05 September 2024
Ref No.: 4482-1010

Mr Simon Dougherty
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PO Box 1138
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Via email: lfittock@ndc.com.au

Dear Luke

Preliminary Biodiversity Assessment – Lot 21 DP 601461, 70 Manifold Road, North Casino

1. Introduction

This Preliminary Biodiversity Assessment has been prepared to support a Planning Proposal to amend the Richmond Valley Local Environmental Plan (LEP) 2012 to rezone the land at 70 Manifold Road, North Casino (Lot 21 DP 601461), for large lot residential development to enable future subdivision into nine lots. The proposed amendment to the LEP would include:

- Changes to the Land Zone Map to change the land zone from Zone RU1 Primary Production to Zone R5 Large Lot Residential.
- Amend the minimum lot size for subdivision to enable a minimum lot size of 7,500 m^2 for the land to be rezoned to R5.

This Preliminary Biodiversity Assessment included an assessment of the following attributes across the whole site:

- Targeted threatened flora surveys.
- Threatened fauna habitat assessment (including assessment of Koala feed trees and Koala scat surveys).
- Vegetation mapping, including Koala feed trees, mature native trees, hollow-bearing trees and threatened flora.
- Preliminary vegetation clearing calculations based on the current subdivision design.

The aim of this Preliminary Biodiversity Assessment is to:

- Determine the occurrence of native vegetation and fauna habitats at the site and how these features may be impacted by future development.
- Determine the biodiversity assessment pathway for the project moving forward.

2. Vegetation Survey Results

2.1 Vegetation

The site has been subject to historical clearing. Vegetation at the site is described in **Table 2.1**, and aligned with plant community types (PCT) as per the BioNet Vegetation Classification system. Vegetation mapping for areas of the site surveyed is provided in **Appendix A**. A full list of flora observed during the site visit is provided in **Appendix B.**

Table 2.1 Plant Community Types

Plant Community Type	Condition	Photo
Native Vegetation		
PCT 3427: Northern Hills Bloodwood – Red Gum Grassy Forest (modified) The canopy consists of Pink Bloodwood (*Corymbia intermedia*), Northern Grey Ironbark (*Eucalyptus siderophloia*) and Forest Red Gum (*Eucalyptus tereticornis*). Occasional Spotted Gum (*Corymbia henryi*), Grafton Stringybark (*Eucalyptus tindaliae*) and infrequent Small-fruited Grey Gum (*Eucalyptus propinqua*) also occur. The midstorey is heavily under scrubbed, however Forest Oak (*Allocasuarina torulosa*), Red Ash (*Alphitonia excelsa*), Carracabah (*Acacia concurrens*), Coffee Bush (*Breynia oblongifolia*) and Wombat Berry (*Eustrephus latifolius*) occur. Ground cover is dominated by a mix of Bahia Grass (*Paspalum notatum**) and Blady Grass (*Imperata cylindrica*). Occasional Common Couch (*Cynodon dactylon*), Kikuyu (*Cenchrus clandestinus**) and Many-flowered Mat-rush (*Lomandra multiflora*) also occurs.	Modified Condition – vegetation has been subject to past disturbance. Midstorey is heavily under scrubbed and ground cover is heavily grazed by cattle.	 **Plate 2.1 View north of PCT 3427 (modified) within the site**

Plant Community Type	Condition	Photo
PCT 3427: Northern Hills Bloodwood – Red Gum Grassy Forest (derived) Ground cover is dominated by Blady Grass (*I. cylindrica*) with occasional Bahia Grass (*P. notatum**), Common Couch (*C. dactylon*), Kikuyu (*C. clandestinus**) and Many-flowered Mat-rush (*L.multiflora*) also occurs.	Derived Condition – vegetation has been subject to past disturbance. Community lacks treed vegetation.	 **Plate 2.2 View west of PCT 3427 (derived) within the site**
PCT 3323: Far North Lowland Basalt Grassy Forest (modified) The canopy is dominated by Pink Bloodwood (*C. intermedia*), with occasional Forest Red Gum (*E. tereticornis*), Swamp Box (*Lophostemon suaveolens),* Spotted Gum (*C. henryi*), North Grey Ironbark (*E. siderophloia*) and Silky Oak (*Grevillea robusta*). Scattered Hoop Pine (*Araucaria cunninghamii*) and Brush Box (*Lophostemon confertus*) also occur. The midstorey features Red Ash (*A. excelsa*), Sweet Pittosporum (*Pittosporum undulatum*), Foambark Tree (*Jagera pseudorhus var. pseudorhus*), Cockspur Thorn (*Maclura cochinchinensis*), Scrambling Lily (*Geitonoplesium cymosum*), Lantana (*Lantana camara**) and Climbing Asparagus Fern (*Asparagus plumosus**). Gound cover consists of Bahia Grass (*P notatum**), Blady Grass (*I. cylindrica*), Kikuyu (*C. clandestinus**) and South African Pigeon Grass (*Setaria sphacelata**).	Modified Condition – vegetation has been fragmented by historic clearing and weed incursions.	 **Plate 2.3 View south of PCT 3323 within the site and extends into Manifold Road reserve**

