



Englobo Wildlife Management Plan

Proposed Englobo Subdivision DA/1295/2023

Doyalson Wyee RSL Club Ltd t/a Doyalson Lifestyle Group

49-65 Wentworth Avenue and
80-110 Pacific Highway,
Doyalson NSW 2262

Prepared by:

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Basis of Report

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Doyalson Wyee RSL Club Ltd t/a Doyalson Lifestyle Group (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

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Acronyms, Abbreviations and Definitions

AABR	Australian Association of Bush Regenerators
Assessment Area	In accordance with the BAM (DPIE, 2020a), the Assessment Area includes the Subject Land and the area of land within the 1500m buffer zone surrounding the Subject Land (or 500m buffer zone for linear proposals) that is determined as per Subsection 3.1.2.
APZ (s)	Asset Protection Zone (s)
BAM	NSW Biodiversity Assessment Method (DPIE, 2020a)
BAM-C	Biodiversity Assessment Method Calculator
BCAR	Biodiversity Certification Assessment Report
BC Act	Biodiversity Conservation Act 2016 (NSW)
BDAR	Biodiversity Development Assessment Report
Biodiversity Corridor (s)	Three Biodiversity Corridors set out by the VPA, including Corridor F which occurs within the Subject Land for the EVMP
BOS	Biodiversity Offsets Scheme
Bush Regeneration	Defined by the AABR as the practice of restoring bushland by focussing on reinstating and reinforcing the systems' ongoing natural regeneration processes.
Council	Central Coast Council
CEEC (s)	Critically Endangered Ecological Community (s)
Construction Footprint	As required by the BAM (DPIE, 2020a), this is defined as the proportion of the Development Footprint, including temporary and ancillary construction facilities. These areas are not yet delineated by the Englobo Subdivision but will be defined and must be accounted for in future planning.
Corridor (s)	Landscape and Biodiversity Corridors set out by the VPA
DA (s)	Development Application (s) prepared pursuant to the EP&A Act
DBH	Diameter at Breast Height
Development Footprint	In accordance with the BAM (DPIE, 2020a), this refers to the area of land directly impacted by the proposed development, including access roads and zones designated for storing construction materials
Easement Dealing	Pipeline Easement Dealing AE445647 (2009)
EC (s)	Ecological Community listed under the EPBC Act
EEC (s)	Endangered Ecological Community (s)
ELMP	Englobo Landscape Management Plan (an in-principle LMP to be updated at each stage of the future development)
Endangered Ecological Community	An ecological community specified in Schedule 2 of the BC Act
Englobo Subdivision	The Proposed Englobo Subdivision DA/1295/2023, being subdivision of the Subject Land (thirteen lots) into 14 lots, including stormwater and sewer, road upgrades at the Pacific Highway entrance and slip lane and Community Title subdivision.



EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)
EVMP	Englobo Vegetation Management Plan (an in-principle VMP to be updated at each stage of the future development)
EWMP	Englobo Wildlife Management Plan (an in-principle WMP to be updated at each stage of the future development)
HBT (s)	Hollow-bearing tree (s)
HCCRPP	Hunter and Central Coast Regional Planning Panel
Hollow-bearing tree	In accordance with the BAM (DPIE, 2020a), this refers to a living or dead tree that has at least one hollow. A tree is considered to contain a hollow if: (a) the entrance can be seen; (b) the entrance width is at least 5cm; (c) the hollow appears to have depth (i.e. solid wood cannot be seen beyond the entrance); and (d) the hollow is at least 1m above the ground. Trees must be examined from all angles.
HTW (s)	High Threat Weed (s)
IBRA	Interim Biogeographic Regionalisation for Australia
IPA (s)	Inner Protection Areas
Landscape Corridor (s)	Four Landscape Corridors set out by the VPA, including three (Landscape Corridors D, E, G) that occur within the Subject Land for the EVMP
LLS Act	Local Land Services Act 2013 (NSW)
LMP (s)	Landscape Management Plan (s)
MNES	Matters of National Environmental Significance
NPW Act	National Parks and Wildlife Act 1974 (NSW)
NSW	New South Wales
Operational Footprint	As required by the NSW BAM (DPIE, 2020a) this is defined as the proportion of the Development Footprint that will remain operational following construction. These areas are not yet defined by the Englobo Subdivision but will be defined and must be applied for future plans.
PCT (s)	Plant Community Type (s)
Proponent	Doyalson Wyee RSL Club Ltd
Regeneration	Where native vegetation can regenerate itself from an intact root zone and seed bank to a natural state, with associated management (e.g. weed control)
Rehabilitation	The vegetation rehabilitation is defined as the return of native vegetation within disturbed areas
Resilience	The ability of an ecosystem to regenerate naturally and to withstand, or recover from, disturbances such as weed invasion, clearing, or fire
Restoration	To restore pre-existing indigenous ecosystems and ecological processes, maintaining and developing the capacity of a natural system to self-perpetuate
RFI (s)	Request for Information (s)
SAIL	Serious and Irreversible Impact



SEARs	Secretary's Environmental Assessment Requirements
SRZ	Structural Root Zone
Subject Land	In accordance with the BAM (DPIE, 2020a), this refers to land subject to a development, activity, clearing, biodiversity certification or a biodiversity stewardship proposal. The Subject Land for the Proposed Englobo Subdivision is 49-65 Wentworth Avenue and 80-110 Pacific Highway, Doyalson NSW 2262 (formally described as Lot 1 DP 215875, Lot 2 DP 215875, Lot 3 DP 215875, Lot 4 DP 215875, Lot 5 DP 215875, Lot 6 DP 215875, Lot 7 DP 215875, Lot 8 DP 215875, Lot 9 DP 215875, Lot 1 DP 503655, Lot 11 DP 240685, Lot 49 DP 707586 and Lot 7 DP 240685).
TBDC	Threatened Biodiversity Data Collection
TEC (s)	Threatened Ecological Community (s)
Threatened Species	A species specified in Schedule 1 of the BC Act
Total Site	The Total Site is the total of all properties subject to the Planning Proposal and VPA, along with a recently acquired property at 118 Pacific Highway. It includes the addresses 49-65 Wentworth Avenue and 80, 90, 100, 110, 118, 120 Pacific Highway, Doyalson NSW 2262, formally described as Lot 1 DP 215875, Lot 2 DP 215875, Lot 3 DP 215875, Lot 4 DP 215875, Lot 5 DP 215875, Lot 6 DP 215875, Lot 7 DP 215875, Lot 8 DP 215875, Lot 9 DP 215875, Lot 1 DP 503655, Lot 11 DP 240685, Lot 49 DP 707586, Lot 7 DP 240685, Lot 62 DP 755266 and Lot 7340 DP1166918.
TPZ	Tree Protection Zone
VEC (s)	Vulnerable Ecological Community (s)
Vegetation SEPP	State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 (NSW)
VMP (s)	Vegetation Management Plan (s)
VPA 2022	Voluntary Planning Agreement (Document Identification AS580574)
Weed infestation	An area considered to have a dominating weed population, or where rehabilitation would be significantly impacted by weed species
WMP (s)	Wildlife Management Plan (s)



1.0 Introduction

1.1 Planning Proposal Background

1.1.1 Voluntary Planning Agreement

The Total Site covers approximately 49.51 hectares and includes 49-65 Wentworth Avenue and 80-110, 118 and 120 Pacific Highway, Doyalson NSW 2262. The proposed Landscape and Biodiversity Corridors including those identified in the VPA 2022 (the “Corridors”), encompass approximately 11.99 hectares. Consequently, the remaining 37.52 hectares represent the Development Footprint.

As an outcome of a previous five-year planning proposal process for Planning Proposal (PP-2021-4334) (the “Planning Proposal”), a Voluntary Planning Agreement (VPA) - AS580574 (Central Coast Council, 2022a) (hereafter “VPA 2022”) - was established between Central Coast Council (the “Council”) and Doyalson Wyee RSL Club Ltd (the “Proponent”). The purpose of VPA 2022 is to facilitate the progressive development of the Proponent’s property located at 49-65 Wentworth Avenue and 80-110 and 120 Pacific Highway, Doyalson NSW 2262. The VPA 2022 site area excludes 118 Pacific Highway, legally described as Lot 7340 DP1166918, which was acquired in 2023 and now forms part of the Total Site.

The majority part of the Total Site that is subject to Planning Proposal and VPA 2022 is legally described as the following 14 lots: Lots 1-9 DP 215875, Lot 1 DP 503655, Lot 11 DP 240685, Lot 49 DP 707586, Lot 7 DP 240685, and Lot 62 DP 755266. It comprises approximately 44.82 hectares. VPA 2022 proposed Landscape and Biodiversity Corridors (the “VPA 2022 Corridors”) comprise 9.87 hectares and therefore 34.95 hectares represent the Development Footprint.

Over the five-year Planning Proposal period (2018-2022), the VPA 2022 land was subject to biodiversity studies and design reviews to determine potential development footprints, while aiming to avoid and minimise impacts on native vegetation and threatened species habitat. These assessments are detailed in the Biodiversity Development Assessment Report (ELA, 2018) which was submitted with the Planning Proposal. The Planning Proposal identified land suitable for development and ultimately led to an amendment of the Central Coast Local Environmental Plan 2022, resulting in the rezoning of the land.

Approved in December 2022, the Planning Proposal re-zoned the majority of the Total Site to support an integrated precinct comprising retail, recreation, community, and residential uses, centred around the Doyalson Wyee RSL Club. VPA 2022 is registered on the current land titles under dealing number AS580574, ensuring the protection of the VPA 2022 Corridors in perpetuity.

As part of the process, which balanced the principle of “avoid and minimises” with bushfire control obligations, the biodiversity corridors were rezoned to Conservation C2 and C3. Offset strategies, including biodiversity credit co-purchase, were incorporated to mitigate vegetation removal within the development footprint.

The east-west landscape corridors were developed in consultation with Council (Dr Chris McLean) to ensure functional wildlife movement pathways. Particular attention was given to maintaining connectivity for key species such as Squirrel Glider and Glossy Black-Cockatoo, facilitating movement between vegetated areas from the western side of the Pacific Highway to Colongra Lake.

For a full summary of the five-year process culminating in VPA 2022, refer to the letter from Eco Logical Australia Pty Ltd (2025a), dated 17 September 2025 ref: 24HUS8504.



1.1.2 VPA 2022 Landscape Corridor Delineations

Section 3, Schedule 2 of VPA 2022 outlines the following requirements for the preparation of Landscape Management Plans (LMPs):

- 1 *The Proponent must prepare one or more Landscape Plans for the following Landscape Corridors generally in accordance with the plan in Annexure B, the following descriptions, and the requirements set out in clauses 3.2 to 3.6:*
 - a) *An irregular shaped landscaped corridor (Corridor C) spanning east-west along the southern border of Lot 62 DP755266 (with minimum width of 16.3m) and connects with Biodiversity corridor B to the north;*
 - b) *a 20m wide linear landscaped corridor (Corridor D) along the alignment of the Gas Pipeline;*
 - c) *an irregular shaped east-west landscaped corridor (Corridor E) with a minimum width of 16m, retention of existing tree canopy, including the tress within the Central Park area; and*
 - d) *a triangular shaped landscaped corridor (Corridor G) with a maximum width of 51m located on the northern portion of Lot 7 DP 240685 adjacent to Corridor F.*
- 2 *A Landscape Plan must depict the locations of the road crossings as shown in indicative locations in the plan in Annexure B where relevant to the subject matter of the plan.*
- 3 *The Landscape Plan for Corridor E must identify a minimum of 31 hollow bearing trees (including their tree protection zones) and the requisite measures for retaining the hollow bearing trees. The parties acknowledge that Council may also impose a condition on any development consent relating to the land on which Corridor E is located to restrict the removal of hollow bearing trees.*
- 4 *Landscape Corridors C, D, E and G are to be managed in accordance with the requirements of 'Managed Land' in Planning for Bushfire Protection 2019.*
- 5 *Landscape Corridors C, D E and G are to comply with requirements for an Inner Protection Area as described in Planning for Bushfire Protection 2019. An Inner Protection Area will require retention and establishment of native canopy trees only in order to avoid a bushfire hazard.*
- 6 *The Landscape Plan for Corridor D shall provide for shallow soil planting. Due to the presence of the Jemena pipeline, deep soil planting cannot be implemented.*

1.1.3 VPA 2022 Biodiversity Corridor Delineations

Section 4, Schedule 2 of VPA 2022 outlines the following requirements for the preparation of Vegetation Management Plans (VMPs).

