Habitat Rehabilitation Monitoring Report - ORU Baseline Yarrabilba

EPBC Number: 2013/6791
Project name: Yarrabilba
Proponent's ACN: 103 578 436
Proposed action: To construct the Yarrabilba residential development and associated infrastructure approximately 40 kilometres south east of Brisbane, Queensland (see EPBC Act referral 3013/6791 and request to vary proposal dated 5 August 2013)
Prepared for: Lend Lease
Prepared by: Dr S. Butler, Dr M. Runkowski, M. Brett & K. Richardt
Date: Sept 2015

Document Version Control

Project	
Title:	**Habitat Rehabilitation Management Report – Offset Area Baseline**
Authors:	**Dr Sarah Butler, Dr Mark Ballantyne, Michael Brett and Kieran Richardt**
File reference:	**NCO11-0011_Yarrabilba**
Project leader:	**Kieran Richardt**
Phone:	**+(61) 7 5576 5568, +(61) 4 1541 3408**
Email:	**info@natura-consulting.com**
Client:	**Lend Lease**
Client contact:	**Rob Ball**

Revision History

Version:	**Purpose:**	**Issued by:**	**Date**	**Reviewer:**	**Date:**
Draft	Peer review	Dr Sarah Butler	25/09/2015	Kieran Richardt	28/09/15

Declaration of Accuracy

In making this declaration, I am aware that section 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) makes it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the *EPBC Act* or the *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth). The offence is punishable on conviction by imprisonment or a fine, or both. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

Signed

_____

Full name (please print)

_____

Organisation (please print)

_____

Date

____/____/____

Contents

1 Executive Summary 6
2 Introduction 8
2.1 Background 8
2.2 Objectives 8
3 Rehabilitation Areas 10
3.1 Purpose of Habitat Rehabilitation 10
3.2 Offset Rehabilitation Units 10
3.3 Crossing Rehabilitation Units 10
3.4 Pre-clearing Regional Ecosystems Rehabilitation Units 14
4 Rehabilitation Performance Indicators 15
4.1 Performance Indicators 15
4.2 Contingency Measures and Corrective Actions 16
4.2.1 Meeting benchmarks 16
4.2.2 As constructed data 16
5 Monitoring Methodology 21
5.1 Sites 21
5.2 Photo point monitoring 21
5.3 Transect and quadrat monitoring 23
6 Results 24
6.1 Photo-point monitoring 24
6.2 Transect and quadrat monitoring 36
6.2.1 Species richness 36
6.2.2 Tree Canopy Cover and Height (T1) 36
6.2.3 Small Tree Cover and Height (T2-T3) 36
6.2.4 Shrub Cover and Height (S1) 37
6.2.5 Ground Cover (G1) 37
6.2.6 Weed Incursion 37
7 Discussion 40
8 Bibliography 44
9 Appendices 46
Appendix A Benchmark species lists for each pre-clearing RE. 47
Appendix B Species Composition 72
Appendix C Percent ground cover 84
Appendix D Overlapping cover (%) within canopy tree (T1), small tree (T2-T3) and shrub (S1) stratum 90
Appendix E Height (m) of canopy trees (T1), small trees (T2-T3) and shrubs (S1) 95

List of Figures

Figure 1 Yarrabilba site location. 9
Figure 2 Rehabilitation units for Offset Requirement areas. 11
Figure 3 Offset Area monitoring locations. 22

List of Tables

Table 1 Offset rehabilitation units (ORU) within the corridor network. 12
Table 2 Road and infrastructure crossing rehabilitation units (CRU) traversing Offset Rehabilitation Units (ORU). 13
Table 3 Summary of pre-clearing Regional Ecosystems within Offset Rehabilitation Units and Crossing Rehabilitation Units. 14
Table 4 Reference, interim and final benchmark vegetation structure for each pre-clearing RE detailed for rehabilitation units (ORU and HRU) and crossing rehabilitation units (CRU). 17
Table 6 Data collected at monitoring sites. 23
Table 7 Photo monitoring images. 25
Table 8 Baseline species species richness, canopy height within the canopy (T1), sub-canp[y (T2-T3) and shub layer (S1) and cover within the canopy (T1), sub-canp[y (T2-T3), shub layer (S1) and ground layer (G1). 38

Table 9 Baseline species species richness, canopy height within the canopy (T1), sub-canp[y (T2-T3) and shub layer (S1) and cover within the canopy (T1), sub-canp[y (T2-T3), shub layer (S1) and ground layer (G1). 41

1 Executive Summary

Natura Consulting has developed this *Habitat Rehabilitation Monitoring Report* as a baseline for rehabilitation within the Yarrabilba Offset Requirement Areas as prescribed in the *Habitat Rehabilitation and Management Plan* (Natura Consulting, March 2015) and the Approval Conditions set out under the *Environmental Protection and Biodiversity Conservation Act 1999* dated 13 Novemebr 2014.

The intent of this plan is to provide baseline monitoring information to direct the rehabilitation works associated with Koala habitat within the Fauna Corridor, Greenspace Corridor and Environmental Protection Zones of the Yarrabilba site. The areas to be rehabilitated are Offset Requirement areas, ensuring that Koala habitat is specifically maintained within the 195 ha Offset Area. This report provides baseline data for the rehabilitation of the Offset areas, with 64 sites to be monitored within an area of 1,981,771 m^2 (198.2 ha). Each monitoring site is located within an Offset area rehabilitation (ORU1 to ORU23) including Road Crossing rehabilitation Units (CRU8, CRU11 and CU15), with the pre-clearing Regional Ecosystem, management type and corridor type tabulated.

Each rehabilitation unit is to be rehabilitated to a vegetation structure and species composition that is in line with that of the appropriate pre-clearing Regional Ecosystem (RE). This is derived from the vegetation structure and species composition of the appropriate pre-clearing RE. The final benchmark for rehabilitation is derived from the definition of remnant vegetation under the *Vegetation Management Act 1999* (canopy is 70% of the height, 50% of the cover and similar species composition of the appropriate pre-clearing RE). Interim benchmarks are also provided whereby an assessment at regular intervals will be made on the progress of the rehabilitation/revegetation efforts towards achieving this plan's outcomes. For Interim Benchmark years 1 to 10, vegetation structure has been quantified from a cumulative growth curve (CGC). The reference Benchmark, Interim Benchmarks and Final Benchmarks have been tabulated for each RE, with the relevant rehabilitation unit also identified. A species list for each RE, including dominant species within each stratum, has also been provided.

Contingency measures and corrective actions have also been provided to account for instances of when Interim Benchmarks are not being met. 'As constructed' data and surveyed boundaries will also be provided for each rehabilitation unit to test and demonstrate compliance within the offset area (195 ha) requirement.

The monitoring methodology that is applied has been detailed, where a minimum of two monitoring sites per rehabilitation unit has been surveyed in order to document and assess rehabilitation through time. The final location's of the 64 monitoring sites has been mapped. Monitoring includes photo point monitoring and transect and quadrat monitoring to monitor changes in species richness, percentage foliage cover for the ground layer, shrub and canopy layers, canopy height, and weed prevalence.

An assessment of site species richness and structure was undertaken to determine the baseline condition against the benchline values. A number of sites already meet the final benchmark for some individual parameters. However, for species richness, only 1 site meets the reference final benchmark. Rehabilitation efforts needs to ensure that the full suite of species represented in the pre-RE for each rehabilitation unit are planted where possible.

A total of 45 of the sites meet a benchmark for canopy tree cover, 57 of the sites meet a benchmark for canopy tree height, 57 of the sites meet a benchmark for small tree cover, 37 sites meets a benchmark for small tree height, 37 sites meet a benchmark for shrub cover, 47 sites meet a benchmark for shrub height, 63 sites meet a benchmark for ground cover, and 28 sites meet a benchmark for weed cover of the ground layer.

Overall, this assessment reveals that rehabilitation needs to prioritise weed control. Furthermore, strategic rehabilitation of the ground, shrub and tree layer will ensure that weeds are outcompeted and shaded out. A number of sites do not yet meet a benchmark for tree and shrub structure. These sites are primarily exotic grass pasture with scattered trees and shrubs. These sites will need to be prioritised for rehabilitation within the next 6 months to ensure that they meet the IMO – 1 year benchmark in August 2016.

2 Introduction

2.1 Background

The Yarrabilba development site is located on the eastern side of Waterford - Tamborine Road and to the south of Logan Village (refer to Figure 1). It is bounded by rural residential areas to the north, Plunkett Road to the south and the Plunkett Conservation Park to the east. The site consists of approximately 2,200 ha, of which 1,931 ha is controlled by Lend Lease Communities (Yarrabilba) Pty Ltd. The land has been historically used for pine forestry, a military training camp in WWII and for live stock grazing, when first cleared. Yarrabilba is predominately vegetated with areas of regrowth native vegetation, regenerating pines and exotic grasslands. Some limited areas of native remnant and regrowth vegetation exist but they are mostly confined to creeks, drainage channels and wetlands.

The site is currently in the early stages of development with the growth of Yarrabilba projected to span approximately 30 years. The long-term master-planned development incorporates an extensive network of dedicated open space (in excess of 25% of the site). A significant component of the open space is dedicated to the conservation of habitat for Koala (*Phascolarctos cinereus*).

Habitat rehabilitation is intended to improve Koala habitat quality within the site in order to significantly increase the site's carrying capacity in the medium to long term. In addition, the configuration of key elements of the open space system (Fauna Corridor, Greenspace Corridor and Environmental Protection Zone) will enhance the site's contribution to Koala movement opportunities within the context of larger areas of Koala habitat to the east and west of the site (Austecology 2012). Under the development of Yarrabilba, all existing fragments of remnant vegetation which have value for koalas will be retained (approximately 5.4% of the total site area) (Austecology 2012). The rehabilitation of the Fauna Corridor, Greenspace Corridor and Environmental Protection Zone will significantly expand on these values by providing additional Koala habitat (Natura Consulting 2011).

Natura Consulting has developed this *Habitat Rehabilitation Monitoring Report – Baseline within Offset Areas* prior to the commencement of habitat rehabilitation within Offset Areas in the Yarrabilba Residential Development. This report provides baseline data for the rehabilitation of Offset areas in the development site, with 64 sites to be monitored. It is noted, however, that Slash pine (*Pinus elliottii*) control has already occurred throughout 90% of the site.

2.2 Objectives

The intent of this report is to provide baseline data with which to assess the rehabilitation of Koala habitat within the Offset Requirement area, which includes Fauna Corridor, Greenspace Corridor and Environmental Protection Zone.

This report is consistent with the *Habitat Rehabilitation and Management Plan* (Natura Consulting 2015), *Offset Management Plan* (Austecology 2015), *Koala Management Plan* (Austecology 2012) and *Fauna Corridor Infrastructure Master Plan* (Natura Consulting 2011). In particular the objectives of this report are to:

- Describe the rehabilitation areas and clear and concise rehabilitation outcomes and performance indicators against which achievement of the rehabilitation will be measured;
- Identify contingency measures and appropriate corrective actions that will be undertaken if the performance indicators or outcomes are not being met;
- Outline the monitoring methodology including monitoring site locations;
- Present the baseline monitoring results; and
- Assess whether rehabilitation is on-track to meet the next interim performance indicator.

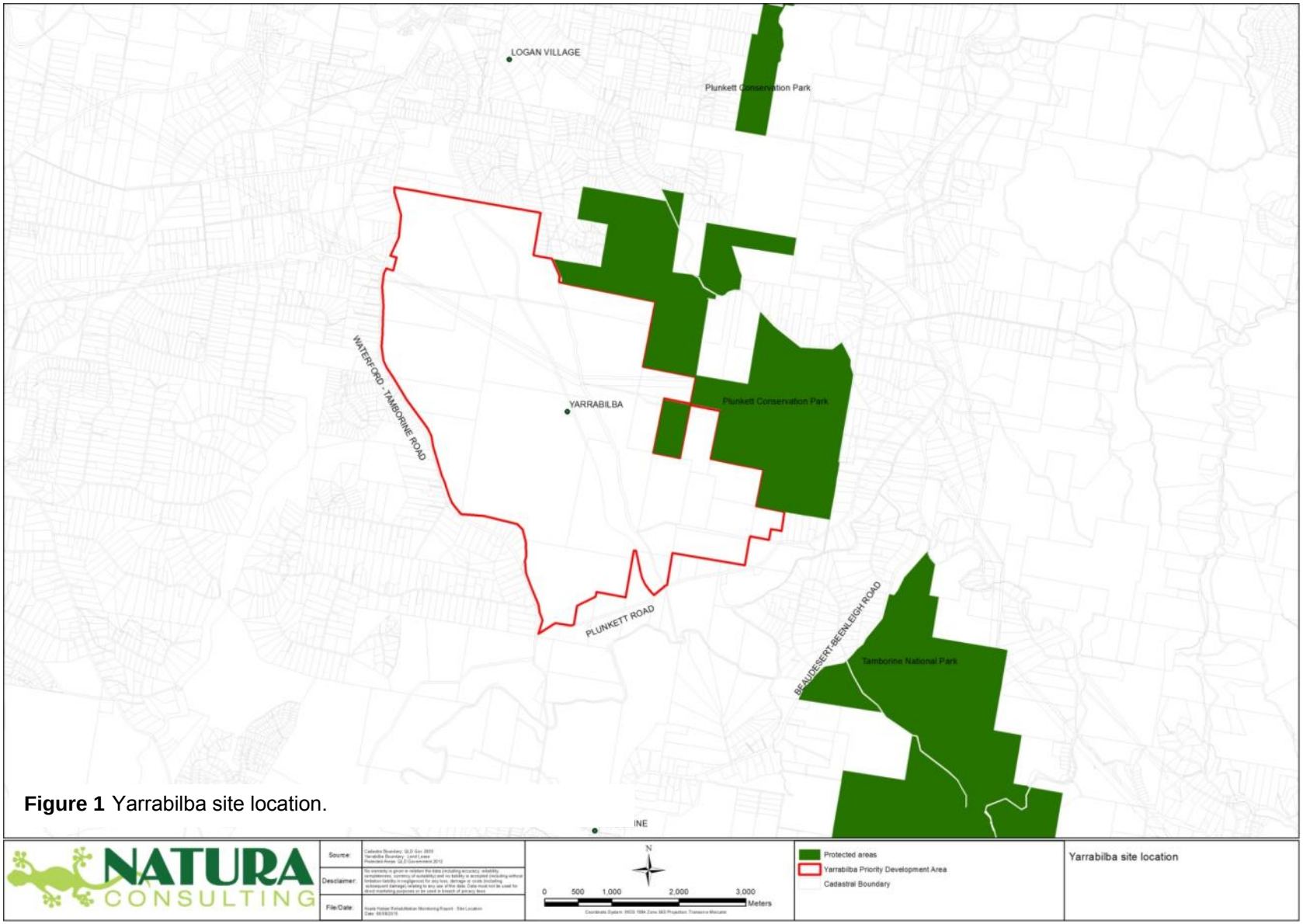

Figure 1 Yarrabilba site location.