Plant Community Type	Condition	Photo
Non-native vegetation		
Miscellaneous Ecosystem – Non-Native Grassland Cleared pasture featuring Bahia Grass (*Paspalum notatum**), Kikuyu (*C. clandestinus**), South African Pigeon Grass (*S. sphacelata**), Purpletop (*Verbena bonariensis**) and Fireweed (*Senecio madagascariensis**).	Area is dominated by non-native grass and pasture species. Not considered to be native vegetation (less than 15% native vegetation occurs).	 **Plate 2.4 View south of non-native grassland within the site**
*Denotes exotic species		

2.2 Threatened Flora

No threatened flora species were recorded at the site.

2.3 Threated Ecological Communities

Vegetation within the site does not align with any Threatened Ecological Communities (TECs).

2.4 Waterways

One mapped creek line occurs to the east of the site (refer to **Appendix A**). No frog species were calling during the site inspection.

3. Fauna Habitat

3.1 Fauna Habitat Features

A range of common fauna species were observed during the site inspection (refer to **Appendix B**). The site provides habitat for a range of fauna species which would be likely to use similar dry sclerophyll forest locally. Habitat values of the site are summarised as follows:

- Grassy areas provide foraging habitat for macropods (Eastern Grey Kangaroo were observed throughout the site).
- Native tree species provide foraging (fruit, nectar, pollen, insects) resources for locally occurring avifauna, arboreal mammals, microbats and flying-foxes.
- Forest Redgum and Tallowwood, preferred Koala feed trees occur at the site.
- Three hollow-bearing trees occur at the site and may provide habitat for arboreal mammals (gliders and possums or hollow-obligate bird and microbat species).

3.2 Threatened Fauna

The Spot Assessment Technique (SAT) was used to survey for Koala scats as an indicator of Koala usage of the site. No Koala scats were recorded.

Based on the desktop habitat assessment and site assessment, species that have at least a moderate likelihood of occurrence within the site are provided in **Table 3.1**.

Table 3.1 Threatened BC Act Listed Fauna

Scientific Name	Common Name	BC Act*	Likelihood of Occurrence
Aves			
Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo	V	**Moderate** – Potential foraging habitat occurs at the site. Local BioNet records.
Glossopsitta pusilla	Little Lorikeet	V	
Pomatostomus temporalis temporalis	Grey-crowned Babbler	V	
Mammalia			
Phascolarctos cinereus	Koala	E	**Moderate** – Potential foraging habitat occurs at the site (Koala feed trees). Local BioNet records.
Phascogale tapoatafa	Brush-tailed Phascogale	V	**Moderate** – Potential foraging habitat occurs at the site. Hollow-bearing trees present at the site.
Petaurus norfolcensis	Squirrel Glider	V	
Pteropus poliocephalus	Grey-headed Flying-fox	V	**Moderate** – Potential foraging habitat occurs at the site. Local BioNet records.

**Biodiversity Conservation Act 2016*
V = Vulnerable, E = Endangered

4. Vegetation Removal

Based on the proposed rezoning and subdivision design, clearing would be required for the road, asset protection zones (APZs), dwelling envelopes and fences. The following vegetation would require removal:

- PCT 3427 (Modified) – 0.059 ha (this includes native trees, shrubs, and ground cover species).
- PCT 3427 (Derived) – 0.111 ha (this includes predominantly Blady Grass that dominates the ground cover of this PCT).
- PCT 3323 (Modified) – 0.093 ha (this includes native trees, shrubs, and ground cover species).
- Non-native grassland – 1.335 ha of non-native dominated grassland (this area is not included in native vegetation calculations).