- 7 *The Proponent must prepare one or more VMPs for each of the Biodiversity Corridors, each of which:*
 - a) *provides for the re-establishment of native vegetation and incorporates the following matters:*
 - i. *description of the proposed vegetation community;*
 - ii. *description of the proposed works;*
 - iii. *identification of VMP management zones;*



- iv. *description of works, management and maintenance activities to be carried out in the zones, including targets for density of native vegetation and weed cover;*
 - v. *details of implementation, monitoring and reporting requirements; and*
 - vi. *an estimate of the costs of carrying out the works and actions required to be carried out or performed in each stage.*
- b) *is generally in accordance with the matters set out in pages 36 to 39 of 'Central Coast Council Flora and Fauna Guidelines 2019'; and*
- c) *provides for an implementation period of no less than 10 years.*

Section 5, Schedule 2 of VPA 2022 outlines the following requirements for the implementation of VMPs:

- 1 *The Proponent must establish Biodiversity Corridors generally in accordance with the plan in Annexure B, the following description, and the requirements of clause 5.6:*
 - a) *a biodiversity corridor (Corridor A) of minimum 40m width along the northern boundary;*
 - b) *a biodiversity corridor (Corridor B) with a maximum width of 57m spanning north-south connecting Corridors A and C;*
 - c) *a north-south biodiversity corridor (Corridor F) along the eastern boundary, ranging between a minimum width of 41m at the southern portion of Lot 11 DP 240685 and a maximum width of 49m at the northern portion of Lot 7 DP 240685. The minimum widths applicable to each lot (from south to north of each lot) are:*
 - i. *41m to 43m for Lot 11 DP 240685 (Corridor F – South);*
 - ii. *43m to 46m for Lot 49 DP 707586 (Corridor F – Central); and*
 - iii. *46m to 49m for Lot 7 DP 240685 (Corridor F – North).*
 - d) *The second order stream associated with Corridor B must comply with the requirements of the Water Management Act 2000.*
- 2 *A separate VMP may be prepared and submitted in respect of Corridor F – South, Corridor F – Central and Corridor – North as described in clause 5.1(c) of Schedule 2.*
- 3 *If the Proponent intends to undertake Development in a staged manner on land immediately adjoining a Biodiversity Corridor, the parties are to negotiate in relation to the timing requirements for preparing a VMP.*
- 4 *Despite clause 5.1, the parties acknowledge that the Proponent will continue to investigate alternative locations to which it may relocate one or more of the Biodiversity Corridors outside of the Land.*
- 5 *If the Proponent identifies suitable alternative location(s) for one or more Biodiversity Corridor, the Proponent may request, and Council must, negotiate in good faith to accept the establishment of the corridors at the alternative locations on adjoining nearby land.*
- 6 *A Biodiversity Corridor must retain existing native vegetation and rehabilitate all vegetation strata (groundcover, mid and canopy) where absent.*



1.1.4 Biodiversity and Landscape Corridors

The VPA 2022 defined seven Corridors, comprising three Biodiversity Corridors and four Landscape Corridors. These Corridors collectively cover 9.87 hectares, representing 19.97 % of the Total Site.

Table 1 provides a summary of the Corridors. The five-year negotiation with Council regarding the Planning Proposal aimed to balance the creation of net developable area within the Total Site with the following environmental considerations:

- Protecting existing high-value vegetation in Biodiversity Corridor F;
- Re-establishing native vegetation in the newly created Biodiversity Corridors A and B;
- Maintaining remnant vegetation in Corridor G; and
- Establishing east-west Landscape Corridors C, D and E to support wildlife habitat connectivity with adjacent Biodiversity Corridors.

Table 1: Corridor Summary (ADW Johnson, 2025a, p.2)

Corridor Reference	Corridor Type	Corridor Current Lot and DP	Corridor Proposed Lot	Corridor Land Area (ha)	Corridor % of Total Site
A	Biodiversity	Lot 62 DP 755266	Lot 62 DP 755266	1.43	3.2%
B	Biodiversity	Lot 62 DP 755266	Lot 62 DP 755266	1.15	2.56%
C	Landscape	Lot 62 DP 755266	Lot 62 DP 755266	1.56	3.47%
D	Landscape	Lot 7 DP 240685	Lot 1, Lot 6, Lot 7, Lot 15	1.01	2.25%
E	Landscape	Lot 11 DP 240685, Lot 49 DP 707586	Lot 1, Lot 4, Lot 5	1.55	3.45%
F	Biodiversity	Lot 11 DP 240685	Lot 12	2.66	5.93%
G	Landscape	Lot 7 D.P. 240685	Lot 6	0.52	1.15%
Total Corridors				9.88	22.01%



1.2 Englobo Subdivision Background

1.2.1 Response to Council Request for Information

This Englobo Wildlife Management Plan (EWMP) integrates responses and clarifications:

- Through Council Requests for Information (RFIs) since 2023
- The Peer Review prepared by de Witt (2023)
- Further RFIs through the Deferral Action required by the Hunter and Central Coast Regional Planning Panel (HCCRPP 2025)

1.2.2 EWMP as Guidance for Englobo Subdivision DA

This EWMP has been developed since 2023 as a guiding plan to inform Proposed Englobo Subdivision DA/1295/2023 (the “Englobo Subdivision”).

Pre-DA comments (Central Coast Council, 2022b) refer to the EWMP as follows:

“A Wildlife Management Plan (WMP) for the clearing will need to be provided. Council’s Flora and Fauna Guidelines (2019) provide further guidance on preparing WMPs. The BDAR submitted with the application is to include a map and count of hollow bearing trees and other habitats within the development area, and the WMP is to include a hollow replacement strategy that may include re-erection on of salvaged hollows corridors on suitable trees, creation of artificial hollows in living trees, and provision of nestboxes.”

Future development applications for the 14 Englobo super lots will be submitted to Council, at which stage site-specific WMPs will be developed in accordance with the context of this initial WMP and as required by VPA 2022. Accordingly, the Applicant does not intend to implement the wildlife management outlined in this report as part of the current Englobo Subdivision development application.

1.2.3 Subject Land and Proposed Englobo Subdivision

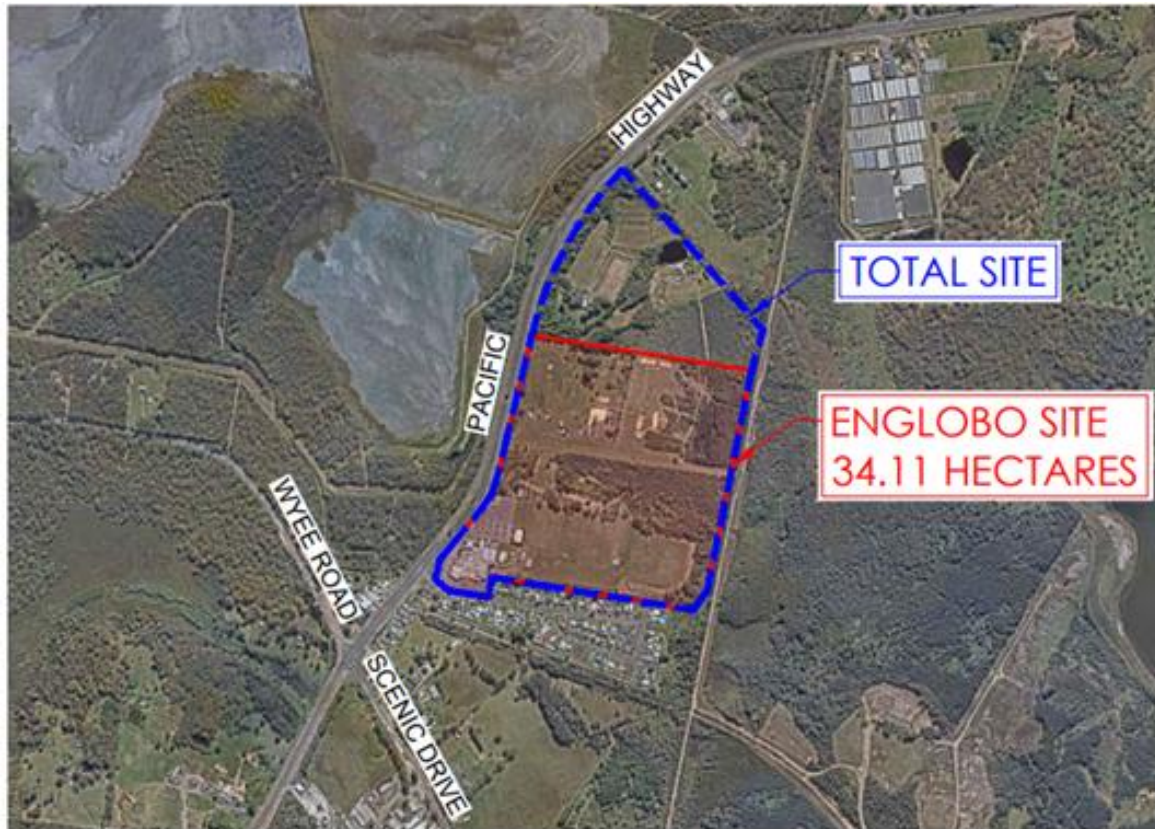
The Subject Land is 34 hectares and is shown in Figure 1. The Proposed Englobo Subdivision DA/1295/2023 involves the subdivision of the Subject Land (thirteen lots) into 14 lots, including stormwater and sewer, road upgrades and slip lane at the Pacific Highway entrance.

The Development Footprint is approximately 30 hectares and is shown in Figure 2. The Development Footprint encompasses all areas of future subdivision works and includes three Landscape Corridors (D, E and G) within which partial vegetation clearing is proposed, and which will be guided by the Englobo Landscape Management Plan (ELMP) (SLR, 2025b).

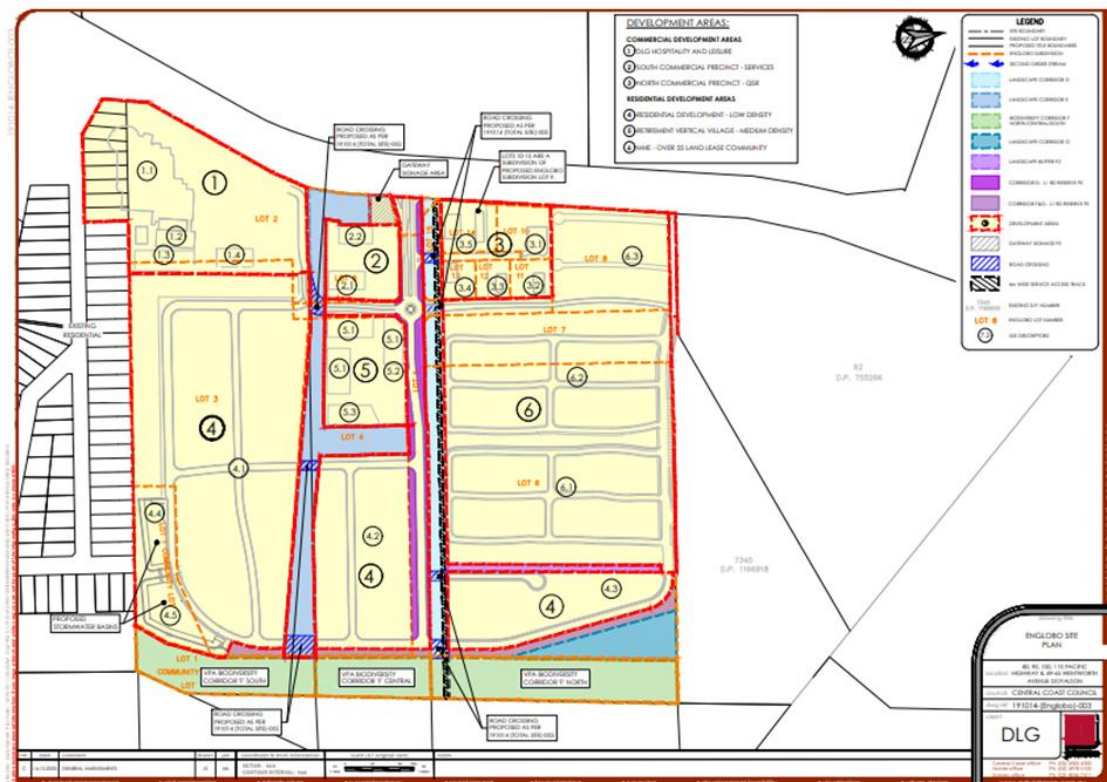
The following extracts are provided from the Englobo Site Plans (Version 1, 23 October 2025 - Englobo Plan Set) prepared by ADW Johnson (2025b).