3 Rehabilitation Areas

3.1 Purpose of Habitat Rehabilitation

Koala habitat rehabilitation is to be undertaken within "Existing Assessable Koala Habitat to be protected and managed" and "Offset Areas" within Fauna Corridors, Greenspace Corridors and Environmental Protection Zones. This totals an area of 1,981,771 m^2 (198.2 ha) in the Offset Areas and an additional 754,657 m^2 (75.5 ha) within Existing Assessable Koala Habitat areas outside of Offset areas, comprising a combined area of 2,736,428 m^2 (273.6 ha) to be rehabilitated.

The Koala habitat rehabilitation area has been divided into Offset Rehabilitation and Habitat Rehabilitation units and Crossing Rehabilitation Units. This report is relevant to the Offset Rehabilitation Units only.

3.2 Offset Rehabilitation Units

Koala habitat rehabilitation is to occur within Offset Rehabilitation units as shown in Figure 2. Each rehabilitation unit (ORU1 to ORU23) is a mapped polygon, where the polygon boundaries are the mapped Pre-Clearing Regional Ecosystems. The Regional Ecosystem (RE) code applicable to each unit was determined by overlapping Pre-Clearing Regional Ecosystem mapping (Queensland Government 2015b) with Offset Requirement area mapping within the Fauna Corridors, Greenspace Corridors and Environmental Protection Zones.

The following table presents a summary of rehabilitation units attributes, including:

- The area of the rehabilitation unit in square metres;
- The corridor within which the rehabilitation unit is located;
- The RE code for pre-clearing vegetation within the rehabilitation unit and the landzone/geology of the rehabilitation unit.

It is noted that the minimum rehabilitation unit size is ~2,500 m^2 to reflect the mapping limitation of the Pre-Clearing Regional Ecosystems mapping dataset (Queensland Government 2015). However, there are two rehabilitation units with areas of are slightly less than 2,500 m^2, which were retained due to their immediate proximity to adjacent rehabilitation units.

3.3 Crossing Rehabilitation Units

Rehabilitation and monitoring will also be undertaken where road and infrastructure traverses an Offset Requirement area. Crossing rehabilitation units have been identified by overlaying the proposed internal road network with the Pre-Clearing Regional Ecosystem mapping (Queensland Government 2015) and Offset Requirement area mapping. Each crossing rehabilitation unit (CRU1 to CRU15) is a mapped polygon overlayed over Offset Rehabilitation Units. It is noted that these locations are indicative and may change with the final alignment of roads. Table 2 presents a summary of the Crossing Rehabilitation Units, which are subject to rehabilitation actions outlined in this report.

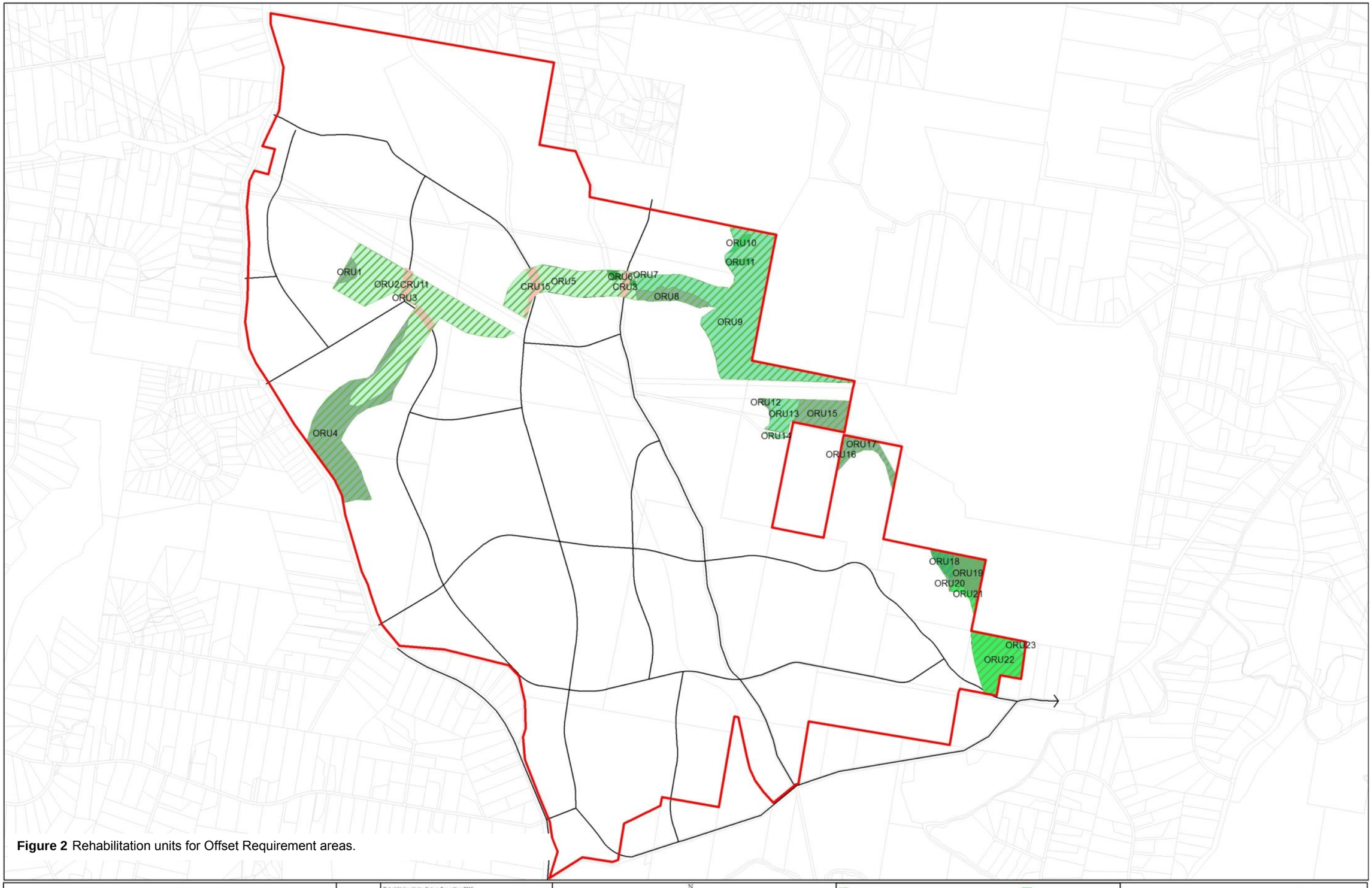

Figure 2 Rehabilitation units for Offset Requirement areas.

Table 1 Offset rehabilitation units (ORU) within the corridor network.

Rehab. Unit	Area (m^2)	Corridor Type	RE Code(s)	Landzone/ Geology
ORU1	16,933	Greenspace Corridor	12.9-10.17/12.9-10.2	Fine grained sedimentary rocks - undulating country on fine grained sedimentary rocks
ORU2	439,297	Fauna Corridor / GreenSpace Corridor	12.3.11/12.3.6/12.3.7	Recent quaternary alluvial systems – Alluvial river and creek flats
ORU3	1,451	Fauna Corridor	12.9-10.17/12.9-10.2	Fine grained sedimentary rocks - undulating country on fine grained sedimentary rocks
ORU4	269,317	Fauna Corridor	12.3.11/12.3.6/12.3.7 12.9-10.17/12.9-10.2	Recent quaternary alluvial systems – Alluvial river and creek flats and Fine grained sedimentary rocks - undulating country on fine grained sedimentary rocks
ORU5	201,530	Fauna Corridor	12.3.11/12.3.6/12.3.7	Recent quaternary alluvial systems – Alluvial river and creek flats
ORU6	10,205	Fauna Corridor	12.3.11/12.3.7	Recent quaternary alluvial systems – Alluvial river and creek flats
ORU7	7,264	Fauna Corridor	12.3.11/12.3.6/12.3.7	Recent quaternary alluvial systems – Alluvial river and creek flats
ORU8	46,711	Fauna Corridor	12.9-10.17/12.9-10.2	Fine grained sedimentary rocks - undulating country on fine grained sedimentary rocks
ORU9	513,080	Environmental Protection / Fauna Corridor	12.9-10.17/12.9-10.19	Fine grained sedimentary rocks - undulating country on fine grained sedimentary rocks
ORU10	8777	Environmental Protection	12.9-10.17	Fine grained sedimentary rocks - undulating country on fine grained sedimentary rocks
ORU11	8,324	Environmental Protection	12.9-10.17	Fine grained sedimentary rocks - undulating country on fine grained sedimentary rocks
ORU12	46,711	Environmental Protection	12.9-10.17/12.9-10.2	Fine grained sedimentary rocks - undulating country on fine grained sedimentary rocks
ORU13	49,644	Environmental Protection	12.9-10.17/12.9-10.19/12.9-10.2	Fine grained sedimentary rocks - undulating country on fine grained sedimentary rocks
ORU14	4,286	Environmental Protection	12.9-10.17/12.9-10.19/12.9-10.2	Fine grained sedimentary rocks - undulating country on fine grained sedimentary rocks
ORU15	80,800	Environmental Protection	12.9-10.17/12.9-10.2	Fine grained sedimentary rocks - undulating country on fine grained sedimentary rocks
ORU16	4,708	Environmental Protection	12.9-10.17/12.9-10.19	Fine grained sedimentary rocks - undulating country on fine grained sedimentary rocks
ORU17	47,475	Environmental Protection	12.9-10.17/12.9-10.2	Fine grained sedimentary rocks - undulating country on fine grained sedimentary rocks
ORU18	24,352	Environmental Protection	12.9-10.17	Fine grained sedimentary rocks - undulating country on fine grained sedimentary rocks
ORU19	59,917	Environmental Protection	12.11.5/12.11.3	Recent quaternary alluvial systems – Alluvial river and creek flats
ORU20	3,154	Environmental Protection	12.9-10.17/12.9-10.2	Fine grained sedimentary rocks - undulating country on fine grained sedimentary rocks
ORU21	13,374	Environmental Protection	12.11.5/12.11.3	Recent quaternary alluvial systems – Alluvial river and creek flats
ORU22	118,260	Environmental Protection	12.11.5/12.11.3	Recent quaternary alluvial systems – Alluvial river and creek flats
ORU23	6,201	Environmental Protection	12.11.5	Recent quaternary alluvial systems – Alluvial river and creek flats
Area	**1,981,771**			

Table 2 Road and infrastructure crossing rehabilitation units (CRU) traversing Offset Rehabilitation Units (ORU).

Crossing Rehab. Unit	Area (m^2)	Traversing ORU	Corridor Type	RE Code(s)	Landzone/ Geology
CRU3	12,578	ORU5, ORU6, ORU7, ORU9	Fauna Corridor	12.3.11/12.3.6/12.3.7	Fine grained sedimentary rocks - undulating country on fine grained sedimentary rocks
CRU11	31,324	ORU2	Fauna Corridor	12.3.11//12.3.7	Fine grained sedimentary rocks - undulating country on fine grained sedimentary rocks
CRU15	22,138	ORU5	Greenspace Corridor / Fauna Corridor	12.3.11/12.3.6/12.3.7	Fine grained sedimentary rocks - undulating country on fine grained sedimentary rocks
Area	**66,040**				

3.4 Pre-clearing Regional Ecosystems Rehabilitation Units

A short description of the pre-clearing Regional Ecosystems identified in the offset rehabilitation units and crossing rehabilitation units is provided in Table 3

Table 3 Summary of pre-clearing Regional Ecosystems within Offset Rehabilitation Units and Crossing Rehabilitation Units.

RE Code	RE short description (extract from Qld Herbarium RE Description Database	Vegetation Management Act class	Biodiversity status
12.3.6	*Eucalyptus tereticornis, Casuarina cunninghamiana* subsp. *cunninghamiana* +/- *Melaleuca* spp. fringing woodland	Least concern	No concern at present
12.3.7	*Melaleuca quinquenervia* +/- *Eucalyptus tereticornis, Lophostemon suaveolens* open forest on coastal alluvial plains	Least concern	No concern at present
12.3.11	*Eucalyptus tereticornis* +/- *Eucalyptus siderophloia, Corymbia intermedia* open forest on alluvial plains	Of concern	Of concern
12.9-10.2	*Corymbia citriodora* subsp. *variegata* +/- *Eucalyptus crebra* open forest on sedimentary rocks	Least concern	No concern at present
12.9-10.4	*Eucalyptus racemosa* subsp. *racemosa* woodland on sedimentary rocks	Least concern	No concern at present
12.9-10.12	*Eucalyptus seeana, Corymbia intermedia, Angophora leiocarpa* woodland on sedimentary rocks	Endangered	Endangered
12.9-10.17	*Eucalyptus acmenoides, E. major, E. siderophloia* +/- *Corymbia citriodora* subsp. *variegata* woodland on sedimentary rocks	Least concern	No concern at present
12.9-10.19	*Eucalyptus fibrosa* subsp. *fibrosa* woodland on sedimentary rocks	Least concern	No concern at present
12.11.3	*Eucalyptus siderophloia, E. propinqua* +/- *E. microcorys, Lophostemon confertus, Corymbia intermedia, E. acmenoides* open forest on metamorphics +/- interbedded volcanics	Least concern	No concern at present
12.11.5	*Corymbia citriodora* subsp. *variegata, Eucalyptus siderophloia, E. major* open forest on metamorphics +/- interbedded volcanics	Least concern	No concern at present

(Source: QLD Government 2015a)

4 Rehabilitation Performance Indicators

In accordance with the *EPBC* Act 1999 decision notice, the Koala *Habitat Rehabilitation Management Plan* (Natura Consulting 2015) has been formulated reflecting the onsite rehabilitation requirements of Fauna and Green Space Corridors, Regional Ecosystems, drainage lines and post development fauna movement pathways within Offset Areas on the site. This plan identifies Koala habitat rehabilitation benchmarks and determines restoration actions to meet these benchmarks.

Each rehabilitation unit is to be rehabilitated to a vegetation structure and species composition that is line with that of the appropriate pre-clearing RE (Identified in Table 5 and Table 6). The reference benchmark for rehabilitation of each rehabilitation unit is derived from the vegetation structure and species composition of the appropriate pre-clearing Regional Ecosystem (RE) (refer to Table 5 and Table 6). These benchmarks quantify average canopy cover, shrub cover, ground cover, species richness and average height of the canopy and have been sourced from the Queensland Herbarium (Queensland Government 2015). These technical descriptions are a compilation of data from multiple sites for canopy cover, shrub cover, and average stem density for each strata, groundcover and average species richness (Queensland Government 2015). Through establishing these benchmarks, a reasonable comparison can be made between the floristic composition and vegetation structure of a given rehabilitation unit and the appropriate pre-clearing RE.