Therefore, a total of **0.263 ha** of native vegetation would be removed as a result of the current subdivision proposal for the rezoning.

5. Assessment Pathway

5.1 Biodiversity Values Map

Where a relevant clearing or development proposal impacts an area of Biodiversity Value, the Biodiversity Offset Scheme (BOS) applies and a Biodiversity Development Assessment Report (BDAR) in accordance with the requirements of the Biodiversity Assessment Methodology (BAM) is required.

The site does not contain any areas of land mapped as being of Biodiversity Value (as per the Biodiversity Values Map and Threshold Tool – refer to **Figure 5.1**).

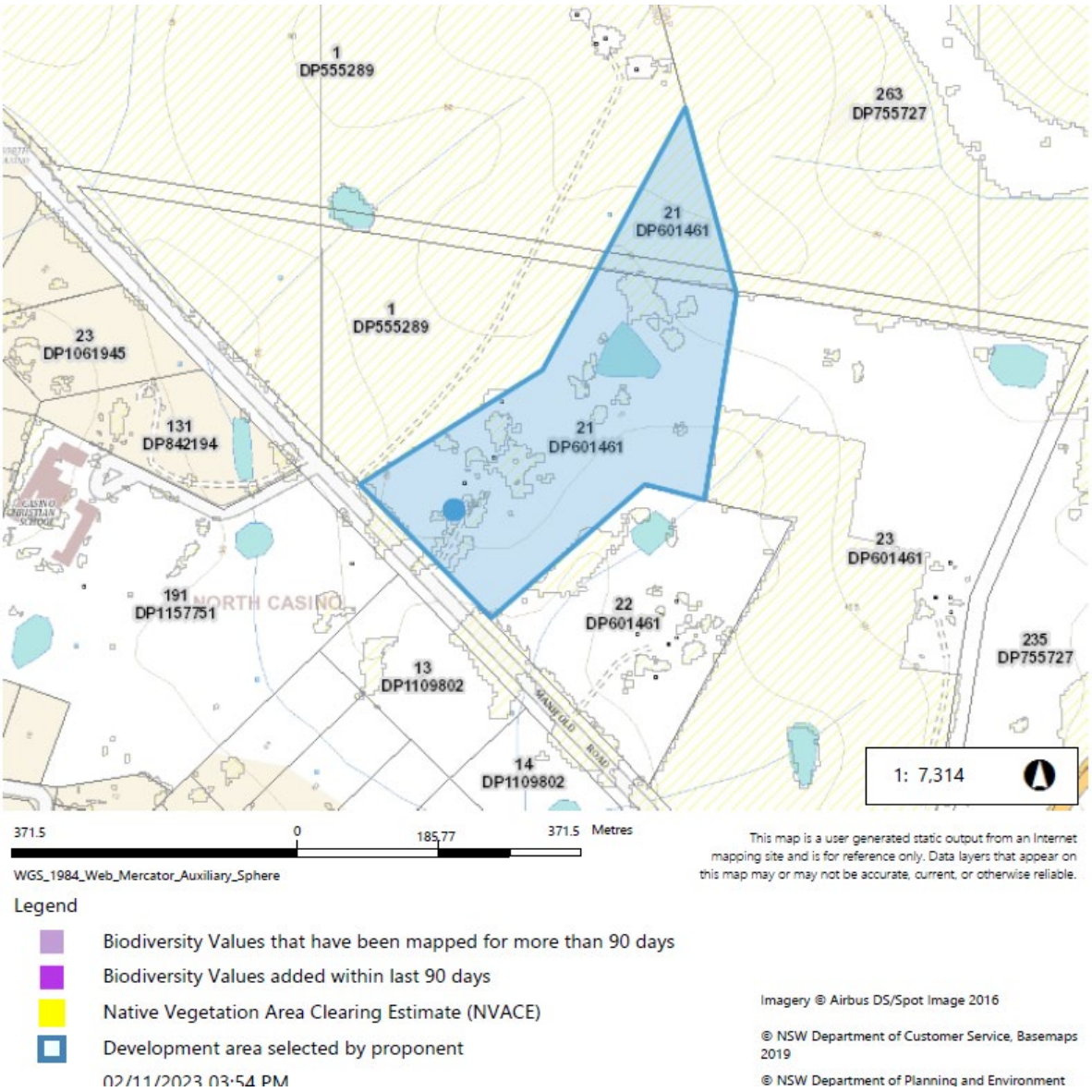


Figure 5.1 Biodiversity Values Mapping (site marked blue)