Plan Extract 1: Total Site and Englobo Site (ADW Johnson, 2025b, p.1)



Plan Extract 2: Proposed Englobo Subdivision (ADW Johnson, 2025b, p.5)



The Development Footprint excludes the area of the future Biodiversity Corridor F contemplated in VPA 2022 for which no subdivision works are proposed and within which the Proponent has prepared a separate Englobo Vegetation Management Plan (EVMP) (SLR, 2025c).

This EWMP has been prepared to guide wildlife protection measures during clearing and demolition works within the Development Footprint.

1.2.4 Context of the Englobo Subdivision

Key elements of the Englobo Subdivision include:

- Biodiversity Corridor F
- Landscape Corridors D, E, and G
- Four designated, Ancillary Planting Zones:
 - Corridor D – Lot 1 Road Reserve Planting Zone
 - Gateway Signage Planting Zone
 - Landscape Buffer Planting Zone
 - Corridors F&G – Lot 1 Road Reserve Ancillary Planting Zone
- 14 Englobo super lot development areas supported by road, utility, and subdivision infrastructure within a Community Title format.

The current vegetation condition of the VPA 2022 Corridors is summarised in Table 2 below.

Table 2: VPA 2022 Corridors and Vegetation Condition (ADW Johnson, 2025a)

Corridor Number	Corridor Type	Corridor Current Lot and DP	Corridor Proposed Lot	Corridor Land Area (ha)	Corridor % of Total Site	Current Condition
D - service access track	Landscape	Lot 7 DP 240685	Lot 6, Lot 7, Lot 15	0.20	0.59	Open cleared land
D	Landscape	Lot 7 DP 240685	Lot 6, Lot 7	0.81	2.37	Open cleared land with scattered trees
E	Landscape	Lot 49 DP 707586, Lot 11 DP 240685	Lot 1, Lot 4, Lot 5	1.55	4.53	Predominantly vegetated with some earth work areas. HBTs feature.
F (south)	Biodiversity	Lot 11 DP 240685	Lot 1	0.85	2.5	Significantly vegetated with EEC areas to north
F (central)	Biodiversity	Lot 49 DP 707586	Lot 1	0.55	1.62	Significantly vegetated
F (north) - services access track	Biodiversity	Lot 49 DP 707586	Lot 1	0.02	0.05	Open Cleared land
F (north)	Biodiversity	Lot 7 DP 240685	Lot 1	1.23	3.61	Significantly vegetated



Corridor Number	Corridor Type	Corridor Current Lot and DP	Corridor Proposed Lot	Corridor Land Area (ha)	Corridor % of Total Site	Current Condition
G	Landscape	Lot 7 DP 240685	Lot 6	0.52	1.52	Mixed vegetation. Significant proportion of exotic species
Total Approved Proposed Corridors				5.73	16.79	Sum of all approved proposed corridors

The table below summarises the areas for each component of the Subject Land and the associated percentage of each area compared to the entirety of the Englobo Subdivision.

Table 3: Area Footprints

Proposed Area	Area Footprint (ha)	% of Subject Land
Landscape Corridor D	1.01	3.0%
Landscape Corridor E	1.55	4.5%
Landscape Corridor G	0.52	1.5%
Biodiversity Corridor F	2.66	7.8%
Corridor D – Lot 1 Road Reserve Planting Zone	0.47	1.4%
Corridors F and G – Lot 1 Road Reserve Planting Zone	0.46	1.3%
Gateway Signage Planting Zone	0.08	0.2%
Landscape Buffer Planting Zone	0.18	0.5%
Development Areas (roads, utility, subdivision infrastructure)	27.20	79.7%
Total Subject Land Area	34.13	99.90%

Following approval of the Englobo Subdivision, the Proponent will submit staged development applications to facilitate uses across the 14 super lots.

1.3 Objectives and Strategy

The objectives of the EWMP are to address the requirements of the Central Coast Guidelines (2019) and incorporate the management measures from the BDAR (SLR, 2025a). Key objectives of the EWMP are to:

- Formulate and implement fauna habitat management actions, clearly define objectives, methods, and reporting requirements, and ensure all relevant participants understand their responsibilities.
- Minimise impacts to fauna during and after construction by avoiding harm to threatened species, limiting habitat disturbance to approved areas, reducing indirect impacts (e.g. light and dust), implementing pre-clearing protocols, and safeguarding fauna welfare throughout clearing activities.
- Ensure that the development does not exacerbate existing adverse effects of feral animal populations.
- Restore and enhance retained fauna habitat by rehabilitating cleared areas, reusing natural resources, installing and monitoring nest boxes to support hollow-dependent and threatened species, improving habitat for the Glossy Black-Cockatoo, minimizing



pest species, and implementing monitoring strategies to assess mitigation effectiveness.

1.4 WMP Requirements

Council guidelines (Central Coast Council, 2019) require the following information is included within a WMP:

- *Identify fauna likely to occur on-site and provide details on management actions to avoid and/or mitigate the risk of harm to the welfare of native animals including avoiding breeding times for species present.*
- *Identify on a plan and physically mark habitat trees.*
- *Identify on a plan and physically mark other habitat resources for salvage (e.g. very large or significant tree hollows, hollow logs and boulders) and specify where the salvage materials are to be permanently placed or temporarily stored.*
- *Provide timeframe/schedules and protocols for clearing of non-habitat trees, and then habitat trees. The protocols for clearing of habitat trees are to identify the most benign method of dislodging fauna relocation of fauna/tree felling while the fauna remains in-situ, and treatment of captured fauna*
- *Identify nearby release areas for animals requiring immediate relocation (this may include a recommendation to install nest boxes in adjacent habitat prior to clearing as temporary refuge for displaced animals). Contact details for the nearest vet are to be included. Ensure appropriate permissions have been granted to enter third party properties if the animals are to be released offsite. Ideally release areas are identified for long-term conservation (e.g. E2 zoned land or Council bushland).*
- *Detail a Nest Box Replacement/Hollow Relocation Plan for nest box/natural hollow reuse, construction and placement. Details are to include information regarding hollow bearing trees (location, number, aspect of hollow, height), nest boxes (number, type, thermal insulation, thickness), location, installation methods and the recommended monitoring/maintenance program. The final number of nest boxes to be installed will need to be calculated once the number of salvaged hollows is determined. Hollows/boxes must be installed across a sufficient area so as not to exceed natural hollow densities for target species.*
- *Detail a monitoring program for nest boxes/salvaged hollows to determine their usage and to carry out repairs or replacement (as required). Monitoring is to occur every six (6) months for a minimum period of five (5) years following installation. Monitoring reports are to be prepared by the Ecologist and forwarded to Council after each monitoring event."*

1.5 Personnel

The roles and qualifications of all staff responsible for preparation of this EWMP are listed in Table 4.

Table 4: Staff Roles and Qualifications

Staff Name & Title	Qualifications and Training	Role
Jeremy Pepper Technical Director	Bachelor of Science (Hons Class 1) University of NSW 1996 Cert II Bushland Regeneration, TAFE NSW	Report technical review



Staff Name & Title	Qualifications and Training	Role
	Cert III Horticulture (Arboriculture), TAFE NSW BAM accredited assessor (#BAAS17104)	
Fiona Iolini Associate Ecologist	Bachelor of Environmental Science and Management, University of Newcastle 2007 Cert III Conservation and Land Management, TAFE NSW BAM accredited assessor (#BAAS19042)	Project management, reporting
Vander Bertoldo Project Ecologist	Bachelor of Biological Science (Hons) UNESC University, Brazil Master of Marine and Environmental Science, SCU University, NSW	Reporting
Hannah Centra Project Ecologist	Bachelor of Environmental Science and Management, University of Newcastle 2021	Reporting



2.0 Natural Values of the Subject Land

2.1 Topography and Soils

The Subject Land slopes to the east, with elevations 26 meters at the southwest corner and 10 meters along the eastern boundary. There is an unnamed watercourse mapped in the northwest of the Subject Land and a dam in the centre.

The Soil Landscapes of Central and Eastern NSW (DPE, 2023) map the Subject Land as 'Doyalson' with a band of 'Wyong' corresponding to the watercourse in the northwest corner.

Soils likely to be encountered within the more elevated portions of the Subject Land are moderately deep yellow earths and podzolic soils with underlying sandstone and conglomerate geologies. In lower-lying parts of the Subject Land soils are likely to grade into yellow and red podzolic soils and soloths with siltstone and claystone.

2.2 Native Vegetation

The Subject Land contains three plant community types (PCTs):

- PCT 1717 – *Broad-leaved Paperbark Swamp Mahogany – Swamp Oak – Saw Sedge swamp forest of the Central Coast and Lower North Coast*
- PCT 1638 – *Smooth-barked Apple – Red Bloodwood – Scribbly Gum grass – Shrub woodland on lowlands of the Central Coast*
- PCT 1636 – *Scribbly Gum – Red Bloodwood, Angophora inopina heathy woodland on lowlands of the Central Coast*

These PCTs are mapped in Figure 3.

2.3 Threatened Ecological Communities

The PCT 1717 – *Broad-leaved Paperbark Swamp Mahogany – Swamp Oak – Saw Sedge swamp forest of the Central Coast and Lower North Coast* is associated with the threatened ecological community *Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions* (an Endangered Ecological Community) as listed as under the NSW *Biodiversity Conservation Act 2016* (BC Act).

2.4 Threatened Flora Species

No threatened species of flora were identified within the Subject Land during the biodiversity assessment (SLR, 2025a; Section 5.3). Threatened species with potential to occur were subject to targeted surveys involving parallel transects performed in 2018 and 2023. Threatened species of flora that were assessed in accordance with the BAM are included in Table 5.

