertaken by ARCH Artifex in July 2025 and AEP in October and November 2025 to identify the ‘best fit’ Plant Community Types (PCTs) within the Subject Land. The

surveys were stratified and targeted to assess the expected environmental variation and address any gaps in existing mapping and information. Surveys included:

- Ground-truthing of state vegetation mapping to identify all vegetation communities present onsite as well as segregate vegetation zones according to condition and current management practices;
- Identification of all vascular plant species encountered during fieldwork. Subject Land coverage was both systematic to ensure all key points of the site were checked, and therein the Random Meander Technique (Cropper 1993) was utilised to maximise species encountered;
- The plot-based floristic vegetation survey is based on a 20m × 20m plot (or 400m^2 equivalent for linear areas).
- Two (2) BAM plots were conducted by ARCH Artifex and two (2) plots were conducted by AEP
- Only BAM Plots 1 and 3 were included within the BAM – C. Plot 2 was located outside the Subject Land and Plot 4 was conducted within the grassland area that was determined not to constitute enough native vegetation coverage to assign to a PCT.

2.2.4 Vegetation integrity survey

The total area of each vegetation zone was calculated using GIS, and the minimum number of BAM plots required was based on Table 3 of BAM Subsection 4.3.4. Given the disturbed nature of the majority of the site, BAM Plots were located within parts of the vegetation zone that were most representative.

2.2.5 Planted vegetation assessment

Planted native vegetation was assessed in conjunction with the following:

- Appendix D: Streamlined assessment module – Planted native vegetation (DPIE 2020a);
- Streamlined assessment module planted native vegetation (DCCEEW 2024);
- Widely Cultivated Native Species lists; and
- Historic aerial Imagery (Spatial Services);

Historical aerial imagery was used to determine the location of planted species that don't occur naturally in the Cumberland IBRA Subregion.



Study Area
Subject Land
Cadastre

NSW HydroLine
NSW HydroArea

State Vegetation Type Mapping (DCCEEW, 2024)

PCT 3250 - Northern Foothills Blackbutt Grassy Forest
PCT 3320 - Cumberland Shale Plains Woodland
PCT 3321 - Cumberland Shale-Sandstone Ironbark Forest

Figure 4 - State Vegetation Type Mapping

0 80 160 m

Scale: 1:5,000

N

AEP

Address: 3 Brookhollow Avenue, Norwest NSW
Client: GreensquareDC c/- ARCH Artifex
AEP Ref: 5749 | Date: 15 December 2025

Imagery: Nearmap (July 2025)
Spatial Reference: GDA2020 MGA Zone 56

Disclaimer: While reasonable care has been taken to ensure the information on this map is accurate and up-to-date, errors or omissions may still occur. Please verify the accuracy of all information before use. Note that boundaries are not survey accurate and do not scale off this plan.

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2.3 Threatened flora survey methods

2.3.1 Review of existing information

A review of literature and datasets was undertaken to develop a list of species to be targeted during the threatened fauna and flora species surveys including:

- NSW BioNet Atlas – searching within 100km^2 search area;
- NSW BioNet Threatened Biodiversity Data Collection (TBDC);
- Protected Matters Search Tool (PMST) (Cth DCCCEW 2025) within a 5km buffer; and
- The Biodiversity Assessment Method Calculator (BAM-C).

Fauna and flora species were assessed against the habitat features identified within the Subject Land to determine the suitability of the area to support these species. This involved cross-referencing species information in the TBDC (DCCEEW 2025b) and scientific literature with relevant information from the site. BioNet records are depicted in **Figure 5.**

2.3.2 Habitat constraints assessment

Habitats and microhabitats were assessed by ARCH Artifex in July and August 2025, and by AEP in October and November 2025 to identify specific habitats and microhabitats for threatened species within the Subject Land. Consideration was given to contributing factors including topography, soil, light, and hydrology for threatened flora and assemblages. Exclusions were made based on habitat constraints, geographic limitations, or microhabitat requirements.

2.3.3 Flora field surveys

All required flora survey techniques were utilised for targeted survey of the species and guided by *Surveying threatened plants and their habitats - NSW survey guide for the Biodiversity Assessment Method* (DPIE 2020a) and the BAM (DPIE 2020b). Survey effort is shown in **Figure 6**.

The following survey methods were undertaken to record the presence of threatened species on site:

- Identification of all vascular plant species encountered during fieldwork. Subject Land coverage was both systematic to ensure all key points of the site were checked, and therein the Random Meander Technique (Cropper 1993) was utilised to maximise species encountered;
- Seasonal targeted threatened flora surveys walking 5 – 10m and 10 – 20m line transects throughout the site, targeting a range of threatened flora; and
- Four (4) BAM plots were undertaken across the site in accordance with BAM 2020.

2.4 Threatened fauna survey methods

2.4.1 Review of existing information

Threatened fauna were identified utilising the same information sources as described for flora, in **Section 2.3.**

2.4.2 Habitat constraints assessment

Habitats and microhabitats were assessed by ARCH Artifex in July and August 2025, and by AEP in October and November 2025 to identify specific habitats and microhabitats for threatened species within the Subject Land. This assessment focused primarily on the identification of specific habitat types and resources within the Study Area favoured by known threatened species listed in **Section 5.1.3**. The assessment also considered the potential value of the Subject Land (and surrounding areas) for all major guilds of native flora and fauna. The assessment was based on the specific habitat requirements of each threatened fauna species in regards to home range, feeding, roosting, breeding, movement patterns and corridor requirements, such as hollows, Koala feed trees, watercourses, rocky outcrops and other features that could potentially be utilised.

2.4.3 Field Surveys

Fauna surveys were carried out utilising techniques as outlined below, with reference to relevant guidelines.

Cumberland Plain Land Snail

One (1) diurnal survey was undertaken for this species, focusing on the detection of empty shells, particularly around refugia such as soil cracks, leaf litter, and decorticated bark, and especially at the base of trees. One (1) nocturnal survey after recent rainfall and suitable humidity was undertaken, focusing on the detection of live specimens around refugia, soil cracks, leaf litter, decorticated bark and at the base of trees.

Avifauna Surveys

The presence of avifauna within the site was assessed via incidental observations during all other phases of fieldwork. For diurnal surveys, birds were identified by direct observation or by recognition of calls or distinctive features such as nests, feathers etc. A total of two (2) nights of spotlight surveys utilising call playback techniques were undertaken for the Bush Stone-curlew.

Mammals

The occurrence of mammals within the site was assessed by utilising habitat assessment and baited camera traps. Four (4) baited camera traps, one (1) terrestrial and three (3) arboreal cameras, were placed within native vegetation across the site. Cameras were placed on a bracket that faced towards a baited tube cannister containing honey-oat bait.

Habitat assessment included survey for foraging resources (blossom, herbaceous, prey etc), hollows and roosting opportunity, connectivity and water. A single Koala Spot Assessment Technique (SAT) survey was undertaken within a patch of suitable native vegetation (containing feed tree species), where 30 trees around a central tree were searched for koala scats. A total of two (2) nights of spotlight surveys utilising call playback techniques were undertaken for Koalas.

Incidental Observations & Secondary Indications

Incidental records of any fauna species observed during fieldwork were noted. This included opportunistic sightings of secondary indications (scratches, scats, diggings, tracks etc.) of any resident or migratory species. Searches were also conducted for whitewash, regurgitation pellets and prey remain from Owls, chewed (Allo)Casuarina cones from Black-Cockatoos, chewed fruit remains from frugivorous birds etc.

Refer to **Figure 7** for survey effort.

2.5 Limitations

Micromyrtus minutifolia

As per the TBDC, surveys for *Micromyrtus minutiflora* should be undertaken '*at least 3 times, each at least 1 month apart unless found*'. Given the degraded and non-remnant nature of the site, deviation from the survey effort prescribed by the TBDC is considered appropriate for the following reasons:

- *Micromyrtus minutiflora* is a shrub, with vegetative material suitable for identification to genus level, persisting throughout the year;
- Potential *Micromyrtus* specimens, if present would have been identifiable during surveys one (1) and (2) which were undertaken one (1) month apart;
- The non-remnant nature of the site suggests this species is highly unlikely to exist on site. Historical disturbance and under scrub management has reduced the likelihood of natural generation of this species.

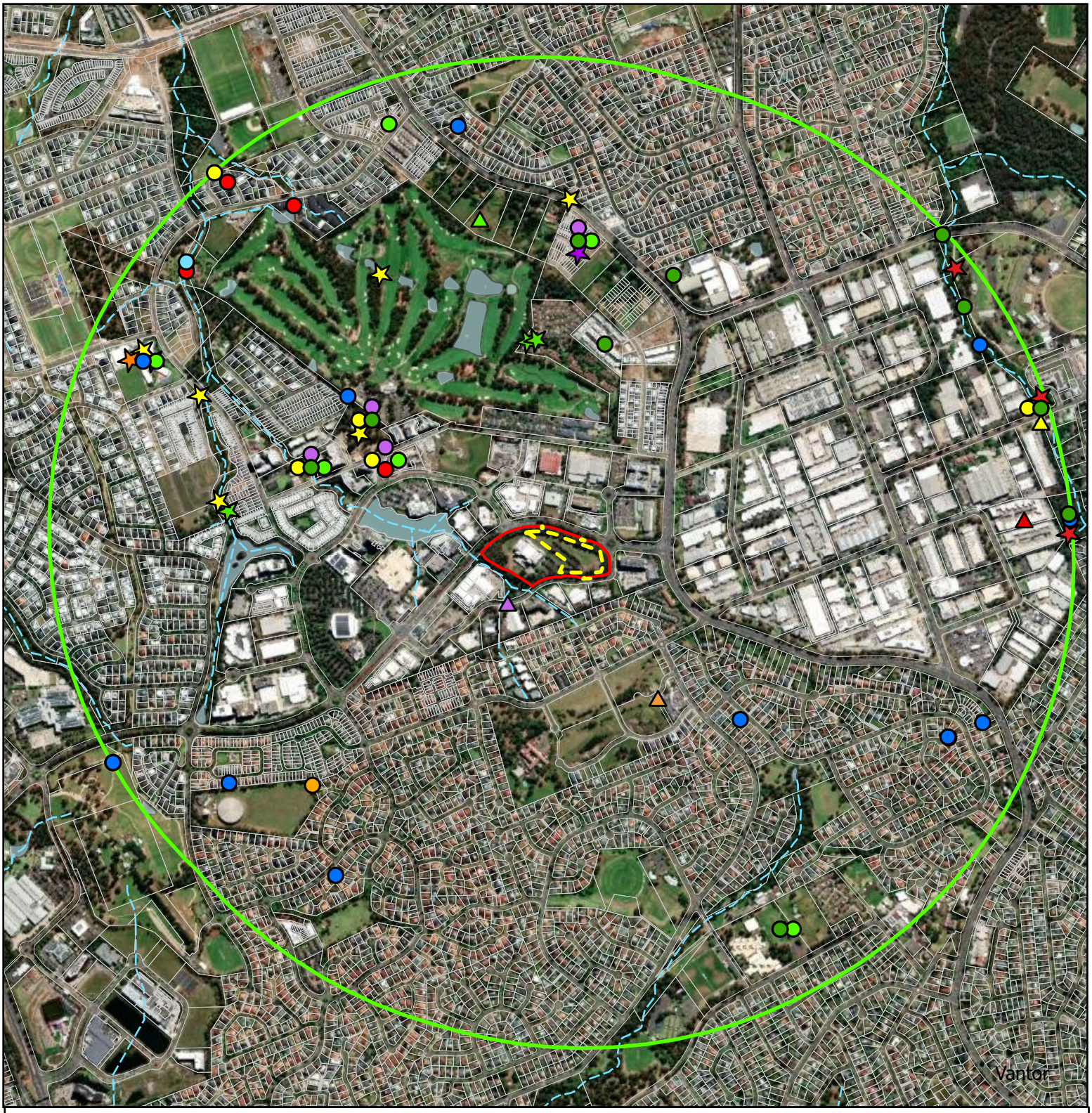
Therefore, given the degraded nature of the site, and the absence of any *Micromyrtus* specimens encountered during site surveys (including two (2) rounds of targeted flora transects), deviation from the TBDC survey requirements is not considered to be a significant limitation, for assessing the presence of *Micromyrtus minutiflora*.

2.6 Weather Conditions

Table 3: Environmental conditions during survey

Survey Undertaken	Date	Time	Temperature (min. & max.)	Rainfall (mm)	Humidity (%)	Rainfall within 4 days	Rainfall within 10 days	Rainfall within 30 days
Habitat Assessment BAM Plots	03/07/25	0800 - 1400	13.0-18.0°C	1.5	62	59.5	59.5	69.0
	10/07/25	0900 - 1500	7.0-16.4°C	0	51	3.5	65.0	73.0
5m Flora Transects: *Pimelea spicata.*	13/08/25	0800-1200	6.0 – 18.8°C	0.5	86	38.0	85.5	129.0
5m Flora Transects: *Grevillea juniperina* subsp. *juniperina, Persoonia nutans, Pomaderris brunnea.* 10m Flora Transects: *Eucalyptus benthamii, Eucalyptus glaucina, Acacia pubescens, Dillwynia tenuifolia.*	14/08/25	0800-1400	9.8 – 14.2°C	1.5	74	24.5	58.0	129.5
5m-10m Flora Transects: *Micromyrtus minutiflora* *Pimelea spicata* *Pterostylis saxicola* Habitat assessment Diurnal Cumberland Plain Land Snail survey Koala SAT Nocturnal Koala and Bush Stone Curlew call playback and spotlighting	08/10/25	1230-2030	13.5-30.2°C	0	60	1.5	1.5	72.0
Nocturnal Koala and Bush Stone Curlew call playback and spotlighting	09/10/25	1930-2030	20.0-27.0°C	0	57	1.5	1.5	72.0
BAM Plots 10m-20m Flora Transects: *Hibbertia puberula* *Pultenaea parviflora* *Pultenaea pedunculata* *Pimelea curviflora var curviflora* 5m-10m Flora Transects: *Persoonia nutans* *Grevillea juniperina* subsp. *juniperina* *Pimelea spicata* *Pomaderris brunnea*	17/10/25	0915-1315	17.5-34.5°C	0	54	0	1.5	15.0

Survey Undertaken	Date	Time	Temperature (min. & max.)	Rainfall (mm)	Humidity (%)	Rainfall within 4 days	Rainfall within 10 days	Rainfall within 30 days
Nocturnal and diurnal Cumberland Plain Land Snail 10-20m Flora Transects: *Hibbertia puberula* *Eucalyptus benthamii* *Eucalyptus glaucina* *Acacia pubescens* *Dillwynia tenuifolia*	30/10/25	1400-2045	12.5-23.5°C	16.0	78	19.6	19.6	23.2
5-10m Flora Transects: *Micromyrtus minutiflora* *Pimelea spicata* *Pimelea curviflora* var. *curviflora* *Hibbertia puberula*	04/11/25	0800-1030	17.0-23.5°C	0.8	56	13.8	33.4	37.0



Study Area
Subject Site
Cadastre
NSW HydroLine
NSW HydroArea
1500m Assessment Buffer

Gastropoda

Cumberland Plain Land Snail

Mammalia

Eastern Coastal Free-tailed Bat
Eastern False Pipistrelle
Greater Broad-nosed Bat
Grey-headed Flying-fox
Koala
Large Bent-winged Bat
Southern Myotis
Yellow-bellied Sheathtail-bat

Flora

Acacia pubescens
Eucalyptus nicholii
Eucalyptus scoparia
Macadamia integrifolia
Syzygium paniculatum

Aves

Flame Robin
Little Lorikeet
Powerful Owl
Regent Honeyeater
Swift Parrot
White-throated Needletail

Figure 5 - BioNet Atlas Threatened Species Records

0 290 580 m

Scale: 1:17,000

N

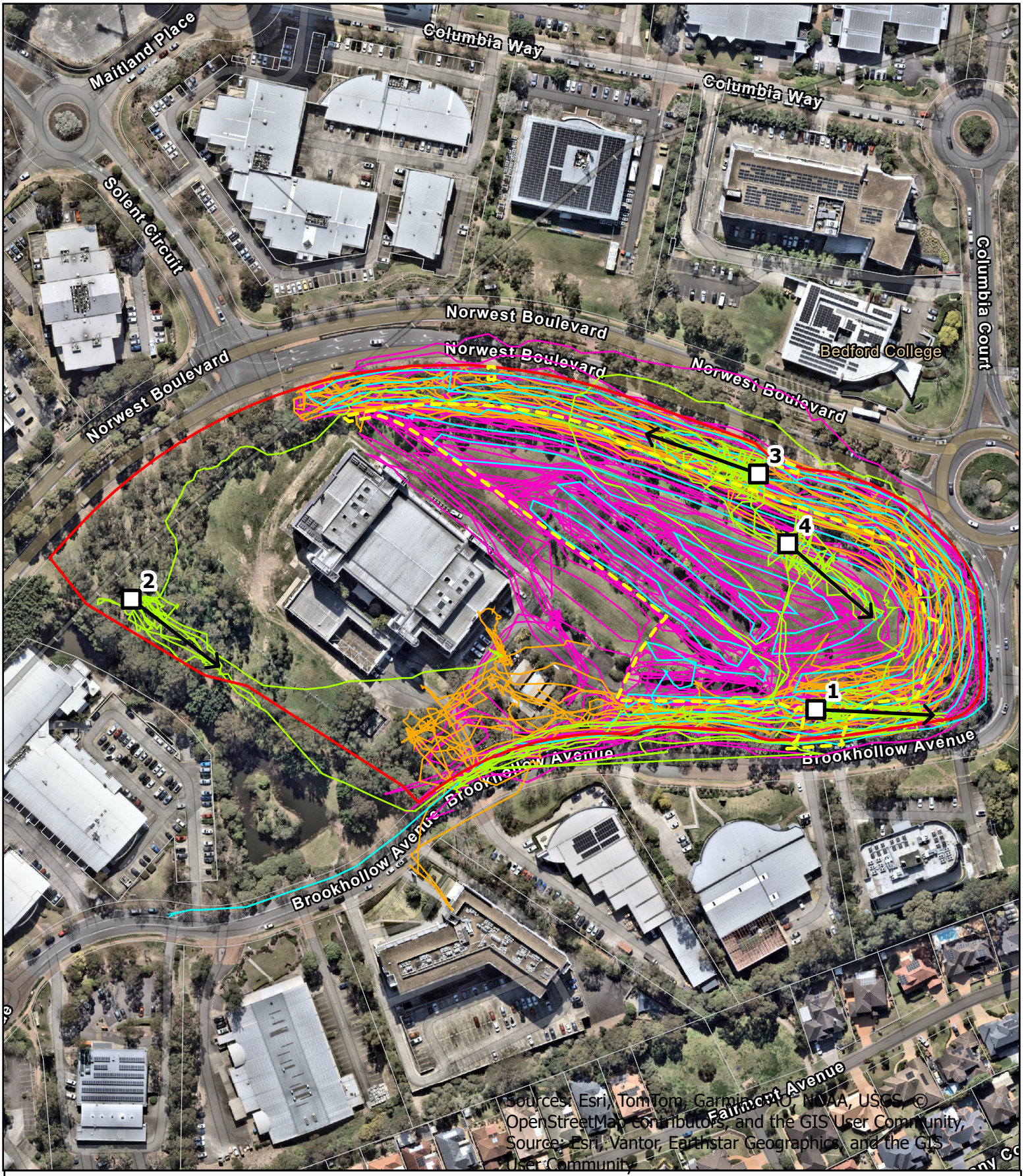
AEP

Address: 3 Brookhollow Avenue, Norwest NSW
Client: GreensquareDC c/- ARCH Artifex
AEP Ref: 5749 | Date: 15 December 2025

Imagery: ESRI
Spatial Reference: GDA2020 MGA Zone 56

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Study Area
Subject Land
Cadastre
BAM Plot
BAM Direction
BAM Transect
August Flora Transects
October Flora Transects
November Flora Transects

Figure 6 - Survey Effort - Flora

0 30 60 m
Scale: 1:2,200

N

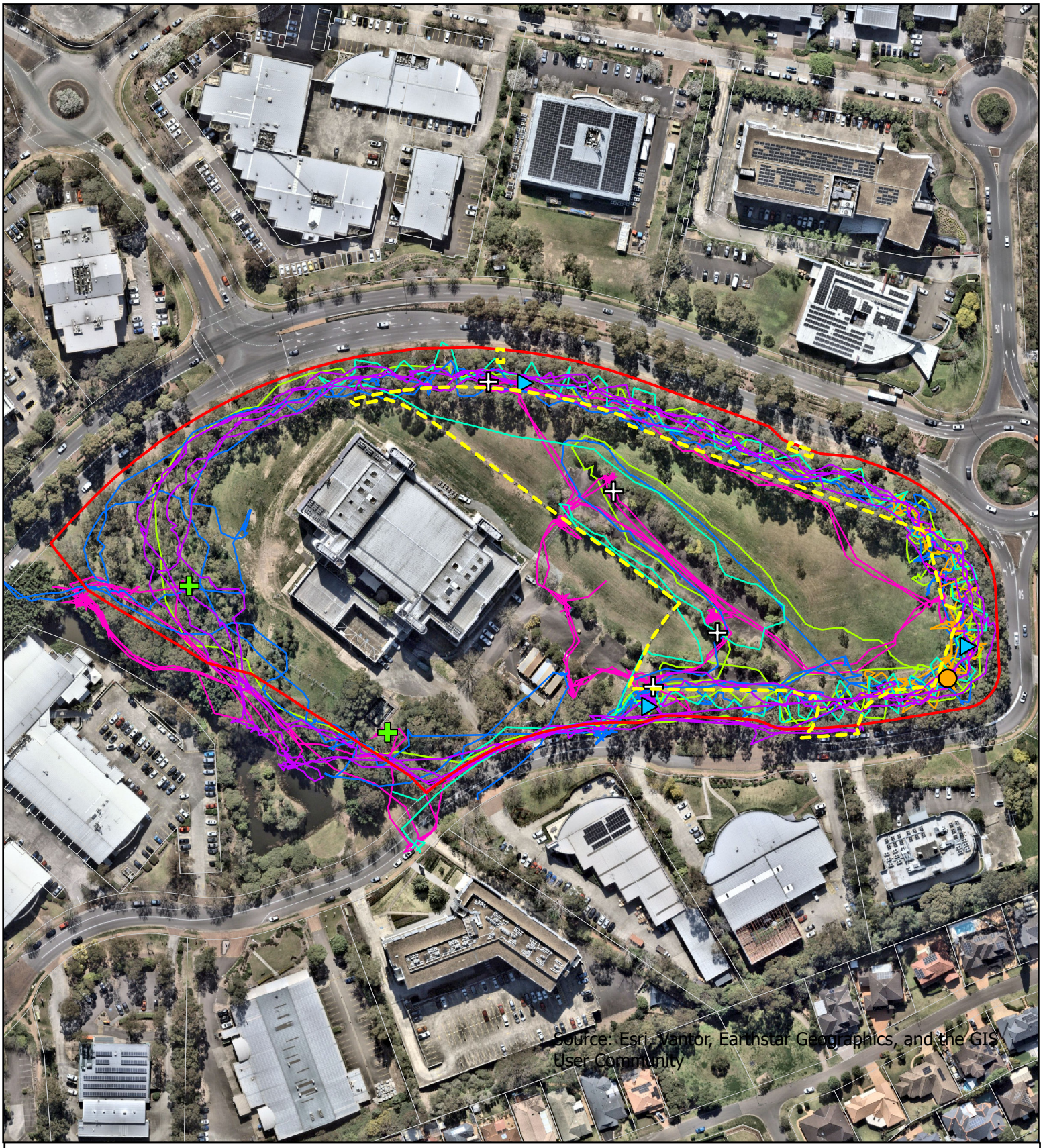
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Client: GreensquareDC c/- ARCH Artifex
AEP Ref: 5749 | Date: 15 December 2025

Imagery: Nearmap (July 2025)
Spatial Reference: GDA2020 MGA Zone 56

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Study Area
Subject Land
Cadastre

Diurnal Snail survey
Equipment deployment
Habitat assessment
Koala SAT survey
Nocturna Snail survey
Nocturnal Koala and Bush Stone Curlew survey

Koala and Bush Stone-curlew Call Playback
Anabat location
Camera location
Koala SAT

Figure 7 - Survey Effort - Fauna

0 30 60 m
Scale: 1:2,200

N

AEP

Address: 3 Brookhollow Avenue, Norwest NSW
Client: GreensquareDC c/- ARCH Artifex
AEP Ref: 5749 | Date: 15 December 2025

Imagery: Nearmap (July 2025)
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3.0 Site context

3.1 Assessment area

The assessment area for the Project includes the Subject Land and the land located within 1500m of the site as shown in **Figure 2.** The Assessment Area totals ~808.13ha, which primarily consists of residential and commercial developments.