5.2 Native Vegetation Clearing Threshold

Currently the site is zoned RU1 Primary Production under the Richmond Valley LEP 2012. RU1: Primary Production has a minimum lot size of 40 ha therefore, the BOS Clearing Threshold of 1 ha of native vegetation removal applies to the site.

A total of **0.263 ha** of native vegetation removal is required for the proposal under the current proposed subdivision design. This clearing does not exceed the BOS Clearing Threshold of 1 ha, therefore, on this basis, the proposal would not require a BDAR.

6. Conclusion

This assessment has identified that the proposal would not trigger a BDAR. Clearing required would be less than 1 ha of native vegetation, therefore an ecological assessment such as a Biodiversity Assessment Report (BAR) would suffice to quantify impacts to native vegetation and threatened species in addition to addressing statutory requirements (such as BC Act, EPBC Act and Richmond Valley LEP 2012).

I trust this information suits your requirements. Please contact me if you require further information or wish to complete any further assessment of the site.

Yours sincerely,
GeoLINK

Sam Smith
Ecologist

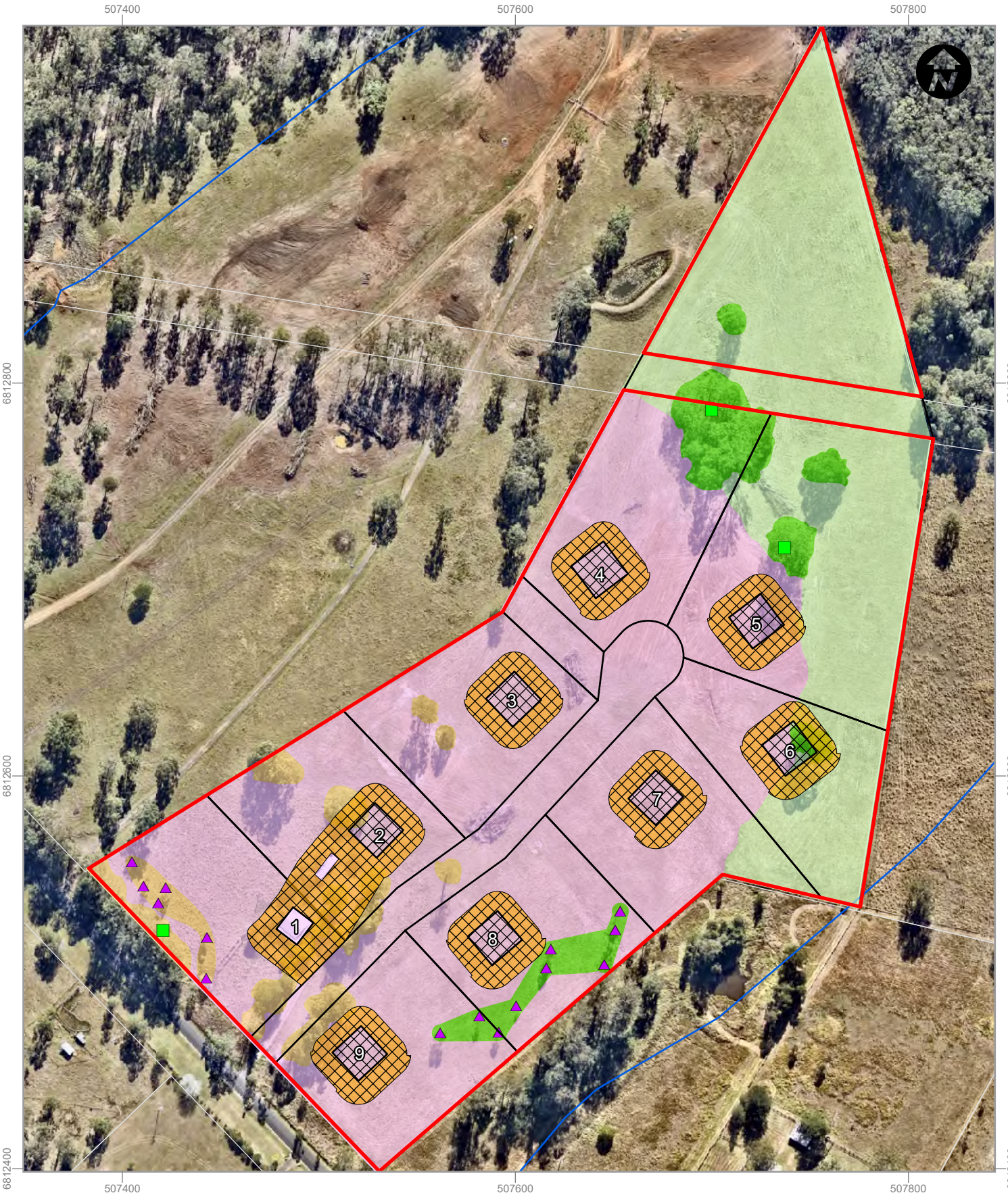
Certification

	Name	Signature	Date
Prepared by	Sam Smith		04/09/2024
Reviewed by	Veronica Silver		05/09/2024

UPR	Description	Issued By	Date Issued
4482-1004	Version 1	Veronica Silver	15/12/2023
4482-1010	Version 2	Veronica Silver	05/09/2024

Appendix A

Vegetation Mapping and Constraints



LEGEND

- Site boundary
- Cadastre
- Asset Protection Zone (APZ)
- Clearing area
- Building envelope
- Miscellaneous ecosystem - non native grassland
- PCT 3323 - Far North Lowland Basalt Grassy Forest (modified)
- PCT 3427 - Northern Hills Bloodwood - Red Gum Grassy Forest (modified)
- PCT 3427 - Northern Hills Bloodwood - Red Gum Grassy Forest (derived)
- Hollow-bearing trees
- Forest Red Gum
- Watercourse

0 50 Metres

Vegetation Mapping and Constraints - Appendix A

GeoLINK environment | engineering | planning | design

Preliminary Biodiversity Assessment - 70 Manifold Road, North Casino
4482-1013

Information shown is for illustrative purposes only
Drawn by: AB Checked by: SDS Reviewed by: VJS
Source of base data: Nearmap 11/07/2023
Date: 4/09/2024
Revision: A

Appendix B

Flora and Fauna Inventory

Table B.1 Flora Inventory