4.1 Performance Indicators

The final benchmark for rehabilitation is derived from the definition of remnant vegetation under the *Vegetation Management Act 1999.* Vegetation can be mapped as remnant vegetation and associated essential habitat for Koalas if the canopy is 70% of the height, 50% of the cover and similar species composition of the appropriate pre-clearing RE (Queensland Government 2015). Therefore, the final benchmark for rehabilitation is 70% of the reference benchmark cover (for canopy, shrub and ground-layer) and 50% of the reference benchmark height (for canopy and shrub layer) of the appropriate RE.

Six rehabilitation performance indicators were selected:

1 Average canopy cover
2 Average height of canopy
3 Dominant canopy species
4 Average shrub cover
5 Average groundcover
6 Species richness
7 Weed cover

Weed cover needs to be considered for rehabilitation benchmarks for this site, particularly in the canopy where numerous exotic pine trees exist. Throughout the life of the development a weed cover of ≤5% is to be maintained.

The reference and final benchmark vegetation structure and species composition for each of the pre-clearing RE's identified within the mapped rehabilitation units is identified in Table 5 and Table 6 respectively. Note that exotic species identified in Table 6 are to assist with identification purposes only and are to be controlled and managed, not planted or assisted.

Rehabilitation units are to be managed and restored until they reach the final benchmark condition as identified in Table 4 and Table 5 and objectives of the Habitat Rehabilitation and Management Plan. The objectives of this plan are long term and are likely to require more than 15 years to be achieved, within each rehabilitation unit, after commencement of implementation.

Interim benchmarks are also provided whereby an assessment at regular intervals can be made on the progress of the rehabilitation/revegetation efforts towards achieving this plan's outcomes. Given this, adaptive management approaches can also be employed to redirect restoration approaches, in the event that interim benchmarks are not being met. Table 5 provides a summary of the timeframe to achieve the interim and final benchmarks.

For Interim Benchmark years 1 to 10, vegetation structure has been quantified from a cumulative growth curve (CGC), which for biological organisms including trees and shrubs is sigmoidal (Fenner School 2015). As the reference benchmarks applied for this report are at the Regional Ecosystem level and site data and long term tree and shrub growth curves are not available for Yarrabilba, we have derived general growth curves for each Regional Ecosystem. This is based on a sigmoidal growth curve, the average reference benchmark height of the stratum, the minimum height at which regrowth vegetation is considered to be of equivalent height as the RE (50% of reference benchmark height), and the average height of tubestock (20 cm) that is predominately used for revegetation in southeast Queensland.

The final benchmark at year 15 is 70% of the reference benchmark cover (for canopy, shrub and ground-layer) and 50% of the reference benchmark height (for canopy and shrub layer) of the appropriate pre-clearing RE.

4.2 Contingency Measures and Corrective Actions

4.2.1 Meeting benchmarks

During the course of monitoring, if Interim Benchmarks are not being met, the timeframes to achieve the Final Benchmarks will be reviewed and extended, whereby Lend Lease will continue to undertake rehabilitation works with continued monitoring until the Final Benchmarks are met. The review of the success of meeting Interim Benchmarks will be undertaken at each monitoring event and reported on. Where the extension of rehabilitation works is required for particular Rehabilitation Units, discussions will be undertaken with the Department of Environment, to ensure that any additional requirements are also highlighted and addressed.

4.2.2 As constructed data

Constructed data and surveyed boundaries will be provided for each rehabilitation unit, within three months of completion of earthworks. This will be undertaken to test and demonstrate compliance within the offset area (195 ha) requirement.

Table 4 Reference, interim and final benchmark vegetation structure for each pre-clearing RE detailed for rehabilitation units (ORU and HRU) and crossing rehabilitation units (CRU).

Benchmark Condition (where rehabilitation units are treated individually, at least 70% of height and 50% of cover values to be attained within first 15 years of commencement of rehabilitation works)											
RE Code	**Name**	**Status (VMA)**	**Biodiversity Status**	**Habitat Rehabilitation Unit**				**Crossing Rehabilitation Unit**			
12.3.6	***Melaleuca quinquenervia* +/- *Eucalyptus tereticornis, Lophostemon suaveolens* open forest on coastal alluvial plains**	Least concern	No concern at present	ORU2, ORU4, ORU5, ORU7				CRU3, CRU15			
				Average Canopy Cover (%)	**Average Canopy Height (m)**	**Average T2-T3 Canopy Cover (%)**	**Average T2-T3 Canopy Height (m)**	**Average Shrub Cover (%)**	**Average Shrub Height (m)**	**Average Ground cover (%)**	**Species Richness (av. +/- SD)**
Interim Benchmark by 1 year				10.0	1.5			1.5	0.5	6.0	
Interim Benchmark by 2 years				14.0	3.0			2.0	0.8	10.0	
Interim Benchmark by 3 years				16.0	4.0			2.5	1.2	15.0	
Interim Benchmark by 5 years				22.0	6.0			3.0	1.4	20.0	
Interim Benchmark by 10 years				28.0	9.2			4.0	1.5	25.0	
Final Benchmark by 15 years				**30.5**	**10.7**			**4.5**	**1.6**	**29.2**	**-**
Reference Benchmark (Pre-Clearing RE)				**60.9**	**15.3**			**8.9**	**2.3**	**58.4**	**33.3 +/- 10.5**
12.3.7	***Eucalyptus tereticornis*, *Casuarina cunninghamiana* subsp. *cunninghamiana* +/- *Melaleuca* spp. fringing woodland**	Least concern	No concern at present	ORU2, ORU4, ORU5, ORU6, ORU7				CRU3, CRU11, CRU15			
				Average Canopy Cover (%)	**Average Canopy Height (m)**	**Average T2-T3 Canopy Cover (%)**	**Average T2-T3 Canopy Height (m)**	**Average Shrub Cover (%)**	**Average Shrub Height (m)**	**Average Ground cover (%)**	**Species Richness (av. +/- SD)**
Interim Benchmark by 1 year				5.5	1.6	2.0	0.8	2.5	0.5	6.0	
Interim Benchmark by 2 years				6.0	2.9	3.0	2.7	3.0	0.8	7.0	
Interim Benchmark by 3 years				7.0	4.1	4.0	3.7	3.5	1.2	8.0	
Interim Benchmark by 5 years				9.0	6.2	5.9	5.2	4.0	1.4	10.0	
Interim Benchmark by 10 years				12.0	10.1	9.3	7.3	6.0	1.5	12.0	
Final Benchmark by 15 years				**13.3**	**13.6**	**11.5**	**8.2**	**6.6**	**1.6**	**14.4**	**-**
Reference Benchmark (Pre-Clearing RE)				**26.6**	**19.4**	**15.3**	**9.0**	**13.2**	**2.3**	**28.7**	**52.8 +/- 7.5**

Benchmark Condition (where rehabilitation units are treated individually, at least 70% of height and 50% of cover values to be attained within first 15 years of commencement of rehabilitation works)											
RE Code	**Name**	**Status (VMA)**	**Biodiversity Status**	**Habitat Rehabilitation Unit**				**Crossing Rehabilitation Unit**			
12.3.11	***Eucalyptus tereticornis* +/- *Eucalyptus siderophloia*, *Corymbia intermedia* open-forest on alluvial plains**	Of concern	Of concern	ORU2, ORU4, ORU5, ORU6, ORU7				CRU3, CRU11, CRU15			
				Average Canopy Cover (%)	**Average Canopy Height (m)**	**Average T2-T3 Canopy Cover (%)**	**Average T2-T3 Canopy Height (m)**	**Average Shrub Cover (%)**	**Average Shrub Height (m)**	**Average Ground cover (%)**	**Species Richness (av. +/- SD)**
Interim Benchmark by 1 year				7.0	1.6	2.0	0.8	2.0	0.4	1.5	
Interim Benchmark by 2 years				10.0	3.0	3.0	2.8	4.0	0.7	2.0	
Interim Benchmark by 3 years				12.0	4.2	4.2	3.8	5.0	1.1	3.0	
Interim Benchmark by 5 years				18.0	6.4	6.4	5.5	7.0	1.3	4.5	
Interim Benchmark by 10 years				22.0	10.7	10.7	8.2	9.0	1.5	7.0	
Final Benchmark by 15 years				**25.6**	**16.7**	**13.9**	**9.6**	**10.9**	**1.9**	**8.5**	**-**
Reference Benchmark (Pre-Clearing RE)				**51.1**	**23.8**	**23.9**	**11.3**	**21.7**	**2.7**	**17**	**40.6 +/- 8.5**
12.9-10.2	***Corymbia citriodora* subsp. *variegata* +/- *Eucalyptus crebra* open forest on sedimentary rocks**	Least concern	No concern at present	ORU1, ORU3, ORU4, ORU8, ORU12, ORU13, ORU14, ORU15, ORU17, ORU20							
				Average Canopy Cover (%)	**Average Canopy Height (m)**	**Average T2-T3 Canopy Cover (%)**	**Average T2-T3 Canopy Height (m)**	**Average Shrub Cover (%)**	**Average Shrub Height (m)**	**Average Ground cover (%)**	**Species Richness (av. +/- SD)**
Interim Benchmark by 1 year				6.0	1.6	2.0	0.8	6.0	0.4	6.0	3.0
Interim Benchmark by 2 years				10.0	2.9	2.9	2.8	6.5	0.7	7.0	4.0
Interim Benchmark by 3 years				12.0	4.2	4.0	3.8	7.0	1.1	12.0	5.0
Interim Benchmark by 5 years				18.0	6.3	6.0	5.3	8.5	1.3	18.0	7.0
Interim Benchmark by 10 years				22.0	10.5	9.6	7.7	11.4	1.5	22.0	9.0
Final Benchmark by 15 years				**26.8**	**15.5**	**11.9**	**8.9**	**15.1**	**1.8**	**23.6**	**10.8**
Reference Benchmark (Pre-Clearing RE)				**53.5**	**22.2**	**16.5**	**10.1**	**21.6**	**2.5**	**47.2**	**21.6**

Benchmark Condition (where rehabilitation units are treated individually, at least 70% of height and 50% of cover values to be attained within first 15 years of commencement of rehabilitation works)											
RE Code	**Name**	**Status (VMA)**	**Biodiversity Status**	**Habitat Rehabilitation Unit**				**Crossing Rehabilitation Unit**			
12.9-10.17	***Eucalyptus acmenoides, Eucalyptus major, Eucalyptus siderophloia +/- Corymbia citriodora subsp. variegata* woodland on sedimentary rocks**	Least concern	No concern at present	ORU1, ORU3, ORU4, ORU8, ORU9, ORU10, ORU11, ORU12, ORU13, ORU14, ORU15, ORU16, ORU17, ORU18, ORU20							
				Average Canopy Cover (%)	**Average Canopy Height (m)**	**Average T2-T3 Canopy Cover (%)**	**Average T2-T3 Canopy Height (m)**	**Average Shrub Cover (%)**	**Average Shrub Height (m)**	**Average Ground cover (%)**	**Species Richness (av. +/- SD)**
Interim Benchmark by 1 year				6.0	1.6	2.0	0.8	6.0	0.6	10.0	
Interim Benchmark by 2 years				10.0	3.0	3.0	2.8	7.0	1.0	20.0	
Interim Benchmark by 3 years				12.0	4.2	4.3	3.9	10.0	1.5	25.0	
Interim Benchmark by 5 years				18.0	6.4	6.5	5.7	14.0	1.8	30.0	
Interim Benchmark by 10 years				22.0	10.9	11.3	8.9	16.0	2.2	35.0	
Final Benchmark by 15 years				**27.2**	**18.2**	**15.0**	**10.4**	**20.0**	**2.8**	**43.9**	-
Reference Benchmark (Pre-Clearing RE)				**54.3**	**26.0**	**30.5**	**12.9**	**40.0**	**4.0**	**87.8**	**36.5 +/- 15.1**
12.9-10.19	***Eucalyptus fibrosa subsp. fibrosa* woodland on sedimentary rocks**	Least concern	No concern at present	ORU9, ORU14, ORU16							
				Average Canopy Cover (%)	**Average Canopy Height (m)**	**Average T2-T3 Canopy Cover (%)**	**Average T2-T3 Canopy Height (m)**	**Average Shrub Cover (%)**	**Average Shrub Height (m)**	**Average Ground cover (%)**	**Species Richness (av. +/- SD)**
Interim Benchmark by 1 year				6.0	1.6	2.0	0.8	2.5	0.4	2.5	
Interim Benchmark by 2 years				7.0	3.0	2.9	2.7	4.0	0.7	3.0	
Interim Benchmark by 3 years				9.0	4.2	4.0	3.7	5.0	1.1	4.0	
Interim Benchmark by 5 years				12.0	6.3	6.0	5.2	7.0	1.3	6.0	
Interim Benchmark by 10 years				15.0	10.5	9.6	7.3	9.0	1.5	8.0	
Final Benchmark by 15 years				**20.9**	**15.8**	**11.9**	**8.2**	**9.6**	**1.7**	**8.2**	-
Reference Benchmark (Pre-Clearing RE)				**41.8**	**22.5**	**16.4**	**9.0**	**19.1**	**2.4**	**16.4**	**30.1 +/- 4.6**

Benchmark Condition (where rehabilitation units are treated individually, at least 70% of height and 50% of cover values to be attained within first 15 years of commencement of rehabilitation works)											
RE Code	**Name**	**Status (VMA)**	**Biodiversity Status**	**Habitat Rehabilitation Unit**				**Crossing Rehabilitation Unit**			
12.11.3	***Eucalyptus siderophloia, E. propinqua* +/- *E. microcorys, Lophostemon confertus, Corymbia intermedia, E. acmenoides* open forest on metamorphics +/- interbedded volcanics**	Least concern	No concern at present	ORU19, ORU21, ORU22							
				Average T1 Canopy Cover (%)	**Average T1 Canopy Height (m)**	**Average T2-T3 Canopy Cover (%)**	**Average T2-T3 Canopy Height (m)**	**Average Shrub Cover (%)**	**Average Shrub Height (m)**	**Average Ground cover (%)**	**Species Richness (av. +/- SD)**
Interim Benchmark by 1 year				6.0	1.6	1.6	1.0	1.5	0.4	3.0	
Interim Benchmark by 2 years				10.0	3.0	3.0	2.7	2.0	0.7	5.0	
Interim Benchmark by 3 years				14.0	4.2	4.2	3.6	2.5	1.1	7.0	
Interim Benchmark by 5 years				20.0	6.4	6.5	4.9	4.0	1.3	10.0	
Interim Benchmark by 10 years				25.0	10.8	11.2	6.8	4.5	1.5	12.0	
Final Benchmark by 15 years				**31.1**	**17.6**	**14.9**	**7.5**	**5.3**	**1.7**	**15.4**	-
Reference Benchmark (Pre-Clearing RE)				**62.1**	**25.2**	**30.0**	**8.0**	**10.5**	**2.4**	**30.8**	**55.1 +/ 15.4**
12.11.5	***Corymbia citriodora* subsp. *variegata*, *Eucalyptus siderophloia*, *E. major* open forest on metamorphics +/- interbedded volcanics**	Least concern	No concern at present	ORU19, ORU21, ORU22, ORU23							
				Average T1 Canopy Cover (%)	**Average T1 Canopy Height (m)**	**Average T2-T3 Canopy Cover (%)**	**Average T2-T3 Canopy Height (m)**	**Average Shrub Cover (%)**	**Average Shrub Height (m)**	**Average Ground cover (%)**	**Species Richness (av. +/- SD)**
Interim Benchmark by 1 year				6.0	1.6	1.6	1.0	0.5	0.4	8.0	
Interim Benchmark by 2 years				9.0	3.0	2.8	2.7	1	0.7	10.0	
Interim Benchmark by 3 years				12.0	4.2	3.8	3.7	1.5	1.1	14.0	
Interim Benchmark by 5 years				15.0	6.4	5.4	5.3	2	1.3	18.0	
Interim Benchmark by 10 years				18.0	10.8	7.9	7.7	2.5	1.5	20.0	
Final Benchmark by 15 years				**21.8**	**15.8**	**9.2**	**8.7**	**2.9**	**1.6**	**23.0**	-
Reference Benchmark (Pre-Clearing RE)				**43.5**	**22.5**	**10.6**	**9.9**	**5.8**	**2.3**	**46.0**	**48.0 +/ 12.3**

Adapted from Queensland Government (2015).* No pre-defined benchmarks for this RE are provided within the RE technical descriptions (Queensland Government 2015) and therefore, these numbers have been based on data collected in the field from previous assessments and reference sites within this RE type.