Table 5 Threatened Flora Assessed by the Biodiversity Assessment (SLR, 2025a)

Common Name	Scientific Name	Listing Status	
		BC Act	EPBC Act
Bynoe's Wattle	<i>Acacia bynoeana</i>	Endangered	Vulnerable
Charmhaven Apple	<i>Angophora inopina</i>	Vulnerable	Vulnerable
Trailing Woodruff	<i>Asperula asthenes</i>	Vulnerable	Vulnerable



Common Name	Scientific Name	Listing Status	
		BC Act	EPBC Act
Thick-leaf Star-hair	<i>Astrotricha crassifolia</i>	Vulnerable	Vulnerable
Netted Bottle Brush	<i>Callistemon linearifolius</i>	Vulnerable	-
n/a	<i>Corunastylis</i> sp. Charmhaven (NSW896673)	Critically Endangered	Critically Endangered
Leafless Tongue Orchid	<i>Cryptostylis hunteriana</i>	Vulnerable	Vulnerable
Rough Doubletail	<i>Diuris praecox</i>	Vulnerable	Vulnerable
Camfield's Stringybark	<i>Eucalyptus camfieldii</i>	Vulnerable	Vulnerable
n/a	<i>Eucalyptus parramattensis</i> subsp. <i>decadens</i>	Vulnerable	Vulnerable
<i>Eucalyptus parramattensis</i> C. Hall. subsp. <i>parramattensis</i> in Wyong and Lake Macquarie Local Government Areas	<i>Eucalyptus parramattensis</i> subsp. <i>parramattensis</i>	Endangered Population	-
Variable Midge Orchid	<i>Genoplesium insigne</i>	Critically Endangered	Critically Endangered
Small-flower Grevillea	<i>Grevillea parviflora</i> subsp. <i>parviflora</i>	Vulnerable	Vulnerable
n/a	<i>Maundia triglochinosides</i>	Vulnerable	-
Biconvex Paperbark	<i>Melaleuca biconvexa</i>	Vulnerable	Vulnerable
Grove's Paperbark	<i>Melaleuca groveana</i>	Vulnerable	-
Tall Knotweed	<i>Persicaria elatior</i>	Vulnerable	Vulnerable
Tranquillity Mintbush	<i>Prostanthera askania</i>	Endangered	Endangered
Eastern Australian Underground Orchid	<i>Rhizanthella slateri</i>	Vulnerable	Endangered
Heath Wrinklewort	<i>Rutidosis heterogama</i>	Vulnerable	Vulnerable
n/a	<i>Tetradlea glandulosa</i>	Vulnerable	-
Black-eyed Susan	<i>Tetradlea juncea</i>	Vulnerable	Vulnerable

2.5 Fauna Species and Habitat Values

The Subject Land supports a diverse array of fauna and habitat values, offering abundant resources for ground-dwelling and arboreal mammals, microchiropteran bats, and diurnal birds through features such as hollow-bearing trees, stags, dense ground cover, and rich floral diversity. Notable recorded species include echidnas, bandicoots, possums, gliders, wallabies, and bats such as the Lesser Long-eared Bat (*Nyctophilus geoffroyi*) and Little Forest Bat (*Vespadelus vulturnus*).

Aquatic habitat is available via a large dam, supporting mammals, birds, reptiles, frogs, and waterbirds, with vegetation including *Eleocharis sphacelata*, *Typha orientalis* and *Ottelia ovalifolia*. Feral species recorded within the Subject Land include the Red Fox, European Rabbit, Black Rat, and Brown Hare.



2.5.1 Mammal Habitat

The Subject Land contains habitat suitable for both ground-dwelling and arboreal mammals. This includes an abundance of hollow-bearing trees, stags, and coarse woody debris, all of which provide suitable nesting and denning sites. Dense leaf litter and ground vegetation also offer shelter and refuge for ground-dwelling mammals.

A variety of food resources are available, including flowering eucalypts and a diverse range of mid-storey flowering trees and shrubs (such as melaleucas, acacias, and banksias), as well as grasses and other ground covers. These resources are likely to support a diverse invertebrate population, which in turn may provide food for insectivorous mammals and birds.

Mammal species previously recorded on the site include:

- Short-beaked Echidna (*Tachyglossus aculeatus*)
- Northern Brown Bandicoot (*Isodon macrourus*)
- Bush Rat (*Rattus fuscipes*)
- Brushtail Possum (*Trichosurus vulpecula*)
- Ringtail Possum (*Pseudocheirus peregrinus*)
- Swamp Rat (*Rattus lutreolus*)
- Sugar Glider (*Petaurus breviceps*)
- Squirrel Glider (*Petaurus norfolcensis*)
- Brown Antechinus (*Antechinus stuartii*)
- Dusky Antechinus (*Antechinus swainsonii*)
- Lesser Long-eared Bat (*Nyctophilus geoffroyi*)
- Little Forest Bat (*Vespadelus vulturnus*)
- Swamp Wallaby (*Wallabia bicolor*)

2.5.2 Microchiropteran Bat Habitat

The Subject Land provides habitat for microchiropteran bat species, including both hollow-bearing trees and human-made structures. Stags and trees with loose bark may also offer suitable roosting sites. A variety of food resources are present, including habitats that support invertebrate populations (i.e. suitable prey species). Species of microchiropteran bats that have been recorded on the Subject Land include Lesser Long-eared Bat (*Nyctophilus geoffroyi*) and Little Forest Bat (*Vespadelus vulturnus*).

2.5.3 Diurnal Bird Habitat

Habitat suitable for foraging and nesting birds is present within the Subject Land. This includes hollow-bearing trees and large, mature trees capable of supporting stick nests. A diverse range of food resources is available, including flowering eucalypts, various mid-storey flowering trees and shrubs, grasses, and other ground cover species. These resources are also likely to support a rich invertebrate population, thereby offering additional food sources for insectivorous bird species.



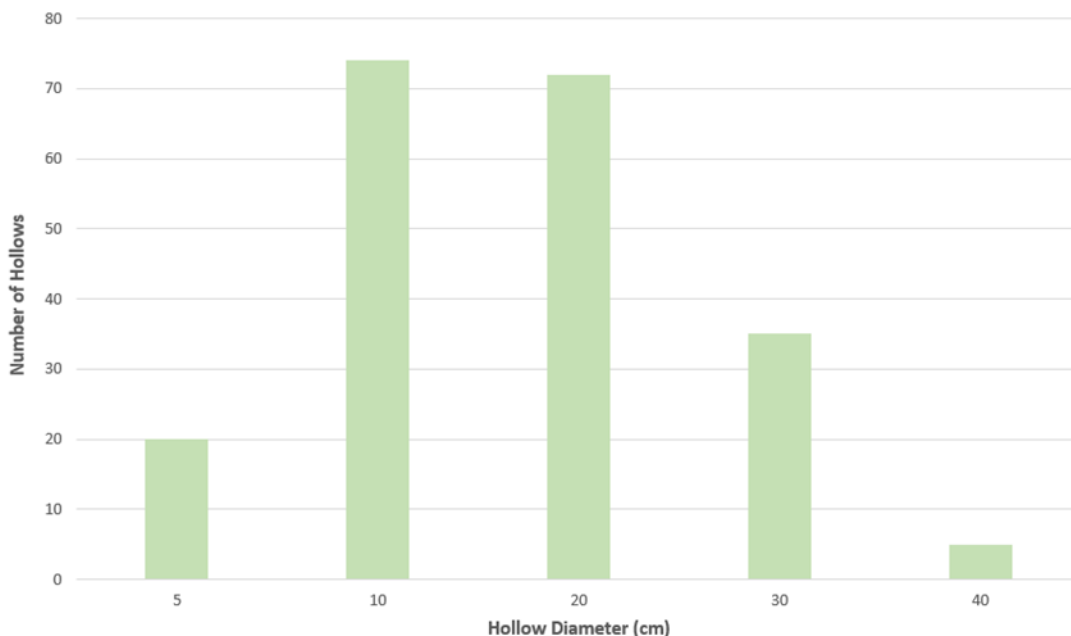
2.5.4 Hollow-bearing Trees

A hollow-bearing tree survey of the Subject Land was previously conducted by ELA (2018). The data reveals that Scribbly Gum (*Eucalyptus haemastoma*) is the dominant hollow-forming species. Many of the hollow-bearing trees contain multiple hollows, ranging in diameter from 5cm to >40cm. An analysis of the size class of the hollows within the Development Footprint is presented in Graph 1.

A total of 64 trees containing 206 hollows occur; however two of these trees were found to be absent during recent surveys (SLR, 2025a). Hollow-bearing trees proposed to be retained occur within the Landscape and Biodiversity Corridors. Hollow-bearing trees to be removed lie outside of these Corridors and include 30 hollow-bearing trees with up to 90 hollows.

The location of hollow-bearing trees in relation to the Development Footprint and Biodiversity Corridors is presented in Figure 3. A full list of the characteristics of all hollow-bearing trees is presented in Appendix A.

Graph 1: Size Class and Hollows



2.5.5 Threatened Fauna Species

The Subject Land provides foraging habitat for the Glossy Black-Cockatoo (*Calyptorhynchus lathami*), the only observed threatened fauna species. Four Glossy Black-Cockatoos were observed feeding in a Black She-oak (*Allocasuarina littoralis*) during searches for breeding habitat in 2018 (ELA, 2018). Two were also recorded foraging on the Subject Land by SLR in 2023 (SLR, 2025a).

Information pertaining to the habitat of the Glossy Black-Cockatoo (DPE, 2023b) is presented below:

- Inhabit open forest and woodlands of the coast and the Great Dividing Range where stands of Sheoak occur. Black Sheoak (*Allocasuarina littoralis*) and Forest Sheoak (*A. torulosa*) are important foods.
- Feed almost exclusively on the seeds of several species of she-oak (*Casuarina* and *Allocasuarina* species), shredding the cones with the massive bill.
- Mate for life and are usually seen in pairs or small groups.
- Single egg is laid every 1-2 years, between March and May.
- Need access to water to drink each day. They prefer to drink at sites where vegetation grows close to the water's edge, providing both a resting place and cover from predators.
- Nest in large hollows in dead and living eucalypt trees. A typical nest hollow has an entrance diameter of at least 15cm and is around one metre deep.

Key threatened species of fauna that were assessed in accordance with the BAM are included in Table 6.

Table 6 Threatened Fauna Assessed by the Biodiversity Assessment (SLR, 2025a)

Common Name	Scientific Name	Listing Status	
		BC Act	EPBC Act
Regent Honeyeater	<i>Anthochaera phrygia</i>	Critically Endangered	Critically Endangered
Bush Stone-curlew	<i>Burhinus grallarius</i>	Endangered	-
Gang-gang Cockatoo	<i>Callocephalon fimbriatum</i>	Endangered	Endangered
South-eastern Glossy Black-Cockatoo	<i>Calyptorhynchus lathami lathami</i>	Vulnerable	Vulnerable
Eastern Pygmy-possum	<i>Cercartetus nanus</i>	Vulnerable	-
Large-eared Pied Bat	<i>Chalinolobus dwyeri</i>	Endangered	Endangered
Wallum Froglet	<i>Crinia tinnula</i>	Vulnerable	-
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	Vulnerable	-
Giant Burrowing Frog	<i>Heleioporus australiacus</i>	Vulnerable	Vulnerable
Little Eagle	<i>Hieraaetus morphnoides</i>	Vulnerable	-
Pale-headed Snake	<i>Hoplocephalus bitorquatus</i>	Vulnerable	-
Swift Parrot	<i>Lathamus discolor</i>	Endangered	Critically Endangered



Common Name	Scientific Name	Listing Status	
		BC Act	EPBC Act
Green and Golden Bell Frog	<i>Litoria aurea</i>	Endangered	Vulnerable
Green-thighed Frog	<i>Litoria brevipalmata</i>	Vulnerable	-
Square-tailed Kite	<i>Lophoictinia isura</i>	Vulnerable	-
Little Bent-winged Bat	<i>Miniopterus australis</i>	Vulnerable	-
Large Bent-winged Bat	<i>Miniopterus orianae oceanensis</i>	Vulnerable	-
Southern Myotis	<i>Myotis macropus</i>	Vulnerable	-
Barking Owl	<i>Ninox connivens</i>	Vulnerable	-
Powerful Owl	<i>Ninox strenua</i>	Vulnerable	-
Eastern Osprey	<i>Pandion cristatus</i>	Vulnerable	-
Giant Dragonfly	<i>Petalura gigantea</i>	Endangered	-
Southern Greater Glider	<i>Petauroides volans</i>	Endangered	Endangered
Squirrel Glider	<i>Petaurus norfolcensis</i>	Vulnerable	-
Brush-tailed Rock-wallaby	<i>Petrogale penicillata</i>	Endangered	V
Brush-tailed Phascogale	<i>Phascogale tapoatafa</i>	Vulnerable	-
Koala	<i>Phascolarctos cinereus</i>	Endangered	Endangered
Common Planigale	<i>Planigale maculata</i>	Vulnerable	-
Long-nosed Potoroo	<i>Potorous tridactylus</i>	Vulnerable	Vulnerable
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	Vulnerable	Vulnerable
Masked Owl	<i>Tyto novaehollandiae</i>	Vulnerable	-
Mahony's Toadlet	<i>Uperoleia mahonyi</i>	Endangered	Endangered

2.6 Waterbodies

The Subject Land lies within the Colongra/Tuggerah Lake catchment area. A mapped watercourse is located in the northwest corner of the site, identified by Water NSW (ESRI, 2023) as two small first-order streams that converge into a second-order stream. The second-order stream extends approximately 1.4 kilometres in a northerly and easterly direction from the Subject Land, ultimately draining into Colongra Lake. From there the water flows into Lake Munmorah, then Budgewoi Lake, followed by Tuggerah Lake, before eventually discharging into the Tasman Sea/Pacific Ocean.