3.2 Landscape features

Landscape features identified within the subject land and assessment area are shown on **Figure 2,** and discussed in further detail in **Table 4.**

Table 4: Landscape feature assessment

Landscape Feature	Assessment
IBRA bioregions and IBRA subregions	The Subject Land occurs entirely within the Sydney Basin IBRA bioregion, and the Cumberland IBRA subregion. This information was entered into the BAM-Calculator accordingly.
Rivers and Streams	There are no hydrolines or waterbodies present within the Subject Land. The closest stream is Strangers Creek, approximately 120m west of the Subject Land.
Key Fish Habitat (NSW Fisheries Management Act, 1994)	The Subject Land is not intersected by mapped Key Fish Habitat (DPIRD 2025a).
Estuaries and Wetlands	No listed Estuaries or Wetlands are mapped within the Subject Land or the Assessment Area
Native Vegetation Extent	Native vegetation was assessed within the assessment area through analysis of satellite imagery and vegetation datasets (DCCEEW 2024). The surrounding area contains limited native vegetation due to the urban setting that is largely developed. Riparian corridors occur primarily along Strangers Creek which runs adjacent to the western border of the Study Area.
Connectivity Features	The Subject Land is located in an urban area that has been modified by past land use. The site has limited connectivity to intact native vegetation due to surrounding sealed roads. Thus, the native vegetation within the Subject land is not expected to form part of a habitat corridor.
Karst, Caves, Crevices, Cliffs, Rock and other Geological Features of Significance	There are no karst, caves, crevices, cliffs, rocks or other geological features of significance on the Subject Land or within the Assessment Area.
Soil hazard features	No soil hazard features have been identified.
Features identified by the Secretary's Environmental Assessment Requirements (SEARs)	No additional landscape features were identified in the SEARs.
Areas of Outstanding Biodiversity Value (AOBV) under the BC Act	No AOBV are present on the Subject Land or within the Assessment Area.
NSW (Mitchell) Landscape	The Subject Land occurs on Cumberland Plain. Other NSW (Mitchell) Landscapes within the Assessment Area include Blaxlands Ridge and Pennant Hills Ridges to the west.

3.3 Native vegetation cover

Native vegetation cover within the assessment area is estimated to be approximately 100.09ha, determined from SVTM 2024 mapping and aerial imagery. **Table 5** summarises the extent of native vegetation cover within the assessment area, as shown in **Figure 2**.

Table 5: Native vegetation cover in the assessment area

Assessment area (ha)	808.13
Total area of native vegetation cover (ha)	99.40
Percentage of native vegetation cover (%)	12.31
Class (0-10, >10-30, >30-70 or >70%)	Due the difficulties in accurately mapping native vegetation at a desktop level, AEP have assumed a NVE of 40% (>30-70) in the BAM-C.

4.0 Native vegetation, threatened ecological communities and vegetation integrity

4.1 Native vegetation extent

Determination of native vegetation extent within the Subject Land was determined through site surveys conducted in July and August 2025 by ARCH Artifex and October 2025 AEP Ecologists in conjunction with aerial imagery as per the methods described in **Section 2.2.3**. Ground-truthing found that a strip of native vegetation occurs along the border of the Study Area, which closely resembles the mapped native vegetation extent. **Figure 8** presents the extent of native vegetation within the Study Area and Subject Land.



Study Area | Subject Land | Cadastre | Native Vegetation Extent

Figure 8 - Native Vegetation Extent

0 25 50 m

Scale: 1:1,500

N

AEP

Address: 3 Brookhollow Avenue, Norwest NSW
Client: GreensquareDC c/- ARCH Artifex
AEP Ref: 5749 | Date: 15 December 2025

Imagery: Nearmap (July 2025)
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4.2 Plant community types

4.2.1 Overview

The majority of the Subject Land has been cleared and modified as a result of historical land use. Native vegetation is generally restricted to the periphery of the Study Area, with a lack of old-growth or remnant trees. Most trees have a diameter at breast height (DBH) between 30–40cm. The growth pattern across the site suggests that it was entirely cleared in the past, with areas around the periphery subsequently planted with native species and recolonised by naturally regenerating vegetation.

The primary canopy species include *Eucalyptus tereticornis* and *E. crebra*, with *E. moluccana* and *E. umbra* also observed. The midstorey is largely absent, and the ground layer comprises a mix of native and exotic species. Historical clearing has contributed to the proliferation of exotic grasses within the ground layer. High-threat weeds recorded on site include *Senecio madagascariensis* and *Lantana camara*.

Under the BAM, identification of the Plant Community Type (PCT) or most likely PCTs, as well as any Threatened Ecological Communities (TECs), is required for the Subject Land. PCT identification must follow the NSW PCT classification as described in the BioNet Vegetation Classification System, while TEC identification must be consistent with the NSW Threatened Species Scientific Committee Final Determinations. Diagnostic species recorded during fieldwork that support the PCT determinations are listed in the following tables.

Fieldwork identified one (1) vegetation zone within the Subject Land, which is described in Section 4.3 and depicted in **Figure 9**. BAM plot photographs and additional site photographs are provided in **Appendix G**. Plant Community Types identified are summarised in **Table 6**.

Table 6: PCTs identified within the Subject Land

PCT ID	PCT name	Subject Land area (ha)
3320	*Cumberland Shale Plains Woodland*	0.36
	Total area	**0.36**

4.2.2 PCT Determination Process

The BAM's assessment module requires the identification of the PCT or the most likely PCTs, and all TECs, on the Subject Land. The identification must be in accordance with the NSW PCT classification as described in the BioNet Vegetation Classification system. The identification of TECs must be consistent with the NSW Threatened Species Scientific Committee Final Determination for the TEC.

The PCT determination process AEP utilises is the NSW Government BioNet Vegetation Classification, including the PCT Data and Bulk Export data spreadsheet to determine the most likely PCTs. The following outlines the process:

1. Determine the State Vegetation Type Mapping Extent based on most recent mapping tools;
2. Determine the IBRA and Sub IBRA zone, this step assists in removing PCTs that are not located within Subject Land;
3. Determine the NSW Landscapes, a map needs to be generated for this step as there may be multiply landscapes within the Subject Land; and
4. Use the floristic results from the BAM Plots, filtering from canopy species through to ground stratum. Using the BioNet Vegetation Classification is critical in this stage where the frequency of the species present is the leading factor in the determination of PCT presence or absence and is identified within this step.

The above steps allow the narrowing of the potential PCTs considered**.** With further assessment required.

5. Using the BioNet Vegetation Classification and details collected in the field to assess both the vegetation formation and class, must be undertaken to ensure the species present are representative of the community on the Subject Land. For example, some species such as

Eucalyptus robusta, can be found in both Dry Sclerophyll Forests and Forested Wetlands, which will significantly alter the PCT if not assessed accurately;

6. Determination of LGA, as there are particular plant communities that are restricted to or excluded from LGAs;
7. Geology, soil type and elevation play a significant role in the distribution of flora within NSW and are considered in PCT determination;
8. AEP uses E-Spade and MinView to determine the local soil types to assist with refining the PCTs; and
9. Other factors affecting habitat suitability include rainfall, slope, aspect and the presence of hydrolines which are considered in the application of the BioNet Vegetation Classification results and data collect on site.

The above steps are generally undertaken in order to ensure the PCTs within the Subject Land are an accurate reflection of the vegetation communities occurring within the areas.

4.2.3 Justification of PCT 3320 selection

Table 7: PCT Decision Pathway

Result: PCT 3320 – Cumberland Shale Plains Woodland	
Search Term	**Selection**
IBRA Bioregion	Sydney Basin
IBRA Sub-region	Cumberland
Vegetation Formation	Grassy Woodlands
Tree Growth Form Group (Canopy)	*Eucalyptus tereticornis, Eucalyptus crebra*
Results	Returned a short-list of four (4) PCTs: 3318, 3319, 3320, 3321
PCT 3318 – *Cumberland Moist Shale Woodland*	**Floristic overlap** PCT 3318 bears some resemblance to the assessed vegetation, the canopy being dominated by *Eucalyptus tereticornis*. The shrub layer of the assessed vegetation contains sparse *Acacia parramattensis, Acacia fimbriata, Dodonea triquetra* and *Pittosporum undulatum*. The assessed vegetation did not contain waxy-leaved shrubs or ferns which are characteristic of PCT 3318. **Geography and Landscape Position** Geography and Landscape position is a weak match. PCT 3318 is mainly distributed along protected aspects on steeper shale hills and rises in the southern half of the Cumberland Plain. There are no steep hills or rises in the vicinity of the site and the site is located in the northern half of the Cumberland Plain. **Geology and Soils** Geology and soils are a strong match. PCT 3318 and the assessed vegetation occur on shale soils. **Conclusion** While there is characteristic canopy species, the assessed vegetation lacks characteristic waxy-leaved shrubs and ferns, and the geography and landscape position where not considered best fit for the assessed vegetation.
PCT 3319 – *Cumberland Shale Hills Woodland*	**Floristic overlap** PCT 3319 bears some resemblance to the assessed vegetation. PCT 3319 contains a canopy dominated by *Eucalyptus moluccana* and *Eucalyptus tereticornis.* The assessed vegetation contained a canopy dominated by *Eucalyptus tereticornis* with local patches of *Eucalyptus moluccana* and *Eucalyptus crebra.* PCT 3319 frequently includes *Bursaria spinosa* and at least one species of Acacia, of which *Acacia implexa* is the most common. The assessed vegetation has a limited shrub layer, there were a number of Acacia species present, of which *Acacia fimbriata* was the most prevalent. A small number of *Acacia implexa* was also present within the assessed vegetation. Both

	PCT 3319 and the assessed vegetation contain a ground cover dominated by grasses and forbs. Characteristic ground covers within the assessed vegetation include *Microlaena stipoides, Glycine tabacina,* and *Dichondra repens*. **Geography and Landscape Position** Occurs on rises and upper slopes of hills south from Cecil Hills. The site is located approximately 25km north of Cecil Hills. **Geology and Soils** Geology and soils are a strong match. PCT 3319 and the assessed vegetation occur on shale soils. **Conclusion** While there is characteristic species, the geography and landscape position where not considered best fit for assessed vegetation.
PCT 3320 – *Cumberland Shale Plains Woodland*	**Floristic overlap** PCT 3320 bears resemblance to the assessed vegetation, with the canopy dominated by *Eucalyptus tereticornis* and local patches dominated by *Eucalyptus crebra* and *Eucalyptus moluccana*. PCT 3320 frequently includes *Bursaria spinosa* and at least one species of Acacia, of which *Acacia parramattensis, Acacia decurrens* and *Acacia falcata* are the most common. The sparse shrub layer within the assessed vegetation is highly degraded and did not contain *Bursaria spinosa*, however, a number of Acacia species were present, of which *Acacia fimbriata* was the most prevalent. A small number of *Acacia parramattensis* and *Acacia implexa* were also present. **Geography and Landscape Position** Geography and Landscape position are a strong match being located on the Cumberland Plains in western Sydney below 120m ASL (site is approximately 97m ASL). **Geology and Soils** Geology and soils are a strong match being located on undulating Wianamatta Group shale plains. **Conclusion** PCT 3320 was chosen as the best fit for the assessed vegetation due to the matching characteristic flora, geography, landscape, and geology.
PCT 3321 – *Cumberland Shale-Sandstone Ironbark Forest*	**Floristic overlap** PCT 3321 bears some resemblance to the assessed vegetation. PCT 3321 contains a canopy dominated by ironbark Eucalypts and commonly *Eucalyptus punctata* and stringybark Eucalypts. The assessed vegetation is primarily dominated by *Eucalyptus tereticornis* and contains local patches dominated by *Eucalyptus crebra*, an ironbark Eucalypt, however, *Eucalyptus punctata and* stringybark Eucalypts were not present. The sparse small tree layer of PCT 3321 and the assessed vegetation contained several acacia species, including *Acacia parramattensis.* The ground cover is dominated by grasses and forbs. Characteristic ground covers within the assessed vegetation included *Microlaena stipoides.* **Geography and Landscape Position** Geography and landscape position are a strong match being located on the fringes of the Cumberland Plain. The site is located approximately 1.5km from the eastern border of the Cumberland Plain. **Geology and Soils** Geology and soils are a weak match. PCT 3321 occurs on Tertiary alluvium or shale-gravel soils and is associated with the subtle intergrade between clay-rich shale soil and the coarse sandy substrates of the sandstone plateau. The site is predominantly shale influenced and contains few species typically associated with sandstone. **Conclusion** While there are local patches dominated by *Eucalyptus crebra*, the assessed vegetation lacks characteristic stringybark Eucalypts and *Eucalyptus punctata.* Additionally, the geology and soils where not considered best fit for the assessed vegetation.

Result:	PCT 3320 – *Cumberland Shale Plains Woodland*
Per cent cleared value (%)	93.03%
Extent within Subject Land (ha)	0.36ha

4.2.4 Condition states

PCT 3320 has been assessed as a single condition state within the Subject Land (PCT 3320 Poor), with a VIS of 37.5, and a representative photo has been provided in **Plate 1** below.



Plate 1: PCT 3320 Poor

4.2.4.1 Alignment with BC Act TECs

PCT 3320 is associated with two BC Act-listed ecological communities:

- Critically Endangered Ecological Community (CEEC) *Cumberland Plain Woodland in the Sydney Basin Bioregion* (Cumberland Plain Woodland), and
- Endangered Ecological Community (EEC) *Shale Gravel Transition Forest in the Sydney Basin Bioregion* (Shale Gravel Forest).

Shale Gravel Forest typically occurs on shallow deposits of hardened gravel, whereas Cumberland Plain Woodland is associated with shale substrates derived from the Wianamatta Group, which is mapped on site (GSNSW 2025).

In addition, Shale Gravel Forest is generally dominated by *Eucalyptus fibrosa*, which was not recorded on site, whereas the typical canopy species of Cumberland Plain Woodland, *E. tereticornis* and *E. moluccana*, were present. Accordingly, an assessment against the listing criteria for Cumberland Plain Woodland (TSSC 2009b) has been undertaken in **Table 8** below.

Table 8: PCT 3320 – BC Act Assessment for Cumberland Plain Woodland

NSW Scientific Committee - final determination - Characteristics	Assessment of the Vegetation Community present
Cumberland Plain Woodland is the name given to the ecological community in the Sydney Basin bioregion associated with clay soils derived from Wianamatta Group geology, or more rarely alluvial substrates, on the Cumberland Plain, a rainshadow area to the west of Sydney's Central Business District. The mean annual rainfall of this area is typically in the range of 700-900 mm, and is generally lower than that received on more elevated terrain that partially surrounds the Plain. The community typically occurs on flat to undulating or hilly terrain up to about 350 m elevation but may also occur on locally steep sites and at slightly higher elevations.	The Study Area occurs on Ashfield Shale which is a part of the Wianamatta Group. The site occurs in the Sydney Basin bioregion in the Cumberland sub-region. The site occurs at approximately 97m ASL. **Consistent.**
Paragraph 3. Assemblage of species: *Acacia implexa* *Ajuga australis* *Aristida ramosa* *Aristida vagans* *Arthropodium milleflorum* *Arthropodium minus* *Asperula conferta* *Austrodanthonia caespitosa* *Austrodanthonia racemosa var. racemosa* *Austrodanthonia tenuior* *Bossiaea prostrata* *Bothriochloa decipiens* *Bothriochloa macra* *Brunoniella australis* *Bursaria spinosa* *Carex inversa* *Centaurium spicatum* *Centella asiatica* *Cheilanthes distans* *Dichopogon fimbriatus* *Dichopogon strictus* *Digitaria diffusa* *Dillwynia sieberi* *Dodonaea viscosa subsp. cuneata* *Echinopogon caespitosus var. caespitosus* *Echinopogon ovatus* *Einadia hastata* *Einadia nutans* *Einadia polygonoides* *Einadia trigonos* *Elymus scaber var. scaber* *Eragrostis leptostachya* *Eremophila debilis* *Eriochloa pseudoacrotricha* *Eucalyptus crebra* *Eucalyptus eugenioides* *Eucalyptus moluccana* *Eucalyptus tereticornis* *Lomandra filiformis subsp. filiformis* *Lomandra multiflora subsp. multiflora* *Mentha diemenica* *Microlaena stipoides var. stipoides* *Opercularia diphylla* *Oxalis perennans* *Panicum effusum* *Paspalidium distans* *Phyllanthus virgatus* *Plantago debilis* *Plantago gaudichaudii* *Plectranthus parviflorus* *Poa labillardieri var. labillardieri;* *Pratia purpurascens* *Pultenaea microphylla* *Rubus parvifolius* *Scleria mackaviensis* *Scutellaria humilis*	**Species present within PCT 3320 on site:** **Upper stratum** present: *Eucalyptus crebra* *Eucalyptus tereticornis* *Eucalyptus moluccana* **Mid stratum** present: *Acacia implexa* **Ground stratum** present: *Dianella longifolia* *Dichondra repens* *Digitaria* spp. *Centella asiatica* *Einadia hastata* *Einadia nutans* *Einadia polygonoides* *Einadia trigonos* *Glycine tabacina*

NSW Scientific Committee - final determination - Characteristics			Assessment of the Vegetation Community present
Cheilanthes sieberi subsp. sieberi *Chloris truncata* *Chloris ventricosa* *Chorizema parviflorum* *Chrysocephalum apiculatum* *Clematis glycinoides var. glycinoides* *Commelina cyanea* *Crassula sieberiana* *Cymbonotus lawsonianus* *Cymbopogon refractus* *Cyperus gracilis* *Daucus glochidiatus* *Daviesia ulicifolia* *Desmodium brachypodium* *Desmodium varians* *Dianella longifolia* *Dichanthium sericeum* *Dichelachne micrantha* *Dichelachne parva* *Dichondra repens*	*Euchiton sphaericus* *Exocarpus cupressiformis* *Fimbristylis dichotoma* *Galium migrans* *Galium propinquum* *Geranium homeanum* *Geranium solanderi var. solanderi* *Glossogyne tannensis* *Glycine clandestina* *Glycine microphylla* *Glycine tabacina* *Goodenia hederacea subsp. hederacea* *Hardenbergia violacea* *Hypericum gramineum* *Hypoxis hygrometrica* *Hypoxis pratensis var. pratensis* *Indigofera australis* *Juncus usitatus* *Lachnagrostis avenacea var. avenacea*	*Senecio diaschides* *Senecio hispidulus var. hispidulus* *Sida corrugata* *Solanum cinereum* *Solanum prinophyllum* *Sorghum leiocladum* *Sporobolus creber* *Sporobolus elongatus* *Stackhousia viminea* *Themeda australis* *Tricoryne elatior* *Vernonia cinerea var. cinerea* *Veronica plebeia* *Wahlenbergia gracilis* *Wahlenbergia stricta subsp. stricta* *Wurmbea dioica subsp. dioica* *Zornia dyctiocarpa var. dyctiocarpa*	*Microlaena stipoides* subsp. *stipoides* *Oxalis perennans* *Paspalidium distans* *Veronica plebeia* **Consistent.**
Cumberland Plain Woodland is restricted to the Sydney Basin Bioregion and is currently known to occur within the local government areas of Auburn, Bankstown, Baulkham Hills, Blacktown, Camden, Campbelltown, Fairfield, Hawkesbury, Holroyd, Liverpool, Parramatta, Penrith and Wollondilly, but may occur elsewhere within the bioregion.			The Study Area occurs within The Hills Shire LGA. However, the Study Area occurs approximately 2km from the Blacktown LGA. **Consistent.**
Result: Yes. Vegetation assessed as PCT 3320 is associated with this CEEC			
Detailed Justification of Assessment: The Subject Land is located in the correct Bioregion (Sydney Basin) and in proximity to an appropriate LGA (Blacktown) at an elevation with an appropriate range. The assessed vegetation possesses a canopy dominated by species diagnostic to this CEEC, as well as several diagnostic groundcover species, as evidenced above. Soil landscapes in the locality are consistent with Ashfield Shale which forms part of the Wianamatta group. AEP have taken a precautionary approach and assumed the lithology is appropriate for this community at the Study Area. Considering the above assessment, it has been determined that vegetation within the Subject Land identified as PCT 3320 is consistent with the BC Act listed Critically Endangered Ecological Community *Cumberland Plain Woodland in the Sydney Basin Bioregion.* The extent of this community within the Study Area is depicted in **Figure 6.**			

4.2.4.2 Alignment with EPBC Act TECs

PCT 3320 is associated with the EPBC Act listed CEEC *Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest.* The EPBC conservation advice (TSSC 2009a) for this TEC outlines a two-step test for community recognition. Areas must satisfy:

- The key diagnostic characteristics (**Table 9**); and
- The minimum condition thresholds (**Table 10**).

AEP has assessed vegetation mapped as PCT 3320 against both components. The results are summarised below.

Table 9: PCT 3320 – EPBC Act Assessment – Key diagnostic characteristics

Key Diagnostic Characteristics of CEEC	AEP Assessment
Distribution is limited to the Sydney Basin Bioregion with most occurrences in the Cumberland Sub-region. This covers a geographic area commonly known as the Cumberland Plain, a rainshadow coastal valley in western Sydney. **AND;**	The Study Area is in the Hills Shire LGA which is in the Sydney Basin Bioregion and the Cumberland Sub-region. **Consistent.**
Most occurrences are on clay soils derived from Wianamatta Group geology, with limited to rare occurrences on soils derived from Tertiary Alluvium, Holocene Alluvium, the Mittagong Formation, Aeolian Deposits and Hawkesbury Sandstone. **AND;**	The Study Area occurs on Ashfield Shale which belongs to the Wianamatta group. **Consistent.**
Upper tree layer species must be present with these features: The minimum projected foliage cover of canopy trees is 10% or more; and the tree canopy is typically dominated by *Eucalyptus moluccana* (Grey Box), *E. tereticornis* (Forest Red Gum) and/or *E. fibrosa* (Red Ironbark). Other canopy species may occur in association with the typical dominants and may be locally dominant at some sites. **AND;**	Vegetation mapped as PCT 3320 contains a canopy dominated by *Eucalyptus terreticornis Eucalyptus moluccana* and *Eucalytpus crebra.* where canopy cover exceeded 10%. The average canopy projected foliage cover (PFC) of BAM Plots is 30%. **Consistent.**
A sparse lower tree layer may be present, typically with young eucalypts of upper tree canopy species and species of Acacia, Exocarpos and Melaleuca. **AND;**	Lower tree layer is sparse with occasional *Pittosporum undulatum, Acacia parramattensis, Acacia fimbriata,* and *Acacia implexa.* **Consistent.**
The understorey typically is dominated by the ground layer and shows these features: The ground layer typically comprises a variety of perennial native graminoids and forbs; Native graminoid species that are often present include: the grasses *Aristida ramosa* (Purple Wiregrass), *A. vagans* (Threeawn Speargrass), *Cymbopogon refractus* (Barbed Wire Grass), *Dichelachne micrantha* (Plumegrass), *Echinopogon caespitosus* var. *caespitosus* (Tufted Hedgehog Grass), *Eragrostis leptostachya* (Paddock Lovegrass), *Microlaena stipoides* subsp. *stipoides* (Weeping Grass), *Paspalidium distans* and *Themeda triandra* (Kangaroo Grass), and other graminoids *Carex inversa* (Knob Sedge), *Cyperus gracilis* (Slender Sedge), *Lomandra filiformis* subsp. *filiformis* (Wattle Mat-rush) and *L. multiflora* subsp. *multiflora* (Many flowered Mat-rush); Native forb and other herb species present include: *Asperula conferta* (Common Woodruff), *Brunoniella australis* (Blue Trumpet), *Cheilanthes sieberi* (Poison Rock-Fern), *Desmodium varians* (Slender Tick-trefoil), *Dianella longifolia* (Blue Flax-Lily), *Dichondra repens* (Kidney Weed), *Glycine* spp., *Hardenbergia violacea* (Native Sarsparilla), *Opercularia diphylla* (Stinkweed), *Oxalis perennans*,	Ground layer contained *Dianella longifolia, Dichondra repens, Glycine tabacina, Microlaena stipoides* subsp. *stipoides, Oxalis perennans* and *Paspalidium distans,* **Consistent.**

Key Diagnostic Characteristics of CEEC	AEP Assessment
Pratia purpurascens (Whiteroot) and *Wahlenbergia gracilis* (Australian Bluebell); and A shrub layer may be present, to variable extent, and is often dominated by *Bursaria spinosa* (Blackthorn) while other species include: *Daviesia ulicifolia* (Gorse Bitter Pea), *Dillwynia sieberi*, *Dodonaea viscosa* subsp. *cuneata* (Wedge-leaf Hop-bush), *Indigofera australis* (Native Indigo) and *Lissanthe strigosa* (Peach Heath).	
Result: The vegetation mapped as PCT 3320 within the Subject Land meets all key diagnostic characteristics for the CEEC.	