5 Monitoring Methodology

The following monitoring program was implemented to capture baseline data prior to rehabilitation treatments being applied. Adaptive management strategies will be used where a rehabilitation treatment does not produce the desired result. When this occurs, the treatment will be identified and/or modified.

For this monitoring program, a minimum of two monitoring sites per rehabilitation unit is sufficient to identify any major changes and to provide a 'snap shot' of ecological conditions. Monitoring in this way will allow the ongoing collection of information to demonstrate the effectiveness of habitat rehabilitation efforts, and the frequency of monitoring activities will enable management prescriptions to be adjusted to bring about any necessary changes and corrective actions (adaptive management).

5.1 Sites

Vegetation monitoring for baseline occurred in a network of 63 sample sites with:

- 2 sample sites Crossing Rehabilitation Units and within Rehabilitation Units <50,000 m^2;
- 3 sample sites within Rehabilitation Units >50,000 m^2 but <150,000 m^2; and
- 4 sample sites within Rehabilitation Units >200,000 m^2.

The final location of each monitoring site within its representative rehabilitation unit was identified by GPS coordinates and direction (compass bearing). Monitoring site locations are identified in Figure 3.

Site locations have been permanently marked by two steel pickets with yellow safety caps placed approximately 100 m apart. Metal tags were attached to each picket, identifying site number and picket number (i.e. 0 m and 100 m). Where there was insufficient space to locate the 100 m transect due to proximity of the site to the edge of the Offset Area, the site was 50 m long.

The following methodology will be applied to monitor at each site.

5.2 Photo point monitoring

For each site, a permanently marked photo point has been established at the first marker picket and photographing towards a second marker picket at 10 m along the relevant compass bearing. A metal tag was attached to the picket, identifying site number and picket number (i.e. 10 m). All photos were taken such that the 0 m picket was located in the bottom left hand corner of the photo.

The photos were saved with the following information recorded for each file:

- Site number;
- Survey (i.e. baseline); and
- Date.

Figure 3 Offset Area monitoring locations.

5.3 Transect and quadrat monitoring

Quantitative site data, including the attributes of species richness, percentage foliage cover for the ground layer, shrub and canopy layers, canopy height, and weed cover are to be collected from field transects and quadrats established at each of the monitoring sites:

- A 100 m transect was placed between the first and third metal pickets (0 m and 100 m);
- Quadrats were placed along the transect:
  - 50 x 10 m plot positioned at the transect start at 0 m on the left hand side of the transect; and
  - 1 x 1 m subplots positioned at 0 m, 10 m, 20 m, 30 m and 40 m. Adjustments were made for each subplot if its positioning is placed over a trunk, fallen tree, roots. Where this occurred, the location of the quadrat along transects was identified such that the quadrat is consistently placed at this location during future monitoring.

Given the above, each monitoring site had the following information collected (Table 6). This benchmark monitoring process will also be undertaken at 6 months, 1 year, 18 months, 2 years, 2.5 years, 3 years, 4 years, 5 years, 10 years and 15 years. Reporting from each of the monitoring events shall be provided to the Department of Environment within 4 weeks of completion of monitoring.

Table 6 Data collected at monitoring sites.

Method of collection	Data collected
50 m x 10 m quadrat (plot)	Species richness, tubestock survival, height of each canopy species
100 m transect	Canopy species cover and height, shrub cover
Five 1 x 1 m quadrats (subplot)	Percentage cover in ground layer (including regenerating native canopy cohorts)

6 Results

6.1 Photo-point monitoring

Photo monitoring results are reported in the following table, showing the variety of vegetation types and condition. The vegetation varies from exotic grass pasture with sparse regenerating shrubs and trees to eucalypt forest with intact structure and species composition. Note that a number of sites show evidence of dense lantana camara infestations. These sites are typically at an advanced state of natural regeneration with common canopy tree sized eucalypts and abundant acacias.

Table 7 Photo monitoring images.

Site 18 – 5/8/2015	Site 19 – 5/8/2015	Site 23 – 5/8/2015
		
Site 24 – 6/8/2015	Site 25 – 5/8/2015	Site 26 – 6/8/2015
		

Site 27 – 6/8/2015

Site 28 – 6/8/2015

Site 29 – 6/8/2015

Site 30 – 14/8/2015

Site 31 – 17/8/2015

Site 32 – 17/8/2015

Site 33 – 17/8/2015

Site 44 – 7/8/2015

Site 45 – 7/8/2015

Site 46 – 12/8/2015

Site 47 – 12/8/2015

Site 48 – 7/8/2015

Site 49 – 7/8/2015

Site 54 – 12/8/2015

Site 55 – 13/8/2015

Site 56 – 12/8/2015

Site 57 – 12/8/2015

Site 58 – 13/8/2015

Site 59 – 12/8/2015

Site 60 – 13/8/2015

Site 61 – 13/8/2015

Site 62 – 17/8/2015

Site 63 – 17/8/2015

Site 64 – 17/8/2015

Site 65 – 17/8/2015

Site 66 – 13/8/2015

Site 67 – 14/8/2015

Site 68 – 14/8/2015

Site 69 – 17/8/2015

Site 101 – 18/8/2015

Site 102 – 18/8/2015

Site 103 – 18/8/2015

Site 104 – 18/8/2015

Site 107 – 18/8/2015

Site 109 – 18/8/2015

Site 110 – 19/8/2015

Site 111 – 19/8/2015

Site 112 – 18/8/2015

Site 113 – 19/8/2015

Site 114 – 19/8/2015

Site 115 – 19/8/2015

Site 123 – 21/8/2015

Site 124 – 21/8/2015

Site 127 – 21/8/2015

Site 128 – 21/8/2015

Site 129 – 25/8/2015

Site 130 – 25/8/2015

Site 131 – 21/8/2015

Site 132 – 25/8/2015

Site 133 – 21/8/2015

Site 134 – 26/8/2015

Site 135 – 25/8/2015

Site 136 – 26/8/2015

Site 137 – 25/8/2015

Site 138 – 25/8/2015

Site 143 – 16/8/2015

Site 144 – 26/8/2015

.

6.2 Transect and quadrat monitoring

6.2.1 Species richness

At baseline in August 2015, a total of 294 species were recorded within the 63 montiroing sites in the Offset Area (refer to Appendix B for a full species list for each site).

Species richness within sites ranged from 8 to 50 species, with 26.3 species observed on average. The largest number of species was observed in sites adjacent to Plunkett Conservation Park in the south east of the site and site adjacent to Wall Block, also in the south east of the site. Species richness in these sites ranged from 20 to 50 species.

The lowest number of species was observed in site 24, located in the exotic pasture with scatted regenerating eucalypts.

Canopy tree species (T1 stratum) common across the Offset Area include *Eucalyptus siderophloia*, *Corymbia intermedia*, *Eucalyptus acmenoides*, *Angophora leiocarpa*, *Corymbia trachyphloia*, *Lophostemon confertus* and *Pinus elliottii* (from highest to lower abundance).

Small tree species (T2-T3) common across the Offset Area include *Lophostemon suaveolens, Acacia disparrima, Alphitonia excelsa* and *Eucalyptus siderophloia* (from highest to lower abundance).

Shrub species (S1 stratum) that were commonly observed across the Offset Area include *Alphitonia excelsa*, *Acacia disparrima*, *Lantana camara*, and shrubs sized *Lophostemon confertus* and *Lophostemon suaveolens* and *Acacia concurrens* (from highest to lower abundance).

Of the species recoreded 20 are exotic. Several of these were significant across the Offset Area, present at a large number of sites. This includes *Lantana camara* (19 sites), *Lantana montevidensis* (11 sites) and *Passiflora suberosa* (18 sites).

6.2.2 Tree Canopy Cover and Height (T1)

Of the sites with canopy trees present (T1 stratum), tree canopy cover varied from 2.5% to over 100% cover, with average canopy cover 50.4%. Canopy species with high canopy cover were *Eucalyptus moluccana*, *Corymbia citriodora*, *Corymbia trachyphloia*, *Eucalyptus fibrosa* and *Eucalyptus siderophloia* (in order of highest to lower).

Several of the sites did not have any canopy trees present, including site 18 (ORU1), site 24 (CRU11), site 27 (ORU2), site 32 (ORU4), site 54 (ORU6), sites 56 and 57 (CRU3), site 59 (ORU7), site 61 (ORU8), site 101 (ORU12) and sites 112 and 113 (ORU16).

Canopy tree height varied from 10 m to 26.6 m, with the average tree height 14.4 m. Canopy species with high average canopy height were *Eucalyptus moluccana*, *Eucalyptus seeana, Eucalyptus major*, *Corymbia citriodora*, *Corymbia henryi*, *Eucalyptus fibrosa*, *Eucalyptus resinifera*, *Eucalyptus siderophloia* (in order of highest to lowest average canopy height).

6.2.3 Small Tree Cover and Height (T2-T3)

Of the sites with small trees present (T2 –T3 stratum), cover varied from 2.0% (site 58 – ORU7) to over 100% (site 143 – CRU8), with average cover 25.7%. Small tree species with high average cover were *Acacia disparrima* and *Alphitonia excelsa* (from highest to lower). Small tree height varied from 5.0 m to 9.9 m high, with an average of 7.7 m.

Several of the sites did not have any small trees present, including site 30 (ORU4), 47 (ORU5), 54 (ORU6), 112 (ORU16) and 115 (ORU17).

6.2.4 Shrub Cover and Height (S1)

Of the sites with shrubs present, shrub cover varied from 0.3 % (site 115, ORU15) to over 97.9% (site 110, ORU15). Shrub height varied from 1.1 m to 4.9 m with an average height of 2.9 m. Shrub species with high cover within sites were *Lantana camara*, *Daviesia umbellulata*, shrub sized *Lophostemon confertus*, *Alphitonia excelsa*, shrub sized *Eucalyptus microcorys*, and shrub sized *Lophostemon suaveolens* (in order of highest to lower average cover).

Several of the sites did not have any shrubs present, including site 19 (ORU1), 30 and 34 (ORU4), 46 (ORU5), 49 (ORU15), 54 and 55 (ORU6), 59 (ORU7), 60 (ORU8), 68 (ORU9) and 103 (ORU13).

6.2.5 Ground Cover (G1)

All of the sites have living ground layer, varying in cover from 12.4% (site 102 – ORU13) to 92.4% (site 26 – ORU2), with an average cover of 48.7%. Ground cover species with high cover within sites were *Enteropogon unispiceus, Imperata cylindrica, Lobelia purpurascens, Lomandra multiflora* and *Themeda triandra.*

6.2.6 Weed Incursion

Weeds were present at 46 of the sites (73%). In sites where weeds were present, weed cover in the ground layer varied from 0.2% (site 24 – CRU11, sites 25, 26 and 28 – ORU2) to 40.4% (site 59 – ORU7), with average cover 6.3%. Weed species in the ground layer with high cover were *Melinis minutiflora, Setaria sphacelata, Sida cordifolia, Passiflora suberosa, Lantana camara, Lantana montevidensis* and *Ageratum houstonianum.*

Table 8 Baseline species species richness, canopy height within the canopy (T1), sub-canp[y (T2-T3) and shub layer (S1) and cover within the canopy (T1), sub-canp[y (T2-T3), shub layer (S1) and ground layer (G1).