ELA (2018) ground-truthed the mapped watercourse on the Subject Land and determined that there were no formed bed or banks and as such determined that there was no watercourse as defined by the *Water Management Act 2000* (WM Act). The absence of a watercourse was also confirmed during the SLR 2023 habitat assessment surveys. Despite the absence of a formal watercourse the Subject Land contains one large dam with some aquatic vegetation (Photo 1) and several small ponds that are associated with the Raw Challenge obstacles and are in a degraded condition (Photo 2).

The main dam is predominately vegetated with *Eleocharis sphacelata* and *Typha orientalis* at the edges and *Ottelia ovalifolia* subsp. *ovalifolia* floating in deeper areas. The waterbodies represent drinking habitat for mammals, birds, reptiles and are likely to provide aquatic



habitat to eels and common species of frogs, and water birds. At the time of the inspection the main dam appeared to contain the exotic fish *Gambusia holbrooki*.

Photo 1: Main Dam in Centre of Subject Land



Photo 2: Typical nature of Obstacle Ponds in North of Subject Land



3.0 Management Activities and Guidelines

3.1 Management Considerations

The proposed development will involve the removal and modification of native vegetation and habitat within the Development Footprint, which may result in several ecological impacts. These include the direct displacement of fauna species, potentially including threatened species, and the disturbance or removal of fauna habitat through the clearing of native vegetation, logs, leaf litter, and soil. Additionally, 30 hollow-bearing trees containing a total of 90 hollows will be removed, further affecting local wildlife.

Feral animal species such as the Red Fox (*Vulpes vulpes*), European Rabbit (*Oryctolagus cuniculus*), Black Rat (*Rattus rattus*), and Brown Hare (*Lepus capensis*) have previously been identified within the Subject Land. These species tend to thrive near human dwellings where they can access shelter and food sources such as human waste. The increase in human activity and construction within the Development Footprint may lead to a rise in feral animal populations, which could compete with and displace native fauna.

Most of the Subject Land consists of previously cleared and developed areas with patches of native dry sclerophyll forest and woodland. There are some areas of exotic and non-native vegetation including planted native species. Native vegetation will be retained and protected within Biodiversity and Landscape Corridors. Native vegetation including planted native species will also be retained within the Development Footprint where feasible. Fauna habitat restoration will be undertaken to mitigate the impacts of vegetation clearing. This will include the reuse of salvaged habitat features such as topsoil and habitat logs within designated Biodiversity Corridors. Additionally, nest boxes will be installed to support displaced fauna.

Specific restoration efforts will also target the Glossy Black-Cockatoo, with activities focused on improving habitat quality within the Biodiversity Corridors. These efforts will involve both vegetation and habitat restoration to support the species' long-term survival in the area.

The welfare of native animals is a key consideration during the development process. Potential impacts include displacement from natural habitats, injury or death, indirect disturbances such as noise and vibration, and disruption of breeding activities. To address these concerns, a Project Ecologist will be present on-site during construction to monitor and reduce potential harm to native fauna.

The management of waterbody discharge, including the dewatering of dams and ponds, will be carefully planned to avoid adverse environmental impacts. Considerations include the quality and quantity of discharged water, the protection of native and endangered species, the prevention of nuisance species spread, and the relocation of displaced aquatic wildlife.

3.2 Pre-clearance Surveys

3.2.1 General Survey

Pre-clearing surveys will be undertaken prior to commencement of any clearing activities to determine the presence and location of any fauna and habitat features that can be retained and utilised for habitat restoration within the Biodiversity Corridors. The surveys will be undertaken by a suitably qualified and experienced Project Ecologist.

The Project Ecologist will conduct pre-clearing surveys to identify:

- Fauna species likely to be encountered during construction and potential impacts to fauna during vegetation clearing.
- Potential fauna habitat in the project area.



- Preferred locations to relocate fauna habitat.

Pre-clearing surveys will take place one month prior to construction or 1-2 weeks prior to the commencement of vegetation clearing. The Project Ecologist will mark all potential fauna habitat (e.g. hollow-bearing trees, nest trees, burrows, etc...) in the project area with high visibility tape (e.g. trees, large woody debris and nests).

A report will be compiled to detail survey findings and any additional fauna management measures following the completion of the pre-clearing surveys.

3.2.2 Glossy Black Cockatoo Surveys

In accordance with the BDAR (SLR, 2025a) breeding surveys are to be conducted for the Glossy Black Cockatoo in the correct season (January to September) and within one month prior to native vegetation clearing, as well as monthly for the duration of construction. There is to be a contingency plan to delay construction and/or incorporate noise reduction measures (noise barriers) during construction if breeding evidence is detected. Survey methods are to be conducted in accordance with the Biodiversity Assessment Method, or industry best-practise survey techniques at the time of clearing.

3.2.3 Surveys of Human-made Structures

In accordance with the BDAR (SLR, 2025a) diurnal bat roost surveys are to be conducted of human-made structures for signs of microbat breeding - with contingency plan to delay demolition if breeding evidence is detected. Surveys are to occur in correct season for detection of threatened Bent-winged microbats (December to February) and within 2 days prior to demolition.

3.3 Pre-clearing Inspection

Immediately prior to any vegetation clearing and/or works requiring disturbance (i.e. no more than 2 hours prior), an inspection will be undertaken by the Project Ecologist to identify any fauna that may be encountered during clearing operations. The inspection will consist of:

- Checks for fauna in hollow-bearing trees that are to be relocated to the Biodiversity Corridors.
- Checks in trees for any new nests constructed since the pre-clearing surveys.
- Checks for fauna in hollow logs or fallen timber that are to be relocated to the Biodiversity Corridors.

3.4 Environmental Site Briefing

The ecologist will undertake environmental site briefings with the construction team as required prior to and during construction to communicate areas of retained native vegetation and sensitive ecological features to be protected, as well as human-made structures and non-native vegetation that require pre-clearance surveys and wildlife management.

3.5 Inspections of Environmental Management Measures

Inspections of retained native vegetation and habitats are to occur every 6 months during construction to ensure no stockpiling or rubbish dumping is occurring. Outcomes are to be documented in post clearing report.



3.6 Hygiene Protocol

The following hygiene protocols are to be applied during construction:

- Wash-down stations are to be installed at site entry/exit points.
- Vehicles, machinery, equipment, footwear and clothing are to be cleaned and free of weed propagules before entering and after leaving site.
- Tools and equipment shall be disinfected between uses.
- Use of certified weed-free materials (e.g. soil, gravel, mulch).
- Biosecurity awareness signage is to be displayed at key locations.
- Any weeds and contaminated soils that are removed during the construction phase should be disposed of appropriately.
- Soil shall be tested for pathogens before reuse or relocation.
- A six-monthly weed survey shall be conducted of retained vegetation during construction, with outcomes documented in post clearing report.

3.7 Vegetation Clearing Protocol

The following recommendations are to be implemented during vegetation clearing:

- No vegetation clearing is to occur during the Glossy Black-Cockatoo breeding season (March to August) or microbat breeding season (December to February) unless pre-clearing surveys have been conducted and found no evidence of occupation of these species.
- Areas of vegetation to be retained are to be clearly demarcated with temporary chain mesh fencing and lined with sediment fencing to prevent accidental clearing and runoff during the construction phase. Surveys of protective measures shall be undertaken pre-construction commencement. Protective measures are to be photographed and documented in pre-construction report.
- The Project Ecologist is to be present on site daily during all clearing and demolition operations, to aid in protection of retained vegetation and animal rescue.
- All hollow-bearing trees should be retained during vegetation clearing and felled three weeks after the initial vegetation clearing phase.
- Vegetation should be cleared in a way that will allow fauna species living in or near the clearing site enough time to move out of the area without additional human intervention.
- Clearing must be undertaken in separate stages so that a maximum of one hectare is cleared per day. Staged clearing areas are to be mapped and works documented in post-construction report.
- Each stage of clearing must be separated by at least one 12-hour period that occurs between 6pm and 6am on the following day.
- No clearing should occur during the early evening or at night, as this is when fauna species are most likely to be on the move and are more vulnerable to injury.
- Habitat links must be maintained during clearing to allow fauna species to move safely from the site to adjacent areas.
- Clearing should begin in the area that is furthest from vegetation to be retained.



- The direction of clearing should also ensure that fauna species are directed away from threats such as roads, developed areas or disturbed areas (e.g. residential areas or cleared spaces >100m).
- Sequential clearing should not create an 'island' of habitat that is isolated from adjoining habitat by roads or cleared and disturbed areas.
- Use of hand chainsaw should be adopted for clearing within asset protection zone (where feasible) to allow some vegetation retention. Asset protection clearing areas to be mapped and chainsaw clearing works to be documented in post-construction report.

3.8 Hollow-bearing Tree Removal Protocol

Hollow-bearing trees (HBTs) shall be carefully felled under the supervision of the Project Ecologist and in accordance with the recommendations developed based on the Council Guidelines (Central Coast Council, 2019):

- Clearly mark the HBT to be removed and/or retained by differentiating with coloured flagging tape.
- Check for fauna in the zone of disturbance before clearing and scare or remove them before beginning operations.
- Remove all non-hollow bearing vegetation prior to the removal of HBT.
- After clearing, re-check to ensure no fauna have become trapped or injured during clearing operations. Any fauna found should be safely located to nearby habitat.
- Leave HBT standing for at least one night after other clearing to allow any fauna the opportunity to remove themselves after site disturbance.
- Before felling HBT, tap along trunk using an excavator or loader to scare fauna from the hollows. Repeat several times. The aim of this procedure is to 'substantially' shake the tree. Most fauna will exit the tree during this process.
- Re-check after felling HBT to ensure no fauna have become trapped or injured during clearing operations. Any fauna found should be safely located to nearby habitat (Biodiversity Corridor).
- If taking the HBT tree down in stages, the non-hollow-bearing branches should be removed before the hollow-bearing branches are removed.
- Fell trees into the zone of disturbance to avoid damaging adjacent vegetation.
- Take care when moving equipment near vegetation to be retained.
- Rather than mulching or burning cleared vegetation, logs from the felled trees should be distributed into areas of vegetation to be retained (Biodiversity Corridor) where it would not be considered a fire hazard. This would provide additional potential habitat for ground dwelling fauna such as reptiles and small mammals.

3.9 Dam Dewatering and Fauna Rescue

Based on the outcomes of the biodiversity assessments (ELA, 2018; SLR, 2025a) the dam and waterbodies being release are not likely to contain significant habitat for aquatic fauna or to have large numbers of resident fauna. However, a dam and pond pre-clearance survey is recommended prior to site clearing, to search for any nests, as well as to determine any resident populations at the time of clearing.



To allow any mobile semi-aquatic species to escape safely, the waterbodies should be released over the existing soils and vegetation prior to site clearing, ideally when weather conditions are not too hot and dry. Where feasible any permanently residing native aquatic species (such as native fish and eels) should be captured and relocated to a previously arranged nearby waterbody.

Where any fauna species is injured during the dewatering the animal is to be captured and taken to a local wildlife carer or veterinary facility. Where any exotic pest species can be captured, it is to be taken to a local veterinary facility to be humanely euthanized in a manner consistent with the *Prevention of Cruelty to Animals Act, 1979*.