Table 10: PCT 3320 – EPBC Act Assessment – Condition

Category and Rationale	Thresholds	Site Assessment
A. Core thresholds that apply under most circumstances: patches with an understorey dominated by natives and a minimum size that is functional and consistent with the minimum mapping unit size applied in NSW. **OR**	Minimum patch size is ≥0.5ha; **AND** ≥50% of the perennial understorey vegetation cover is made up of native species.	**No.** The native PFC of perennial understorey vegetation was less 10% in all three (3) plots undertaken within PCT 3320.
B. Larger patches which are inherently valuable due to their rarity. **OR**	The patch size is ≥5ha; **AND** ≥30% of the perennial understorey vegetation cover is made up of native species.	As above.
C. Patches with connectivity to other large native vegetation remnants in the landscape. **OR**	The patch size is ≥0.5 ha; **AND** ≥30% of the perennial understorey vegetation cover is made up of native species; **AND** The patch is contiguous with a native vegetation remnant (any native vegetation where cover in each layer present is dominated by native species) that is ≥5ha in area.	As above.
D. Patches that have large mature trees or trees with hollows (habitat) that are very scarce on the Cumberland Plain.	The patch size is ≥0.5 ha in size; **AND** ≥30% of the perennial understorey vegetation cover is made up of native species; **AND** The patch has at least one tree with hollows per hectare or at least one large tree (≥80 cm dbh) per hectare from the upper tree layer species outlined in the Description and Appendix A.	As above.
Result: Vegetation within the site does not meet the necessary condition thresholds to qualify for EPBC listing.		

4.3 Threatened Ecological Communities

TECs identified within the Subject Land are summarised in **Table 11**.

Table 11: TECs within the Subject Land

TEC name	Profile ID (TBDC)	BC Act status	EPBC Act status	Associated vegetation zone within the Subject Land	Area within Subject Land (ha)
Cumberland Plain Woodland in the Sydney Basin Bioregion	10191	CE	-	PCT 3320	0.36

4.4 Planted Native Vegetation

A mosaic of planted native and exotic vegetation occurs around the existing roads and hardstand within the Subject Land. These areas were confirmed through field surveys and analysis of historical imagery, which shows the site as largely cleared, indicating that the vegetation is not remnant.

Vegetation is planted in clear rows and contains common urban species, including *Callistemon viminalis, Melia azedarach, Pittosporum undulatum, Acacia spectabilis, Grevillea banksia,* and *Acacia longifolia*.

The vegetation composition and planting pattern (e.g. rows of trees adjacent to infrastructure) are consistent with landscaping rather than natural regeneration. Species present include a number listed on the NSW Widely Cultivated Native Species List, such as *Callistemon viminalis, Melia azedarach,* and *Pittosporum undulatum*.

Assessment of this vegetation against the decision key provided in Appendix D.2 of the BAM 2020 confirms that:

- The vegetation is not associated with a remnant or restorable PCT;
- It was not established under any legal conservation obligation or approved restoration program;
- It was planted for functional and aesthetic purposes (i.e. screening and amenity); and
- Several species present are listed as widely cultivated.

A summary of the Appendix D.2 decision key assessment is provided in **Table 12**, and imagery of planted vegetation is shown in **Plate 2**.

Table 12: Planted Native Vegetation decision key

Standard for Assessment	AEP Assessment
Does the planted native vegetation occur within an area that contains a mosaic of planted and remnant native vegetation and which can be reasonably assigned to a PCT known to occur in the same IBRA subregion as the proposal?	**No** The planted native vegetation present contains a mosaic of planted native and non-native vegetation; the native species recorded comprise a mix of species that could be reasonably assigned to PCT 3320 which occur elsewhere on site, as well as species that could not be reasonably assigned any PCT within the Sydney Basin IBRA Subregion. The species that could be reasonably be assigned to PCT 3320 are commonly cultivated species, including *Acacia longifolia, Kunzea ambigua, Callistemon salignus* and *Melaleuca armillaris,* and some are listed on the NSW Widely Cultivated Native Species List, including *Melia azedarach* and *Pittosporum undulatum*. Surrounding the hardstand, many of the trees are planted in rows amongst species common in landscaping. This strongly indicates planted vegetation.

Standard for Assessment	AEP Assessment
	Historic aerial imagery dated 1986 and 1998 shows the site as being predominantly cleared of canopy vegetation in an agricultural landscape followed aerial imagery dated 2002 showing rows of established plants, suggesting that this vegetation is planted and not remnant.  **1986**  **1998**  **2002**
Is the planted native vegetation: a. planted for the purpose of environmental rehabilitation or restoration under an existing conservation obligation listed in BAM Section 11.9(2.), and b. the primary objective was to replace or regenerate a plant community type or a threatened plant species population or its habitat	**No** The plants within the Subject Land were not planted for the purpose of environmental rehabilitation or restoration under an existing conservation obligation listed in BAM Section 11.9(2.).

Standard for Assessment	AEP Assessment
Is the planted/translocated native vegetation individuals of a threatened species or other native species planted/translocated for the purpose of providing threatened species habitat under one of the following: • A species recovery project • Saving our Species project • Other types of government funded restoration project. • Condition of consent for a development approval that required those species to be planted or translocated for the purpose of providing threatened species habitat • Legal obligation as part of a condition or ruling of court. This includes regulatory directed or ordered remedial plantings (e.g. Remediation Order for clearing without consent issued under the BC Act or the Native Vegetation Act) • Ecological rehabilitation to re-establish a PCT or TEC that was, or is carried out under a mine operations plan. • Approved vegetation management plan (e.g. as required as part of a Controlled Activity Approval for works on waterfront land under the NSW Water Management Act 2000).	**No** Vegetation consists of landscaped plantings comprised of commonly cultivated that were not planted for any of the listed purposes.
Was the planted native vegetation (including individuals of a threatened flora species) undertaken voluntarily for revegetation, environmental rehabilitation or restoration without a legal obligation to secure or provide for management of the native vegetation?	**No** The planted vegetation within the Study Area was not planted / Translocated for the purpose of a voluntarily revegetation, environmental rehabilitation or restoration without a legal obligation to secure or provide for management of the native vegetation.
Is the native vegetation (including individuals of a threatened flora species) planted for functional, aesthetic, horticultural or plantation forestry purposes? This includes examples such as: windbreaks in agricultural landscapes, roadside plantings (including street trees, median strips, roadside batters), landscaping in parks, gardens and sport fields/complexes, macadamia plantations or teatree farms?	**Yes** The planted vegetation within the Study Area was planted for functional and aesthetic purposes adjacent to roads and hardstand.
Is the planted native vegetation a species listed as a widely cultivated native species on a list approved by the Secretary of the Department (or an officer authorised by the Secretary)?	**Yes** Some of the planted vegetation within the Study Area is identified as being widely cultivated on a list approved by the Secretary of the Department (or an officer authorised by the Secretary) Appendix B Table 5– Widely cultivated native species list such as *Callistemon viminalis, Melia azedarach*, and *Pittosporum undulatum* are species published on the widely cultivated native species list.



Plate 2: Planted native and non-native vegetation around existing hardstand.

4.5 Cleared / Non-native Grassland / Existing hardstand

The majority of the Subject Land (approx. 1.02ha) is a mixture of predominantly exotic vegetation, roads and hardstand. This primarily occurs in the form of managed grassland that has been highly modified from the original vegetation through historical clearing and ongoing management practices. BAM Plot 2 was undertaken within this zone and the vegetation is dominated by exotic grasses including: *Briza minor, Briza subaristata, Axonopus fissifolius,* and *Paspalum dilatatum.* These areas do not constitute a defined native vegetation unit and does not conform to a listing under the BC Act or EPBC Act. Additionally, planted non-native species, such as *Platanus hispanica* and *Jacaranda mimosoides* occur within the zone.



Plate 3: BAM Plot 4 in cleared non-native grassland

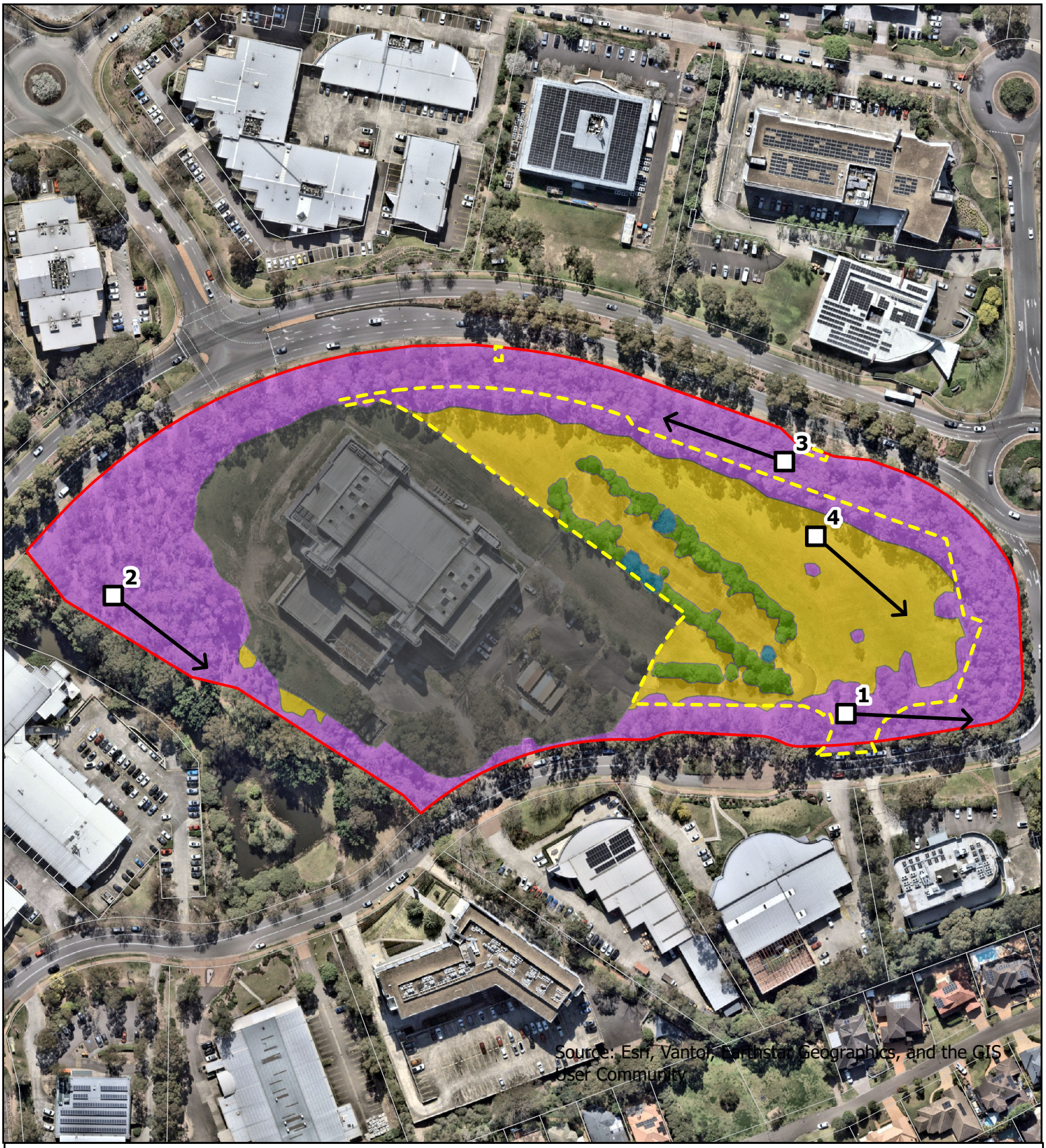
4.6 Vegetation Zones

Table 13 provides a summary of vegetation zones and associated areas identified throughout the Subject Land and how the assessment address Table 3 in BAM 2020.

Table 13: Vegetation zones and patch size.

Vegetation zone ID	PCT ID number and name	Condition / other defining feature	Area (ha) on Subject Land	Patch size class (list multiple if areas of native vegetation are discontinuous)	No. vegetation integrity plots required	No. vegetation integrity plots completed	No. vegetation integrity plots used in assessment	Plot IDs of vegetation integrity plots used in assessment
PCT 3320 - Poor	PCT 3320 – *Cumberland Shale Plains Woodland*	Poor	0.36	101	1	3	2	Plot 1, Plot 3

The extent of the PCT is provided in **Figure 9**.



Study Area

Subject Land

Cadastre

Ground-truthed Vegetation

PCT 3320 - Cumberland Shale Plains Woodland (Poor)

Planted Native

Exotic Canopy / Shrubs

Cleared / Infrastructure

Area subject to existing DA - not assessed

BAM Plot

BAM Direction

Figure 9 - Plant Community Types

0 30 60 m

Scale: 1:2,100

N

AEP

Address: 3 Brookhollow Avenue, Norwest NSW
Client: GreensquareDC c/- ARCH Artifex
AEP Ref: 5749 | Date: 15 December 2025

Imagery: Nearmap (July 2025)
Spatial Reference: GDA2020 MGA Zone 56

Disclaimer: While reasonable care has been taken to ensure the information on this map is accurate and up-to-date, errors or omissions may still occur. Please verify the accuracy of all information before use. Note that boundaries are not survey accurate and do not scale off this plan.

Path: D:\!!! Workspaces !!!\5749 Norwest\5749 Workspace\5749 Workspace.aprx



Study Area

Subject Land

Cadastre

BC Act CEEC - Cumberland Plain Woodland in the Sydney Basin Bioregion

Figure 10 - Threatened Ecological Communities

0 25 50 m

Scale: 1:1,500

N

AEP

Address: 3 Brookhollow Avenue, Norwest NSW
Client: GreensquareDC c/- ARCH Artifex
AEP Ref: 5749 | Date: 15 December 2025

Imagery: Nearmap (July 2025)
Spatial Reference: GDA2020 MGA Zone 56

Disclaimer: While reasonable care has been taken to ensure the information on this map is accurate and up-to-date, errors or omissions may still occur. Please verify the accuracy of all information before use. Note that boundaries are not survey accurate and do not scale off this plan.

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4.7 Vegetation integrity (vegetation condition)

The PCT within the Subject Land has been established through the analysis of data collected. The following assessment and development of vegetation zones have been carried out through the modification of methods used to establish PCTs and vegetation zones and are described below.

AEP botanists recorded vegetation conditions when the BAM Plots were undertaken. The BAM Plot data was entered independently into the BAM-C, where the vegetation conditions were allocated. AEP uses the continuous non-linear approach based on the Weibull function, where conditions are allocated based on 0 being lowest and 100 being the highest of benchmark respectively, allowing the below conditions to be allocated to each BAM Plot individually (refer **Appendix F**):

- 70 – 100 Good;
- 50 – 69 Moderate;
- 35 – 49 Poor;
- 25 - 34 Degraded;
- 17 - 24 Highly Degraded; and
- < 17 Severely Degraded.

The individual BAM Plot VIS were assessed allowing the vegetation zones within the above condition classes to be grouped together and entered into the BAM – C for further assessment.

4.7.1 Vegetation integrity survey plots

The minimum number of plots required for each vegetation zone was met in accordance with the BAM.

4.7.2 Scores

Vegetation scores as assessed within the Subject Land are provided in **Table 14** below.

Table 14: Vegetation integrity scores

Plot	Plot 1	Plot 3
Location Data		
Easting	311868	311852
Northing	6265554	6265691
Bearing	92	290
Composition Data		
Tree	5	4
Shrub	2	2
Grass-like	3	4
Forb	6	5
Fern	0	0
Other	2	2
Composition Condition Score	36.3	
Structure Data		
Tree	35.3	32.5

Plot	Plot 1	Plot 3
Shrub	0.4	0.4
Grass-like	2.4	1.2
Forb	0.7	2.1
Fern	0	0
Other	0.2	3
Structure Condition Score	32.2	
Function Data		
Regenerating Stems (<5cm DBH)	Present	Present
Stem Classes (cm DBH)	5-9 10-19 20-29 30-49	5-9 10-19 20-29 30-49
# Large Trees	0	0
Hollow-bearing Trees	0	0
Litter Cover (%)	93	90
Coarse Woody Debris (m)	0	1.5
High Threat Weed Cover	4.2	6.2
Function Condition Score	45	
Current Vegetation Integrity Score	37.5	

4.7.3 Use of benchmark data

Benchmark data was sourced from the NSW BioNet Vegetation Classification system for PCT 3320 and PCT 3321.



Study Area | Subject Land | Cadastre | PCT 3320 - Cumberland Shale Plains Woodland (Poor)

Figure 11 - Vegetation Zones

0 25 50 m

Scale: 1:1,500

N

AEP

Address: 3 Brookhollow Avenue, Norwest NSW
Client: GreensquareDC c/- ARCH Artifex
AEP Ref: 5749 | Date: 15 December 2025

Imagery: Nearmap (July 2025)
Spatial Reference: GDA2020 MGA Zone 56

Disclaimer: While reasonable care has been taken to ensure the information on this map is accurate and up-to-date, errors or omissions may still occur. Please verify the accuracy of all information before use. Note that boundaries are not survey accurate and do not scale off this plan.

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5.0 Habitat suitability for threatened species

5.1 Identification of threatened species for assessment

5.1.1 Habitat assessment

5.1.1.1 Habitat trees

No hollow-bearing trees were found within the Subject Land. A strip of vegetation containing nectar producing trees including Eucalyptus and Acacia species along the borders of the site provide foraging habitat for arboreal mammals and fruit bats. Some of these eucalyptus trees have defoliating bark which may provide habitat for microbats, reptiles and some amphibians. Stags are sparse and thin, not containing hollows or fissures suitable for roosting.

5.1.1.2 Water features and hydrology

There are no watercourses or water features within the Subject Land. The closest mapped watercourse is Strangers Creek approximately 140m southwest of the Subject Land.

5.1.1.3 Other habitat features

No caves, karsts or rocky outcrops occur on site and are considered a habitat constraint for cave-dwelling microbats. No artificial structures suitable for habitat are located in the Subject Land. Within vegetated areas there is a sparse, thin layer of leaf litter, with scattered denser clumps. Coarse woody debris across the site is very limited and has been mostly under-scrubbed with just small sticks and branches remaining.

5.1.1.4 Survey effort

The survey methods above were utilised across the Subject Land undertaken in July, August and October 2025. **Table 15** outlines a summary of field surveys, as depicted in **Figure 6** and **Figure 7**.

Table 15: Survey Effort

Date	Time	Hours	Field activity	No. of Persons	Staff	Rainfall
03/07/2025	-	8	Random flora meander Opportunistic fauna surveys (diurnal) Habitat assessment Priority weed survey Assessment of Native Vegetation Cover Riparian zone habitat assessment and PCT identification	1	ARCH Artifex	1.5mm
10/07/2025	-		Two (2) BAM Plots			0mm
13/08/2025	-	-	5m Flora Transects targeting *Pimelea spicata.*	1	ARCH Artifex	0.5mm
14/08/2025	-	-	10m Flora Transects targeting *Eucalyptus benthamii, Eucalyptus glaucina, Acacia pubescens, Dillwynia tenuifolia.* 5m flora transects targeting *Grevillea juniperina* subsp. *juniperina, Persoonia nutans, Pomaderris brunnea.*	1	ARCH Artifex	1.5mm
08/10/2025	12:30 – 14:00	1.5	Deployed 4x baited camera traps (1x terrestrial, 3x arboreal)	2	ALR CB	0mm
	13:30 – 15:45	2.25	5m-10m Flora Transects targeting *Micromyrtus minutiflora, Pimelea spicata, Pterostylis saxicola.*	2		
	16:15 – 17:45	1.25	Koala Spot Assessment Technique	1		
	16:15 – 17:45	1.25	Habitat and Hollow Bearing Tree Assessment			
	17:45 – 18:45	1	Diurnal targeted Cumberland Plain Land Snail survey	2		
	19:30 – 20:30	1	Koala and Bush Stone Curlew Nocturnal survey, spotlighting with call playback			

Date	Time	Hours	Field activity	No. of Persons	Staff	Rainfall
09/10/2025	19:30 – 20:30	1	Koala and Bush Stone Curlew Nocturnal survey, spotlighting with call playback	2	JB CB	0mm
17/10/2025	09:15 – 11:15	2	2x BAM Plots	1	JS	0mm
	09:15 – 11:15	2	10m-20m Flora Transects targeting: *Hibbertia puberula, Pultenaea parviflora, Pultenaea pedunculata, Pimelea curviflora* var *curviflora*	1	CB	
	11:15 – 13:15	2	5m-10m Flora Transects targeting: *Persoonia nutans, Grevillea juniperina* subsp. *juniperina, Pimelea spicata, Pomaderris brunnea*	2	JS, CB	
30/10/2025	14:00 – 15:30	1.5	10m-20m Flora Transects targeting: *Hibbertia puberula, Eucalyptus benthamii, Eucalyptus glaucina, Acacia pubescens, Dillwynia tenuifolia*	2	CB, GT	16.0
	15:30 – 16:15	0.75	Collected 4x baited camera traps	2	CB, GT	
	16:15 – 17:15	1	Deployed 2x Anabats	1	CB	
	19:45 – 20:45	1	Nocturnal targeted Cumberland Plain Land Snail survey, spotlighting	1	CB	
04/11/2025	08:00 – 10:00	1.5	5m-10m Flora Transects targeting: *Micromyrtus minutiflora, Pimelea spicata, Pimelea curviflora* var. *curviflora, Hibbertia puberula*	1	CB	0.8
	10:00 – 10:30					

5.1.2 Ecosystem credit species

As detailed in **Sections 2.3** and **2.4,** both desktop and habitat assessments were undertaken to identify the potential use of the Subject Land by threatened fauna. A total of 314 ecosystem species were identified for further assessment, as described in **Table 16.**

Table 16: Predicted ecosystem credit species

Scientific name	Common name	Listing status		Dual credit species	Source (BAM-C, TBDC, Previous Survey, Current Survey)	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID	Sensitivity to gain class
		BC Act	EPBC Act						
Anthochaera phrygia	Regent Honeyeater	CE	CE	Yes	BAM-C	Yes	N/A	PCT 3320	High
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V	-	No	BAM-C	Yes	N/A	PCT 3320	Moderate
Callocephalon fimbriatum	Gang-gang Cockatoo	E	E	Yes	BAM-C	Yes	N/A	PCT 3320	Moderate
Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo	V	V	Yes	BAM-C	Yes	N/A	PCT 3320	High
Chthonicola sagittata	Speckled Warbler	V	-	No	BAM-C	Yes	N/A	PCT 3320	High
Circus assimilis	Spotted Harrier	V	-	No	BAM-C	Yes	N/A	PCT 3320	Moderate
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V	-	No	BAM-C	Yes	N/A	PCT 3320	High
Daphoenositta chrysoptera	Varied Sittella	V	-	No	BAM-C	Yes	N/A	PCT 3320	Moderate
Dasyurus maculatus	Spotted-tailed Quoll	V	E	No	BAM-C	Yes	N/A	PCT 3320	High
Ephippiorhynchus asiaticus	Black-necked Stork	E	-	No	BAM-C	Yes	N/A	PCT 3320	Moderate
Falco subniger	Black Falcon	V	-	No	BAM-C	Yes	N/A	PCT 3320	Moderate

Scientific name	Common name	Listing status		Dual credit species	Source (BAM-C, TBDC, Previous Survey, Current Survey)	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID	Sensitivity to gain class
		BC Act	EPBC Act						
Falsistrellus tasmaniensis	Eastern False Pipistrelle	V	-	No	BAM-C	Yes	N/A	PCT 3320	High
Glossopsitta pusilla	Little Lorikeet	V	-	No	BAM-C	Yes	N/A	PCT 3320	High
Haliaeetus leucogaster	White-bellied Sea-Eagle	V	-	Yes	BAM-C	Yes	N/A	PCT 3320	High
Hieraaetus morphnoides	Little Eagle	V	-	Yes	BAM-C	Yes	N/A	PCT 3320	Moderate
Hirundapus caudacutus	White-throated Needletail	V	V	No	BAM-C	Yes	N/A	PCT 3320	High
Lathamus discolor	Swift Parrot	E	CE	Yes	BAM-C	Yes	N/A	PCT 3320	Moderate
Lophoictinia isura	Square-tailed Kite	V	-	Yes	BAM-C	Yes	N/A	PCT 3320	Moderate
Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	V	-	No	BAM-C	Yes	N/A	PCT 3320	Moderate
Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	V	-	No	BAM-C	Yes	N/A	PCT 3320	High
Miniopterus australis	Little Bent-winged Bat	V	-	Yes	BAM-C	Yes	N/A	PCT 3320	High
Miniopterus orianae oceanensis	Large Bent-winged Bat	V	-	Yes	BAM-C	Yes	N/A	PCT 3320	High
Neophema pulchella	Turquoise Parrot	V	-	No	BAM-C	Yes	N/A	PCT 3320	High
Pandion cristatus	Eastern Osprey	V	-	Yes	BAM-C	Yes	N/A	PCT 3320	Moderate
Petroica boodang	Scarlet Robin	V	-	No	BAM-C	Yes	N/A	PCT 3320	Moderate
Petroica phoenicea	Flame Robin	V	-	No	BAM-C	Yes	N/A	PCT 3320	Moderate

Scientific name	Common name	Listing status		Dual credit species	Source (BAM-C, TBDC, Previous Survey, Current Survey)	Species retained for further assessment?	Reason for exclusion from further assessment	Vegetation zone ID species retained within, including PCT ID	Sensitivity to gain class
		BC Act	EPBC Act						
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	Yes	BAM-C	Yes	N/A	PCT 3320	High
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V	-	No	BAM-C	Yes	N/A	PCT 3320	High
Scoteanax rueppellii	Greater Broad-nosed Bat	V	-	No	BAM-C	Yes	N/A	PCT 3320	High
Stagonopleura guttata	Diamond Firetail	V	V	No	BAM-C	Yes	N/A	PCT 3320	Moderate
Varanus rosenbergi	Rosenberg's Goanna	V	-	No	BAM-C	Yes	N/A	PCT 3320	High

5.1.3 Species credit species

Species credit species identified within the BAM-C are provided In **Table 17** below.