	Species Richness					Height (m)			Overlapping Crown Cover (m)					Ground Cover (%)	
Site	*Canopy (T1)*	*Sub - Canopy (T2 and T3)*	*Shrubs (S1)*	Ground Layer (G1)	Total	*Canopy (T1)*	*Sub - Canopy (T2 and T3)*	*Shrubs (S1)*	*Canopy (T1)*	*Sub - Canopy (T2 and T3)*	*Shrubs (S1)*	*Total Weed Cown Cover*	*Total Crown Cover*	*Shrub and Ground Layer (S1 -G1)*	*Total Weed Ground Cover*
18		2	3	18	23	15.0	5.0	2.6	42.0	56.0		32.4	130.4	74.4	12.4
19	2	4	4	13	23	15.2	7.2	0.0	63.8	12.0			75.8	61.6	2.8
23	2	6	3	16	27	11.0	5.5	4.5	5.0	3.0		2.0	10.0	79.2	
24		2	2	4	8		6.0	3.2	0.0	17.0	5.0	1.0	18.0	74.2	0.2
25	2	3	6	14	25	14.5	8.5	3.0	40.0	6.6		9.5	56.1	29.4	0.2
26	7	3	4	16	30	14.4	7.1	3.0	67.1	17.3		1.0	85.4	92.4	0.2
27		5	7	13	25		5.6	3.7	0.0	8.4	13.1	9.0	17.4	48.8	4
28	2		3	11	16		7.5	3.4	0.0	8.0		1.0	9.0	63.2	0.2
29	5	3	4	17	29	12.8	7.9	4.7	33.6	7.4	6.0	3.4	44.4	91.8	
30	4	2	2	16	24	15.8			74.0		7.7		74.0	30.6	8.8
31	2	4	5	17	28	12.2	7.5	2.9	21.6	49.7		3.1	74.4	24.0	12.85
32		5	6	13	24		6.8	3.2	0.0	91.6		15.0	106.6	24.9	3.7
33	2	2	1	20	25	14.8	9.2		28.5	4.0			32.5	52.6	6.4
44	2	2	4	12	20		7.4	3.1		12.4		3.2	15.6	32.2	8.2
45	7	2		10	19	16.2	9.2		93.0	19.2	4.4		112.2	55.0	2.2
46	3	3	7	13	26	17.7	9.0		37.0	15.0			52.0	63.6	19.2
47	1	2	5	7	15	1.0		3.0	6.0			2.0	8.0	60.2	2.0
48	1	4	1	8	14	11.3	8.8		48.6	4.0	6.0		52.6	35.2	2.6
49	3	6		17	26		6.9			17.1	24.3		17.1	87.6	1.2
54		2	1	13	16						4.2			61.2	9.6
55	5	1	3	21	30	17.7	9.4		111.6	4.4			116.0	31.2	7.6
56		7	1	10	18		7.5	4.6		42.4		18.0	60.4	43.6	3.2
57		3	5	11	19		6.9	3.0		20.8		23.6	44.4	66.0	1.0
58	3	1	8	11	23	18.7	6.0	3.3	24.4	2.0		4.0	30.4	56.4	
59		4	3	12	19		7.3			10.8			10.8	83.0	40.4
60	1	1	4	11	17	12.3	9.3		37.2	5.6			42.8	58.4	2.0
61		4	4	17	25		7.2	3.9		14.6	21.4	2.0	16.6	72.0	
62	5	2	2	15	24	13.7	8.1	3.2	36.9	13.9		7.2	58.0	34.0	
63	3	4	5	11	23	18.5	7.2	2.8	96.6	30.2		42.4	169.2	61.4	
64	5	3	5	16	29	17.7	8.7	2.5	54.4	15.0		3.0	72.4	32.0	
65	4	5	7	18	34	14.9	7.1	1.5	92.4	21.2		12.0	125.6	49.7	
66	4	3	10	13	30	11.4	7.5	2.4	26.3	20.4		42.2	88.9	40.8	1.2
67	3	4	10	16	33	15.5	6.7	3.4	45.8	6.8		6.7	59.3	28.8	
68	2	2	4	11	19	14.4	9.3		24.6	9.0			33.6	29.2	
69	5	2	6	6	19	16.0	7.7	1.3	74.8	3.0		8.2	86.0	23.6	
101		4	6	16	26		7.6	4.6		8.9		1.0	9.9	44.4	33.6
102	4	5	7	10	26	16.4	8.0	3.0	123.2	13.9		5.3	142.4	12.4	
103	4	3	5	20	32	16.2	9.5		114.7	5.0			119.7	26.8	
104	5	5	9	25	44	15.3	6.9	1.4	120.6	25.4		4.5	150.5	22.8	0.4
107	1		8	12	21	11.0		1.5	13.2			1.0	14.2	37.2	0.4
109	1	2	5	15	23	13.0	7.6	2.9	20.0	20.0		41.4	81.4	33.4	17.0

Site	Species Richness					Height (m)			Overlapping Crown Cover (m)					Ground Cover (%)	
	Canopy (T1)	*Sub - Canopy (T2 and T3)*	*Shrubs (S1)*	Ground Layer (G1)	Total	*Canopy (T1)*	*Sub - Canopy (T2 and T3)*	*Shrubs (S1)*	*Canopy (T1)*	*Sub - Canopy (T2 and T3)*	*Shrubs (S1)*	*Total Weed Cown Cover*	*Total Crown Cover*	*Shrub and Ground Layer (S1 -G1)*	*Total Weed Ground Cover*
110	2	5	8	28	43	10.9	8.4	3.1	4.5	41.8	18.2	45.6	91.9	41.0	16
111	3	3	3	13	22	11.1	7.4	3.2	63.7	19.5	23.2	17.4	100.6	23.2	8
112			4	27	31			2.7			10.4	3.2	3.2	82.0	0.4
113		3	8	23	34		5.4	4.0		4.7		1.7	6.4	81.2	1.6
114	4	2	4	14	24		8.9	1.5		6.1		0.4	6.5	75.8	7.2
115	5	1	3	11	20	11.5		1.2	2.5		3.6	0.3	2.8	65.0	6.4
123	6	7	7	8	28	15.6	8.3	3.2	143.8	24.3		5.7	173.8	30.2	
124	4	3	4	9	20	16.1	7.5	3.1	123.8	23.2		4.2	151.2	24.6	
127	6	2	3	13	24	14.6	9.2	1.9	90.8	4.9		0.3	96.0	22.6	
128	7	4	7	20	38	13.7	7.4	3.4	124.4	39.2		28.0	191.6	40.0	8.4
129	6	2	9	33	50	13.3	8.9	1.6	50.9	6.5	15.2	18.5	75.9	62.8	27.2
130	6	5	6	20	37	12.2	8.5	2.3	41.3	16.3	25.5	8.8	66.3	65.0	25.2
131	7	7	5	17	36	14.8	7.9	4.5	130.0	51.5	4.6	8.1	189.6	34.0	0.4
132	6	5	4	16	31	17.0	8.1	2.5	84.8	75.0		44.6	204.4	63.6	29.6
133	4	3	6	13	26	17.8	8.3	5.2	136.6	17.6	15.8	63.6	217.8	40.0	17.2
134	4	6	6	16	32	14.1	6.2	2.9	82.9	53.7	20.8	42.5	179.1	49.2	0.8
135	8	4	8	23	43	12.5	7.7	1.7	78.6	59.0	21.2	47.6	185.2	36.8	1.6
136	5	7	6	13	31	15.5	6.8	2.6	63.8	30.8	18.4	14.4	109.0	26.0	4.4
137	6	3	4	17	30	15.2	8.5	2.8	135.4	54.0	4.4	84.6	274.0	33.2	15.6
138	4	3	6	13	26	17.6	8.2	2.7	111.8	66.0	65.2	78.6	256.4	50.0	6.5
143	5	2	4	18	29	16.1	7.9	2.8	70.0	138.6	68.0	42.2	250.8	47.6	17.6
144	4	4	4	11	23	15.8	7.6	2.1	60.4	89.8	18.2	11.4	161.64	46.0	
	3.2	**3.3**	**4.8**	**14.9**	**26.3**	**14.4**	**7.7**	**2.9**	**50.4**	**23.2**	**6.7**	**13.9**	**87.6**	**48.7**	**6.3**

7 Discussion

An assessment of site species richness and structure was undertaken to determine the baseline condition against the benchline values (refer to following table).

A number of sites already meet the final benchmark for some individual parameters. Sites 123 to 144 (ORU18 to ORU23 and CRU8) met consistently high benchmarks.

For species richness, only 1 site 129 (ORU21) meets the reference final benchmark. Rehabilitation efforts needs to ensure that the full suite of species represented in the pre-RE for each rehabilitation unit are planted where possible.

A total of 45 of the sites meet a benchmark for canopy tree cover, 57 of the sites meet a benchmark for canopy tree height, 57 of the sites meet a benchmark for small tree cover, 37 sites meets a benchmark for small tree height, 37 sites meet a benchmark for shrub cover, 47 sites meet a benchmark for shrub height, 63 sites meet a benchmark for ground cover, and 28 sites meet a benchmark for weed cover of the ground layer.

Overall, this assessment reveals that rehabilitation needs to prioritise weed control in order to bring weed cover to below 5% before IMO-1 year in August 2016. Furthermore, strategic rehabilitation of the ground, shrub and tree layer will ensure that weeds are outcompeted and shaded out. It is noted that *Pinus elliotii* control has already occurred throughout 90% of the site, which is providing lower cover of this species than observed during preliminary assessments.

Sites that do not yet meet a benchmark for tree and shrub structure include site 27 and 28 (ORU2), 56 and 57 (CRU3), site 59 (ORU7), site 101 (ORU112), and site 112, 113, 114 115 (ORU16 and ORU17). These sites are primarily exotic grass pasture with scattered trees and shrubs. These sites will need to be prioritised for rehabilitation within the next 6 months to ensure that they meet the IMO – 1 year benchmark in August 2016.

Table 9 Baseline species species richness, canopy height within the canopy (T1), sub-canp[y (T2-T3) and shub layer (S1) and cover within the canopy (T1), sub-canp[y (T2-T3), shub layer (S1) and ground layer (G1).

Site	Rehabilitation Unit	Pre-Clearing Regional Ecosystem	Species Richness	Canopy Cover (T1)	Canopy Height (T1)	Small Tree Height (T2-T3)	Small Tree Cover (T2-T3)	Shrub Cover (S1)	Shrub Height (S1)	Ground Cover (G1)	Weed Cover
18	ORU1	12.9-10.17/12.9-10.2	X	FMO-15	IMO-10	IMO-3	IMO10	IMO10	FMO15	FINAL	X
19	ORU1	12.9-10.17/12.9-10.2	X	FMO-15	IMO-10	IMO-5	X	X	X	FMO15	IMO-1
23	CRU11	12.3.11/12.3.6/12.3.7	X	X	IMO-10	IMO-5	IMO-1	IMO-1	IMO-5	FINAL	IMO-1
24	CRU11	12.3.11/12.3.6/12.3.7	X	X	X	IMO-10	X	X	IMO-2	FINAL	X
25	ORU2	12.3.11/12.3.6/12.3.7	X	FMO-15	IMO-10	IMO-10	IMO-10	IMO-10	IMO-2	FMO15	IMO-1
26	ORU2	12.3.11/12.3.6/12.3.7	X	FINAL	IMO-10	IMO-5	X	X	FMO-15	FINAL	IMO-1
27	ORU2	12.3.11/12.3.6/12.3.7	X	X	X	IMO-5	IMO-10	IMO-10	FMO-15	FMO-15	X
28	ORU2	12.3.11/12.3.6/12.3.7	X	X	X	IMO-5	X	X	FMO-15	FMO-15	IMO-1
29	ORU4	12.9-10.17/12.9-10.2	X	FMO-15	IMO-10	IMO-5	IMO-3	IMO-3	FINAL	FINAL	X
30	ORU4	12.9-10.17/12.9-10.2	X	FINAL	IMO-10	X	X	X	X	IMO-10	X
31	ORU4	12.9-10.17/12.9-10.2	X	IMO-5	IMO-10	IMO-5	FMO-15	FMO-15	FMO-15	IMO-2	X
32	ORU4	12.9-10.17/12.9-10.2	X	X	X	IMO-5	IMO-10	IMO-10	FMO-15	IMO-3	IMO-1
33	ORU4	12.9-10.17/12.9-10.2	X	FMO-15	IMO-10	IMO-10	X	X	X	FMO-15	X
44	ORU5	12.3.11/12.3.6/12.3.7	X	X	X	IMO-5	IMO-3	IMO-3	FINAL	FMO-15	X
45	ORU5	12.3.11/12.3.6/12.3.7	X	FMO-15	FMO-15	IMO-10	X	X	X	FMO-15	IMO-1
46	ORU5	12.3.11/12.3.6/12.3.7	X	FMO-15	FMO-15	IMO-10	X	X	X	FINAL	X
47	ORU5	12.3.11/12.3.6/12.3.7	X	X	X	X	X	X	X	FINAL	IMO-1
48	CRU15	12.3.11/12.3.6/12.3.7	X	IMO-10	IMO-2	IMO-10	X	X	X	FMO-15	X
49	CRU15	12.3.11/12.3.6/12.3.7	X	X	X	IMO-5	X	X	X	FINAL	X
54	ORU6	12.3.11/12.3.7	X	X	X	X	X	X	X	FINAL	X
55	ORU6	12.3.11/12.3.7	X	FINAL	FMO-15	IMO-10	X	X	X	FINAL	X
56	CRU3	12.3.11/12.3.7	X	X	X	IMO-5	FMO-15	FMO-15	FINAL	FMO-15	IMO-1
57	CRU3	12.3.11/12.3.6/12.3.7	X	X	X	IMO-5	FMO-15	FMO-15	FINAL	FINAL	IMO-1
58	ORU7	12.3.11/12.3.6/12.3.7	X	IMO-2	FMO-15	IMO-5	IMO-1	IMO-1	FINAL	FMO-15	IMO-1
59	ORU7	12.3.11/12.3.6/12.3.7	X	X	X	IMO-5	X	X	X	FINAL	X

Site	Rehabilitation Unit	Pre-Clearing Regional Ecosystem	Species Richness	Canopy Cover (T1)	Canopy Height (T1)	Small Tree Height (T2-T3)	Small Tree Cover (T2-T3)	Shrub Cover (S1)	Shrub Height (S1)	Ground Cover (G1)	Weed Cover
60	ORU8	12.9-10.17/12.9-10.2	X	IMO-5	IMO-10	IMO-10	X	X	X	FMO-15	IMO-1
61	ORU8	12.9-10.17/12.9-10.2	X	X	X	IMO-5	IMO-1	IMO-1	FINAL	FINAL	X
62	ORU9	12.9-10.17/12.9-10.19	X	FMO-15	IMO-10	IMO-5	IMO-3	IMO-3	FMO-15	IMO-5	IMO-1
63	ORU10	12.9-10.17	X	FMO-15	FMO-15	IMO-5	FMO-15	FMO-15	FMO	FMO-15	IMO-1
64	ORU11	12.9-10.17	X	FMO-15	IMO-10	IMO-5	X	X	IMO-10	IMO-5	IMO-1
65	ORU10	12.9-10.17	X	FMO-15	IMO-10	IMO-5	IMO-3	IMO-3	IMO-3	FMO-15	IMO-1
66	ORU9	12.9-10.17/12.9-10.19	X	IMO-10	IMO-10	IMO-5	FINAL	FINAL	FMO-15	FINAL	IMO-1
67	ORU9	12.9-10.17/12.9-10.19	X	FMO-15	IMO-10	IMO-5	IMO-2	IMO-2	FMO-15	FMO-15	IMO-1
68	ORU9	12.9-10.17/12.9-10.19	X	IMO-10	IMO-10	IMO-10	X	X	X	IMO-10	IMO-1
69	ORU9	12.9-10.17/12.9-10.19	X	FINAL	IMO-10	IMO-5	IMO-3	IMO-3	IMO-3	FINAL	IMO-1
101	ORU12	12.9-10.17/12.9-10.2	X	X	X	IMO-5	X	X	FINAL	IMO-10	X
102	ORU13	12.9-10.17/12.9-10.19	X	FINAL	IMO-5	IMO-5	IMO-2	IMO-2	FMO-15	IMO-1	IMO-1
103	ORU13	12.9-10.17/12.9-10.19	X	FINAL	IMO-5	IMO-10	X	X	X	IMO-3	IMO-1
104	ORU13	12.9-10.17/12.9-10.19	X	FINAL	IMO-3	IMO-5	IMO-1	IMO-1	IMO-3	IMO-2	IMO-1
107	ORU14	12.9-10.17/12.9-10.19	X	IMO-10	IMO-10	X	X	X	IMO-3	IMO-10	IMO-1
109	ORU15	12.9-10.17/12.9-10.2	X	IMO-2	IMO-10	IMO-5	FMO-15	FMO-15	FMO-15	IMO-5	X
110	ORU15	12.9-10.17/12.9-10.2	X	IMO-10	IMO-10	IMO-5	FINAL	FINAL	FMO-15	FMO-15	X
111	ORU15	12.9-10.17/12.9-10.2	X	FINAL	IMO-10	IMO-5	FMO-15	FMO-15	FMO-15	IMO-3	X
112	ORU16	12.9-10.17/12.9-10.19	X	X	X	X	X	X	FMO-15	FINAL	X
113	ORU16	12.9-10.17/12.9-10.19	X	X	X	IMO-3	X	X	FINAL	FINAL	IMO-1
114	ORU17	12.9-10.17/12.9-10.2	X	X	X	IMO-10	X	X	FMO-15	FMO-15	X
115	ORU17	12.9-10.17/12.9-10.2	X	X	IMO-3	X	X	X	IMO-2	FMO-15	X
123	ORU18	12.9-10.17	X	FINAL	IMO-10	IMO-5	IMO-1	IMO-1	IMO-10	IMO-2	IMO-1
124	ORU18	12.9-10.17	X	FINAL	IMO-10	IMO-5	X	X	FMO-15	IMO-2	IMO-1
127	ORU20	12.9-10.17/12.9-10.2	X	FINAL	IMO-10	IMO-10	X	X	IMO-5	IMO-2	IMO-1
128	ORU20	12.9-10.17/12.9-10.2	X	FINAL	IMO-10	IMO-5	FMO-15	FMO-15	FMO-15	IMO-10	X
129	ORU21	12.11.5/12.11.3	FINAL	FMO-15	IMO-3	FMO-15	IMO-10	IMO-10	IMO-3	FMO-15	X