3.10 Management of Displaced Fauna

The following recommendations apply to the management of any displaced fauna species during vegetation clearing activities:

- Handling of fauna will be conducted by the Project Ecologist.
- If arboreal animals do not move or they cannot be captured because the tree hollow to be removed is too large, too high or its recovery would breach safety requirements, then the tree will be felled (i.e. in the direction of other tree debris if possible) and animals recovered and relocated to suitable adjacent habitat.
- Animals are to be removed and relocated to the adjacent bushland/nest boxes within the Biodiversity Corridors prior to felling or the tree shall be sectioned and dismantled under the supervision of the Project Ecologist before relocating animals.
- Nocturnal fauna species, such as microbats, are to be 'soft released' using bat boxes placed in adjacent habitat.
- Nocturnal fauna species, such as gliders and possums, are to be secured in suitable enclosures and kept in a quiet, dark and cool environment until they can be released into suitable habitat after dark.
- If any injured fauna species are found during the vegetation clearing/construction period, construction must stop immediately so that the injured animal can be taken to a vet or wildlife carer.

3.11 Indirect Impacts on Retained Habitat

Adjacent habitats are to be monitored for indirect impacts during construction, such as light spill and dust. The following measures are required to be implemented during construction to reduce indirect impacts on fauna habitat:

- Use of light shields on construction equipment
- Limiting evening construction works to reduce light spill
- Lights should be turned off at night (where not required for security)
- Setting maximum speed limits to reduce dust
- Use water tanker and spray unpaved access tracks during the construction phase where required
- Use of dust suppressants
- Limiting soil exposure and truck movements during high winds



Details of indirect impact monitoring and management to be documented within post-construction report.

3.12 Fauna Habitat Restoration

The main habitat restoration activities proposed involve planting native plant species in disturbed areas adjacent to the Development Footprint and in the Biodiversity Corridors. This information is detailed in the EVMP (SLR, 2025c).

The following recommendations apply specifically to fauna habitat features to be used during habitat restoration activities:

- Fauna habitat features including tree hollows, fallen timber, hollow logs and bush rock are to be recovered where possible during vegetation clearing and are to be relocated/ re-erected in restoration areas within the Biodiversity Corridor.
- Any habitat features to be relocated are to be first inspected for the presence of fauna by the Project Ecologist. If fauna species are identified, the habitat feature is to be left for a 24-hour period and then moved if the animal has not self-relocated. Relocation of the animal into suitable adjacent habitat is to be conducted by the Project Ecologist as a final option if the animal will not self-relocate.

The Project Ecologist is to supervise relocation and placement of salvaged habitat features into retained bushland on site. Habitat features are to be mapped and documented in pre-clearance report, including identifying the area of relocation.

A summary of restoration methods for a range of habitat features is presented in Table 7.

Table 7: Fauna Habitat Restoration Methods

Habitat Feature	Treatment
Bush Rock	Move to retained vegetation within the Biodiversity Corridors
Hollow-bearing Trees	Clear as per Section 3.8
Habitat Logs	Move to retained vegetation within the Biodiversity Corridors
Natural Hollows	Reinstate in trees in the Biodiversity Corridors Use as habitat logs in the Biodiversity Corridors
Nest Boxes	Install in retained vegetation within Biodiversity Corridors if: • Nest-boxes do not increase the naturally occurring density of hollows per tree. • There are sufficient hollow-bearing trees (more than 4 per hectare)
Stag Tree	Use as habitat logs in the Biodiversity Corridors
Topsoil, coarse woody debris	Move to the Biodiversity Corridors

3.13 Nest Box Strategy

3.13.1 Nest Box Construction

There are several commercial suppliers that offer nest boxes specifically designed to suit particular species or groups of wildlife. When constructing or commissioning nest boxes, it is important to consider the following features:



- **Material:** The front and base should be made from hardwood at least 25mm thick to ensure durability and insulation.
- **Access for Monitoring:** A hinged lid should be included to allow easy inspection during monitoring and maintenance. Hinges should be made from stainless steel or aluminium to prevent rusting.
- **Safe Finishes:** Only non-toxic paint should be used on both the exterior and interior surfaces. The entrance hole should remain unpainted.
- **Internal Grip:** Grooves should be cut into the inside face of the box to help animals enter and exit easily.
- **Drainage:** Drainage holes should be incorporated into the base to prevent water accumulation.
- **Nest Material:** Place wood shavings or sawdust in the bottom of the box before installation to provide initial nesting material.
- **Rear Entrances:** Include rear entrances in the design where appropriate, depending on the target species and installation site.

3.13.2 Number of Nest Boxes

A total of 62 hollow-bearing trees containing 198 hollows have been identified within the Subject Land. Of these, 30 will be removed as part of the Englobo Subdivision. Since many of the hollow-bearing trees contain multiple hollows across various size classes, it has been determined that the development will result in the loss of 90 hollows.

These hollows provide habitat for a range of fauna species. Based on the analysis of hollow size classes and a one-to-one replacement strategy using nest boxes, 90 hollows are expected to require replacement as summarised in Table 8.

Table 8: Number of Hollows Removed by Size Class

	50mm	100mm	200mm	300mm	400mm	Total
Total hollows on Subject Land	19	72	70	33	4	198
Total hollows to be Removed	4	37	27	22	0	90

A review of commercially available nest box designs was conducted which will assist with identifying suitable replacements for each hollow size class and to target specific fauna species. The exact number and type of nest box to be installed is to be determined at the final DA Stage.

Information on nest box design is presented in Appendix B.

3.13.3 Nest Box Installation

To prevent creating an unnatural abundance of hollows, areas with a low abundance of natural hollows are to be targeted for nest box installation. The exact location of nest box placement within these areas should be determined by the Project Ecologist during installation and should consider the following factors:

- Nest box design for target species (e.g. shape, height above ground, volume of box, entry hole shape and size).



- Target species home range and likely territory to be defended.
- Space boxes adequately to reduce competition between individuals or species.
- Ability to access (e.g. clear flight path in areas where the tree density is not too high).
- Aspect (i.e. overheating can increase mortality of young).
- Distance to feeding resources.
- Camouflage from potential predators.
- Access for monitoring.
- Incorporate GPS tagging or mapping of nest box locations for future ecological studies.
- Record installation details (e.g. date, height, orientation, species targeted) to support adaptive management.

Nest boxes should be mounted in healthy living trees without existing hollows. Aspect of the nest box should aim to provide shelter from the sun and rain (Freegard and Richter, 2009), with the exception that bat boxes may be positioned to receive late afternoon sun providing warmth prior to nocturnal exit (Goldingay and Stevens, 2009). Bat boxes should be installed on a tree clear of branches above or below the box (de Souza-Daw, 2003) and where possible nest boxes should be installed on opposite sides of a single tree to provide two approaches and exit options.

For efficient and safe installation, it is preferred that nest boxes be installed on the main trunk of the tree. They should be installed at a variety of heights on each tree based on:

- The height range of the hollows that were removed
- The ecology of the target species
- The requirements of safe work methods and practical considerations

3.13.4 Nest Box Monitoring

Nest boxes are to be monitored by the Project Ecologist to determine their usage and to carry out repairs or replacement every six months for a minimum period of five years following erection as part of environmental compliance until performance measures have been achieved, being:

- Occupancy by a range of native fauna species.
- Uptake of nest boxes by at least one targeted threatened arboreal mammal species.
- Low occurrence of non-native fauna or pest species as evidenced by a lack of pest species within nest boxes.
- High durability and resilience of nest boxes due to suitable construction and installation.

Animal usage should be confirmed by climbing the tree (i.e. with a ladder or rope access). If safety requirements prohibit climbing the tree; monitoring may also be performed from the ground using a 'burrow scope'. The following data should be recorded during each nest box monitoring event:

- Date
- Type of nest box and its specifications



- Nest box number and location
- Signs of animal presence (e.g. scats, fur, feathers, nesting material etc...)
- Species of animal present (i.e. may be inferred from secondary evidence)
- Breeding data
- Number of individuals
- Condition of each nest box
- Requirements for maintenance or replacement

During each monitoring event, the entrance to the nest box should be blocked prior to inspection to reduce the chance of nocturnal inhabitants escaping and risking predation (Freegard and Richter, 2009). Handling of animals occupying a nest box should be avoided unless identification is uncertain. The Project Ecologist should minimise disturbance in the vicinity of the nest box, as recent inhabitants may be inclined to escape on approach. If any animal exits the nest box on approach, the Project Ecologist should quietly move away to enable the animal to re-enter the box.

Surveillance of bat boxes may be undertaken via watching for exiting bats at dusk (de Souza-Daw, 2003), or through use of a 'burrow' scope during the day. If exiting bats have been recorded, identification may be possible through use of bat detection units. Bat boxes should not be opened once occupied by bats (de Souza-Daw, 2003) as disturbing hibernating bats can lead to exhaustion of food reserves and death of the animal.

In situations where fauna signs within a nest box are inconclusive for determination of the species, remote monitoring cameras may be placed on the tree facing the nest box to assist in identification, where practicable. For example, this may be useful to identify a species of glider that has built a leaf nest if the glider is not present in the box at the time of inspection.

Nest box monitoring is to occur every six months for a minimum period of five years following erection. Nest boxes are to be maintained or replaced as required for the life of the development with results of the inspections to be made available to Council upon request.



4.0 Monitoring and Compliance

4.1 Risk and Contingency Measures

The Subject Land adjoins large areas of native vegetation to the north, and east. Existing residential development exists to the south and west. Due to the position of the Subject Land within the landscape, various risks exist, which may affect the success of implementation of each of the management guidelines identified in Section 3.0.

Risks include the following:

- Bushfire may destroy vegetation, and habitat features in retained areas, including nest boxes.
- Adverse weather such as storms could damage or dislodge nest boxes from associated trees.
- Feral animals, such as the Indian Myna, Black Rat and Honeybees, may occupy nest boxes and prevent occupancy by native fauna species.

If any of the above events occur, the Project Ecologist is to take suitable steps to reduce these impacts, including the following:

- Any damaged nest boxes should be replaced within six months.
- If feral birds are identified inhabiting the nest box any eggs and nesting material should be removed. In the case of the Indian Myna, consideration should be given to installation of an anti-Myna 'baffle' on the nest box or replacing the nest box with a rear-entry design (Goldingay and Stevens, 2009).
- A natural insecticide should be sprayed to kill any lice within nest boxes (Franks and Franks, 2006).
- Feral bees should be managed at dusk or night when they are less active using a non-residue insecticide - insecticide treated nest boxes will likely need to be cleaned out, which is to be done 24-48 hours later (Franks and Franks, 2006).
- Ant infestations within nest boxes may be controlled using Coopex® powder.

Nest box maintenance may be required to address nest boxes in disrepair. Repairs should be conducted for minor damage, such as replacement of lid hinges, but severely damaged nest boxes should be replaced if they are unoccupied by fauna. If an occupied nest box requires maintenance, it should be carried out, if possible, without disturbing the animal. If disturbance to the occupant is likely, consideration should be given to returning at night (i.e. when nocturnal animals are foraging) or waiting until a breeding event is finished (e.g. nesting birds).

4.2 Project Schedule

The project schedule is outlined in Table 9 including the timing and duration for each management task.