Table 17: Predicted species credit species

Scientific Name	Common Name	Listing status		Source (BAM-C, BioNet, Previous Survey, Current Survey)	Species retained for further assessment?	Reason for exclusion (based on geographic limitations, habitat constraints or vagrancy) BAM Subsections 5.2.1 and 5.2.2	Vegetation zone ID species retained in
		BC Act	EPBC Act				
Acacia pubescens	Downy Wattle	V	V	BAM-C	Yes	N/A	PCT 3320 Poor
Anthochaera phrygia	Regent Honeyeater	CE	CE	BAM-C	No	Habitat Constraints – Subject Land not mapped as Important Habitat Area.	N/A
Burhinus grallarius	Bush Stone-curlew	E	-	BAM-C	Yes	N/A	PCT 3320 Poor
Callocephalon fimbriatum	Gang-gang Cockatoo	E	E	BAM-C	No	Habitat Constraints – Require large hollows and / or suitable nest trees, which are not located within the site	N/A
Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo	V	V	BAM-C	No	Habitat Constraints – Require large hollows and / or suitable nest trees, which are not located within the site	N/A
Cercartetus nanus	Eastern Pygmy-possum	V	-	BAM-C	Yes	N/A	PCT 3320 Poor
Chalinolobus dwyeri	Large-eared Pied Bat	E	E	BAM-C	No	Habitat Constraints – Subject Land is not within 2km of rocky areas containing caves or old mines or tunnels.	N/A

Scientific Name	Common Name	Listing status		Source (BAM-C, BioNet, Previous Survey, Current Survey)	Species retained for further assessment?	Reason for exclusion (based on geographic limitations, habitat constraints or vagrancy) BAM Subsections 5.2.1 and 5.2.2	Vegetation zone ID species retained in
		BC Act	EPBC Act				
Deyeuxia appressa	-	E	E	BAM-C	No	Habitat degraded – this species has not been observed in over 80 years. Thought to grow in moist conditions which do not occur within the site. Understorey considered too degraded to support this species which is likely extinct.	N/A
Dillwynia tenuifolia	-	V	-	BAM-C	Yes	N/A	PCT 3320 Poor
Eucalyptus benthamii	Camden White Gum	CE	V	BAM-C	Yes	N/A	PCT 3320 Poor
Eucalyptus glaucina	Slaty Red Gum	V	V	BAM-C	Yes	N/A	PCT 3320 Poor
Grevillea juniperina subsp. juniperina	Juniper-leaved Grevillea	V	-	BAM-C	Yes	N/A	PCT 3320 Poor
Haliaeetus leucogaster	White-bellied Sea-Eagle	V	-	BAM-C	No	Habitat Constraints – Requires mature trees which do not occur within the Subject Land.	N/A
Hibbertia puberula	-	E	-	BAM-C	Yes	N/A	PCT 3320 Poor
Hieraaetus morphnoides	Little Eagle	V	-	BAM-C	No	Habitat Constraints – Requires mature trees	N/A

Scientific Name	Common Name	Listing status		Source (BAM-C, BioNet, Previous Survey, Current Survey)	Species retained for further assessment?	Reason for exclusion (based on geographic limitations, habitat constraints or vagrancy) BAM Subsections 5.2.1 and 5.2.2	Vegetation zone ID species retained in
		BC Act	EPBC Act				
						which do not occur within the Subject Land.	
Lathamus discolor	Swift Parrot	E	CE	BAM-C	No	Habitat Constraints – Subject Land not mapped as Important Habitat Area.	N/A
Litoria aurea	Green and Golden Bell Frog	E	V	BAM-C	No	Habitat Degraded – The nearest suitable waterbody is located approximately 120m to the west. The site lacks any waterbodies that could be utilised by this species and does not contain viable access routes or habitat features that could support foraging or migratory use. The site is not connected to any other waterbodies.	N/A
Lophoictinia isura	Square-tailed Kite	V	-	BAM-C	No	Habitat Constraints – No nest trees or large stick nests within the Subject Land.	N/A
Marsdenia viridiflora subsp. viridiflora - endangered population	Marsdenia viridiflora R. Br. subsp. viridiflora population in the Bankstown, Blacktown, Camden, Campbelltown,	E	-	BAM-C	No	Geographic Limitations – Subject Land not within listed LGAs	N/A

Scientific Name	Common Name	Listing status		Source (BAM-C, BioNet, Previous Survey, Current Survey)	Species retained for further assessment?	Reason for exclusion (based on geographic limitations, habitat constraints or vagrancy) BAM Subsections 5.2.1 and 5.2.2	Vegetation zone ID species retained in
		BC Act	EPBC Act				
	Fairfield, Holroyd, Liverpool and Penrith local government areas						
Meridolum corneovirens	Cumberland Plain Land Snail	E	-	BAM-C	Yes	N/A	PCT 3320 Poor
Micromyrtus minutiflora	-	E	V	BAM-C	Yes	N/A	PCT 3320 Poor
Miniopterus australis	Little Bent-winged Bat	V	-	BAM-C	No	Habitat Constraints – Subject Land does not contain caves or other suitable structures.	N/A
Miniopterus orianae oceanensis	Large Bent-winged Bat	V	-	BAM-C	No	Habitat Constraints – Subject Land does not contain caves or other suitable structures.	N/A
Myotis macropus	Southern Myotis	V	-	BAM-C	Yes	N/A	PCT 3320 Poor
Ninox connivens	Barking Owl	V	-	BAM-C	No	Habitat Constraints – Require large hollows, which are not located within the site	N/A
Ninox strenua	Powerful Owl	V	-	BAM-C	No	Habitat Constraints – Require large hollows, which are not located within the site	N/A

Scientific Name	Common Name	Listing status		Source (BAM-C, BioNet, Previous Survey, Current Survey)	Species retained for further assessment?	Reason for exclusion (based on geographic limitations, habitat constraints or vagrancy) BAM Subsections 5.2.1 and 5.2.2	Vegetation zone ID species retained in
		BC Act	EPBC Act				
Pandion cristatus	Eastern Osprey	V	-	BAM-C	No	Habitat Constraints – No stick-nests within the Subject Land.	N/A
Persoonia nutans	Nodding Geebung	E	E	BAM-C	Yes	N/A	PCT 3320 Poor
Petauroides volans	Southern Greater Glider	E	E	BAM-C	Yes	N/A	PCT 3320 Poor
Petaurus norfolcensis	Squirrel Glider	V	-	BAM-C	Yes	N/A	PCT 3320 Poor
Phascolarctos cinereus	Koala	E	E	BAM-C	Yes	N/A	PCT 3320 Poor
Pimelea curviflora var. curviflora	-	V	V	BAM-C	Yes	N/A	PCT 3320 Poor
Pimelea spicata	Spiked Rice-flower	E	E	BAM-C	Yes	N/A	PCT 3320 Poor
Pomaderris brunnea	Brown Pomaderris	E	V	BAM-C	Yes	N/A	PCT 3320 Poor
Pomaderris prunifolia - endangered population	P. prunifolia in the Parramatta, Auburn, Strathfield and Bankstown Local Government Areas	E	-	BAM-C	No	Geographic Limitations – Subject Land not within listed LGAs	N/A

Scientific Name	Common Name	Listing status		Source (BAM-C, BioNet, Previous Survey, Current Survey)	Species retained for further assessment?	Reason for exclusion (based on geographic limitations, habitat constraints or vagrancy) BAM Subsections 5.2.1 and 5.2.2	Vegetation zone ID species retained in
		BC Act	EPBC Act				
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	BAM-C	No	No breeding camps present in the Subject Land.	N/A
Pterostylis saxicola	Sydney Plains Greenhood	E	E	BAM-C	Yes	N/A	PCT 3320 Poor
Pultenaea parviflora	-	E	V	BAM-C	Yes	N/A	PCT 3320 Poor
Pultenaea pedunculata	Matted Bush-pea	E	-	BAM-C	Yes	N/A	PCT 3320 Poor
Tyto novaehollandiae	Masked Owl	V	-	BAM-C	No	Habitat Constraints – Require large hollows, which are not located within the site	N/A
Wahlenbergia multicaulis - endangered population	Tadgell's Bluebell in the local government areas of Auburn, Bankstown, Baulkham Hills, Canterbury, Hornsby, Parramatta and Strathfield	E	-	BAM-C	No	Geographic Limitations – Subject Land not within listed LGAs	N/A

5.2 Presence of candidate species credit species

From the remaining list of candidate credit species in **Section 5.1.3**, one (1) fauna species was assumed present within the Subject Land.

Table 18: Determining the presence of candidate fauna species credit species on the Subject Land

Scientific name	Common name	Listing status		Method used to determine presence	Present?	Further assessment required
		BC Act	EPBC Act			
Myotis macropus	Southern Myotis	V	-	Assumed present	Yes	Yes

5.3 Threatened species surveys

Targeted threatened species surveys were conducted between August – November 2025. No threatened species were identified during assessment.

Table 19: Threatened species surveys for candidate flora species credit species on the Subject Land

Scientific name	Common name	Threatened flora species surveys			Present	Further assessment required (BAM Subsections 5.2.5 and 5.2.6)
		Survey method	Timing of survey – within recommended period?	Effort (hours & no. people)		
Acacia pubescens	Downy Wattle	Flora Transects (10m in closed vegetation, 20m in open vegetation)	☒ Yes BAM-C: All year Survey: Aug, Oct 2025 ☐ No	ARCH Artifex AEP: 1.5 hrs 2 people	No	No
Dillwynia tenuifolia	-	Flora Transects (10m in closed vegetation, 20m in open vegetation)	☒ Yes BAM-C: Aug-Oct Survey: Aug, Oct 2025 ☐ No	ARCH Artifex AEP: 1.5 hrs 2 people	No	No
Eucalyptus benthamii	Camden White Gum	Flora Transects (10m in closed vegetation, 20m in open vegetation)	☒ Yes BAM-C: All year Survey: Aug, Oct 2025 ☐ No	ARCH Artifex AEP: 1.5 hrs 2 people	No	No
Eucalyptus glaucina	Slaty Red Gum	Flora Transects (10m in closed vegetation, 20m in open vegetation)	☒ Yes BAM-C: All year Survey: Aug, Oct 2025 ☐ No	ARCH Artifex AEP: 1.5 hrs 2 people	No	No

Scientific name	Common name	Threatened flora species surveys			Present	Further assessment required (BAM Subsections 5.2.5 and 5.2.6)
		Survey method	Timing of survey – within recommended period?	Effort (hours & no. people)		
Grevillea juniperina subsp. juniperina	Juniper-leaved Grevillea	Flora Transects (5m in closed vegetation, 10m in open vegetation)	☒ Yes BAM-C: All year Survey: Aug, Oct 2025 ☐ No	ARCH Artifex 2 People AEP: 2 hrs 2 people	No	No
Hibbertia puberula	-	Flora Transects (10m in closed vegetation, 20m in open vegetation)	☒ Yes BAM-C: Oct-Dec Survey: Oct 2025 and November 2025 ☐ No	4.5 hours 2 people	No	No
Micromyrtus minutiflora	-	Flora Transects (5m in closed vegetation, 10m in open vegetation)	☒ Yes BAM-C: All year Survey: Oct, Nov 2025 ☐ No	3.25 hours 2 people	No	No
Persoonia nutans	Nodding Geebung	Flora Transects (5m in closed vegetation, 10m in open vegetation)	☒ Yes BAM-C: All year Survey: Aug, Oct 2025 ☐ No	ARCH Artifex 2 People AEP: 2 hours 2 people	No	No
Pimelea curviflora var. curviflora	-	Flora Transects (10m-20m and 5m-10m)	☒ Yes BAM-C: Oct-Mar Survey: Oct, Nov 2025 ☐ No	3 hours 1 person	No	No
Pimelea spicata	Spiked Rice-flower	Flora Transects (5m in closed vegetation, 10m in open vegetation)	☒ Yes BAM-C: All year Survey: Aug, Oct, Nov 2025 ☐ No	ARCH Artifex 2 People AEP: 5.25 hours 2 persons	No	No
Pomaderris brunnea	Brown Pomaderris	Flora Transects (5m in closed vegetation, 10m in open vegetation)	☒ Yes BAM-C: Aug-Oct Survey: Aug, Oct 2025 ☐ No	ARCH Artifex 2 People AEP: 2 hours 2 people	No	No
Pterostylis saxicola	Sydney Plains Greenhood	Flora Transects (5m in closed	☒ Yes BAM-C: Oct	2.25 hours 2 persons	No	No

Scientific name	Common name	Threatened flora species surveys			Present	Further assessment required (BAM Subsections 5.2.5 and 5.2.6)
		Survey method	Timing of survey – within recommended period?	Effort (hours & no. people)		
		vegetation, 10m in open vegetation)	Survey: Oct 2025 ☐ No			
Pultenaea parviflora	-	Flora Transects (10m in closed vegetation, 20m in open vegetation)	☒ Yes BAM-C: Sep-Nov Survey: Oct 2025 ☐ No	2 hours 1 person	No	No
Pultenaea pedunculata	Matted Bush-pea	Flora Transects (10m in closed vegetation, 20m in open vegetation)	☒ Yes BAM-C: Sep-Nov Survey: Oct 2025 ☐ No	2 hours 1 person	No	No

Flora surveys were undertaken using the flora survey guidelines (DPIE 2020c), which included parallel transects as detailed above. Only five (5) species were surveyed at any time, and species were clumped together in similar life forms. Species with specific requirements as listed in the TBDC are discussed below.

Hibbertia puberula

As per the TBDC, flowers should be used to locate and identify this species, as it is cryptic. Surveys should be conducted when temperatures are below 25°C, as the flowers drop petals at higher temperatures. A local reference site within 10km and at a similar elevation should be used to determine the flowering period.

AEP was not aware of any reference sites within 10km of the site. To address this, iNaturalist records (iNaturalist, 2025) were reviewed to determine whether the species was in flower. Several records were lodged between 2–27 October, and surveys were conducted on 30 October under suitable weather conditions (temperatures below 25°C). As the iNaturalist records during this period were not considered research grade, an additional survey was undertaken on 4 November to maximise the likelihood of detection. A research-grade record was subsequently submitted on 5 November from Morton National Park.

The timing of multiple surveys, aligned with iNaturalist flowering records, is considered sufficient to determine the presence or absence of this species within the Subject Land.

Micromyrtus minutiflora

The species can be surveyed all year round. Multiple surveys may be required, as species only sporadically flowers throughout the year. Survey at least 3 times, each at least 1 month apart unless found (TBDC). Traversal of the Subject Land followed the methodology outlined in Surveying threatened plants and their habitats (DPIE 2020c) outlined above. For shrubs 1-6m, 20m transects can be undertaken in open vegetation while 10m transects can be undertaken in dense vegetation.

This species was surveyed in September and October utilising 10m transect spacing, with both visits conducted in accordance with the guidelines. Two (2) out of the three (3) prescribed survey visits were undertaken – this deviation from the guidelines is discussed in **Section 2.5**.

Pimelea spicata

As per the TBDC, this species should be surveyed at least twice between October and March. This species was surveyed by ArchArtifex in August, and subsequently by AEP on 17 October and 4 November. Accordingly, the survey effort is consistent with the TBDC survey guidelines.

Pterostylis saxicola

This species typically flowers late September to early November but will sometimes flower later in November (TBCD). Traversal of the Subject Land followed the methodology outlined in *Surveying threatened plants and their habitat*s (DPIE 2020c) outlined above. For orchids, 10m transects can be undertaken in open vegetation while 5m transects can be undertaken in dense vegetation.

This species was surveyed in October utilising 5m transect spacing. In addition, whilst not required for this species, surveys were undertaken in concurrence with a local flowering population, as confirmed by DCCEEW (refer **Appendix I**). These surveys are therefore fully compliant with survey guidelines.

Table 20: Threatened species surveys for candidate fauna species credit species on the Subject Land

Scientific name	Common name	Threatened fauna species surveys			Present	Further assessment required (BAM Subsections 5.2.5 and 5.2.6)
		Survey method	Timing of survey – within recommended period?	Effort (hours & no. people)		
Burhinus grallarius	Bush Stone-curlew	Spotlighting Call Playback	☒ Yes BAM-C: All year Survey: Oct 2025 ☐ No	2 persons 2 hours	No	No
Cercartetus nanus	Eastern Pygmy-possum	Baited Camera Traps Spotlighting	☒ Yes BAM-C: Oct-Jan Survey: Oct 2025 ☐ No	Camera Traps – 22 nights 2 persons 2 hours	No	No
Meridolum corneovirens	Cumberland Plain Land Snail	Diurnal surveys Spotlighting	☒ Yes BAM-C: All year Survey: Oct 2025 ☐ No	2 persons 1 hour Nocs: 1 hr, 1 person	No	No
Petaurus volans	Southern Greater Glider	Baited Camera Traps Spotlighting	☒ Yes BAM-C: All year Survey: Oct 2025 ☐ No	Camera Traps – 22 nights 2 persons 2 hours	No	No
Petaurus norfolcensis	Squirrel Glider	Baited Camera Traps Spotlighting	☒ Yes BAM-C: All year Survey: Oct 2025 ☐ No	Camera Traps – 22 nights 2 persons 2 hours	No	No
Phascolarctos cinereus	Koala	KSAT Spotlighting Call Playback	☒ Yes BAM-C: All year Survey: Oct 2025 ☐ No	2 persons 3.25 hours	No	No

Fauna surveys were undertaken as per the methodology in **Section 2.4.**

Arboreal Mammals

The arboreal mammals *S*outhern Greater Glider, Squirrel Glider and Eastern Pygmy-possum were surveyed using camera traps, comprising three (3) arboreal and one (1) terrestrial camera baited with honey–oat ball canisters and deployed for 22 days. Additional spotlighting was conducted over two nights. Considering the limited extent of vegetation and the lack of connectivity to surrounding remnant habitat, this survey effort is considered sufficient to determine the presence of these species, noting the very limited suitable habitat on site.

Koala

Koala surveys were undertaken in accordance with the *Koala Survey Guidelines* (DPE 2022) and included a SAT assessment and nocturnal surveys as described in **Section 2.4**.

Cumberland Plain Land Snail

Surveys for *Cumberland Plain Land Snail* were conducted in accordance with the TBDC guidelines and included both a diurnal search for empty shells and a nocturnal search for live individuals on 30 October. Surveys were timed to coincide with favourable conditions, including high humidity (78%) and recent rainfall (16mm in the preceding 24 hours).

5.4 Expert reports

No expert reports have been used in place of threatened species surveys.

5.5 Area or count, and location of suitable habitat for a species credit species and habitat condition

As per Section 5.2.5 of the BAM, if species credit species are confirmed to occur on site, a species polygon must be prepared. Southern Myotis has been assumed present, and a species polygon has been provided on **Figure 16**.

The species polygon includes all associated vegetation within the site that is within 200m of a suitable waterbody.

6.0 Identifying prescribed impacts

Prescribed impacts are defined in clause 6.1 of the *Biodiversity Conservation Regulation 2017,* and are additional impacts on threatened species that need to be considered and assessed when a development is proposed. These can include loss of habitat, fragmentation, and other indirect or direct impacts on habitat that are not native vegetation which may affect threatened species.

Table 21: Prescribed impacts identified

Feature	Present	Description of feature characteristics and location	Threatened entities that use, are likely to use, or are part of the habitat feature.
Karst, caves, crevices, cliffs, rocks or other geological features of significance	☐Yes / ☒No	N/A	N/A
Human-made structures	☒Yes / ☐No	Existing building structures are not proposed for impacts.	N/A
Non-native vegetation	☐Yes / ☒No	Non-native vegetation consists of managed lawns.	No threatened species were identified during surveys which are likely to utilise this feature.
Habitat connectivity and movement of threatened species	☐Yes / ☒No	Due to the high level of urbanization in the surrounding area, habitat connectivity within the broader landscape is very limited. The Study Area is surrounded by sealed roads limiting connection to native vegetation in the surrounding area. The Subject Land comprises mostly cleared managed lawns with small impacts into the edge of native vegetation that occurs along the border of the Parent Lot (the Study Area).	Potential habitat use is limited to highly mobile fauna such as Aves. The proposed vegetation to be cleared is small and already isolated from habitat in the wider area and therefore would have a minimal impact on habitat connectivity and movement.
Waterbodies, water quality and hydrological processes	☐ Yes / ☒No	No waterbodies occur within the Subject Land. No impacts to waterbodies or hydrological processes are anticipated.	N/A
Wind turbine strikes (wind farm development only)	☐Yes / ☒No	N/A	N/A
Vehicle strikes	☐Yes / ☒No	N/A	N/A

Stage 2 Impact assessment (biodiversity values and prescribed impacts)

7.0 Avoid and minimise impacts

7.1 Avoid and minimise direct and indirect impact

The project is located within an established urban setting that has undergone significant previous disturbance, with limited remaining natural features. Site selection prioritised land that had already been cleared or substantially modified to minimise environmental disturbance.

The proposed data centre has been located in the central, previously disturbed portion of the site, avoiding the areas of Cumberland Plain Woodland situated around the periphery. The project footprint has been designed to retain these remnant vegetation patches wherever possible, with only minor encroachment on areas of low ecological condition or planted vegetation.

While some residual impacts remain unavoidable due to the nature of the development, the chosen location is considered appropriate given the degraded condition of the site and the deliberate efforts made to avoid areas of higher ecological value.

7.2 Avoid and minimise prescribed impacts

The proposed development has been strategically positioned to avoid sensitive environmental features and areas of higher biodiversity value in the surrounding landscape. The selected location is already highly modified, with limited ecological connectivity due to the surrounding road network and urban infrastructure. This isolation restricts fauna movement and dispersal opportunities between the site and nearby remnants of native vegetation.

The development footprint avoids riparian corridors and water-dependent ecosystems. No watercourses, drainage lines, caves, or karst features are present within the site. Accordingly, prescribed impacts associated with hydrological alteration, groundwater dependency, or subterranean habitat disturbance have been effectively avoided.

While some prescribed impacts are unavoidable due to the spatial constraints of the site, the project design incorporates multiple measures to minimise disturbance. These include erosion and sediment controls, dust suppression, weed hygiene protocols, and rehabilitation of disturbed surfaces following construction. The design aligns with sustainable development principles and ensures that impacts are reduced as far as practicable, consistent with the requirements of the BC Act.