Site	Rehabilitation Unit	Pre-Clearing Regional Ecosystem	Species Richness	Canopy Cover (T1)	Canopy Height (T1)	Small Tree Height (T2-T3)	Small Tree Cover (T2-T3)	Shrub Cover (S1)	Shrub Height (S1)	Ground Cover (G1)	Weed Cover
130	ORU21	12.11.5/12.11.3	X	IMO-15	IMO-10	IMO-10	IMO-2	IMO-2	X	FMO-15	X
131	ORU19	12.11.5/12.11.3	X	FINAL	IMO-10	FMO-15	IMO-2	IMO-2	FINAL	IMO-5	X
132	ORU19	12.11.5/12.11.3	X	FMO-15	IMO-10	FMO-15	FMO-15	FMO-15	IMO-10	FMO-15	X
133	ORU19	12.11.5/12.11.3	X	FINAL	FMO-15	FMO-15	FMO-15	FMO-15	FINAL	IMO-10	X
134	ORU22	12.11.5/12.11.3	X	FINAL	IMO-10	FMO-15	FINAL	FINAL	FMO-15	IMO-10	X
135	ORU22	12.11.5/12.11.3	X	FMO-15	IMO-10	FMO-15	FMO-15	FMO-15	IMO-3	IMO-10	X
136	ORU22	12.11.5/12.11.3	X	FINAL	IMO-10	FMO-15	IMO-5	IMO-5	IMO-10	IMO-3	X
137	ORU23	12.11.5	X	FINAL	IMO-10	FINAL	FINAL	FINAL	FMO-15	IMO-5	X
138	ORU23	12.11.5	X	FINAL	IMO-10	FINAL	IMO-10	IMO-10	IMO-10	FMO-15	X
143	CRU8	12.11.5/12.11.3	X	FMO-15	IMO-10	FMO-15	FMO-15	FMO-15	FMO-15	FMO-15	X
144	CRU8	12.11.5/12.11.3	X	FMO-15	IMO-10	FMO-15	FMO-15	IMO-1	IMO-5	FMO-15	X
		Total Meeting a Benchmark	**1**	**45**	**47**	**57**	**37**	**37**	**47**	**63**	**28**

Note: the site meets the following benchmarks: IMO - 1 year; IMO – 2 year, IMO – 3 year, IMO- 4 year, IMO – 5 year, IMO – 10 year, FMO – 15 year, FINAL Benchmark condition, and X – does not meet any benchmark i.e. poorer than IMO-1 year condition.

8 Bibliography

Agricultural Management Company (2011) *Interim Land Management Plan, Yarrabilba Stage 2: Business Plan*. Agricultural Management Company, for Lend Lease.

Austecology (2012) *Koala Management Plan*. Austecology for Lend Lease.

Austecology (2015) *Offset Management Plan*. Austecology for Lend Lease.

Batianoff, G.N., Butler, D.W. (2002) Assessment of invasive naturalised plants of southeast Queensland. *Plant Protection Quarterly* 17:1.

Big Scrub Rainforest Landcare Group (2000) *Common Weeds of Northern NSW Rainforest: A practical manual on their identification and control.* Big Scrub Rainforest Landcare Group, Bangalow, NSW.

Big Scrub Rainforest Landcare Group (2005) *Subtropical Rainforest Restoration 2nd Edition*. Big Scrub Rainforest Landcare Group, Bangalow, NSW.

Brack, C.L. and Wood, G.B. (1996) *Tree Growth Increment*. Australian National University, Fenner School.
Url: http://fennerschool-associated.anu.edu.au/mensuration/BrackandWood1998/T_GROWTH.HTM. Accessed 24/01/2015.

Brisbane City Council (2010) *Ecological Assessment Guidelines – Appendix 3*. Url: http://www.brisbane.qld.gov.au/documents/building_development/pages%20from%20285065_bcc_eco_guidelines_final.part1.pdf

Buchanan, R.A. (1999) *Bush Regeneration: Recovering Australian Landscapes*. Open Training and Education Network.

Buchanan, R.A. (2009). *Restoring Natural Areas: Open Training and Education Network*. Local College New South Wales and Department of Industry and Investment.

Bushland Protection Systems (2012) *Draft Pre-Development Bushfire Mitigation Concept for the Yarrabilba Site: A Complete Town, A Better Outcome.* Bushland Protection Systems for Lend Lease.

Department of Environment and Resource Management (2010) *Wallum Froglet.* Url: http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/az_of_animals/wallum_froglet.html

Department of Infrastructure, Planning and Natural Resources (2004) *Wildlife Corridors.* Url: http://www.environment.nsw.gov.au/resources/nature/landholderNotes15WildlifeCorridors.pdf

Design Flow (2012) *Yarrabilba Stormwater Infrastructure Master Plan.* Design Flow, for Lend Lease.

Dight, G.A., Huggins, J.A., Lucy, M.J., Zerner, G.R. (2003) *Wild Plants of Greater Brisbane*. Queensland Museum.

Environmental Protection Agency (2003) *Regional Ecosystem Map: Based on 2003 Landsat TM Imagery*. Queensland Government, Brisbane.

Franks, A. and Franks, S. (2003) *Nest Boxes for Wildlife, A Practical Guide*. Blooming Books, Melbourne, Australia.

Lend Lease (2011) *Yarrabilba Draft Land Management Plan*. Lend Lease.

Logan River Branch SGAP (Qld Region) Inc. (2008) *Mangroves to Mountains Revised Edition: A field guide to the native plants of South-east Queensland*. Logan River Branch, Browns Plains Queensland.

McDonald, M.C. (1996) *Resilience and the Restoration of Damaged Plant Communities: A discussion focusing on Australian Plant Communities*. PhD. Dissertation. University of Western Sydney, Hawkesbury, NSW.

McDonald, R. C., Isbell, R. F., Speight., J. G., Walker J., and Hopkins M. S. (2005) *Australian Soil and Land Survey Handbook*. Department of Agriculture, Fisheries and Forestry, Canberra.

Natura Consulting (2011) *Fauna Corridor Infrastructure Master Plan*. Natura Consulting for Lend Lease.

New South Wales Department of Primary Industries (2011) *Noxious and Environmental Weed Control Handbook: A guide to weed control in non-crop, aquatic and bushland situations, Fifth Edition*. DPI NSW.

Parsons, W.T. and Cuthbertson, E.G. (2001) *Noxious Weeds of Australia, Second Edition*. CSIRO Publishing.

Primary Industries Department Queensland (2003) *Weeds of Southern Queensland. 2nd Edition*. Department of Primary Industries Brisbane.

Queensland Government (2009*) Koala Safety Fencing and Measures Guideline: A Guideline for the draft South East Queensland Koala Conservation State Planning Regulatory Provisions*. Url http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/Koalas/strategy/pdf/Koalafencingguideline.pdf

Queensland Herbarium (2015a) *Mapping regional ecosystems*. Queensland Government. Url: https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems/ (Accessed 06/12/2014).

Queensland Government (2015b) *Pre-clearing Broad Vegetation Groups of Queensland*. Queensland Government, Department of Science, Information Technology, Innovation and the Arts. URL: https://data.qld.gov.au/dataset/pre-clearing-broad-vegetation-groups-of-queensland/resource/1d49665c-cbc0-4935-a5b5-380c162ff42b (Accessed: 06/12/2014).

Ross, Y. (1998) *Hollow Bearing Trees in Permanent Plots in Southeast Queensland*. Department of Natural Resources, Natural Sciences Precinct, Indooroopilly, Qld. DNRQ980146/

Transport and Main Roads (TMR) (2002) *Fauna Sensitive Road Design. Volume 1, Past and Existing Practices*. Queensland Department of Main Roads, Planning, Design and Environment Division.

Urban Ecology Australia (2006) *Wildlife Corridors*. Url: http://www.urbanecology.org.au/topics/wildlifecorridors.html

Urban Land Development Authority (2011a) *Draft ULDA Guideline 14 – Environment and Natural Resources Sustainability*. Urban Land Development Authority.

Urban Land Development Authority (2011b) *ULDA Guideline 17 – Remnant Vegetation and Koala Habitat Obligations in Greater Flagstone and Yarrabilba UDA's*.

van der Ree, R., Clarkson, D.T., Holland, K., Gulle, N., Budden M., (2008*) Review of Mitigation Measures used to deal with the Issue of Habitat Fragmentation by Major Linear Infrastructure*. Department of Environment, Water, Heritage and the Arts.

Yurrah (2009) *Yarrabilba Vegetation Management Plan. Yurrah,* for Lend Lease.

9 Appendices

Appendix A Benchmark species lists for each pre-clearing RE.

Species	Regional Ecosystem									
	12.3.6	12.3.7	12.3.11	12.9-10.2	12.9-10.4	12.9-10.12**	12.9-10.17	12.9-10.19	12.11.3	12.11.5
Canopy Layer (T1)										
Allocasuarina torulosa	X			X						
Alphitonia excelsa	X			X						
Alstonia constricta				X						
Angophora leiocarpa			X	**X**		**X**	**X**	**X**	**X**	X
Angophora woodsiana			X							X
Brachychiton populneus				X						
Banksia oblongifolia	X									
Casuarina cunninghamiana subsp. cunninghamiana		**X**								
Corymbia citriodora subsp. variegata			X	**X**		X	**X**	X	X	X
Corymbia henryi										X
Corymbia intermedia	**X**	X	**X**		**X**	**X**	**X**	**X**	X	**X**
Corymbia tessellaris		X	X	X						X
Corymbia trachyphloia subsp. trachyphloia					**X**					
Dendrophthoe vitellina			X							
Eucalyptus acmenoides							**X**	X	**X**	X
Eucalyptus biturbinata									**X**	
Eucalyptus carnea							**X**	X	**X**	**X**
Eucalyptus crebra				**X**						**X**
Eucalyptus fibrosa subsp. fibrosa								**X**		
Eucalyptus helidonica										X
Eucalyptus latisinensis	X									
Eucalyptus longirostrata								X		
Eucalyptus major								**X**	**X**	
Eucalyptus melanoleuca								X		
Eucalyptus melanophloia				X						
Eucalyptus microcorys	X				X				**X**	X
Eucalyptus moluccana				X			X			
Eucalyptus montivaga								X		
Eucalyptus pilularis					**X**					
Eucalyptus portuensis								**X**		
Eucalyptus propinqua					X				**X**	X

Species	Regional Ecosystem									
	12.3.6	**12.3.7**	**12.3.11**	**12.9-10.2**	**12.9-10.4**	**12.9-10.12****	**12.9-10.17**	**12.9-10.19**	**12.11.3**	**12.11.5**
Eucalyptus racemosa subsp. racemosa						X				
Eucalyptus resinifera					X					X
Eucalyptus seeana			X			**X**				X
Eucalyptus siderophloia			**X**	X		X	X		X	**X**
Eucalyptus sideroxylon								X		
Eucalyptus tereticornis	**X**	**X**	**X**	X		X	X		X	X
Eucalyptus tindaliae			X		**X**			X		**X**
Euroschinus falcatus var. falcatus		X								
Glochidion ferdinandi	X									
Glochidion sumatranum	X									
Lophostemon confertus	**X**				X				**X**	X
Lophostemon suaveolens		X	**X**							
Melaleuca bracteata		X								
Melaleuca fluviatilis		X								
Melaleuca quinquenervia	**X**		**X**							
Melaleuca salicina	X									
Parsonsia straminea	X									
Syncarpia glomulifera					**X**					
Waterhousea floribunda		X								
Sub-canopy (T2-T3)										
Acacia blakei subsp. blakei								X		
Acacia blakei subsp. diphylla								X		
Acacia concurrens			X							X
Acacia disparrima subsp. disparrima	X	X	**X**	X					**X**	**X**
Acacia fimbriata										X
Acacia glaucocarpa				X						
Acacia leiocalyx							X	X		
Acacia loroloba								X		
Acacia maidenii				X						
Acacia melanoxylon					X					
Alectryon reticulatus										
Allocasuarina luehmannii				X						
Allocasuarina littoralis	X		**X**		X			**X**		X
Allocasuarina torulosa				X	**X**			X	**X**	**X**