Table 9: Timing and Duration of Management Tasks

Measure	Task	Responsible Party	Frequency	Compliance Notes
Pre-clearance Surveys	General Survey	Proponent, ecologist, construction team	1 month or 1-2 weeks prior to clearing	Mark fauna habitat with tape; compile report with findings and management steps. Identify and map habitat features.
	Glossy Black Cockatoo Surveys	Proponent, ecologist, construction team	1 month prior to clearing, monthly (Jan-Sep) during construction	Delay construction or use noise barriers if breeding detected. Include results in compliance report; audit if breeding found.
	Inspect human-made structures, vegetation, and dams	Proponent, ecologist, construction team	One-off survey 2 days before demolition	Delay demolition if breeding microbats detected. Report outcomes.
Pre-clearing Inspection	Final inspection before clearing	Proponent, ecologist, construction team	≤2 hours before clearing	Check for fauna in trees, logs, nests; relocate habitat features.
Environmental Site Briefing	Site briefings with construction team	Proponent, ecologist, construction team	During demolition and construction	Communicate retained vegetation, sensitive features, and wildlife management
Environmental Management Inspections	Inspect retained vegetation and habitats	Proponent, ecologist, construction team	Every 6 months during construction	Document outcomes in post-clearing report
Hygiene Protocol	Implement hygiene and biosecurity measures	Proponent, construction team	Ongoing during construction, 6-monthly weed survey	Follow weed-free, disinfecting, and signage protocols; document weed survey outcomes
Vegetation Clearing Protocol	Stage and manage vegetation clearing	Proponent, ecologist, construction team	Daily during clearing	Follow seasonal restrictions, staged clearing, fauna protection, and documentation
	Stage clearing limiting to 1-ha per week	Proponent, ecologist, construction team	During clearing	Mapped and documented in post-construction report
	Restrict clearing to daylight hours	Proponent, ecologist, construction team	During clearing	Documented in post-construction report
	Guide fauna toward safe habitat	Proponent, ecologist, construction team	During clearing	Document in post-construction report



Measure	Task	Responsible Party	Frequency	Compliance Notes
	Monitor and rescue fauna	Proponent, ecologist, construction team	Daily during clearing	Report outcomes
Hollow-bearing Tree Removal Protocol	Supervised removal of HBTs	Proponent, ecologist, construction team	During clearing	Follow Council guidelines; retain logs for habitat; document fauna relocation
Dam Dewatering and Fauna Rescue	Survey and safely dewater dams	Proponent, ecologist, construction team	Prior to clearing	Ecologists present during de-watering. Relocate native aquatic fauna; document injuries and pest management.
	Oversee and document relocation	Proponent, ecologist, construction team	During clearing	Report with mapped features
Management of Displaced Fauna	Handle and relocate displaced fauna	Proponent, ecologist, construction team	During clearing	Follow species-specific protocols; stop work if fauna injured
Indirect Impacts on Retained Habitat	Monitor and mitigate light/dust impacts	Proponent, ecologist, construction team	Ongoing during construction	Use shields, suppressants, limit night works; document in post-construction report
	Install and maintain sediment controls	Proponent, ecologist, construction team	Weekly and after rain	Ensure controls are effective and maintained
Fauna Habitat Restoration	Relocate and restore habitat features	Proponent, ecologist, construction team	During and following clearing	Inspect and map features; supervise relocation to Biodiversity Corridor
Vegetation Retention Check	Retain trees/vegetation in Development Footprint where feasible	Proponent, ecologist, construction team	One-off before construction certificate	Report outcomes
Nest Box Strategy	Nest Box Construction	Proponent, ecologist, construction team	One-off prior to installation	Use hardwood (>25mm), hinged lid, non-toxic paint, grooves, drainage holes, sawdust, rear entrances
	Number of Nest Boxes	Proponent, ecologist, construction team	One-off analysis, prior to construction	90 hollows removed; install nest boxes in Biodiversity Corridors based on hollow size and species needs
	Nest Box Installation	Proponent, ecologist,	During construction	Install in areas with low hollow abundance; consider species



Measure	Task	Responsible Party	Frequency	Compliance Notes
		construction team		needs, access, aspect, feeding proximity, predator camouflage
	Nest Box Monitoring	Proponent, ecologist	Every 6 months for 5 years	Record usage, species data, box condition; use burrow scope or remote cameras; avoid disturbing fauna



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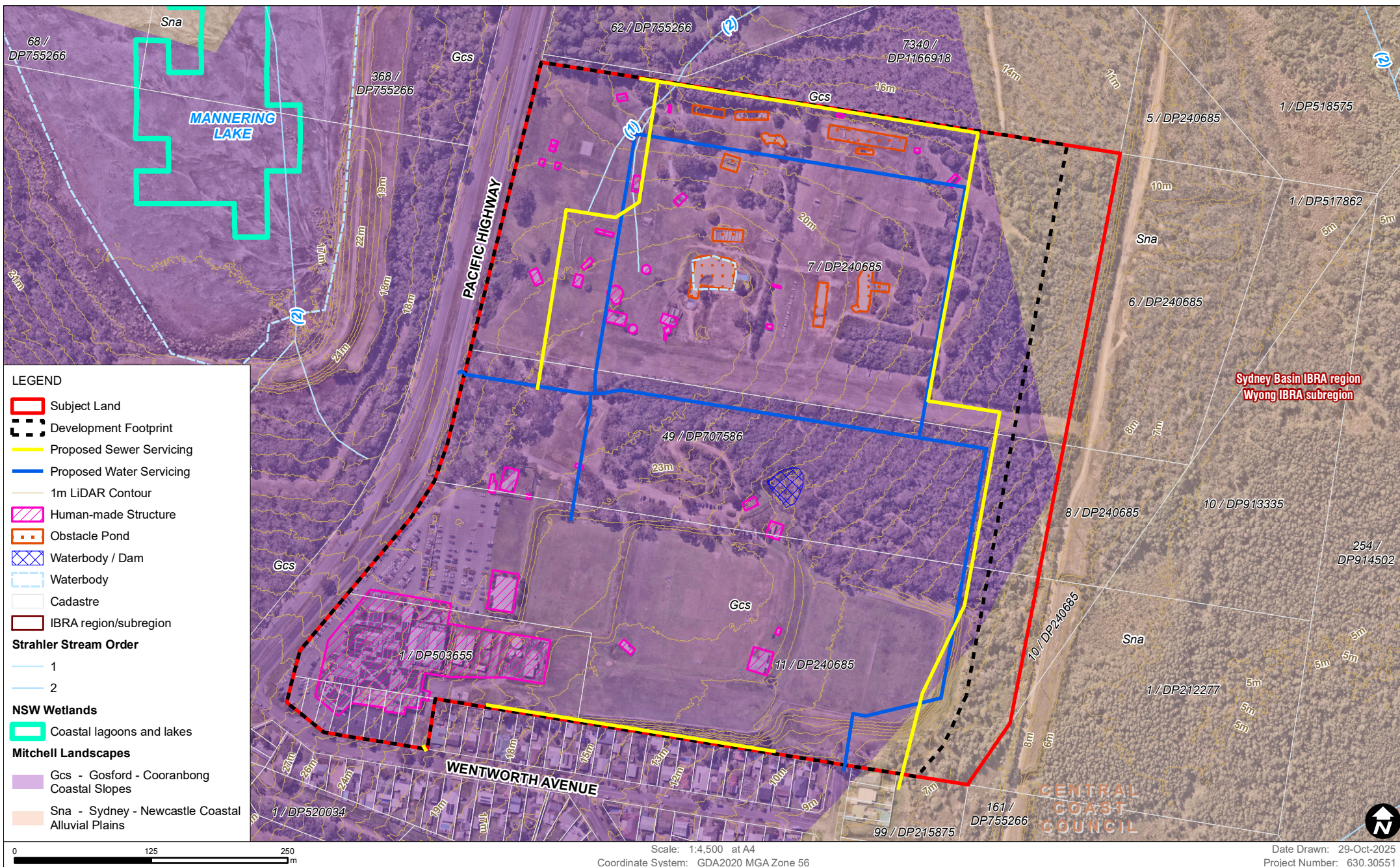
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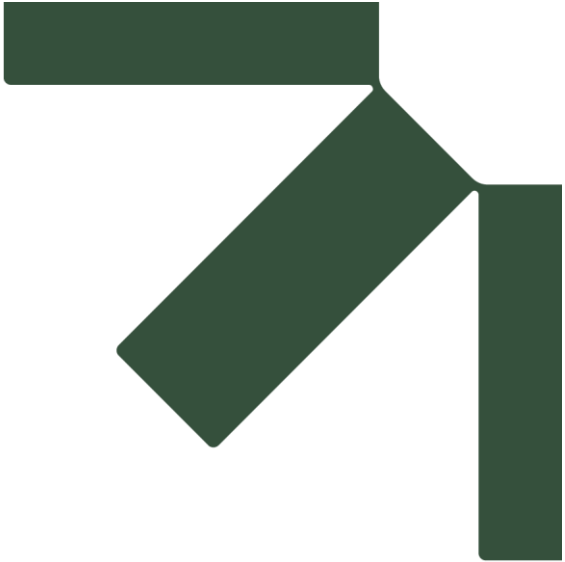
Data Source: NSW SS, March 2023
Aerial imagery supplied by Nearmap, September 2025

* Note: the Corridors are derived from Annexure B of the Voluntary Planning Agreement between Central Coast Council and Doyalson Wyee RSL Club Limited dated May 22.



VEGETATION AND HOLLOW-BEARING TREES

FIGURE 3



Appendix A Hollow-bearing Tree Information

Englobo Wildlife Management Plan

Proposed Englobo Subdivision DA/1295/2023

Doyalson Wyee RSL Club Ltd t/a Doyalson Lifestyle Group

SLR Project No.: 630.30551.00000

7 November 2025

Table A1 Hollow-bearing Tree Data (ELA, 2018)

Object ID	Tree Species	DBH (mm)	Hollow size					Notes	Surveyor	Date_	Possible Threatened Sp. Habitat	Retention
			50mm	100mm	200mm	300mm	400mm					
1	Scribbly	400	2	0	0	0	0		AP	2018-08-02		Retained
2	Scribbly	200	2	0	0	0	0		AP	2018-08-02		Retained
3	Scribbly	900	0	2	0	0	0			2018-08-02	Glossy Black Cockatoo	Retained
4	Scribbly	900	3	0	1	0	0			2018-08-02	Glossy Black Cockatoo	Retained
5	Scribbly	900	0	1	0	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Removed
6	Scribbly	800	1	3	0	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Removed
7	Scribbly	700	0	1	0	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Removed
8	Scribbly	800	0	1	0	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Retained
9	Scribbly	1000	0	0	3	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Retained
10	Scribbly	1000	0	3	3	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Retained
11	EUCAROB	1000	0	0	3	4	0		Ap	2018-08-02	Glossy Black Cockatoo	Retained
12	Scribbly	1000	2	0	4	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Retained
13	Scribbly	800	0	0	3	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Removed



Object ID	Tree Species	DBH (mm)	Hollow size					Notes	Surveyor	Date_	Possible Threatened Sp. Habitat	Retention
			50mm	100mm	200mm	300mm	400mm					
14	Scribbly	1000	0	5	0	4	0		Ap	2018-08-02	Glossy Black Cockatoo	Removed
15	Scribbly	600	0	2	2	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Removed
16	Scribbly	900	0	5	0	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Removed
17	Scribbly	900	0	1	0	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Removed
18	Scribbly	800	0	2	0	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Removed
19	Scribbly	700	0	2	0	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Removed
20	Scribbly	1000	0	0	0	4	0		Ap	2018-08-02	Glossy Black Cockatoo	Removed
21	Stag	700	0	0	1	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Removed
22	Scribbly	1000	0	0	5	2	0		Ap	2018-08-02	Glossy Black Cockatoo	Removed
23	Scribbly		0	2	0	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Removed
24	Scribbly		0	0	3	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Removed
25	Scribbly	1000	0	0	3	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Removed
26	Scribbly	600	0	0	2	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Removed
27	Scribbly	800	0	0	5	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Retained



Object ID	Tree Species	DBH (mm)	Hollow size					Notes	Surveyor	Date_	Possible Threatened Sp. Habitat	Retention
			50mm	100mm	200mm	300mm	400mm					
28	Stag	800	0	0	0	0	2		Ap	2018-08-02	Glossy Black Cockatoo	Retained
29	Scribbly	800	0	0	0	2	0			2018-08-02	Glossy Black Cockatoo	Retained
30	Scribbly	800	0	2	0	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Retained
31	Scribbly	800	0	0	3	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Retained
32	Scribbly	800	0	0	3	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Retained
33	Scribbly		0	2	0	0	0		AP	2018-08-02	Glossy Black Cockatoo	Retained
34	Scribbly	800	0	0	0	2	0		P	2018-08-02	Glossy Black Cockatoo	Retained
35	Scribbly	800	0	0	2	0	1		Ap	2018-08-02	Glossy Black Cockatoo	Retained
36	Scribbly	1000	0	2	6	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Removed
37	Stag	700	0	0	0	3	0		Ap	2018-08-02	Glossy Black Cockatoo	Removed
38	Scribbly	800	0	0	0	4	0		Ap	2018-08-02	Glossy Black Cockatoo	Removed
39	Scribbly	800	0	0	0	4	0		Ap	2018-08-02	Glossy Black Cockatoo	Removed
40	Scribbly	900	0	4	0	2	0		Ap	2018-08-02	Glossy Black Cockatoo	Retained
41	Scribbly	1500	0	3	0	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Retained