7.3 Summary of measures to avoid and minimise impacts

The design for the development application lodgement has undertaken detailed ecological constraints analysis to ensure the hierarchy of biodiversity principles being avoid, minimise and offset are applied to this proposal. The measures to avoid and minimise direct, indirect and prescribed impacts are described in **Table 22.**

Table 22: Avoidance and minimisation measures for direct, indirect and prescribed impacts

Action	Outcome	Timing	Responsibility
Minimise and offset impacts to TECs	The site supports vegetation associated with a state listed TEC. The design minimises impacts by limiting vegetation removal to the edge of patches or isolated trees. Unavoidable impacts will be offset to achieve a no net loss outcome consistent with legislative requirements.	Design Phase	The Proponent

Instigating clearing protocols, including pre-clearing surveys, daily surveys during clearing and staged clearing, using a trained ecologist or licensed wildlife handler	Limit disturbance of vegetation and fauna to the minimum necessary to undertake the proposal.	Prior to and during construction	The proponent and qualified ecologist or suitably qualified person.
Using hygiene protocols to prevent the spread of weeds or pathogens	All machinery entering the site should be appropriately washed down and disinfected prior to work on site to prevent the potential spread of weeds, Cinnamon Fungus (*Phytophthora cinnamomi*) and Myrtle Rust (*Pucciniales fungi*) in accordance with the national best practice guidelines	Prior to any plant or machinery being brought onto the site.	Construction contractor
Using adaptive dust management	Stabilised surfaces should be reinstated as quickly as practicable after construction.	Following clearing	Construction contractor
Training staff and conducting site briefings to communicate environmental features to be protected and measures to be implemented	Appropriate inductions should be provided prior to clearing on site.	Prior to clearing	Construction contractor



Study Area

Subject Land

Cadastre

NSW HydroLine

Impact Area

Retained Vegetation

PCT 3320 - Cumberland Shale Plains Woodland (Poor)

Figure 12 - Avoid and Minimise

0 30 60 m

Scale: 1:2,100

N

AEP

Address: 3 Brookhollow Avenue, Norwest NSW
Client: GreensquareDC c/- ARCH Artifex
AEP Ref: 5749 | Date: 15 December 2025

Imagery: Nearmap (July 2025)
Spatial Reference: GDA2020 MGA Zone 56

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8.0 Impact assessment

8.1 Direct impacts

8.1.1 Residual direct impacts

Whilst direct impacts have been avoided and minimised where possible, residual impacts on native fauna and flora will occur due to the removal of native vegetation. Residual impacts on native vegetation associated with the development have been reduced following the measures detailed above. In total, the proposal would impact 0.55ha of native vegetation. Direct impacts are summarised in **Table 23** below.

Table 23: Summary of residual direct impacts

Direct impact	BC Act status	EPBC Act status	SAII entity	Project phase/timing of impact	Extent (ha)
Impact of PCT 3320	CE	-	Yes	Construction	0.36
Plant Native Vegetation	-	-	-	Construction	0.19

8.1.2 Change in vegetation integrity scores

Residual impacts on vegetation condition after avoidance and minimisation measure have been carried out and are documented in **Table 24.**

Table 24: Impacts to vegetation integrity

Vegetation zone	PCT ID	Area (ha)	Before development				After development				Change
			Composition	Structure	Function	VI score	Composition	Structure	Function	VI score	Change in VI score
PCT 3320 - Poor	3320	0.36	36.3	32.2	45	37.5	0	0	0	0	-37.5

8.2 Indirect impacts

Indirect impacts have been assessed with respect to each stage of the project. Possible indirect impacts are primarily associated within the construction phase, and future impacts will be mitigated through measures provided in this report.

Table 25: Summary of residual indirect impacts

Indirect impact	Impacted entities	Extent (ha)	Frequency	Duration	Project phase/ timing of impact	Likelihood and consequences
Indirect impacts to adjacent vegetation associated with construction works	PCT 3320	All PCT	Duration of construction	Short term	Construction	Indirect impacts are likely during construction due to machinery movement and laydown areas and the removal of trees for the development. However, the site's location comprising primarily exotic managed lawn provides an opportunity to avoid impacts on adjacent land, minimising disturbance to surrounding vegetation.
Increased risk of starvation or exposure, and loss of shade or shelter	Arboreal species	N/A	Duration of construction	Short Term	Construction and during operation	While the development will primarily impact trees through removal, the adjoining land contains similar vegetation, which provide critical habitat features such as shelter, shade, and foraging resources.
Loss of breeding habitat	Arboreal species	N/A	During construction	Short term	Construction and during operation	No hollow-bearing trees or stick nests were identified in the subject Lands, suggesting it is not a breeding site for arboreal fauna and large birds. Impacts to vegetation occur on the edge and the adjoining land contains similar vegetation, which provide critical habitat features
Weed invasion and edge effects	PCT 3320	All PCT	During construction	Long term	Construction	The vegetation on the proposal site is already impacted by exotic species and high threat weeds, while additional edge effects from the development are not expected

Indirect impact	Impacted entities	Extent (ha)	Frequency	Duration	Project phase/ timing of impact	Likelihood and consequences
						to be significant. Even though edge effects such as changes in vegetation structure, increased exotic plant growth, and altered fauna behaviour can result from construction activities, the site is already in a degraded state with marginal habitat values and ecological functioning.
Pests and pathogens	Species of the *Myrtaceae* family	N/A	During construction	Short term	Construction	Construction activities can potentially introduce or spread pathogens like Phytophthora (*Phytophthora cinnamomi*), Myrtle Rust (*Austropuccinia psidii*), and Chytrid fungus (*Batrachochytrium dendrobatidis*) into native vegetation. Although the risk of impact from these pathogens is low due to the already disturbed nature of much of the Subject Land, appropriate measures such as equipment and machine washdowns should be implemented.
Noise, dust, light and vibration	Native fauna	N/A	During construction	Periodic	Construction	Construction of the proposal will introduce additional vehicles and machinery to the site, leading to temporary increases in noise, dust, light, and vibration. However, dust from earthworks will be managed under the appropriate management programs. While the site currently has some existing noise and light pollution, the fauna inhabiting the area may still be sensitive to these disturbances. The site and surrounding area are already in a degraded state with marginal

Indirect impact	Impacted entities	Extent (ha)	Frequency	Duration	Project phase/ timing of impact	Likelihood and consequences
						habitat values and ecological functioning.
Sedimentation and erosion	N/A	N/A	During construction	Short term	Construction	The development has the potential to cause sedimentation and erosion in both the construction site and adjacent habitats due to soil disturbance from earthworks. Appropriate control measures should be implemented to mitigate impacts.
Rubbish dumping	N/A	N/A	During construction	Short term	Construction	There is potential of rubbish dumping in native vegetation located in the adjacent lands or at the Subject Land, increasing pollution in the area. During construction, appropriate waste removal policies should be adhered to on site.
Increased human activity and disturbance	Local fauna & vegetation	Adjacent vegetation and open spaces	More movement of personnel, maintenance activities	Periodic	Construction & Operational	High likelihood; regular monitoring and adherence to environmental management plans will minimise impacts.

8.3 Prescribed impacts

Identified prescribed impacts and the nature, extent, frequency, duration and timing that may occur are described below. Additionally, the consequences of prescribed impacts on biodiversity values and any limitations to data, assumptions and predictions about impacts on biodiversity are discussed.

8.3.1 Habitat connectivity

The development proposes the removal of a small area of native vegetation on the edge of existing native vegetation. As the landscape already exists in a fragmented state, with a lack of mid and lower stratum, the site does not constitute part of a significant habitat corridor. The Subject Land has limited connectivity to intact native vegetation due to surrounding sealed roads and commercial development. Some minor impacts on already limited connectivity may occur during the construction phase; though, impacts are considered negligible. Potential consequences include exacerbating edge effects; however, the site is already in a highly degraded state with marginal habitat values and ecological functioning.

8.3.2 Vehicle strikes

Vehicle strikes on avian and terrestrial species could occur due to a carpark being located in the Subject Land. However, the development will not increase the existing risk of vehicle strikes, as the site primarily incorporates vehicle movement currently. There may be higher traffic during the construction phase due to heavy machinery and other vehicles accessing the site. Consequences include injury or death to native fauna. Due to the urbanised environment and disturbed ecological conditions, it is unlikely that mobile fauna would be at significant risk to vehicular strikes as part of the development.

8.4 Mitigating residual impacts – management measures and implementation

Proposed measures to mitigate residual indirect impacts on habitat are detailed in **Table 26**.

Table 26: Summary of proposed mitigation and management measure for residual indirect impacts

Mitigation measure	Method/technique	Timing	Frequency	Responsibility	Likely efficacy	MNES
Environmental induction for all workers covering ecological values and protection measures.	Training and induction sessions	Pre-construction / clearing	Once before work begins	Construction contractor	High (Low risk of failure)	N/A
Regular inspection and maintenance of erosion and sediment control measures.	Inspections and routine maintenance	Pre-construction / clearing	Regular intervals during work	Construction contractor	High (Low risk of failure)	N/A
Fence off or mark trees and areas of native vegetation to be retained.	Erect physical barriers and markers	Pre-construction / clearing	Once before clearing	Construction contractor / Arborist	High (Low risk of failure)	N/A
Establishment of appropriate buffers around retained trees on site boundary.	Avoidance of Structural Root Zones	Pre-construction / clearing	Once before clearing	Construction contractor / Site ecologist	High (Low risk of failure)	N/A
Restriction of stockpiles to existing cleared areas.	Stockpile management in designated areas	Construction / clearing	Continuous during construction	Construction contractor	High (Low risk of failure)	N/A
Application of water to stockpile areas during windy conditions.	Dust suppression by watering	Construction / clearing	As needed during windy conditions	Construction contractor	High (Low risk of failure)	N/A
Construction traffic restricted to existing roads and tracks.	Traffic management and routing	Construction / clearing	Continuous during construction	Construction contractor	High (Low risk of failure)	N/A
Using hygiene protocols to prevent the spread of weeds or pathogens.	Sterilisation of equipment and work boots prior to entering site.	Construction	Continuous during construction	Construction contractor	High (Low risk of failure)	N/A

9.0 Serious and irreversible impacts

9.1 Assessment for serious and irreversible (SAII) impacts on biodiversity values

The determination of a serious and irreversible impact (SAII) on biodiversity values must be made by the decision-maker, following the four principles outlined in Section 6.7 of *Biodiversity Conservation Regulation 2017*. This section identifies which biodiversity values could be at risk of an SAII due to the Project and evaluates the impact's extent and severity.

6.7 Principles applicable to determination of "serious and irreversible impacts on biodiversity values" (section 6.5(1))

> *(1) This clause applies for the purposes of determining whether an impact on diversity values is a serious and irreversible impact for the purposes of the biodiversity offsets scheme.*
>
> *(2) An impact is to be regarded as serious and irreversible if it is likely to contribute significantly to the risk of a threatened species or ecological community becoming extinct because—*
>
> > *(a) it will cause a further decline of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to be in a rapid rate of decline, or*
> >
> > *(b) it will further reduce the population size of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to have a very small population size, or*
> >
> > *(c) it is an impact on the habitat of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to have a very limited geographic distribution, or*
> >
> > *(d) the impacted species or ecological community is unlikely to respond to measures to improve its habitat and vegetation integrity and therefore its members are not replaceable.*
>
> *(3) For the purpose of this clause, a decline of a species or ecological community is a continuing or projected decline in—*
>
> > *(a) an index of abundance appropriate to the taxon, or*
> >
> > *(b) the geographic distribution and habitat quality of the species or ecological community.*
>
> *(4) If the guidance published by the Environment Agency Head under section 6.5(2) of the Act is changed, a biodiversity assessment report may, during the period of 90 days after the guidance was changed, be prepared on the basis of the guidance in force before the change, but only if the report states that it has been prepared on that basis.*

The candidate SAII TEC Cumberland Plain Woodland was identified within the Subject Land and is proposed for impact.

9.1.1 TEC *Cumberland Plain Woodland in the Sydney Basin Bioregion*

9.1.1.1 Actions to avoid and minimise direct and indirect impacts

The proposed development has been designed to avoid and minimise impacts to Cumberland Plain Woodland in the Sydney Basin Bioregion (CPW) through strategic site selection and project design. The development footprint has been located within the previously disturbed central portion of the site, thereby avoiding the more intact areas of CPW located along the periphery of the Study Area. This approach ensures that the majority of high-quality remnant vegetation remains undisturbed.

Where avoidance was not possible, impacts have been limited to small, degraded edges of woodland or isolated trees of low ecological integrity.

9.1.1.2 Current status (excluding impacts of the proposal)

Table 27: Current status of TEC *Cumberland Plain Woodland in the Sydney Basin Bioregion*

Criteria	Data/information	Data sources	Details of data deficiency, assumptions, reasons for low confidence in information (e.g. TBDC indicates data is unknown or deficient)
Current total geographic extent (ha) of the TEC in NSW	7,930ha	Listing advice (TSSC 2009b)	In the listing advice, Tozer (2003) estimated the extent of Cumberland Plain Woodland (CPW) at 11,054ha, with a confidence range of ±1,564ha, based on aerial imagery from 1998. As a conservative approach, AEP has adopted the lower end of this range (9,490ha) as the baseline for subsequent calculations. The listing advice also notes that between 1998 and 2007, the extent of CPW declined by approximately 5.2%, with a confidence range of ±0.6%. Applying the upper bound (5.8%) equates to an average annual decline of approximately 0.64%. Given that 27 years have passed between the original estimate (1998) and the time of this assessment (2025), and extrapolating this annual rate of loss over that period, the current estimated extent is 7,930ha. This figure is likely conservative, as it assumes the maximum decline rate and does not account for the introduction of significant biodiversity conservation mechanisms over the past two decades, including the Sydney Growth Centres Program, Cumberland Plain Conservation Plan (CPCP), and the Biodiversity Offset Scheme (BOS).
Estimated reduction in geographic extent of the TEC since 1970	29.7%	Listing advice (TSSC 2009b)	The listing advice indicates that only approximately 9% of the pre-European distribution of CPW remains, though no specific data are provided for the 1970s. To estimate the reduction since 1970, AEP has again applied the upper bound of the annual decline rate (0.64%) identified in the listing advice. Extrapolating this rate over a 55-year period (1970–2025) indicates a total reduction of approximately 29.7% in geographic extent over that timeframe. This approach provides a precautionary, worst-case estimate given the absence of updated long-term monitoring data.
Extent of reduction in ecological function, describing the degree of environmental degradation or disruption to biotic processes (Principle 2) indicated by factors listed in BAM Subsection 9.1.1(2.b.)			
Evidence of restricted geographic distribution (Principle 3) based on the TEC's geographic range in NSW			
Extent of occurrence (ha)	2810km^2	Listing advice (TSSC 2009b)	The estimates provided in the listing advice remain the most recent published figures. While minor changes to these values may have occurred over the intervening 15 years, the community is not considered restricted under Principle 3 of the BAM due to its relatively broad distribution across the Cumberland subregion, albeit in fragmented form. Estimate provided from listing advice. This value is based on the listing advice which was published over 15 years ago. The changes over this time, may have resulted
Area of occupancy (ha)	2100km^2	Listing advice (TSSC 2009b)	

			in modifications to this. It is noted that this community is not listed under Principle 3.
Number of threat-defined locations)	N/A	N/A	TBDC indicates data is unknown or deficient

9.1.1.3 Impact Assessment

Table 28: Impact assessment of TEC *Cumberland Plain Woodland in the Sydney Basin Bioregion*

Criteria	Data/information	Sources	Details of data deficiency assumptions, reasons for low confidence in information (e.g. TBDC indicates data is unkown or deficient)
Impact on the geographic extent of the TEC (Principles 1 and 3)			
Area of TEC to be impacted by the proposal (ha)	0.36ha	N/A	N/A
Area of TEC to be impacted by the proposal as a % of the current geographic extent in NSW (%)	0.005%	N/A	N/A
Direct/indirect impacts likely as a result of the proposal to contribute to loss of flora/fauna species characteristic of the TEC (BAM Subsection 9.1.1(4.a.ii.))	Indirect impacts are not considered likely, given the small scale of disturbance, the highly modified nature of the site, and the low ecological condition of surrounding vegetation. The proposed works are unlikely to alter hydrological processes, increase edge effects, or otherwise degrade adjacent areas of retained Cumberland Plain Woodland, and therefore residual impacts are expected to remain localised and minor.	N/A	N/A
Impacts likely to contribute to further environmental degradation or disruption of biotic processes (Principle 2)			
Remaining extent of isolated areas of TEC (ha)	Not quantified at the state scale. Proposal will not measurably change the extent of isolated CPW patches in NSW.	TSSC (2009)	Listing advice describes severe fragmentation and small patch sizes, but does not quantify “isolated areas” as a separate metric. Site impacts are extremely small relative to the statewide distribution and occur in an already fragmented urban context, so any change to

			this parameter is negligible.
Average distance between remaining remnants – remnant is retained (m)	Not quantified. No change to distances between major remnants is expected as the affected patch is already isolated within an urban / business park setting.	TSSC (2009)	Neither the listing advice nor TBDC provide quantitative data on inter-patch distances. At the landscape scale, the proposal does not remove or sever key habitat linkages, so changes in average distance between remnants are not meaningful or measurable.
Average distance between remaining remnants – remnant is removed (m)	Not quantified. Removal of the small, degraded patch will not materially alter inter-patch distances at the bioregional scale.	TSSC (2009)	As above. The affected vegetation is a small, low-condition patch in a heavily urbanised matrix; its removal does not change the broader fragmentation pattern described in the listing advice.
Estimated maximum dispersal distance of species associated with the TEC (km)	Not specifically quantified for CPW. Dispersal distances vary widely between fauna guilds and are not altered by the proposal at the landscape scale.	TSSC (2009)	The listing advice discusses fragmentation impacts on fauna but does not provide numeric dispersal thresholds. Given the very small area impacted and existing isolation of the patch, the proposal is not expected to further constrain dispersal at the scale relevant to SAII.
Area to perimeter ratio of remaining remnants (ratio)	Not quantified at the statewide scale. Proposal will marginally reduce one small, already high edge-to-area patch; no measurable change to the overall metric for the TEC.	TSSC (2009)	The listing advice discusses high edge effects and small patch sizes qualitatively, but does not provide ratios. At the bioregional scale, the change in area-to-perimeter ratio from this proposal is negligible and cannot be robustly quantified.
Vegetation integrity analysis			
Vegetation Zone 1 (Composition score)	36.3	N/A	N/A
Vegetation Zone 1 (Structure score)	32.2	N/A	N/A
Vegetation Zone 1 (Structure score)	45	N/A	N/A



Study Area

Subject Land

Cadastre

SAII Entity

Cumberland Plain Woodland in the Sydney Basin Bioregion

Figure 13 - Serious and Irreversible Impacts

0 25 50 m

Scale: 1:1,500

N

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Client: GreensquareDC c/- ARCH Artifex
AEP Ref: 5749 | Date: 15 December 2025

Imagery: Nearmap (July 2025)
Spatial Reference: GDA2020 MGA Zone 56

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10.0 Impact summary

10.1 Determining an offset requirement for impacts

10.1.1 Impacts on native vegetation and TECs or ECs (ecosystem credits)

Impacts on native vegetation that require an offset are provided in **Table 29** and **Figure 15**.

Table 29: Impacts that require an offset – ecosystem credits

Vegetation zone	PCT name	TEC	Impact area (ha)	Current VI score	Future VI score	Change in VI score	Biodiversity risk weighting	Number of ecosystem credits required
PCT 3320 – Poor	Cumberland Shale Plains Woodland	Yes	0.36	37.5	0	-37.5	2	7
							Total	**7**

10.1.2 Impacts on candidate threatened species (species credits)

Impacts on threatened fauna species are provided in **Table 30**. No flora species were identified for species credit offsets.

Table 30: Impacts that require an offset - species credit

Common name	Scientific name	BC Act	EPBC Act	Biodiversity risk weighting	Loss of habitat (ha or individuals)	Number of species credits required
Southern Myotis	*Myotis macropus*	V	-	2	0.14	3
					Total	**3**

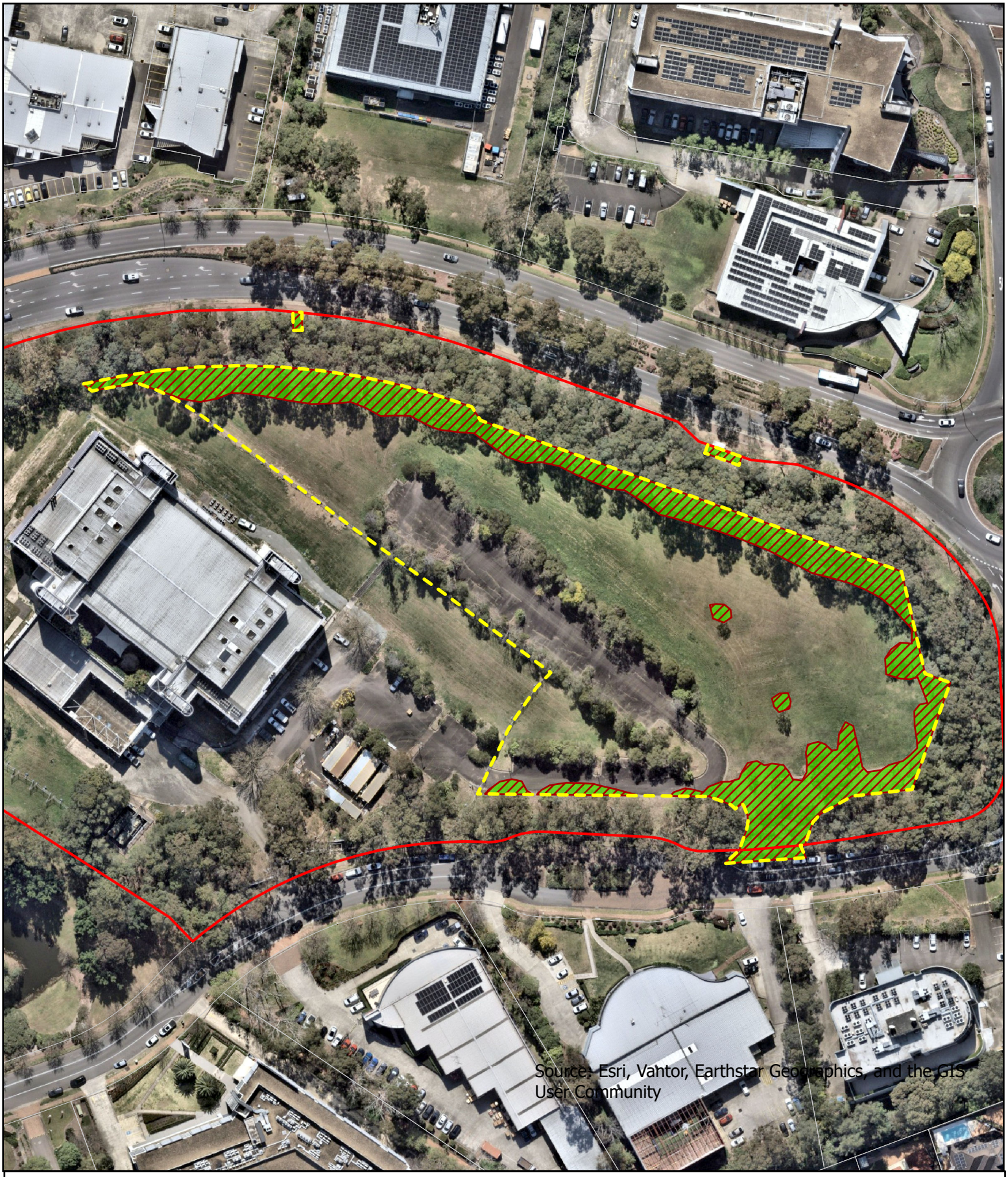
10.2 Impacts that do not need further assessment

Areas within the Subject Land that do not require further assessment are summarised in **Table 31**.

Table 31: Impacts not requiring offset

Impact	Location within Subject Land	Justification
Impacts to planted native vegetation	Central area of the Subject Land	The affected vegetation consists of landscape plantings and revegetated areas that do not meet the definition of a PCT) under the BAM. As such, these areas are not considered native vegetation and do not require ecosystem credit offsets in accordance with Appendix D of the BAM (2020).
Impacts to non-native vegetation and existing infrastructure	Throughout Subject Land	Areas comprising exotic grassland, ornamental plantings, and existing built infrastructure are not classified as native vegetation under the BAM and therefore do not generate offset obligations. Prescribed impacts (e.g. noise, dust, lighting) associated with the proposal have been assessed and are not expected to result in measurable

		impacts on adjacent native vegetation or fauna habitat.