Family	Scientific Name	Common Name
Altingiaceae	*Liquidambar styraciflua**	American Sweetgum
Apocynaceae	*Gomphocarpus physocarpus**	Balloon Cotton Bush
Apocynaceae	*Parsonsia straminea*	Monkey Rope
Araliaceae	*Schefflera actinophylla**	Umbrella Tree
Araucariaceae	*Araucaria cunninghamii*	Hoop Pine
Arecaceae	*Archontophoenix cunninghamiana*	Bangalow Palm
Arecaceae	*Phoenix canariensis**	Date Palm
Asparagaceae	*Asparagus plumosus**	Climbing Asparagus Fern
Asteraceae	*Ambrosia artemisiifolia**	Annual Ragweed
Asteraceae	*Cirsium vulgare**	Spear Thistle
Asteraceae	*Conyza sp.**	A Fleabane
Asteraceae	*Gamochaeta americana**	Cudweed
Asteraceae	*Senecio madagascariensis**	Fireweed
Asteraceae	*Taraxacum officinale**	Dandelion
Bignoniaceae	*Jacaranda mimosifolia**	Jacaranda
Casuarinaceae	*Allocasuarina torulosa*	Forest Oak
Cyperaceae	*Juncus usitatus*	Pin Rush
Dennstaedtiaceae	*Pteridium esculentum*	Bracken
Euphorbiaceae	*Breynia oblongifolia*	Coffee Bush
Fabaceae (Mimosoideae)	*Acacia concurrens*	Curracabah
Fabaceae (Mimosoideae)	*Acacia melanoxylon*	Blackwood
Lauraceae	*Cinnamomum camphora**	Camphor Laurel
Lomandraceae	*Lomandra multiflora*	Many-flowered Mat-rush
Luzuriagaceae	*Eustrephus latifolius*	Wombat Berry
Luzuriagaceae	*Geitonoplesium cymosum*	Scrambling Lily
Lythraceae	*Cuphea carthagenensis**	Cuphea
Malvaceae	*Sida rhombifolia**	Paddy's Lucerne
Moraceae	*Ficus obliqua*	Small-leaved Fig
Moraceae	*Ficus sp.*	A Fig
Moraceae	*Maclura cochinchinensis*	Cockspur Thorn
Myrtaceae	*Callistemon sp.*	Callistemon
Myrtaceae	*Corymbia henryi*	Large-leaved Spotted Gum
Myrtaceae	*Corymbia intermedia*	Pink Bloodwood
Myrtaceae	*Eucalyptus grandis*	Flooded Gum
Myrtaceae	*Eucalyptus microcorys*	Tallowwood
Myrtaceae	*Eucalyptus propinqua*	Small-fruited Grey Gum
Myrtaceae	*Eucalyptus siderophloia*	Northern Grey Ironbark
Myrtaceae	*Eucalyptus tereticornis*	Forest Red Gum
Myrtaceae	*Eucalyptus tindaliae*	Grafton Stringybark
Myrtaceae	*Lophostemon confertus*	Brush Box
Myrtaceae	*Lophostemon suaveolens*	Swamp Box
Myrtaceae	*Melaleuca alternifolia*	Teatree
Myrtaceae	*Melaleuca quinquenervia*	Broad-leaved Paperbark
Ochnaceae	*Ochna serrulata**	Mickey Mouse Plant
Pinaceae	*Pinus elliottii**	Slash Pine
Pittosporaceae	*Pittosporum undulatum*	Sweet Pittosporum
Poaceae	*Axonopus fissifolius**	Narrow-leaved Carpet Grass
Poaceae	*Cynodon dactylon*	Common Couch