Object ID	Tree Species	DBH (mm)	Hollow size					Notes	Surveyor	Date_	Possible Threatened Sp. Habitat	Retention
			50mm	100mm	200mm	300mm	400mm					
42	Scribbly	800	0	0	8	0	0		Ap	2018-08-02	Glossy Black Cockatoo	Retained
43	scribble gum		1	0	0	0	0	branch hollow				Removed
44	scribble gum	80	1	2	0	0	0				Glossy Black Cockatoo	Retained
45	scribbly gum	80+	0	3	0	0	0	all dead branches			Glossy Black Cockatoo	Removed
46	scribbly gum	60	1	0	0	0	0	small dead branch, potential cracks				Removed
47	bloodwood	60	0	0	0	0	0	termite nest on trunk				Removed
48	scribbly gum	80	0	6	1	0	0	many dead branch hollows			Glossy Black Cockatoo	Removed
49	scribbly gum	80	1	0	0	0	0					Removed
50	scribbly gum	80	1	0	0	0	0					Retained
51	scribbly gum	50	0	1	0	0	0				Glossy Black Cockatoo	Retained
52	scribbly gum	75	1	2	0	0	0				Glossy Black Cockatoo	Retained
53	scribbly gum	50	1	2	0	0	0				Glossy Black Cockatoo	Retained
54	scribbly gum	80+	0	2	3	0	0				Glossy Black Cockatoo	Retained

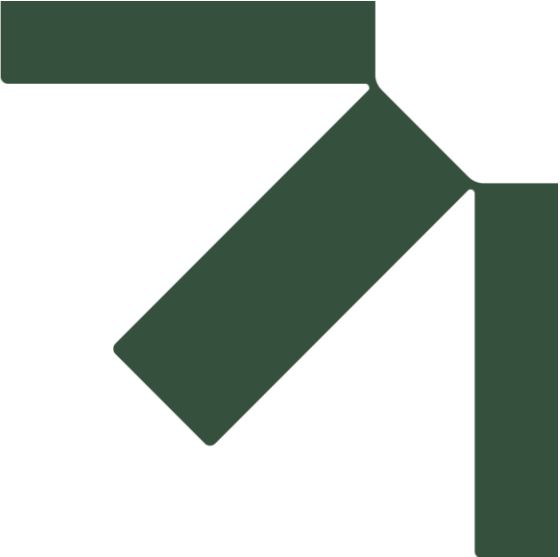


Object ID	Tree Species	DBH (mm)	Hollow size					Notes	Surveyor	Date_	Possible Threatened Sp. Habitat	Retention
			50mm	100mm	200mm	300mm	400mm					
55	scribbly x ?	80+	1	1	0	0	0				Glossy Black Cockatoo	Retained
56	scribbly gum	45	1	1	0	0	0				Glossy Black Cockatoo	Hollow-bearing Tree no longer present (SLR survey, 2023)
57	scribbly gum	50	0	1	0	0	0	rainbow lorikeet nesting			Glossy Black Cockatoo	Retained
58	scribbly gum	60	0	1	1	0	0				Glossy Black Cockatoo	Retained
59	stag	45	0	2	1	1	0	largest hollow big opening in trunk, fairly exposed			Glossy Black Cockatoo	Removed
60	scribble gum	80+	0	2	0	1	1	larger hollows exposed branch openings			Glossy Black Cockatoo	Retained
61	scribble gum	80+	0	1	2	2	1				Glossy Black Cockatoo	Hollow-bearing Tree no longer present (SLR



Object ID	Tree Species	DBH (mm)	Hollow size					Notes	Surveyor	Date_	Possible Threatened Sp. Habitat	Retention
			50mm	100mm	200mm	300mm	400mm					
												survey, 2023)
62	scribbly gum	80+	1	0	0	0	0					Retained
63	Scribbly	1000	0	0	4	0	0		Ap	2018-08-29	Glossy Black Cockatoo	Retained
64	Stag		0	4	0	0	0		Ap	2018-08-29	Glossy Black Cockatoo	Retained
Total			20	74	72	35	5	206				





Appendix B Nest Box Characteristics

Englobo Wildlife Management Plan

Proposed Englobo Subdivision DA/1295/2023

Doyalson Wyee RSL Club Ltd t/a Doyalson Lifestyle Group

SLR Project No.: 630.30551.00000

7 November 2025

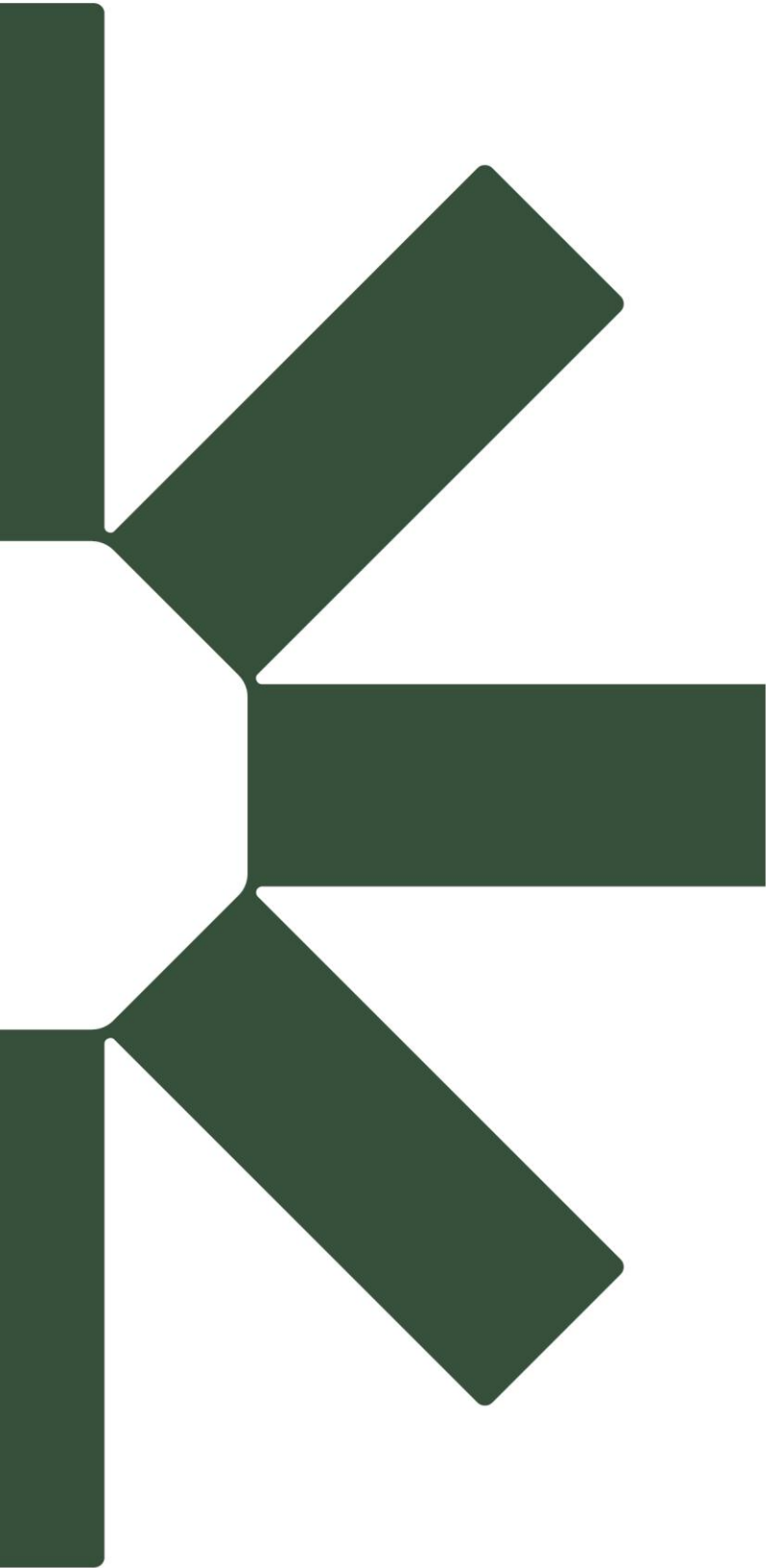
Table B1 Nest Box Characteristics – (Gibbons and Lindenmayer, 2002)

Species	Tree Hollow Dimensions (mm)	Entrance Diameter (mm)	Height from Ground (m)	Home Range (ha)	Behaviour	Suitable Nest Box	Distance Between Boxes
Brown Antechinus	145 x 180 x 370	20–25	4–8	0.5–5	Nests in hollows, logs, stumps, fissures, cracks; often on ground but can be arboreal	Small Arboreal Mammal Nest Box (400 x 120 x 120 mm, 20 x 30 mm entrance)	100m
Feather-tail Glider	145 x 180 x 370	20–25	4–8	0.1-2	Nests in enclosed spaces; uses multiple nests		
Eastern Pygmy Possum	145 x 180 x 370	20–25	4–8	<0.75	Nests in hollows and between wood and bark		
Squirrel Glider	270 x 180 x 410	50	5–12	1.4–2.8	Social groups; tight-fitting entrance	Medium Arboreal Mammal Nest Box (400 x 175 x 175 mm, 40 mm entrance)	
Sugar Glider	270 x 180 x 410	50	5–12	2.4–4	Leaf nests in hollows		
Yellow-bellied Glider	270 x 280 x 410	75	5–12	30–60	Requires large area; uses multiple hollows		
Brush-tailed Phascogale	270 x 280 x 410	75	4–12	540+	Nests in hollows, stumps, bird nests; uses many sites		
Possum	290 x 230 x 450	110	5–12	Variable. 0.2–4 individuals/ha	Nests in hollow limb in living or dead tree but will use almost any dark recess		
Various hollow-roosting microbats	230 x 100 x 340	25	5–12	-	Roost in tree hollows, fissures, branch or trunk; most commonly in Eucalyptus species either living or dead	Microbat Box Internal dimensions: 240(H) x 240(W) x 100(D), Vertical box with 15mm entrance slit	
Little Lorikeet	200–260 x 180 x 490	50–75	5–25	Multiple pairs nest in close proximity	Nests in hollow branch or knot hole from low to very high	Small Parrot Nest Box Internal dimensions: 400(H) x 135(W) x 135(D), Vertical box with 65 mm entrance hole	
Rainbow Lorikeet	200–260 x 180 x 490	50–75	5–25	Multiple pairs nest in close proximity	Nests in deep almost vertical hollow in major limb or trunk		



Species	Tree Hollow Dimensions (mm)	Entrance Diameter (mm)	Height from Ground (m)	Home Range (ha)	Behaviour	Suitable Nest Box	Distance Between Boxes
Crimson Rosella	200–260 x 180 x 490	50–75	5–25	Multiple pairs nest in close proximity	Nests in hollow of live or dead tree from quite low to very high		
Southern Boobook	230 x 260 x 400	110	3–15	18–200	Uses tree hollows ranging from small stumps to high limbs	Large Forest Owl Nest Box Internal dimensions: 1000 x 400 mm with 200 mm entrance hole and horizontal entrance spout	3–4 km
Powerful Owl	500 x 500 x 800	300	8–20	300–1500	Typically nests in a hollow in very large tree, often on a hillside or head of a gully		
Masked Owl	500 x 500 x 800	300	8–20	400–1000	Nest in the trunk or main limb of a large tree in heavy forest often near open country		2–3 km
Sooty Owl	500 x 500 x 800	300	8–20	200–800	Nests in a large smooth-barked live tree, often very high		
Glossy Black-Cockatoo	340 x 330 x 550	170	8–12	-	Inhabits forests and woodlands with abundant Casuarina trees. Uses a large hollow often high in a dead tree	Large Parrot Nest Box Internal dimensions: 600(H) x 250(W) x 250(D), Vertical box with a 200 mm entrance hole	100m





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