Study Area

Subject Land

Cadastre

Impacted Vegetation

PCT 3320 - Cumberland Shale Plains Woodland (Poor)

Figure 14 - Impact Map

0 25 50 m

Scale: 1:1,500

N

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Study Area
Subject Land
Cadastre
Extent of SAII entities
Areas requiring an offset
Areas not requiring offset
Areas not requiring assessment

Figure 15 - Thresholds for Assessing and Offsetting Impacts

0 25 50 m
Scale: 1:1,500

N

AEP

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11.0 Biodiversity credit report

The following credits are required for offset as part of the development.

11.1 Ecosystem credits

Table 32: Ecosystem credit class and matching credit profile

Ecosystem Credit	Attributes shared with matching credits						
	PCT Name	PCT Vegetation Class	PCT Vegetation Formation	Associated TEC	Offset trading group	Hollow bearing trees present?	IBRA Subregion
PCT 3320	Cumberland Shale Plains Woodland	Coastal Valley Grassy Woodlands	Grassy Woodlands	Cumberland Plain Woodland in the Sydney Basin Bioregion	Cumberland Plain Woodland TEC	No	Cumberland (Sydney Basin)

11.2 Species credits

Table 33: Species credit class and matching credit profile

Attributes shared with matching credits			
Name of threatened species	BC Act status	EPBC Act status	IBRA Subregion
Southern Myotis	V	-	Cumberland



Study Area
Subject Land
Cadastre
NSW HydroLine
Top of Bank
Top of Bank Buffer (200m)

Species Polygon
Southern Myotis

Ground-truthed Vegetation
PCT 3320 - Cumberland Shale Plains Woodland (Poor)

Figure 16 - Southern Myotis Species Polygon

0 40 80 m
Scale: 1:2,500
N

AEP

Address: 3 Brookhollow Avenue, Norwest NSW
Client: GreensquareDC c/- ARCH Artifex
AEP Ref: 5749 | Date: 15 December 2025

Imagery: Nearmap (July 2025)
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12.0 References

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Appendix A: BDAR requirements compliance

BAM Reference	Information	BDAR Section	Completed
Report			
Introduction - Chapters 2 and 3	Introduction to the biodiversity assessment including: brief description of proposed development identification of subject land boundary, including: operational footprint and construction footprint indicating clearing associated with temporary/ancillary construction facilities and infrastructure general description of the subject land	1.1	✓
	Sources of information used in the assessment, including reports and spatial data	1.5	✓
	Identification of assessment method applied (i.e., linear or site-based)	2.0	✓
Landscape - Section 3.1, 3.2 and Appendix E	General description of subject land topographic and hydrological setting, geology and soils	2.1.1	✓
	Percent native vegetation cover in the assessment area (as described in BAM Subsection 3.2(4.)	3.3	✓
	IBRA bioregions and subregions (as described in BAM Subsection 3.1.3(2.))	3.2	✓
	Rivers and streams classified according to stream order (as described in BAM Subsection 3.1.3(3–4.) and Appendix E)	3.2	✓
	Wetlands within, adjacent to and downstream of the site (as described in BAM Subsection 3.1.3(4.))	3.2	✓
	Connectivity of different areas of habitat (as described in BAM Subsection 3.1.3(5–6.))	3.2	✓
	Areas of geological significance and soil hazard features (as described in BAM Subsections 3.1.3(7.) and 3.1.3(10.)	3.2	✓
Native vegetation, TECs and vegetation integrity - Chapter 4	Identify native vegetation extent within the subject land, including cleared areas and evidence to support differences between mapped vegetation extent and aerial imagery (as described in BAM Section 4.1(1–3.) and Subsection 4.1.1	4.1	✓
	Provide justification for all parts of the subject land that do not contain native vegetation (as described in BAM Subsection 4.1.2)	4.5	✓
	Review of existing information on native vegetation including references to previous vegetation maps of the subject land and assessment area (described in BAM Section 4.1(3.) and Subsection 4.1.1)	2.2.1, 4.1	✓
	Describe the systematic field-based floristic vegetation survey undertaken in accordance with BAM Section 4.2	2.2.3	✓

BAM Reference	Information	BDAR Section	Completed
	Where relevant, describe the use of more appropriate local data, provide reasons that support the use of more appropriate local data and include the written confirmation from the decision-maker that they support the use of more appropriate local data (as described in BAM Subsection 1.4.2 and Appendix A)	N/A	N/A
	For each PCT within the subject land, describe: • vegetation class • extent (ha) within subject land • evidence used to identify a PCT including any analyses undertaken, references/sources, existing vegetation maps (BAM Section 4.2(1–3.)) • plant species relied upon for identification of the PCT and relative abundance of each species • if relevant, TEC status including evidence used to determine vegetation is the TEC (BAM Subsection 4.2.2(1–2.)) • estimate of percent cleared value of PCT (BAM Subsection 4.2.1(5.))	4.2, 4.3, 4.6	✓
	Describe the vegetation integrity assessment of the subject land, including: • dentification and mapping of vegetation zones (as described in BAM Subsection 4.3.1) • assessment of patch size (as described in BAM Subsection 4.3.2) • survey effort (i.e. number of vegetation integrity survey plots) as described in BAM Subsection 4.3.4(1–2.) • use of relevant benchmark data from BioNet Vegetation Classification (as described in BAM Subsection 4.3.3(5.))	4.6	✓
Chapter 5 and Section 9.1	Identify ecosystem credit species likely to occur on the subject land, including: • list of ecosystem credit species derived from the BAM-C (as described in BAM Subsection 5.1.1 and Section 5.2(1.)) • justification and supporting evidence for exclusion of any ecosystem credit species based on geographic limitations, habitat constraints or vagrancy (as described in BAM Subsections 5.2.1 and 5.2.2) • justification for addition of any ecosystem credit species to the list	5.1.1, 5.1.2	✓
	Identify species credit species likely to occur on the subject land, including: • list of species credit species derived from the BAM-C (as described in BAM Subsection 5.1.1) • justification and supporting evidence for exclusions based on geographic limitations, habitat constraints or vagrancy (as described in BAM Subsections 5.2.1 and 5.2.2) • justification and supporting evidence for exclusions based on degraded habitat constraints and/or microhabitats on which the species depends (as described in BAM Subsection 5.2.2) • justification for addition of any species credit species to the list	5.1.1, 5.1.4	✓
	From the list of candidate species credit species, identify:	5.2	✓

BAM Reference	Information	BDAR Section	Completed
	• species assumed present within the subject land (if relevant) (as described in BAM Subsection 5.2.4(2.a.)) • species present within the subject land on the basis of being identified on an important habitat map for a species (as described in BAM Subsection 5.2.4(2.d.)) • species for which targeted surveys are to be completed to determine species presence (Subsection 5.2.4(2.b.)) • species for which an expert report is to be used to determine species presence (Subsection 5.2.4(2.c.))		
	Present the outcomes of species credit species assessments from: • threatened species survey (as described in BAM Section 5.2.4) • expert reports (if relevant) including justification for presence of the species and information used to make this determination (as described in BAM Section 5.2.4 and 5.3, Box 3) Where survey has been undertaken include detailed information on: • survey method and effort, (as described in BAM Section 5.3) • justification of survey method and effort (e.g. citation of peer-reviewed literature) if approach differs from the Department's taxa-specific survey guides or where no relevant guideline has been published • timing of survey in relation to requirements in the TBDC or the Department's taxa-specific survey guides. Where survey was undertaken outside these guides include justification for the timing of surveys • survey personnel and relevant experience • describe any limitations to surveys and how these were addressed/overcome	5.3. Appendix I	✓

BAM Reference	Information	BDAR Section	Completed
	Species polygon completed for species credit species present within the subject land (assumed present or determined on the basis of survey, expert report or important habitat map) ensuring that: • the unit of measure for each species is documented for species assessed by area: • the polygon includes the extent of suitable habitat for the target species within the subject land (as described in BAM Subsection 5.2.5) • a description of, and evidence-based justification for, the habitat constraints, features or microhabitats used to map the species polygon including reference to information in the TBDC for that species and any buffers applied for species assessed by counts of individuals: • the number of individual plants present on the subject land (as described in BAM Subsection 5.2.5(3.)) • the method used to derive this number (i.e. threatened species survey or expert report) and evidence-based justification for the approach taken • the polygon includes all individuals located on the subject land with a buffer of 30 m around the individuals or groups of individuals on the subject land • Identify the biodiversity risk weighting for each species credit species identified as present within the subject land (as described in BAM Section 5.4)	5.5, 10	✓
Prescribed impacts Chapter 6	Identify potential prescribed biodiversity impacts on threatened entities, including: • karst, caves, crevices, cliffs, rocks and other geological features of significance (as described in BAM Subsection 6.1.1) • occurrences of human-made structures and non-native vegetation (as described in BAM Subsection 6.1.2) • corridors or other areas of connectivity linking habitat for threatened entities (as described in BAM Subsection 6.1.3) • water bodies or any hydrological processes that sustain threatened entities (as described in BAM Subsection 6.1.4) • protected animals that may use the proposed wind farm development site as a flyway or migration route (as described in BAM Subsection 6.1.5) • where the proposed development may result in vehicle strike on threatened fauna or on animals that are part of a threatened ecological community (as described in BAM Subsection 6.1.6) • Identify a list of threatened entities that may be dependent upon or may use habitat features associated with any of the prescribed impacts • Describe the importance of habitat features to the species including, where relevant, impacts on life-cycle or movement patterns (e.g. Subsection 6.1.3)	6.0	✓
Avoid and minimise impacts – Chapter 7	Demonstration of efforts to avoid and minimise impacts on biodiversity values (including prescribed impacts) associated with the proposal location in accordance with Chapter 7, including an analysis of alternative:	7.0	✓

BAM Reference	Information	BDAR Section	Completed
	• modes or technologies that would avoid or minimise impacts on biodiversity values and justification for selecting the proposed mode or technology • alternative locations that would avoid or minimise impacts on biodiversity values and justification for selecting the proposed location • alternative sites within a property on which the proposal is located that would avoid or minimise impacts on biodiversity values and justification for selecting the proposed site		
	Describe efforts to avoid and minimise impacts (including prescribed impacts) to biodiversity values through proposal design (as described in BAM Subsections 7.1.2 and 7.2.2	7.0	✓
	Identification of any other site constraints that the proponent has considered in determining the location and design of the proposal (as described in BAM Subsection 7.2.1(3.)	7.0	✓
Assessment of Impacts - Chapter 8, Section 8.1 and 8.2	Determine the impacts on native vegetation and threatened species habitat, including a description of direct impacts of clearing of native vegetation, threatened ecological communities and threatened species habitat (as described in BAM Section 8.1) Assessment of indirect impacts on vegetation and threatened species and their habitat including (as described in BAM Section 8.2): • description of the nature, extent, frequency, duration and timing of indirect impacts of the proposal • documenting the consequences to vegetation and threatened species and their habitat including evidence-based justifications • reporting any limitations or assumptions, etc. made during the assessment • identification of the threatened entities and their habitat likely to be affected Assessment of prescribed biodiversity impacts (as described in BAM Section 8.3) including: assessment of the nature, extent and duration of impacts on the habitat of threatened species or ecological communities associated with: • karst, caves, crevices, cliffs, rocks and other features of geological significance • human-made structures • non-native vegetation • connectivity of different areas of habitat of threatened species that facilitates the movement of those species across their range • movement of threatened species that maintains their life cycle • water quality, water bodies and hydrological processes that sustain threatened species and threatened ecological communities • assessment of the impacts of wind turbine strikes on protected animals • assessment of the impacts of vehicle strikes on threatened species of animals or on animals that are part of a TEC	8.1, 8.2, 8.3,	✓
	Identification of measures to mitigate or manage impacts in accordance with the recommendations in BAM Subsections 8.4.1 and 8.4.2, including (as described in BAM Subsection 8.4.1(2.):	8.4	✓

BAM Reference	Information	BDAR Section	Completed
Mitigation and Management of Impacts - Chapter 8, Section 8.4 and 8.5	• techniques, timing, frequency and responsibility • identify measures for which there is risk of failure • evaluate the risk and consequence of any residual impacts • document any adaptive management strategy proposed		
	Identification of measures for mitigating impacts related to: • displacement of resident fauna (as described in BAM Subsection 8.4.1) • indirect impacts on native vegetation and habitat (as described in BAM Subsection 8.4.1(3.)) • mitigating prescribed biodiversity impacts (as described in BAM Subsection 8.4.2)	8.4	✓
	Details of the adaptive management strategy proposed to monitor and respond to impacts on biodiversity values that are uncertain (BAM Section 8.5)	N/A	N/A
Impact Summary – Chapter 9	Identification and assessment of impacts on TECs and threatened species that are at risk of a serious and irreversible impacts (SAII, in accordance with BAM Section 9.1) including: • addressing all criteria in Subsection 9.1.1 for each TEC listed as at risk of an SAII present on the subject land • addressing all criteria in Subsection 9.1.2 for each threatened species at risk of an SAII present on the subject land • documenting assumptions made and/or limitations to information • documenting all sources of data, information, references used or consulted • clearly justifying why any criteria could not be addressed • Identification of impacts requiring offset in accordance with BAM Section 9.2 • Identification of impacts not requiring offset in accordance with BAM Subsection 9.2.1(3.) • Identification of areas not requiring assessment in accordance with BAM Section 9.3	9.1, 10.1, 10.2	✓
Impact Summary - Chapter 10	Ecosystem credits and species credits that measure the impact of the development on biodiversity values, including: • future vegetation integrity score for each vegetation zone within the subject land (Equation 25 and Equation 26 in BAM Appendix H) • change in vegetation integrity score (BAM Subsection 8.1.1) • number of required ecosystem credits for the direct impacts of the proposal on each vegetation zone within the subject land (BAM Subsection 9) • number of required species credits for each candidate threatened species that is directly impacted on by the proposal (BAM Subsection 10.1.3)	11	✓
Maps			
Introduction - Chapters 2 and 3	Map of the subject land boundary showing the final proposal footprint, including the construction footprint for any clearing associated with temporary/ancillary construction facilities and infrastructure.	Figure 1, Figure 3	✓

BAM Reference	Information	BDAR Section	Completed
Landscape - Section 3.1, 3.2 and Appendix E	Site Map boundary of subject land cadastre of subject land landscape features identified in BAM Subsection 3.1.3 areas of outstanding biodiversity value within the subject land	Figure 2	✓
	Location Map - digital aerial photography at 1:1,000 scale or finer boundary of subject land: 1500 m buffer area *or* 500 m buffer for linear development landscape features identified in BAM Subsection 3.1.3 additional detail (e.g., local government area boundaries) relevant at this scale areas of outstanding biodiversity value within the assessment area	Figure 2	✓
	Landscape features identified in BAM Subsection 3.1.3 and to be shown on the Site Map and/or IBRA bioregions and subregions rivers, streams and estuaries wetlands and important wetlands connectivity of different areas of habitat areas of geological significance and soil hazard features	Figure 2	✓
Native vegetation, TECs and vegetation integrity - Chapter 4	Map of native vegetation extent for the subject land (as described in BAM Section 3.1)	Figure 8	✓
	Map of PCT/vegetation zones within the subject land (as described in BAM Section 4.2(1.)	Figure 9	✓
	Map the location of floristic vegetation survey plots and vegetation integrity survey plots relative to PCT boundaries	Figure 9	✓
	Map of TEC distribution on the subject land	Figure 10	✓
Chapter 5 and Section 9.1	Map of species credit species records within the subject land and species polygons for flora and fauna species	Figure 16	✓
Prescribed impacts Chapter 6	If relevant, maps showing location of any prescribed impact features (i.e., karst, caves, crevices, cliffs, rocks, humanmade structures, etc.)	N/A	N/A
Avoid and minimise impacts – Chapter 7	Map of final proposal footprint, including construction and operation	Figure 3	✓
	Maps demonstrating indirect impact zones where applicable	N/A	✓

BAM Reference	Information	BDAR Section	Completed
Assessment of Impacts - Chapter 8, Section 8.1 and 8.2	No Maps		
Mitigation and Management of Impacts - Chapter 8, Section 8.4 and 8.5	No Maps		
Thresholds for assessing and offsetting the impacts of the proposal - Chapter 9	Map showing the extent of TECs at risk of an SAII within the subject land	Figure 10	✓
	Map showing the location of threatened species at risk of an SAII within the subject land	N/A	
	Map showing location of: impacts requiring offset impacts not requiring offset areas not requiring assessment	Figure 15	✓
Applying the no net loss standard - Chapter 10	No Maps		
Tables			
Native vegetation, TECs and vegetation integrity - Chapter 4	Table of current vegetation integrity scores for vegetation zone within the site including: composition condition score structure condition score function condition score	Table 14	✓
Chapter 5 and Section 9.1	Table showing ecosystem credit species in accordance with BAM Subsection 5.1.1, and: identifying any ecosystem credit species removed from the list of species on the basis of further assessment in accordance with BAM Subsections 5.2.2 and 5.2.3 identifying the sensitivity to gain class of each species (BAM Section 5.4)	Table 16	✓
	Table detailing species credit species within the subject land at risk of an SAII (BAM Section 9.1) or incidentally observed during the site visit including any associated habitat feature/components and its abundance (flora)/extent of habitat (flora and fauna) and biodiversity risk weighting (BAM Sections 5.2–5.4)	Table 17	✓
Prescribed impacts Chapter 6	Table showing the prescribed impacts.	Table 21	✓

BAM Reference	Information	BDAR Section	Completed
Avoid and minimise impacts – Chapter 7	Table of measures to be implemented before, during and after construction to avoid and minimise the impacts of the proposal, including action, outcome, timing and responsibility	Table 22	✓
Assessment of Impacts - Chapter 8, Section 8.1 and 8.2	Table showing change in vegetation integrity score for each vegetation zone as a result of identified impacts	Table 24	✓
Mitigation and Management of Impacts - Chapter 8, Section 8.4 and 8.5	Table of measures to be implemented before, during and after construction to mitigate and manage impacts of the proposal, including action, outcome, timing and responsibility	Table 26	✓
Thresholds for assessing and offsetting the impacts of the proposal - Chapter 9	No Tables		
Impact – Summary – Chapter 10	• Table of PCTs requiring offset and the number of ecosystem credits required • Table of threatened species requiring offset and the number of species credits required • Table of credit class and matching profile	Table 29, Table 30, Table 32, Table 33	✓
Data			
Landscape - Section 3.1, 3.2 and Appendix E	All report maps as separate jpeg files / Individual digital shape files of: subject land boundary assessment area (i.e., buffer area) boundary cadastral boundary of subject land areas of native vegetation cover areas of habitat connectivity	Attached Files	✓

BAM Reference	Information	BDAR Section	Completed
Native vegetation, TECs and vegetation integrity - Chapter 4	All report maps as separate jpeg files Plot field data (MS Excel format) Digital shape files for all maps and spatial data Field data sheets (if relevant) for determining vegetation integrity (BAM Subsection 4.3.4)		
Chapter 5 and Section 9.1	Digital shape files of species polygons Species polygon map in jpeg format Expert reports and any supporting data used to support conclusions of the expert report Field data sheets (if relevant) for threatened species surveys		
Prescribed impacts Chapter 6	If relevant, digital shape files of prescribed impact feature locations Prescribed impact features map in jpeg format		
Avoid and minimise impacts – Chapter 7	Digital shape files of: final proposal footprint direct and indirect impact zones Maps in jpeg format		
Assessment of Impacts - Chapter 8, Section 8.1 and 8.2			
Mitigation and Management of Impacts - Chapter 8, Section 8.4 and 8.5			
Thresholds for assessing and offsetting the impacts of the proposal - Chapter 9	Digital shape files of: extent of TECs at risk of an SAII within the subject land threatened species at risk of an SAII within the subject land boundary of impacts requiring offset boundary of impacts not requiring offset boundary of areas not requiring assessment Maps in jpeg format		

BAM Reference	Information	BDAR Section	Completed
Applying the no net loss standard - Chapter 10			✓

Appendix B: Biodiversity values map and threshold tool report

Department of Planning and Environment

Biodiversity Values Map and Threshold Report

This report is generated using the Biodiversity Values Map and Threshold (BMAT) tool. The BMAT tool is used by proponents to supply evidence to your local council to determine whether or not a Biodiversity Development Assessment Report (BDAR) is required under the Biodiversity Conservation Regulation 2017 (Cl. 7.2 & 7.3).

The report provides results for the proposed development footprint area identified by the user and displayed within the blue boundary on the map.

There are two pathways for determining whether a BDAR is required for the proposed development:

1. Is there Biodiversity Values Mapping?
2. Is the 'clearing of native vegetation area threshold' exceeded?

Biodiversity Values Map and Threshold Report

Date of Report Generation		15/12/2025 11:22 AM
1. Biodiversity Values (BV) Map - Results Summary (Biodiversity Conservation Regulation Section 7.3)		
1.1	**Does the development Footprint intersect with BV mapping?**	no
1.2	Was ALL BV Mapping within the development footprinted added in the last 90 days? (dark purple mapping only, no light purple mapping present)	no
1.3	**Date of expiry of dark purple 90 day mapping**	N/A
1.4	**Is the Biodiversity Values Map threshold exceeded?**	no
2. Area Clearing Threshold - Results Summary (Biodiversity Conservation Regulation Section 7.2)		
2.1	**Size of the development or clearing footprint**	50,720.1 sqm
2.2	**Native Vegetation Area Clearing Estimate (NVACE)** (within development/clearing footprint)	27,525.0 sqm
2.3	**Method for determining Minimum Lot Size**	LEP
2.4	**Minimum Lot Size** (10,000sqm = 1ha)	8,000 sqm
2.5	**Area Clearing Threshold** (10,000sqm = 1ha)	2,500 sqm
2.6	**Does the estimate exceed the Area Clearing Threshold?** (NVACE results are an estimate and can be reviewed using the Guidance)	yes

REPORT RESULT: Is the Biodiversity Offset Scheme (BOS) Threshold exceeded for the proposed development footprint area? (Your local council will determine if a BDAR is required)	**yes**

What do I do with this report?

• If the result above indicates the BOS Threshold has been exceeded, your local council may require a Biodiversity Development Assessment Report with your development application. Seek further advice from Council. An accredited assessor can apply the Biodiversity Assessment Method and prepare a BDAR for you. For a list of accredited assessors go to: https://customer.lmbc.nsw.gov.au/assessment/AccreditedAssessor.

• If the result above indicates the BOS Threshold has not been exceeded, you may not require a Biodiversity Development Assessment Report. This BMAT report can be provided to Council to support your development application. Council can advise how the area clearing threshold results should be considered. Council will review these results and make a determination if a BDAR is required. Council may ask you to review the area clearing threshold results. You may also be required to assess whether the development is '"likely to significantly affect threatened species" as determined under the test in Section 7.3 of the *Biodiversity Conservation Act 2016*.

• If a BDAR is not required by Council, you may still require a permit to clear vegetation from your local council.

• If all Biodiversity Values mapping within your development footprint was less than 90 days old, i.e. areas are displayed as dark purple on the BV map, a BDAR may not be required if your Development Application is submitted within that 90 day period. Any BV mapping less than 90 days old on this report will expire on the date provided in Line item 1.3 above.

For more detailed advice about actions required, refer to the Interpreting the evaluation report section of the Biodiversity Values Map Threshold Tool User Guide .

Review Options:

• If you believe the Biodiversity Values mapping is incorrect please refer to our BV Map Review webpage for further information.

• If you or Council disagree with the area clearing threshold estimate results from the NVACE in Line Item 2.6 above (i.e. area of Native Vegetation within the Development footprint proposed to be cleared), review the results using the Guide for reviewing area clearing threshold results from the BMAT Tool.

Acknowledgement

I, as the applicant for this development, submit that I have correctly depicted the area that will be impacted or likely to be impacted as a result of the proposed development.

Signature: _____ Date: _____

(Typing your name in the signature field will be considered as your signature for the purposes of this form)

15/12/2025 11:22 AM

Biodiversity Values Map and Threshold Tool

The Biodiversity Values (BV) Map and Threshold Tool identifies land with high biodiversity value, particularly sensitive to impacts from development and clearing.

The BV map forms part of the Biodiversity Offsets Scheme threshold, which is one of the factors for determining whether the Scheme applies to a clearing or development proposal. You have used the Threshold Tool in the map viewer to generate this BV Threshold Report for your nominated area. This report calculates results for your proposed development footprint and indicates whether Council may require you to engage an accredited assessor to prepare a Biodiversity Development Assessment Report (BDAR) for your development.