Species	Regional Ecosystem									
	12.3.6	**12.3.7**	**12.3.11**	**12.9-10.2**	**12.9-10.4**	**12.9-10.12****	**12.9-10.17**	**12.9-10.19**	**12.11.3**	**12.11.5**
Alphitonia excelsa	**X**		X	X	**X**		**X**		X	
Amyema miquelii									X	
Angophora leiocarpa			X	**X**			X	X		X
Angophora subvelutina		X			X					X
Angophora woodsiana			X					X		X
Backhousia myrtifolia										
Banksia integrifolia			X							
Banksia oblongifolia					X					
Aphananthe philippinensis		X								
Casuarina cunninghamiana subsp. cunninghamiana		**X**								
Casuarina glauca			X							
Celastrus subspicata				X						
*Cinnamomum camphora**			X							
Corymbia citriodora subsp. variegata				**X**			**X**	X	X	X
Corymbia henryi										X
Corymbia intermedia	X		**X**	X	**X**		**X**	X	X	X
Corymbia tessellaris		X	X	X						X
Cryptocarya triplinervis		X								
Cryptocarya triplinervis var. triplinervis		X								
Cupaniopsis anacardioides		X								
Diospyros australis		X								
Diplatia furcata		X								
Dockrillia bowmanii		X								
Drypetes deplanchei		X								
Elaeocarpus obovatus		X	X						X	
Endiandra discolor					X					
Endiandra sieberi					X					
Erythrina vespertilio									X	
Eucalyptus acmenoides							**X**		X	
Eucalyptus carnea									X	**X**
Eucalyptus crebra				**X**						X
Eucalyptus exserta								X		
Eucalyptus fibrosa subsp. fibrosa							X	**X**		
Eucalyptus helidonica										X

Species	Regional Ecosystem									
	12.3.6	**12.3.7**	**12.3.11**	**12.9-10.2**	**12.9-10.4**	**12.9-10.12****	**12.9-10.17**	**12.9-10.19**	**12.11.3**	**12.11.5**
Eucalyptus longirostrata								X		
Eucalyptus major				X				**X**		
Eucalyptus melanoleuca								X		
Eucalyptus melanophloia				X						
Eucalyptus microcorys					X				X	
Eucalyptus moluccana				X			X	X		
Eucalyptus montivaga								X		
Eucalyptus pilularis					X					
Eucalyptus propinqua									**X**	X
Eucalyptus resinifera					X					X
Eucalyptus seeana										X
Eucalyptus siderophloia			X	**X**	X		**X**		**X**	X
Eucalyptus sideroxylon								X		
Eucalyptus tereticornis			X	X			X			X
Eucalyptus tindaliae					X					X
Euroschinus falcatus var. falcatus		X								
Ficus adenosperma		X								
Ficus coronata			X							
Flindersia schottiana					X					
Geijera salicifolia		X								
Glochidion ferdinandi			X		**X**					
Glochidion sumatranum	X		X							
Jagera pseudorhus			X							X
Leptospermum polygalifolium										X
Lophostemon confertus				X	**X**			X	**X**	**X**
Lophostemon suaveolens	**X**	X	**X**		X	X	X		X	**X**
Macaranga tanarius		X								
Maclura cochinchinensis		X								
Mallotus philippensis		X							X	
Melaleuca bracteata		X								
Melaleuca fluviatilis		X								
Melaleuca linariifolia		X	X							
Melaleuca quinquenervia	**X**		**X**			X				
Melaleuca salicina			X		X					

Species	Regional Ecosystem									
	12.3.6	**12.3.7**	**12.3.11**	**12.9-10.2**	**12.9-10.4**	**12.9-10.12****	**12.9-10.17**	**12.9-10.19**	**12.11.3**	**12.11.5**
Melaleuca saligna										X
Melaleuca viminalis		X								
Notelaea longifolia			X	X						
Notelaea 51acrocarpa var. microcarpa		X								
Olea paniculata									X	
Pandorea pandorana									X	
Parsonsia straminea			X							
*Pinus elliottii**			X							
Pleiogynium timorense		X								
Polyscias elegans									X	
Rhodosphaera rhodanthema									X	
Syncarpia glomulifera					**X**					
Syzygium oleosum					X					
Waterhousea floribunda		X								
Shrub Layer (S1)										
Abutilon auritum		X								
Acacia amblygona				X						
Acacia binervata									X	
Acacia blakei subsp. diphylla								X		
Acacia complanata							**X**	**X**		
Acacia concurrens			X	X					X	**X**
Acacia decora				X						
Acacia disparrima subsp. disparrima	**X**	**X**	**X**	**X**	X		X	**X**	**X**	**X**
Acacia falcata				X	X			X		X
Acacia fimbriata			X	X				X		X
Acacia glaucocarpa				X						
Acacia implexa				X			X			
Acacia irrorata				X					**X**	
Acacia ixiophylla								X		
Acacia juncifolia								X		
Acacia leiocalyx		X	**X**	**X**	X		**X**	**X**		X
Acacia leiocalyx subsp. leiocalyx	X						**X**			
Acacia leptocarpa	X									
Acacia loroloba				X				X		

Species	Regional Ecosystem									
	12.3.6	**12.3.7**	**12.3.11**	**12.9-10.2**	**12.9-10.4**	**12.9-10.12****	**12.9-10.17**	**12.9-10.19**	**12.11.3**	**12.11.5**
Acacia maidenii		X	X	X	X			X	X	X
Acacia melanoxylon	X		X		X				X	
Acacia neriifolia				X						
Acacia oshanesii					X					
Acacia penninervis								X		
Acacia sertiformis								X		
Acalypha nemorum									X	
Acrotriche aggregata					X				X	
Alchornea ilicifolia		X								
Alchornea thozetiana		X								
Alectryon diversifolius				X						
Alectryon tomentosus		X								
Allocasuarina littoralis	X		X	X				**X**	X	X
Allocasuarina torulosa				X	X		X	X	**X**	X
Alphitonia excelsa	**X**		X	**X**	**X**		X	**X**	X	**X**
Alstonia constricta		X		X				X		
Alyxia ruscifolia								X		
Angophora leiocarpa			X	X			X			
Angophora subvelutina		X								
Angophora woodsiana										X
Aphananthe philippinensis		X								
*Argemone mexicana**		X								
*Asparagus africanus**			X							
Astrotricha latifolia				**X**				**X**	X	
Babingtonia similis										X
*Baccharis halimifolia**			X						X	
Banksia integrifolia			X							
Banksia oblongifolia					X					
Banksia spinulosa					X					
Banksia spinulosa var. collina								X		
Banksia spinulosa var. spinulosa					X					
Bertya cunninghamii		X								
Brachychiton populneus				X					X	
Brachychiton populneus subsp. *trilobus*									X	X

Species	Regional Ecosystem									
	12.3.6	**12.3.7**	**12.3.11**	**12.9-10.2**	**12.9-10.4**	**12.9-10.12****	**12.9-10.17**	**12.9-10.19**	**12.11.3**	**12.11.5**
Brachychiton rupestris				X						
Breynia oblongifolia		X	X	X					X	
Bursaria spinosa								X	X	
Cassinia compacta								X		
Cassinia quinquefaria								X		
Cayratia clematidea		X								
Celastrus subspicata								X		
Choretrum candollei				X				X		
*Cinnamomum camphora**			X						X	
Citrus australis				X						
*Citrus limon**		X								
Clematis glycinoides									X	
Clerodendrum floribundum			X		X			X	X	
Commersonia bartramia	X									
Corymbia citriodora subsp. variegata								X	X	X
Corymbia intermedia	X		X	X			X	X	X	X
Corymbia tessellaris			X	X						X
Corymbia trachyphloia subsp. trachyphloia								X		
Cupaniopsis anacardioides	X	X								
Cupaniopsis parvifolia		X		X						
Cryptocarya triplinervis		X								
Cyclophyllum coprosmoides	X						X			
Daviesia arborea									X	
Daviesia ulicifolia				X				X		
Daviesia villifera								X		
Denhamia pittosporoides								X		
Derris involuta									X	
Diospyros australis		X								
Diospyros geminata		X								
Diplatia furcata		X								
Dockrillia bowmanii		X								
Dodonaea lanceolata var. subsessilifolia		X								
Dodonaea triangularis								X		
Dodonaea triquetra			X		X				X	X

Species	Regional Ecosystem									
	12.3.6	12.3.7	12.3.11	12.9-10.2	12.9-10.4	12.9-10.12**	12.9-10.17	12.9-10.19	12.11.3	12.11.5
Drypetes deplanchei									X	
Elaeocarpus reticulatus					X					
Elaeodendron australe									X	
Endiandra discolor					X					
Eremophila debilis				X						
Erythrina vespertilio									X	
Eucalyptus acmenoides								X	X	
Eucalyptus carnea									X	X
Eucalyptus crebra				**X**						X
Eucalyptus exserta	X							X		
Eucalyptus fibrosa subsp. fibrosa								X		
Eucalyptus helidonica										X
Eucalyptus major				X				X		
Eucalyptus melanoleuca								X		
Eucalyptus microcorys									X	X
Eucalyptus moluccana				X						
Eucalyptus montivaga								X		
Eucalyptus propinqua									X	X
Eucalyptus seeana										X
Eucalyptus siderophloia			X						X	X
Eucalyptus sideroxylon								X		
Eucalyptus tereticornis			X	X					X	X
Eucalyptus tindaliae										X
Eucalyptus tindaliae										X
Excoecaria dallachyana		X								
Exocarpus cupressiformis									X	
Exocarpus latifolius					X					
Ficus coronata		X								
Ficus fraseri		X								
Ficus opposita		X								
Flindersia australis				X						
Gahnia sieberiana					X					
Glochidion ferdinandi		X	X		**X**				X	
Glochidion lobocarpum		X								

Species	Regional Ecosystem									
	12.3.6	12.3.7	12.3.11	12.9-10.2	12.9-10.4	12.9-10.12**	12.9-10.17	12.9-10.19	12.11.3	12.11.5
Glochidion sumatranum	X		X		**X**					
*Gomphocarpus physocarpus**				X						
Goodenia ovata								X		
Grevillea banksii	X		X							
Grevillea robusta			X							
Hakea eriantha								X		
Hakea florulenta			X							
Hakea plurinervia					X					
Hodgkinsonia ovatiflora										X
Hovea acutifolia					X				X	
Hovea lorata				X						
Hovea pannosa								X		
Hibiscus heterophyllus					X				X	
Indigofera australis				X					X	
Jacksonia scoparia				X				X		X
Jagera pseudorhus										X
*Lantana camara**	**X**	**X**	**X**	**X**	**X**		X	X	**X**	**X**
Leptospermum polygalifolium	**X**		**X**					X		
Leptospermum semibaccatum					X					
Leptospermum trinervium					X					
Leucopogon juniperinus								X	X	
*Ligustrum sinense**			X						X	
Livistona australis					X					
Livistona decora	X									
Lophostemon confertus				X	**X**		**X**	X	**X**	**X**
Lophostemon suaveolens	**X**	X	**X**		X					X
Maclura cochinchinensis		**X**	X							
Mallotus philippensis		X								
Maytenus cunninghamii				X						
Maytenus bilocularis								X		
Maytenus silvestris									X	
Melaleuca bracteata		X								
Melaleuca linariifolia	X	X	X							
Melaleuca linariifolia var. trichostachya		X								

Species	Regional Ecosystem									
	12.3.6	12.3.7	12.3.11	12.9-10.2	12.9-10.4	12.9-10.12**	12.9-10.17	12.9-10.19	12.11.3	12.11.5
Melaleuca nodosa										X
Melaleuca quinquenervia	X		X							
Melaleuca salicina			X						X	X
Melaleuca viminalis		X								X
Melastoma malabathricum subsp. malabathricum					X					
Melia azedarach		X								
Monotoca scoparia								X		
Murraya paniculata			X							
Myoporum montanum				X					X	
Myrsine variabilis			X					X	X	
Neolitsea australiensis		X								
Notelaea linearis								X		
Notelaea microcarpa								X		
*Ochna serrulata**					X		X			
Olea paniculata									X	
Olearia nernstii									X	
*Opuntia tomentosa**		X								
Ozothamnus diosmifolius										X
Pandorea pandorana									X	
Parsonsia straminea		X	X							
Passiflora aurantia								X		
*Passiflora suberosa**							**X**			
*Passiflora subpeltata**	X	X							X	
Persoonia iogyna									X	
Persoonia media									X	
Persoonia sericea				X				X		
Persoonia stradbrokensis			X		X					
Persoonia virgata					X					
Phyllanthus microcladus		X								
*Pinus elliottii**			X							
Pittosporum angustifolium				X						
Pittosporum ferrugineum		X								
Pittosporum revolutum			X							
Plantago debilis		X								

Species	Regional Ecosystem									
	12.3.6	12.3.7	12.3.11	12.9-10.2	12.9-10.4	12.9-10.12**	12.9-10.17	12.9-10.19	12.11.3	12.11.5
Pleiogynium timorense		X								
Podolobium ilicifolium									X	
Polyscias elegans	X	X							X	X
Pomaderris queenslandica								X		
Psychotria daphnoides									X	
Psychotria loniceroides										X
Psydrax odorata								X		
Psydrax odorata forma buxifolia				X						
Pultenaea euchila				X						
Pultenaea microphylla								X		
Pultenaea paleacea			X							
Pultenaea spinosa										X
Pultenaea villosa					X			X		
Sarcochilus sp.									X	
*Schinus terebinthifolius**	X									
Senecio amygdalifolius									X	
Senna pendula var. glabrata	X		X		X					
Sida hackettiana			X							
*Sida rhombifolia**	X									
Smilax australis									X	
Solanum densevestitum									X	
Solanum ellipticum				X				X		
*Solanum mauritianum**	X									
*Solanum seaforthianum**				X						
Solanum stelligerum									X	X
*Solanum torvum**		X								
Stephania japonica			X							
Streblus brunonianus		X								
Swainsona galegifolia				X						
Syncarpia glomulifera					X					
Syzygium australe		X								
Tinospora smilacina		X								
Toona ciliata		X								
Trema tomentosa		X	X						X	X

Species	Regional Ecosystem									
	12.3.6	12.3.7	12.3.11	12.9-10.2	12.9-10.4	12.9-10.12**	12.9-10.17	12.9-10.19	12.11.3	12.11.5
*Triumfetta rhomboidea**										X
Trochocarpa laurina									X	X
Trophis scandens subsp. scandens			X							
*Urena lobata**		X								
Wikstroemia indica				X					X	
Xanthorrhoea johnsonii				X				X		
Zieria collina									X	
Ground Layer (G)										
Abilgaardia vaginata	X		X							
Acacia amblygona								X		
Acacia concurrens	X		X							
Acacia disparrima subsp. disparrima	X	X	X		X					
Acacia ixiophylla								X		
Acacia leiocalyx	X		X					X		
Acacia loroloba								X		
Acacia maidenii		X					X			
Acacia melanoxylon					X					
Acacia penninervis					X					
Achyranthes aspera		X								
Acrotriche aggregata					X					
Adiantum aethiopicum		X								
Adiantum hispidulum		X								
*Ageratina riparia**			X							
*Ageratum houstonianum**	X	X	X				X			
Ajuga australis		X								
Alchornea ilicifolia		X								
Alchornea thozetiana		X								
Alloteropsis semialata	X		X		X		X		X	
Alphitonia excelsa	X	X	X				X			
Alstonia constricta		X								
*Alternanthera brasiliana**	X									
Alternanthera nana		X								
Alyxia ilicifolia subsp. magnifolia					X					
Alyxia ruscifolia subsp. ruscifolia		X								