Family	Scientific Name	Common Name
Poaceae	*Imperata cylindrica*	Blady Grass
Poaceae	*Paspalum notatum**	Bahia Grass
Poaceae	*Cenchrus clandestinus**	Kikuyu
Poaceae	*Setaria gracilis**	Slender Pigeon Grass
Poaceae	*Setaria sphacelata**	South African Pigeon Grass
Proteaceae	*Grevillea robusta*	Silky Oak
Rhamnaceae	*Alphitonia excelsa*	Red Ash
Rutaceae	*Flindersia australis*	Crows Ash
Sapindaceae	*Jagera pseudorhus var. pseudorhus*	Foambark Tree
Solanaceae	*Solanum capsicoides**	Devil's Apple
Solanaceae	*Solanum chrysotrichum**	Giant Devil's Fig
Thymelaeaceae	*Pimelea linifolia subsp. linifolia*	Slender Rice-flower
Verbenaceae	*Lantana camara**	Lantana
Verbenaceae	*Verbena bonariensis**	Purpletop
*Denotes exotic species		

Table B.2 Fauna Inventory

Scientific Name	Common Name	Observation Type
Aves		
Cacatua sanguinea	Little Corella	O
Colluricincla harmonica	Grey Shrike-thrush	HC
Coracina novaehollandiae	Black-faced Cuckoo-shrike	O
Corvus orru	Torresian Crow	HC
Cracticus nigrogularis	Pied Butcherbird	O
Dacelo novaeguineae	Laughing Kookaburra	O
Eurystomus orientalis	Dollarbird	HC
Gerygone albogularis	White-throated Gerygone	HC
Grallina cyanoleuca	Magpie-lark	O
Gymnorhina tibicen	Australian Magpie	O
Manorina melanocephala	Noisy Miner	O
Meliphaga lewinii	Lewin's Honeyeater	HC
Ocyphaps lophotes	Crested Pigeon	HC
Rhipidura albiscapa	Grey Fantail	O
Sphecotheres vieilloti	Australasian Figbird	HC
*Spilopelia chinensis**	Spotted Dove	HC
Strepera graculina	Pied Currawong	HC
Trichoglossus moluccanus	Rainbow Lorikeet	O
Mammals		
*Bos taurus**	Cattle	O
*Canis familiaris**	Domestic Dog	O
Macropus giganteus	Eastern Grey Kangaroo	O
Reptiles		
Lampropholis delicata	Garden Skink	O

* = exotic species
O = observed
HC = heard call