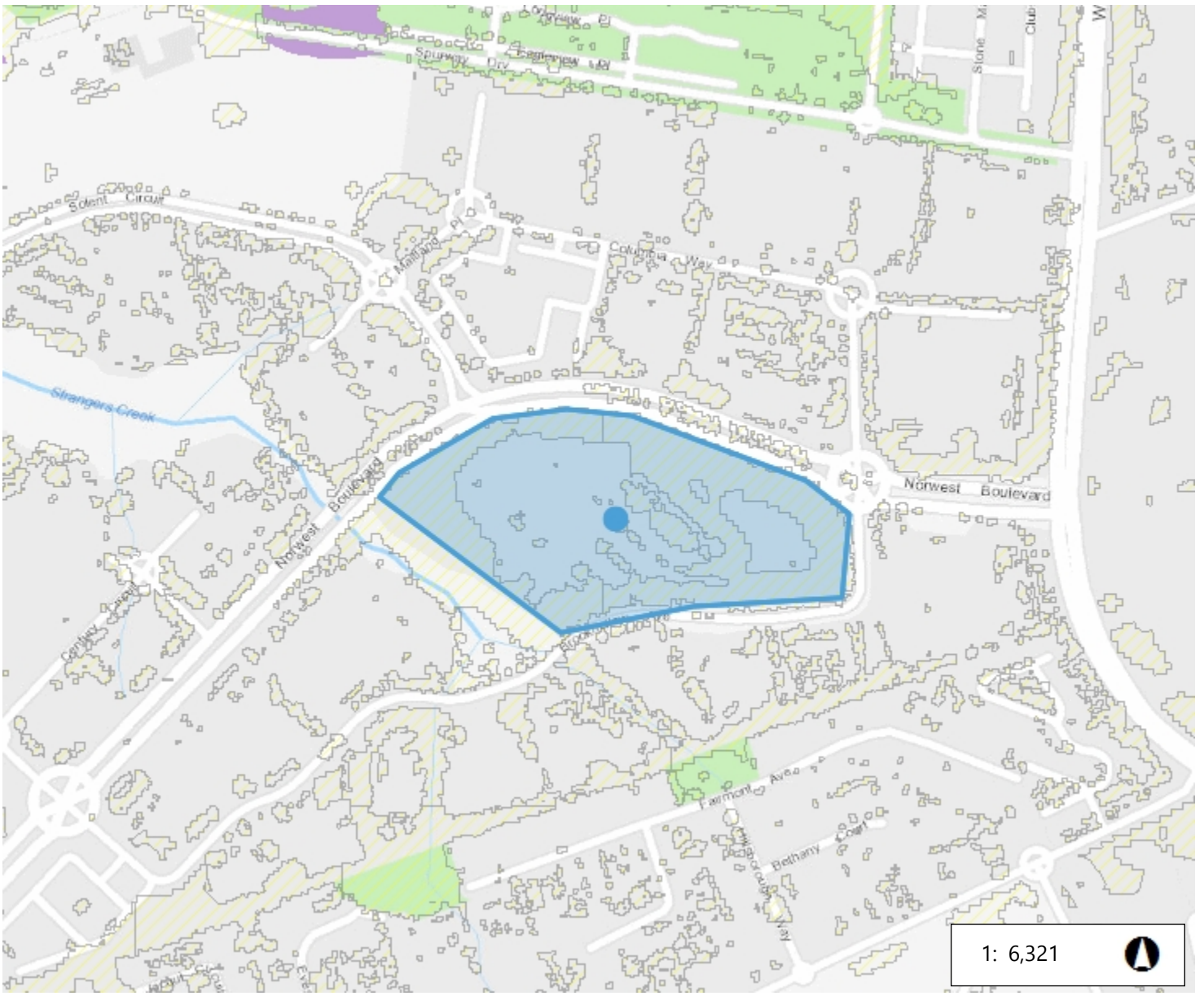
This report may be used as evidence for development applications submitted to councils. You may also use this report when considering native vegetation clearing under the State Environmental Planning Policy (Biodiversity and Conservation) 2021 - Chapter 2 vegetation in non-rural areas.

What's new? For more information about the latest updates to the Biodiversity Values Map and Threshold Tool go to the updates section on the Biodiversity Values Map webpage.

Map Review: Landholders can request a review of the BV Map where they consider there is an error in the mapping on their property. For more information about the map review process and an application form for a review go to the Biodiversity Values Map Review webpage.

If you need help using this map tool see our Biodiversity Values Map and Threshold Tool User Guide or contact the Map Review Team at map.review@environment.nsw.gov.au or on 1800 001 490.

Biodiversity Values Map



321.1 0 160.55 321.1 Metres

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Legend

- Biodiversity Values that have been mapped for more than 90 days
- Biodiversity Values added within last 90 days
- Native Vegetation Area Clearing Estimate (NVACE)
- Development area selected by proponent

15/12/2025 11:22 AM

Imagery © Airbus DS/Spot Image 2016

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© NSW Department of Planning and Environment

The results provided in this tool are generated using the best available mapping and knowledge of species habitat requirements.

This map is valid as at the date the report was generated. Checking the Biodiversity Values Map viewer for mapping updates is recommended.

Appendix C: Additional Surveys

Date	Time	Hours	Field activity	No. of Persons	Staff	Rainfall
13/08/2025	-	-	5m Flora Transects targeting *Hibbertia superans*, *Zieria involucrata, Grammitis stenophylla, Tetratheca glandulosa, Wahlenbergia multicaulis.*	-	ARCH Artifex	0.5mm
14/08/2025	-	-	10m Flora Transects targeting *Melaleuca deanei, Callistemon linearifolius, Acacia bynoeana.* 5m flora transects targeting *Leucopogon exolasius, Persoonia bargoensis, Leucopogon fletcheri* subsp. *fletcheri, Darwinia biflora, Grevillea parviflora* subsp. *parviflora, Grevillea parviflora* subsp. *supplicans.*	-	ARCH Artifex	1.5mm
08/10/2025	13:30 – 15:45	2.25	5m-10m Flora Transects targeting *Epacris purpurascens* var. *purpurascens, Persoonia hirsuta.*	2	ALR CB	0mm
17/10/2025	09:15 – 11:15	2	10m-20m Flora Transects targeting *Lasiopetalum joyceae*	1	CB	0mm
30/10/2025	16:15 – 17:15	1	Diurnal Red-crowned Toadlet survey	1	GT	16mm
	19:45 – 20:45	1	Nocturnal Red-crowned Toadlet survey with call playback	1	GT	

Appendix D: Flora list

Family	Scientific Name	Common Name	Plot 1	Plot 2	Plot Arch 0	Plot Arch2
Fabaceae (Mimosoideae)	Acacia fimbriata	Fringed Wattle				1
Fabaceae (Mimosoideae)	Acacia implexa	Hickory Wattle	0.2			
Fabaceae (Mimosoideae)	Acacia longifolia subsp. longifolia	Sydney Golden Wattle				
Fabaceae (Mimosoideae)	Acacia parramattensis	Parramatta Wattle			0.1	
Fabaceae (Mimosoideae)	Acacia spectabilis	Mudgee Wattle				
Casuarinaceae	Allocasuarina torulosa	Forest Oak			0.2	2
Rhamnaceae	Alphitonia excelsa	Red Ash	2			
Myrtaceae	Angophora floribunda	Rough-barked Apple	0.5			
Apocynaceae	Araujia sericifera	Moth Vine			0.1	
Asparagaceae	Asparagus spp.		0		0.3	
Poaceae	Axonopus fissifolius	Narrow-leafed Carpet Grass		20		
Myrtaceae	Baeckea linifolia	Weeping Baeckea				
Proteaceae	Banksia spinulosa	Hairpin Banksia				
Asteraceae	Bidens pilosa	Cobbler's Pegs			0.3	0.2
Brassicaceae	Brassica spp.	Brassica				0.1
Poaceae	Briza minor	Shivery Grass		20		
Poaceae	Briza subaristata		0	20		
Myrtaceae	Callistemon salignus	Willow Bottlebrush				
Myrtaceae	Callistemon viminalis	Weeping Bottlebrush				
Gentianaceae	Centaurium spp.		0	0.1		
Apiaceae	Centella asiatica	Indian Pennywort		1	0.2	0.1
Asteraceae	Cirsium vulgare	Spear Thistle				0.1
Asteraceae	Conyza bonariensis	Flaxleaf Fleabane			0.2	0.1
Poaceae	Cynodon dactylon	Common Couch	0.1	10		
Asphodelaceae	Dianella caerulea	Blue Flax-lily	0.1			
Asphodelaceae	Dianella caerulea var. caerulea		0			
Asphodelaceae	Dianella longifolia	Blueberry Lily			0.1	
Convolvulaceae	Dichondra repens	Kidney Weed	0.5		0.1	0.2
Poaceae	Digitaria spp.		0		0.3	
Sapindaceae	Dodonaea triquetra	Large-leaf Hop-bush	0.2		0.2	0.1
Poaceae	Ehrharta erecta	Panic Veldtgrass	2		5	20
Chenopodiaceae	Einadia hastata	Berry Saltbush	1			
Chenopodiaceae	Einadia nutans	Climbing Saltbush			0.1	
Chenopodiaceae	Einadia polygonoides	Knotweed Goosefoot	0.2			
Chenopodiaceae	Einadia trigonos	Fishweed	0.3			
Myrtaceae	Eucalyptus crebra	Narrow-leaved Ironbark	20		10	5
Myrtaceae	Eucalyptus moluccana	Grey Box				10
Myrtaceae	Eucalyptus tereticornis	Forest Red Gum	10		15	5
Myrtaceae	Eucalyptus umbra	Broad-leaved White Mahogany			10	1
Rubiaceae	Galium leiocarpum		0	0.2		
Asteraceae	Gamochaeta coarctata		0	1		
Fabaceae (Faboideae)	Glycine tabacina	Variable Glycine	1		0.1	0.2
Proteaceae	Grevillea banksii		0			
Fabaceae (Faboideae)	Grona varians		0	1		
Clusiaceae	Hypericum perforatum	St. Johns Wort		1		
Asteraceae	Hypochaeris albiflora	White Flatweed		0.5		
Asteraceae	Hypochaeris glabra	Smooth Catsear			0.1	0.2
Asteraceae	Hypochaeris radicata	Catsear		1		
Bignoniaceae	Jacaranda mimosifolia	Jacaranda				
Myrtaceae	Kunzea ambigua	Tick Bush				
Verbenaceae	Lantana camara	Lantana	0.1		0.1	0.1
Oleaceae	Ligustrum lucidum	Large-leaved Privet			0.1	
Fabaceae (Faboideae)	Lotus angustissimus	Slender Birds-foot Trefoil		0.2		
Primulaceae	Lysimachia arvensis	Scarlet Pimpernel		1	0.1	0.1
Malvaceae	Malva parviflora	Small-flowered Mallow				0.1
Myrtaceae	Melaleuca armillaris subsp. armillaris	Bracelet Honey-myrtle				
Meliaceae	Melia azedarach	White Cedar				
Poaceae	Microlaena stipoides	Weeping Grass	0.1	5	2	
Malvaceae	Modiola caroliniana	Red-flowered Mallow	0.2			
Nandinaceae	Nandina domestica	Japanese Sacred Bamboo			0.1	
Poaceae	Oplismenus hirtellus		0	0.5		
Poaceae	Oplismenus imbecillis		0		0.1	
Oxalidaceae	Oxalis perennans		0		0.1	0.1
Caryophyllaceae	Paronychia brasiliana	Chilean Whitlow Wort, Brazilian Whitlow			0.2	
Poaceae	Paspalidium distans		0	0.5		
Poaceae	Paspalum dilatatum	Paspalum		10		0.1
Passifloraceae	Passiflora spp.		0	2		
Passifloraceae	Passiflora suberosa	Cork Passionfruit			0.2	0.2
Pittosporaceae	Pittosporum undulatum	Sweet Pittosporum			0.2	
Plantaginaceae	Plantago lanceolata	Lamb's Tongues		2		0.2
Platanaceae	Platanus hispanica 'Acerifolia'	Hybrid Plane				
Rubiaceae	Richardia humistrata		0	0.5		
Myrtaceae	Sannantha pluriflora		0			
Asteraceae	Senecio madagascariensis	Fireweed	0.1	0.2	0.1	0.1
Fabaceae (Caesalpinioideae)	Senna pendula var. glabrata		0			
Malvaceae	Sida rhombifolia	Paddy's Lucerne	0.1		0.1	0.2
Solanaceae	Solanum nigrum	Black-berry Nightshade	0.1		0.1	
Solanaceae	Solanum seaforthianum	Climbing Nightshade	2		0.3	
Asteraceae	Soliva sessilis	Bindyi		0.5	0.1	0.1
Asteraceae	Sonchus asper	Prickly Sowthistle	0.1			
Asteraceae	Sonchus oleraceus	Common Sowthistle				0.2
Euphorbiaceae	Triadica sebifera	Chinese Tallowood				
Apocynaceae	Tylophora barbata	Bearded Tylophora			0.1	
Verbenaceae	Verbena rigida var. rigida	Veined Verbena				0.1
Plantaginaceae	Veronica plebeia	Trailing Speedwell			0.1	0.1
Poaceae	Vulpia myuros	Rat's Tail Fescue		1		

Appendix E: Matters of national environmental significance

EPBC Act Assessment

A Protected Matters Search of an area of 5km radius of the Subject Land was conducted in October 2025 for Matters of National Environmental Significance as relevant to the *Environment Protection & Biodiversity Conservation Act 1999* (EPBC Act). The following Matters of National Significance are considered in this assessment.

World Heritage Properties:

The site is not a World Heritage area and is not in close proximity to any such area.

National Heritage Places:

The site is not a National Heritage place, and it is not in close proximity to any such place.

Wetlands of International Significance (declared Ramsar wetlands):

The site is not a Wetland of International Significance, and it is not in close proximity to any such place.

Great Barrier Reef Marine Park:

The site is not part of, or within close proximity to, the Great Barrier Reef Marine Park.

Commonwealth Marine Areas:

The site is not part of, or within close proximity to, any Commonwealth Marine Area.

Threatened Ecological Communities:

From a search of the EPBC Act Protected Matters database, five (5) TECs were considered likely to occur including:

Five (5) Critically Endangered Ecological Communities:

- *River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria;*
- *Shale Sandstone Transition Forest of the Sydney Basin Bioregion;*
- *Turpentine-Ironbark Forest of the Sydney Basin Bioregion;*
- *Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest;*
- *Western Sydney Dry Rainforest and Moist Woodland on Shale;* and

Ground truthing of vegetation within the Study Area identified that PCT 3320 – *Cumberland Shale Plains Woodland* was not commensurate with any EPBC Act TECs.

Threatened Species:

The EPBC Act Protected Matters database search found 46 listed threatened species or their habitat were or were likely to be recorded within a 5km radius of the Subject Land. Threatened species were assessed from field inspections/surveys and utilising the NSW BioNet Atlas search tool within a 10km search radius of the Study Area, with most recent records assessed. No threatened species were detected during surveys.

Migratory Species:

A total of seven (13) listed migratory species have potential to utilise the site on an irregular basis. The limited number and sporadic nature of records close to the Subject Land appear to reflect opportunistic rather than regular use of any habitat considered of importance to any threatened species. It is not considered that the development of this land is likely to significantly affect the availability of potential habitat for such mobile species, or disrupt migratory patterns.

EPBC Act Assessment Conclusion:

Consideration of the EPBC Act confirmed that the proposed development is not likely to impact upon any Matters of National Environmental Significance.

Appendix F: Vegetation survey data

Plot no: 1 **Job:** Brookhollow **Job no:** 5749 **Date:** 10/07/25 **Observers:** Pat

Mapped Regional Vegetation community: 3320

Upper stratum	Unknown (Comment)	C	Ab	Mid stratum	(Comment)	C	Ab	Lower stratum	(Comment)	C	Ab
Eucalyptus tereticornis		15	15	Pittosporum undulatum		0.2	3	asparagus spp.		0.3	15
Eucalyptus umbra		10	15	Dodonaea triquetra		0.2	3	Bidens pilosa		0.3	45
Eucalyptus crebra		10	10	Ligustrum lucidum		0.1	3	Centella asiatica		0.2	20
Allocasuarina torulosa		0.2	2	Acacia parramattensis		0.1	3	Glycine tabacina		0.1	15
				Lantana camara		0.1	1	Oxalis perennans		0.1	5
				Nandina domestica		0.1	1	Hypochaeris glabra		0.1	20
				Passiflora suberosa		0.2	10	Soliva sessilis		0.1	20
				Solanum seaforthianum		0.3	15	Lysimachia arvensis		0.1	15
				Tylophora barbata		0.1	2	Dichondra repens		0.1	8
				Araujia sericifera		0.1	1	Paronychia		0.2	20
								Sida rhombifolia		0.1	10
								Conyza bonariensis		0.2	15
								Veronica plebeia		0.1	10
								Senecio		0.1	2
								Solanum nigrum		0.1	5
								Dianella longifolia		0.1	2
								Einadia nutans		0.1	6
								Oplismenus		0.1	6
								Microlaena stipoides		2	100
								Ehrharta erecta		5	250
								Digitaria spp.		0.3	15

Arrival time:	09:30		**Departure time:**	10:00	**Weather:**	sunny, 15.4C	**photos (one landscape, one portrait) taken**	Done	**GPS points taken**	Done
Start	311,868	6265554		**End**	311,921	6265587	**Zone:**	56	**Bearing:**	92
Tree Stem Size Class	**Presence(TRUE)/Absence(F**	**Number**	**Count of**	**Leaf Litter Cover within 5 x 1m2 sub-plots**						
< 5 cm	TRUE	[redacted]	0		**Leaf**	**Live**	**Bare ground**	**Rocks**	**Other**	**Total**
5 - 9 cm	TRUE	[redacted]	[redacted]	**1**	90	0	0	0	0	**90**
10 – 19 cm	TRUE	[redacted]		**2**	95	0	0	0	0	**95**
20 – 29 cm	TRUE	[redacted]	**Length of logs**	**3**	95	0	0	0	0	**95**
30 – 49cm	TRUE	5	1.5	**4**	80	0	0	0	0	**80**
50 -79cm	FALSE	0	[redacted]	**5**	90	0	0	0	0	**90**
>80cm	FALSE	0		**Average**	90	0	0	0	0	**90**
Plot Disturbance: (weediness, clearing, erosion, edge effects, grazing, fire, other)										
Habitat features, comments and incidental fauna observations:										

Plot no: 2 **Job:** Brookhollow **Job no:** 5749 **Date:** 10/07/25 **Observers:** Patrick

Mapped Regional Vegetation community: 3320

Upper stratum	Unknown (Comment)	C	Ab	Mid stratum	(Comment)	C	Ab	Lower stratum	(Comment)	C	Ab
Eucalyptus tereticornis		5	6	Dodonaea triquetra		0.1	1	Glycine tabacina		0.2	35
Eucalyptus moluccana		10	8	Acacia fimbriata		1	10	Veronica plebeia		0.1	10
Eucalyptus crebra		5	10					Bidens pilosa		0.2	50
Eucalyptus umbra		1	2					Plantago lanceolata		0.2	40
Allocasuarina torulosa		2	10					Sonchus oleraceus		0.2	15
								Dichondra repens		0.2	50
								Oxalis perennans		0.1	15
								Cirsium vulgare		0.1	10
								Hypochaeris glabra		0.2	30
								Malva parviflora		0.1	10
								Verbena rigida var. rigida		0.1	5
								Soliva sessilis		0.1	20
								Lysimachia arvensis		0.1	30
								Brassica spp.		0.1	35
								Sida rhombifolia		0.2	30
								Conyza bonariensis		0.1	8
								Centella asiatica		0.1	10
								Senecio madagascariensis		0.1	10
								Lantana camara		0.1	2
								Ehrharta erecta		20	500
								Paspalum dilatatum		0.1	10
								Passiflora suberosa		0.2	10

Arrival time:	10:00		**Departure time:**	10:30	**Weather:**	partly cloudy, 15.2C	**photos (one landscape, one portrait) taken**	Done	**GPS points taken**	Done
Start	311,556	6265620		**End**	311,616	6265606	**Zone:**	56	**Bearing:**	132
Tree Stem Size Class	**Presence(TRUE)/Absence(F**	**Number**	**Count of**	**Leaf Litter Cover within 5 x 1m2 sub-plots**						
< 5 cm	TRUE	[redacted]	0		**Leaf**	**Live**	**Bare ground**	**Rocks**	**Other**	**Total**
5 - 9 cm	TRUE	[redacted]	[redacted]	**1**	70	0	0	0	0	**70**
10 – 19 cm	TRUE	[redacted]		**2**	75	0	0	0	0	**75**
20 – 29 cm	TRUE	[redacted]	**Length of logs**	**3**	75	0	0	0	0	**75**
30 – 49cm	TRUE	7	24	**4**	60	0	0	0	0	**60**
50 -79cm	FALSE	0	[redacted]	**5**	30	0	0	0	0	**30**
>80cm	FALSE	0		**Average**	62	0	0	0	0	**62**
Plot Disturbance: (weediness, clearing, erosion, edge effects, grazing, fire, other)										
Habitat features, comments and incidental fauna observations:										

Plot no: 3 **Job:** Brookhollow **Job no:** 5749 **Date:** 17/10/25 **Observers:** JS

Mapped Regional Vegetation community: 3320

Upper stratum	Unknown (Comment)	C	Ab	Mid stratum	(Comment)	C	Ab	Lower stratum	(Comment)	C	Ab
Eucalyptus tereticornis	Terry's	10		Acacia implexa	Acacia	0.2	2	Einadia hastata	einadia	1	10
Eucalyptus crebra	crebra	20		Dodonaea triquetra	Dodonea	0.2	2	Einadia	einadia long	0.2	5
Angophora floribunda	angophora floribunda?	0.5	1					Glycine tabacina	glycine	1	15
Alphitonia excelsa	alphitonia excelsa	2	1					Einadia trigonos	einadia	0.3	10
								Ehrharta erecta	ehrharta	2	20
								Solanum	solanum	2	15
								Dichondra repens	dichondra	0.5	50
								Oplismenus	implisminus	0.5	40
								Sonchus asper	sonxhus oler	0.1	5
								Sida rhombifolia	sida rhom	0.1	10
								Lantana camara	lantana	0.1	5
								Paspalidium distans	padpilidium	0.5	15
								Passiflora spp.	passionate	2	15
								Modiola caroliniana	modiola	0.2	15
								Senecio	fire weed.	0.1	5
								Solanum nigrum	solanum	0.1	5
								Microlaena	microlaena	0.1	5
								Dianella caerulea	dianella	0.1	2
								Cynodon dactylon	cynodon	0.1	20

Arrival time:	10am		**Departure time:**	11:30am	**Weather:**	Cloudy, hot	**photos (one landscape, one portrait) taken**	Done	**GPS points taken**	Done
Start	311,852	6265691		**End**	311,803	6265708	**Zone:**	56	**Bearing:**	290
Tree Stem Size Class	**Presence(TRUE)/Absence(F**	**Number**	**Count of**	**Leaf Litter Cover within 5 x 1m2 sub-plots**						
< 5 cm	TRUE	[redacted]	0		**Leaf**	**Live**	**Bare ground**	**Rocks**	**Other**	**Total**
5 - 9 cm	TRUE	[redacted]	[redacted]	**1**	99	1	0	0	0	**100**
10 – 19 cm	TRUE	[redacted]	[redacted]	**2**	98	2	0	0	0	**100**
20 – 29 cm	TRUE	[redacted]	**Length of logs**	**3**	70	0	30	0	0	**100**
30 – 49cm	TRUE	x	0	**4**	99	1	0	0	0	**100**
50 -79cm	FALSE	0	[redacted]	**5**	99	1	0	0	0	**100**
>80cm	FALSE	0	[redacted]	**Average**	93	1	6	0	0	**100**

Plot Disturbance: (weediness, clearing, erosion, edge effects, grazing, fire, other)

Adjacent to road reserve resulting in edge effects

Habitat features, comments and incidental fauna observations:

Plot no: 4 **Job:** Brookhollow **Job no:** 5749 **Date:** 17/10/25 **Observers:** JS

Mapped Regional Vegetation community: 0

Upper stratum	Unknown (Comment)	C	Ab	Mid stratum	(Comment)	C	Ab	Lower stratum	(Comment)	C	Ab
								Briza minor	briza minor	20	200
								Cynodon dactylon	cynodon	10	80
								Plantago lanceolata	plantago	2	30
								Hypericum perforatum	st john's worth	1	20
								Centella asiatica	centella	1	40
								Galium leiocarpum	gallium	0.2	10
								Briza subaristata	briza	20	250
								Senecio	fire weed	0.2	5
								Paspalum dilatatum	paspalum	10	80
								Axonopus fissifolius	axonopis	20	200
								Vulpia myuros	vulpine	1	15
								Lysimachia arvensis	lysimachia	1	20
								soliva sessilis	saliva	0.5	25
								Hypochaeris radicata	hypochearis	1	10
								Lotus angustissimus	hairy lotus	0.2	10
								Hypochaeris albiflora	hypochearis	0.5	15
								microlaena stipoides	microlaena	5	100
								gamochaeta coarctata	gamocheata	1	20
								Grona varians	grona?	1	20
								Richardia humistrata	richardia	0.5	15
								Centaurium spp.	centuries	0.1	5

Arrival time:	1pm		**Departure time:**	1:45pm	**Weather:**	Cloudy, hot	**photos (one landscape, one portrait) taken**	Done	**GPS points taken**	Done
Start	311,865	6265660		**End**	311,903	6265627	**Zone:**	56	**Bearing:**	132
Tree Stem Size Class	**Presence(TRUE)/Absence(F**	**Number**	**Count of**	**Leaf Litter Cover within 5 x 1m2 sub-plots**						
< 5 cm	FALSE	[redacted]	0		**Leaf**	**Live**	**Bare ground**	**Rocks**	**Other**	**Total**
5 - 9 cm	FALSE	[redacted]	[redacted]	**1**	5	95	0	0	0	**100**
10 – 19 cm	FALSE	[redacted]		**2**	3	92	5	0	0	**100**
20 – 29 cm	FALSE	[redacted]	**Length of logs**	**3**	5	95	0	0	0	**100**
30 – 49cm	FALSE	0	0	**4**	10	90	0	0	0	**100**
50 -79cm	FALSE	0	[redacted]	**5**	1	99	0	0	0	**100**
>80cm	FALSE	0	[redacted]	**Average**	4.8	94.2	1	0	0	**100**
Plot Disturbance: (weediness, clearing, erosion, edge effects, grazing, fire, other)										
Exotic grassland plot										
Habitat features, comments and incidental fauna observations:										

Appendix G: Site photographs



Above: Exotic grassland within the Subject Land.

Below: Retained native vegetation in the south- west of the Study Area.





Above: Black Rat recorded during camera trap monitoring.

Below: Little Corella's recorded foraging within the Study Area.





Above: BAM Plot 3.

Below: PCT 3320 – Poor



Appendix H: Credit reports

BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id
00059908/BAAS23016/25/00059909

Proposal Name
Greensquare BDAR

BAM data last updated *
05/08/2025

Assessor Name
Joelan Sawyer

Assessor Number
BAAS23016

BAM Data version *
Current classification (live - default) (82)

Proponent Names

Report Created
15/12/2025

BAM Case Status
Finalised

Assessment Revision
2

BOS entry trigger

Assessment Type
Major Projects

Date Finalised
15/12/2025

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
Nil		

Species
Nil

Additional Information for Approval

BAM Biodiversity Credit Report (Like for like)

PCT Outside Ibra Added

None added

PCTs With Customized Benchmarks

PCT
No Changes

Predicted Threatened Species Not On Site

Name
No Changes

Ecosystem Credit Summary (Number and class of biodiversity credits to be retired)

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
3320-Cumberland Shale Plains Woodland	Shale Gravel Transition Forest in the Sydney Basin Bioregion	0.4	0	7	7

BAM Biodiversity Credit Report (Like for like)

3320-Cumberland Shale Plains Woodland

Like-for-like credit retirement options

Name of offset trading group	Trading group	Zone	HBT	Credits	IBRA region
Shale Gravel Transition Forest in the Sydney Basin Bioregion This includes PCT's: 3320, 3448	-	3320_Poor	No	7	Cumberland, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Species Credit Summary

Species	Vegetation Zone/s	Area / Count	Credits
Myotis macropus / Southern Myotis	**3320_Poor**	0.1	3.00

Credit Retirement Options

Like-for-like credit retirement options

	Spp	IBRA subregion
Myotis macropus / Southern Myotis	**Myotis macropus /** Southern Myotis	Any in NSW

BAM Credit Summary Report

Proposal Details

Assessment Id
00059908/BAAS23016/25/00059909

Proposal Name
Greensquare BDAR

BAM data last updated *
05/08/2025

Assessor Name
Joelan Sawyer

Report Created
15/12/2025

BAM Data version *
Current classification (live - default) (82)

Assessor Number
BAAS23016

BAM Case Status
Finalised

Date Finalised
15/12/2025

Assessment Revision
2

BOS entry trigger

Assessment Type
Major Projects

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

Ecosystem credits for plant communities types (PCT), ecological communities & threatened species habitat

Zone	Vegetation zone name	TEC name	Current Vegetation integrity score	Change in Vegetation integrity (loss / gain)	Area (ha)	Sensitivity to loss (Justification)	Species sensitivity to gain class	BC Act Listing status	EPBC Act listing status	Biodiversity risk weighting	Potential SAII	Ecosystem credits

Cumberland Shale Plains Woodland											
1	3320_Poor	Shale Gravel Transition Forest in the Sydney Basin Bioregion	37.5	37.5	0.36	Biodiversity Conservation Act listing status	High Sensitivity to Gain	Endangered Ecological Community	Not Listed	2.00	7
										Subtotal	**7**
										Total	**7**

Species credits for threatened species

Vegetation zone name	Habitat condition (Vegetation Integrity)	Change in habitat condition	Area (ha)/Count (no. individuals)	Sensitivity to loss (Justification)	Sensitivity to gain (Justification)	BC Act Listing status	EPBC Act listing status	Potential SAII	Species credits
Myotis macropus / Southern Myotis (Fauna)									
3320_Poor	37.5	37.5	0.14	Biodiversity Conservation Act listing status	Species dependent on habitat attributes	Vulnerable	Not Listed	False	3
								Subtotal	**3**

Appendix I: *Pterostylis saxicola* flowering confirmation

From:	Jane Rodd
To:	Darcy Kilvert; Joel Callaghan
Cc:	Erica Mahon; Ben Jones
Subject:	Re: Microtis angusii flowering
Date:	Tuesday, 30 September 2025 11:07:14 AM
Attachments:	image002.png image003.jpg image004.jpg image005.jpg

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Hi Darcy

Yes *Pterostylis saxicola* is flowering right now in SW Sydney, likely in NW Sydney too - I expect it will remain in flower over the next two weeks.

Kind regards,
Jane

Jane Rodd (she/her)
A/Senior Team Leader, Ecosystems and Threatened Species, Greater Sydney
Regional Delivery | Conservation Programs, Heritage and Regulation
Department of Climate Change, Energy, the Environment and Water
T (02) 9860 1537 **E** jane.rodd@dcceew.nsw.gov.au

From: Darcy Kilvert <darcy@andersonep.com.au>
Sent: Tuesday, September 30, 2025 10:46 AM
To: Jane Rodd <jane.rodd@dcceew.nsw.gov.au>; Joel Callaghan <joel.callaghan@dcceew.nsw.gov.au>
Cc: Erica Mahon <Erica.Mahon@dcceew.nsw.gov.au>; Ben Jones <benj@andersonep.com.au>
Subject: RE: Microtis angusii flowering

Hi Jane,

I'm looking to schedule in some surveys for *Pterostylis saxicola*. Do you know if it's started flowering?

Regards,

Darcy Kilvert
Senior Ecologist | Sydney Office Manager

ANDERSON ENVIRONMENT & PLANNING
0413 056 384 | darcy@andersonep.com.au

Appendix J: CVs

ALESSANDRO RONCOLATO
Ecologist

Profile Summary

Alessandro is an ecologist at Anderson Environmental & Planning, where he applies his knowledge and experience to a variety of environmental projects. Having recently completed his undergraduate degree in Environmental Science, he has developed a wide set of skills that are crucial to his role.

During his time at AEP, Alessandro has honed his abilities in fauna and flora identification and surveys, GIS, animal handling, environmental planning, ecological assessments, restoration, land management and report writing. His knowledge and practical experience make him a valuable asset in promoting sustainable environmental practices and effective ecological restoration.

Academic Qualifications

- Bachelor of Science (Environmental Biology) and Bachelor of Arts in International Studies – University of Technology Sydney, 2023

Training, Licences and Professional Memberships

- NSW Class C Driver's Licence
- WHS NSW Construction Induction White Card
- First Aid (Provide First Aid HLTAID011)
- SSI Open Water Divers License

Professional Experience

Ecologist — 2023 – Present
Anderson Environment & Planning
Newcastle NSW

Sales Assistance — 2019 – 2024
Rebel Sport

Construction Labourers — 2017
Bedrock

Relevant Project Experience

Ecological Surveys

- Camera trapping surveys for ground and arboreal species including deployment, completion, and analysis at Bermagui, Scone and Pleasure Point.
- Completed threatened orchid and ground cover surveys via 5m transects at various sites.
- Completed threatened shrub surveys via 10m transects at various sites.
- Completed threatened tree surveys via 20m transects at various sites.
- Microbat surveys by Anabat deployment, and collection at Santa Sabina, Revesby, Pleasure Point, Mount Vicotria, Blackheath.
- Spot Analysis Techniques surveys: Colo heights, Mount Victoria, Scone and Singleton.

- Nocturnal surveys for forest owls such as Powerful Owls, Sooty Owls and Barking Owls which includes stag watching, call playback and spot lighting at various sites.
- Diurnal bird surveys which include the deployment and collection song meters at various sites.
- Conducting frog surveys for threatened species at various sites.
- Bushfire vegetation inspection and assessment in accordance with PBP 2019 at various sites.
- Habitat and Hollow Bearing Tree Assessments completed at Wyee, Illawarra, Wentworth and Mount Victoria.
- Arborist Assessment for Austin Butler Reserve, Yanco and Catherine fields
- Conducted target surveys for a variety of threatened flora and fauna at various sites in the Blue Mountains.

Ecological Assessment

- Biodiversity Assessment Method (BAM) plots completed at various sites under the supervision of BAM accredited assessor Joelan Sawyer.

Ecological Monitoring

- Assisted in the locating, trapping, handling and microchipping of native bush rats at North head.

Charlotte Brown

Profile Summary

An experienced environmental scientist and consultant

Academic Qualifications

- Bachelors in Conservation Biology (Honours / First Class) – University of Wollongong (2021)

Training, Licences and Professional Memberships

- NSW Class C Driver's Licence
- WHS NSW Construction Induction White Card
- First Aid (Provide First Aid HLTAID011)
- Animal Ethics and Welfare Training (University of Wollongong, 2021)
- Rescue 101 (Wires)
- Chemical AQF3 Certification
- RISI and ACS (Rail Works Certification)
- Basics of JMP, R-Studio, ArcGIS and QGIS

Professional Experience

Ecologist — 2025 – Present
Anderson Environment & Planning
Sydney NSW

Casual Ecologist — 2025 – 2025
Niche Environment & Heritage
AUS

Conservation Science Intern — 2024 – 2024
A Rocha Canada
British Columbia CAN

Bush Regenerator / Supervisor — 2022 – 2024
Total Earth Care
Sydney NSW

Research Assistant — 2020 – 2020
UTS
Sydney NSW

Relevant Project Experience

Ecological Surveys

- Research Volunteer for remote Strzelecki Desert project - researching the effects of dingo presence on flora and fauna in SA and NSW. Set up and monitored Elliot Sherman traps, safely handled, identified, sexed, measured, weighed, and released small mammals. Conducted spotlighting, transect vegetation, and fauna track surveys. (2022)
- Research Volunteer for remote Bearded Dragon Project - Two weeks of fieldwork in remote NSW. Included radio-tracking, capturing, and tagging lizards; Sexing, weighing & measuring lizards; Data analysis, recording & organisation.

Ecological Assessment

-

Ecological Monitoring

- Volunteer assistant for Marine and Freshwater PHD Projects - Capturing, sexing & measuring burrowing shrimp. Setting up crayfish traps & identifying common species. Pond hand-netting methods to collect and sex an invasive freshwater fish.

DARCY KILVERT

Senior Ecologist & Sydney Office Manager

Profile Summary

Darcy works with AEP in the role of Senior Ecologist / Sydney Office Manager, overseeing the Sydney Office since its establishment in 2023. With a comprehensive grasp of environmental legislation and approval processes, he possesses extensive expertise in implementing the Biodiversity Assessment Method. Having worked in the Natural Resource Management sector since 2015, Darcy has developed skills in Botany, Report Writing, Project Management, and GIS. His areas of special interest include Botany and Ecological Community identification, with a particular focus on the Greater Sydney Region.

Academic Qualifications

- Bachelor of Science (Biology), The University of Newcastle, completed in September 2021

Training, Licences and Professional Memberships

- NSW Class C Driver's Licence
- WHS NSW Construction Induction White Card
- First Aid (Provide First Aid HLTAID011)
- Working at Heights
- Chemcert and EPA ground applicator licence

Professional Experience

Senior Ecologist / Sydney Office Manager — 2023 - Present
Anderson Environment & Planning
Newcastle NSW

Ecologist / Project Lead — 2022 - 2023
Anderson Environment & Planning
Newcastle NSW

Ecologist — 2021 - 2022
Anderson Environment & Planning
Newcastle NSW

Senior Field Supervisor — 2018 - 2021
Traditional Aussie Gardens
Newcastle

Field Worker — 2015 - 2017
Newcastle City Council
Newcastle

Relevant Project Experience

Ecological Survey examples

- Botanical surveys including BAM plots: Bermagui, Greendale, Waringah, Gosford, Lake Macquarie, Singleton, Quirindi, Lake Cathie, Dilkoon and Tweed Heads.
- Threatened flora surveys: Carrai, Blueys Beach, Dilkoon, and South West Rocks.
- Targeted Koala Nocturnal searches: Upper Rouchel, Greendale, South West Rocks, and Bundanoon.
- Spot Analysis Techniques surveys: Newcastle, Maitland, Hawkesbury, Camden, and Penrith.

Ecological Assessment examples

- Biodiversity Development Assessment Report project management: Greendale, Empire Bay, Hawkesbury, Pleasure Point, South West Rocks
- Ecological Assessment Reports: Carramar, Lake Macquarie, Gosford, and Woolwich.
- Biocertification Assessments: West Wilton, Strathfield, Schofields, and Rouse Hill
- Part-5 Ecological Assessments: Liverpool, Wollongong, and Homebush.
- BDAR Waivers: Revesby, Strathfield and Schofields.

Ecological Monitoring

- Biodiversity Stewardship Agreements including Blueys Beach and South West Rocks;
- Vegetation Monitoring Plots: Pheasants Nest and Warriewood.

GEOFF TURNER
Ecologist / GIS Officer

Profile Summary

Geoff is a junior Ecologist and GIS Officer with Anderson Environmental & Planning. Having recently completed an undergraduate degree in environmental science where he garnered experience in environmental science and undertaking ecological fieldwork such as targeted flora and fauna surveys, he has begun to broaden his skills by commencing a Master of Geographic Information Science at the University of Queensland. During his time working as an Ecologist / GIS Officer he has furthered his ecology skills in conducting ecological assessments and surveys, in addition to performing the accompanying geospatial work that both informs the fieldwork and concisely communicates the data. His work with Anderson Environment & Planning has helped consolidate report writing skills first honed as a requirement of his bachelor's degree.

Academic Qualifications

- Master of Geographic Information Science - University of Queensland, Current
- Bachelor of Science (Environmental Science) – University of Sydney, 2023

Training, Licences and Professional Memberships

- NSW Class C Driver's Licence
- WHS NSW Construction Induction White Card
- First Aid (Provide First Aid HLTAID011)

Professional Experience

Ecologist / GIS Officer — 2024 – Present
Anderson Environment & Planning
Newcastle NSW

Technician (Espresso machines) — 2023 - 2024
Buccheri Group
Melbourne VIC

Farm Hand — 2020 - 2021
Pocket City Farms
Sydney NSW

Relevant Project Experience

Ecological Surveys

- Diurnal bird surveys (Various sites, 2024-onwards).
- Frog surveys for threatened species (Oxford Falls, April 2024).
- Habitat surveys, including tree hollow identification (Various sites, 2024-onwards).
- Nocturnal surveys for nocturnal avian fauna, including stagwatching, spotlighting, quiet listening and call playback (Wyee, 2024).

Ecological Assessment

- Biodiversity assessment methodology (BAM) plots, under supervision of BAM accredited assessor Joelan Sawyer (Narellan, May 2024).
- Bushfire vegetation inspection and assessment in accordance with PBP 2019 (Clarendon, April 2024).

Geospatial Analysis

- Perform Geospatial analysis according to guidelines and legislation for various reports such as Ecological Assessments and Biodiversity Management Plans.
- Design and present complex spatial data for government and industry.

JEREMY BURRILL

Senior Ecologist & Project Manager

Profile Summary

Jeremy works with AEP in the role of Senior Ecologist/ Project Manager. He is a graduate of environmental science and management, and has experience in voluntary roles in environmental fields, involving threatened fauna and flora surveying, biodiversity reporting, management plans, consultancy projects and project management. He possesses a range of knowledge across ecological legislation and impact assessment. His background in environmental fields with his ecological knowledge and management experience is utilised in a diverse array of applications in his current role.

Academic Qualifications

- Bachelor of Environmental Science (Environmental Management and Sustainability) Deakin University (2020)

Training, Licences and Professional Memberships

- NSW Class C Driver's Licence
- WHS NSW Construction Induction White Card
- First Aid (Provide First Aid HLTAID011)
- Work Safely at Heights

Professional Experience

Senior Ecologist
Anderson Environment & Planning
Sydney NSW
2024 - Present

Ecologist / Project Manager
Anderson Environment & Planning
Sydney NSW
2022 – 2024

Ecologist
Anderson Environment & Planning
Sydney NSW
2020 – 2022

Relevant Project Experience

Ecological Surveys

- Botanical surveys including Biodiversity Assessment Method (BAM) vegetation plots under supervision of BAM accredited assessors Frances O'Brien and Timothy Mouton across various sites.
- Threatened flora surveys: Bundanoon, Greendale, Edmondson Park, Loftus, Glenning Valley, Wyee, Wadalba, Halloran, Ingleside, Somersby, Mardi, Wallsend, North Kellyville, Loftus and Pleasure Point.

- Threatened Nocturnal Fauna surveys: Bundanoon, Greendale, Edmondson Park, Loftus, Glenning Valley, Wyee, Wadalba, Halloran, Ingleside, Somersby, Mardi, Wallsend, Cattai, Barrington Tops and Somersby.
- Threatened Diurnal Fauna Surveys: Bundanoon, Greendale, Edmondson Park, Loftus, Glenning Valley, Wyee, Wadalba, Halloran, Ingleside, Somersby, Mardi, Wallsend, Cattai, Barrington Tops, Pleasure Point and Somersby.
- Microbat Nocturnal Harp Trapping: Wallsend and Mardi.
- Koala Spot Assessment Technique Surveys: Greendale, Wadalba, Girvan and Somersby.
- Nestbox installation: Glenning Valley and Narellan Vale.
- Habitat surveys including hollow bearing tree identification: Bundanoon, Greendale, Edmondson Park, Wyee, Somersby, Cattai, Barrington Tops and Somersby.
- Vegetation Clearance Surveys and Supervision: Glenning Valley, Wyee, Warnervale, Chain Valley Bay, Narellan Vale and Carramar.

Ecological Assessment

- Biodiversity Development Assessment Report contribution: Greendale, Edmondson Park, Austral, Rouse Hill and Annangrove.
- Ecological Assessment Reports: Minto, Berkeley Vale, Rooty Hill, Warriewood, Macquarie Park, Carramar and Ambarvale.
- Biocertification Assessments: West Wilton, Edmondson Park and Schofields.
- Weed Management Plan: Pheasants Nest and Tahmoor.
- Vegetation/ Biodiversity Management Plans: Woy Woy, Pheasants Nest, Vineyard, Grantham Farm, Warriewood, Loftus and Greendale.
- Riparian Assessment Reports: Schofields, Greendale, Quakers Hill and Ingleside.
- BDAR Waiver Letters: Revesby, Strathfield and Schofields.
- Plant Community Type determination.
- GIS Mapping.

Ecological Monitoring

- Vegetation Monitoring Plots: Pheasants Nest, Warriewood and Werrington.
- Fauna Monitoring/ Nestbox Monitoring: Glenning Valley and Wyee.

JOELAN SAWYER
Senior Ecologist

Profile Summary

Joelan works with AEP in the Role of Senior Ecologist, Joelan Specialises in botany with experience focused in the Greater Sydney area and along the NSW coastline. He is proficient in performing flora and fauna surveys, plant identification and taxonomy, GIS, and reporting for biodiversity and impact assessments. He also has in-depth knowledge of the NSW legislative pathways, namely the Biodiversity Conservation Act 2016 and the associated Biodiversity Assessment Method (BAM). Joelan is an accredited assessor. Accreditation No. BAAS23016

Academic Qualifications

- Bachelor of Science (Biology), The University of Western Sydney, completed September 2018
- BAM Assessor; accreditation number: BAAS23016.

Training, Licences and Professional Memberships

- NSW Class C Driver's Licence
- WHS NSW Construction Induction White Card
- First Aid (Provide First Aid HLTAID011)

Professional Experience

Senior Ecologist — 2023 – Present
Anderson Environment & Planning
Sydney NSW

Ecologist — 2017 - 2023
Anne Clements & Associates

Nursery Worker / Horticulturalist — 2015 - 2017
Wingham Nursery & Florist

Relevant Project Experience

Ecological Surveys

- Flora
  - Targeted surveys for *Dichanthium setosum* in the Hunter Region;
  - Targeted surveys for *Tetratheca glandulosa* and *Hibbertia procumbens* on the Somersby Plateau;
  - Targeted surveys for *Eucalyptus benthamii*, *Dillwynia tenuifolia* and *Grevilliea juniperina*, Western Sydney;
  - Targeted surveys for *Genoplesium baueri*, and *Grammitis stenophylla* Northern Sydney;
- Fauna
  - Spot Analysis Techniques surveys: Muswellbrook, Gunnedah, Scone, Bermagui, Blue Mountains, Western Sydney;
  - Targeted surveys for Cumberland Plain Land Snail, Western Sydney;

- Targeted surveys for Broad Headed Snake, Cattai;
- Targeted surveys for Striped Legless Lizard and Pink Tailed Legless Lizard, Muswellbrook;
- Targeted surveys for Green and Golden Bell Frog, Eastern Suburbs, Sydney;

- Bushfire
  - Bushfire vegetation inspection and assessment in accordance with PBP 2019, various sites;
- Arboriculture
  - Waste recycling facility, 120 trees assessed, West Gosford;
  - Industrial development, 140 trees assessed, Stanmore Park;
  - Commercial development, 80 trees assessed, Marsden Park;

Ecological Assessment

- BAM assessment for Biodiversity Development Assessment Reports;
  - Sandstone quarry extension, Cattai;
  - Aged care housing, Bermagui;
  - Residential development, Pleasure Point;
  - Solar Farm, Stubbo;
  - Eco cabins, Colo;
  - Farm building and agricultural infrastructure, Richmond;
  - Mountain bike track, Delrio, Webbs Creek;
  - Aged care housing, Mollymook;
  - Hunter Gas Pipeline project, Hunter region;
- Accredited assessor for Landscaping Material Supply Facility Biodiversity Development Assessment Report, Greendale;
- BAM assessment and PCT for Ecological Assessment Reports;
  - Horse stabling development, Clarendon;
  - Great southern walk accommodation, Illawarra Escarpment;
  - Rezoning for Carrathool Shire Council at Merriwagga and Rankin Springs;
  - Biodiversity assessment of various Sydney Water assets, Greater Sydney;
  - Biodiversity assessment of Newcastle Councils bushland assets, Newcastle;
  - Biodiversity assessment of Penrith Councils assets at St Marys industrial area;

Ecological Monitoring

- Vegetation monitoring on VMP lands;
  - St Narsai Assyrian Christian College, Horsley Park;
  - Residential development, Cooranbong;
  - Sandstone Quarry restoration, Red Hill Reserve, Beacon Hill;
- Publications
  - Sawyer, J. (2021). *Achieving resilient biodiversity offsets on reconstructed landforms* [Poster Presentation]. Ecological Society of Australia 2021 “Symposium: Practitioners collaborating to restore and rewild landscapes” Darwin, Australia