Species	Regional Ecosystem									
	12.3.6	12.3.7	12.3.11	12.9-10.2	12.9-10.4	12.9-10.12**	12.9-10.17	12.9-10.19	12.11.3	12.11.5
*Amaranthus spinosus**		X								
*Ambrosia artemisiifolia**			X							
Angophora subvelutina		X								
Aristida calycina								X		X
Aristida calycina var. calycina			X						X	
Aristida lignosa								X		
Aristida personata		X								
Aristida queenslandica								X		
Aristida queenslandica var. dissimilis								X		
Aristida vagans		X		X			X	X		
Aristida warburgii			X							
*Aristolochia elegans**		X								
Aristolochia pubera		X	X							
Arundinella nepalensis		X	X		X			X	X	
*Asclepias curassavica**		X	X							
*Asparagus africanus**	X									
*Aster subulatus**	X									
Astrotricha latifolia					X			X		
Austrodanthonia sp.									X	
Austrostipa pubescens								X		
Austrostipa sp.									X	
Austrostipa rudis subsp. rudis								X		
*Axonopus compressus**		X								
*Axonopus fissifolius**		X								
*Baccharis halimifolia**	X				X					
Baloskion pallens			X							
Banksia robur	X									
Baumea articulata	X									
Baumea juncea	X									
Baumea rubiginosa	X									
*Bidens bipinnata**		X								
*Bidens pilosa**	X	X	X							
Billardiera scandens	X				X					
Billardiera scandens var. scandens					X					

Species	Regional Ecosystem									
	12.3.6	12.3.7	12.3.11	12.9-10.2	12.9-10.4	12.9-10.12**	12.9-10.17	12.9-10.19	12.11.3	12.11.5
Blechnum carilagineum					X					
Blechnum indicum			X							
Boerhavia dominii		X								
Boronia glabra								X		
Bothriochloa decipiens				X						X
Bothriochloa decipiens var. decipiens		**X**								
Breynia oblongifolia	X	X	X		X		X	X		
Bridelia leichhardtii		X								
Brunoniella australis	X	X	X				X	X		
Bryophyllum sp.	X									
Bursaria spinosa								X		
Bursaria spinosa subsp. spinosa								X		
Caladenia catenata			X							
Calochlaena dubia			X		**X**			X		
Calotis dentex								X		
Capillipedium parviflorum									X	
Capillipedium spicigerum	X	X	X	X					X	X
Carex appressa									X	
Carex breviculmis									X	
Cassytha glabella	X				X					
Cassytha pubescens		X	X		X					
Casuarina cunninghamiana subsp. cunninghamiana		X								
Cayratia clematidea			X							
Centella asiatica	X	X	X							
Centipeda minima		X								
*Centratherum punctatum subsp. punctatum**	X									
Chamaecrista mimosoides		X								
Chamaecrista nomame			X							
*Chamaesyce hirta**		X								
Chamaesyce macgillivrayi		X								
Cheilanthes distans								X		
Cheilanthes sieberi	X	X	X				X	X		
Cheilanthes tenuifolia	X									
Chloris divaricata				X						

Species	Regional Ecosystem									
	12.3.6	12.3.7	12.3.11	12.9-10.2	12.9-10.4	12.9-10.12**	12.9-10.17	12.9-10.19	12.11.3	12.11.5
*Chloris gayana**	X		X							
Chorizema parviflorum			X							
Christella dentata		X								
Christella hispidula		X								
Chrysocephalum apiculatum			X							
Chrysopogon filipes		X								
Chrysopogon oliganthus		X								
Chrysopogon sylvaticus							X	X	X	
*Cinnamomum camphora**					X					
*Cirsium vulgare**		X								
Cissus antarctica		X								
Clematis glycinoides		X								
Commelina diffusa	X	X	X					X		
Commelina lanceolata	X		X							
*Conyza sumatrensis**		X								
Corybas barbarae			X							
Corymbia tessellaris			X							
*Crassocephalum crepidioides**	X		X				X			
Crassula sieberiana subsp. sieberiana								X		
Crotalaria montana			X							
*Crotalaria spectabilis**		X								
Cryptocarya triplinervis var. triplinervis		X								
Cryptostylis erecta					X					
Cupaniopsis anacardioides			X							
Cupaniopsis parviflora		X								
Curculigo ensifolia			X							
Cyanthillium cinereum	X	X	X				X	X		
Cyclophyllum coprosmoides			X				X	X		
*Cyclospermum leptophyllum**		X								
Cymbopogon bombycinus		X								
Cymbopogon refractus		X	X	**X**	X		X	X	X	X
Cynodon dactylon var. dactylon	X	X								
Cyperus bowmanii							X			
Cyperus difformis	X	X								

Species	Regional Ecosystem									
	12.3.6	12.3.7	12.3.11	12.9-10.2	12.9-10.4	12.9-10.12**	12.9-10.17	12.9-10.19	12.11.3	12.11.5
Cyperus enervis									X	
Cyperus fulvus		X								
Cyperus gracilis		**X**							X	
Cyperus haspan	X									
Cyperus javanicus	X	X								
Cyperus laevis									X	X
Cyperus pilosus	X	X								
Cyperus polystachyos	X									
Cyperus tetraphyllus									X	
Cyperus trinervis	X	X					X			
*Dactyloctenium aegyptium**		X								
Daviesia acicularis								X		
Daviesia umbellulata			X		X					
Desmodium brachypodum					X					
Desmodium gunnii			X				X			
Desmodium rhytidophyllum		X	X		X		X	X		
Desmodium varians			X							
Dianella brevipedunculata			X				X			
Dianella caerulea	X	X	X		X		X	X		
Dianella longifolia								X		
Dianella longifolia var. stupata								X		
Dianella rara			X							
Dianella revoluta			X					X		
Dichelachne micrantha									X	X
Dichondra repens		X								
Digitaria breviglumis							X			
*Digitaria ciliaris**		X								
*Digitaria didactyla**		X								
Digitaria longiflora			X							
Digitaria parviflora	X		X		X		**X**	X	X	X
Digitaria ramularis		X								
*Digitaria violascens**		X								
Diplocyclos palmatus subsp. palmatus		X								
Dipodium variegatum					X					

Species	Regional Ecosystem									
	12.3.6	12.3.7	12.3.11	12.9-10.2	12.9-10.4	12.9-10.12**	12.9-10.17	12.9-10.19	12.11.3	12.11.5
Dodonaea triangularis								X		
Dodonaea triquetra					X					
Doodia caudata								X		
Doodia heterophylla					X					
*Drymaria cordata**		X								
Drypetes deplanchei		X								
Echinochloa telmatophila			X							
Echinopogon caespitosus var. caespitosus	X									
Eclipta prostrata		X								
Einadia hastata								X		
Elattostachys nervosa		X								
Eleocharis acuta	X									
*Eleusine indica**		X								
*Emilia sonchifolia**	X	X	X				X			
Endiandra sieberi					X					
Enneapogon lindleyanus								X		
Enteropogon paucispiceus								X		
Enteropogon unispiceus							X			
Entolasia stricta	X		X	**X**	X		**X**	**X**	**X**	**X**
Epacris microphylla			X							
Eragrostis brownii		X	X				X			X
Eragrostis spartinoides		X	X	X					X	X
*Eragrostis tenuifolia**		X								
Eremochloa bimaculata	X		X	**X**	X		X	X	X	X
Eriachne glabrata								X		
Eriachne pallescens	X									
Eriocaulon australe			X							
Erythrina vespertilio		X								
Euroschinus falcatus var. falcatus		X								
Eustrephus latifolius	X	X	X		X		X	X		
Evolvulus alsinoides		X								
Ficus fraseri		X								
Ficus opposita		X								
Ficus rubiginosa			X							

Species	Regional Ecosystem									
	12.3.6	12.3.7	12.3.11	12.9-10.2	12.9-10.4	12.9-10.12**	12.9-10.17	12.9-10.19	12.11.3	12.11.5
Fimbristylis cinnamometorum	X		X							
Fimbristylis depauperata							X			
Fimbristylis dichotoma	X	X	X		X			X		X
Flemingia parviflora		X	X				X			
Gahnia aspera	X		X		X		X	X		
Galactia tenuiflora		X	X					X		
Geitonoplesium cymosum	X	X	X		X					
Geodorum densiflorum	X	X	X		X					
Glochidion ferdinandi	X	X	X				X			
Glochidion sumatranum	X		X							
Glycine clandestina	X		X		X			X		
Glycine clandestina var. clandestina		X			X		X			
Glycine clandestina var. sericea			X							
Glycine cyrtoloba							X			
Glycine tabacina		X								
Glycine tomentella		X	X							
*Gomphocarpus physocarpus**	X	X	X				X	X		
Gonocarpus chinensis subsp. verrucosus	X		X				X			
Gonocarpus micranthus subsp. ramosissimus			X							
Goodenia bellidifolia			X							
Goodenia bellidifolia subsp. argentea								X		
Goodenia delicata								X		
Goodenia hederacea								X		
Goodenia ovata								X		
Goodenia rotundifolia			X		X		X	X		
Grevillea leiophylla			X							
Grevillea robusta		X								
Grewia latifolia		X								
Gymnanthera oblonga		X								
Gymnostachys anceps					X			X		
Hakea florulenta	X		X							
Haloragis heterophylla							X			
Hardenbergia violacea								X		
*Heliotropium amplexicaule**		X								

Species	Regional Ecosystem									
	12.3.6	**12.3.7**	**12.3.11**	**12.9-10.2**	**12.9-10.4**	**12.9-10.12****	**12.9-10.17**	**12.9-10.19**	**12.11.3**	**12.11.5**
Heteropogon contortus	X	X	X	**X**						X
Hibbertia aspera					X					
Hibbertia scandens			X		X					
Hibbertia stricta								X		
Hibbertia vestita	X				X					
Homoranthus virgatus	X									
Hovea acutifolia					X					
Hybanthus enneaspermus		X								
Hybanthus monopetalus								X		
Hybanthus stellarioides			X		X		X	X		
Hydrocotyle tripartita	X		X							
Hypericum gramineum	X		X							
Hypochaeris microcephala var. albiflora		X								
*Hypochaeris radicata**					X					
Hypoxis pratensis	X		X							
Imperata cylindrica	**X**	X	**X**	**X**	**X**		X	X	**X**	**X**
Indigofera australis								X		
*Ipomoea cairica**		X								
Ischaemum australe var. australe	X									
*Jacaranda mimosifolia**			X							
Jacksonia scoparia								X		
Jagera pseudorhus		X			X					
Jasminum didymium subsp. racemosum								X		
Jasminum simplicifolium		X						X		
Juncus continuus		X								
Juncus kraussii	X									
Juncus polyanthemus			X							
Juncus usitatus	X									
Lagenophora moorei		X								
Lagenophora stipitata	X		X							
*Lantana camara**	X	X	X		X		X	X		
*Lantana montevidensis**		X								
Leersia hexandra		X								
Lepidosperma laterale	X		X		X			X	X	X

Species	Regional Ecosystem									
	12.3.6	12.3.7	12.3.11	12.9-10.2	12.9-10.4	12.9-10.12**	12.9-10.17	12.9-10.19	12.11.3	12.11.5
Lepidosperma lateral var. laterale								X		
Lepironia articulata	X									
Leptospermum polygalifolium			X							
Leptospermum semibaccatum					X					
Leucopogon leptospermoides					X					
Leucopogon pimeleoides					X					
*Ligustrum sinense**			X							
Lindernia crustacea			X							
Lindsaea incisa			X		X					
Lissanthe strigosa								X		
Lissanthe strigose subsp. subulata								X		
Livistona australis					X					
Lobelia purpurascens	X	X	X		X		X			
Lomandra confertifolia			X		X					
Lomandra confertifolia subsp. pallida			X				X	**X**		
Lomandra filiformis			X					X		
Lomandra filiformis subsp. filiformis								X		
Lomandra hystrix	X	**X**								
Lomandra laxa			X		X		X			
Lomandra longifolia	**X**	X	**X**		X		X			
Lomandra multiflora			X					X		
Lomandra multiflora subsp. multiflora					X		X	X		
Lomatia silaifolia			X		X			X		
Lophostemon suaveolens		X	X					X		
Ludwigia octovalvis		X								
*Macfadyena unguis-cati**		X								
Maclura cochinchinensis		X	X							
Macroptilium atropurpureum		X								
Macrotyloma axillare			X							
Mallotus philippensis		X								
*Malvastrum americanum var. americanum**		X						X		
Malvastrum coromandelianum		X								
Marsdenia brevis								X		
Marsdenia fraseri								X		

Species	Regional Ecosystem									
	12.3.6	12.3.7	12.3.11	12.9-10.2	12.9-10.4	12.9-10.12**	12.9-10.17	12.9-10.19	12.11.3	12.11.5
Maytenus disperma		X								
*Mecardonia procumbens**		X								
*Megathyrsus maximus**	X	X	X						X	X
Melaleuca bracteata		X								
Melastoma malabathricum			X							
Melastoma malabathricum subsp. malabathricum	X									
Melia azedarach		X								
Melichrus urceolatus								X		
*Melinis minutiflora**									X	**X**
*Melinis repens**		X								X
Microlaena stipoides			X				X		X	X
Microlaena stipoides var. stipoides		X						X	X	
Mitrasacme alsinoides			X							
Monotoca scoparia					X			X		
Murdannia graminea	X		X				X			
Murraya paniculata		X								
Notelaea ovata			X							
Nyssanthes diffusa		X								
*Ochna serrulata**	X		X		X					
Olea paniculata		X								
Olearia nernstii								X		
Opercularia diphylla								X		
Oplismenus aemulus	X	**X**	X		X		X		X	
Oplismenus imbecillis			X		X				X	X
*Opuntia tomentosa**		X					X	X		
Ottochloa gracillima	**X**	X	**X**				**X**		X	
Ottochloa nodosa		X			**X**				X	
Oxalis chnoodes	X									
*Oxalis corniculata**		X			X					
Oxalis perennans			X							
Oxalis radicosa	X									
Oxalis rubens					X			X		
Panicum effusum			X	**X**	X		**X**		X	X
Panicum simile			X		X					

Species	Regional Ecosystem									
	12.3.6	**12.3.7**	**12.3.11**	**12.9-10.2**	**12.9-10.4**	**12.9-10.12****	**12.9-10.17**	**12.9-10.19**	**12.11.3**	**12.11.5**
Parsonsia eucalyptophylla	X									
Parsonsia straminea	X	X	X							
Paspalidium distans	X		X				X			
Paspalidium gausum			X							X
Paspalidium gracile	X		X						X	X
*Paspalum conjugatum**									X	
*Paspalum dilatatum**		X			X				X	
Paspalum longifolium	X									
Paspalum scrobiculatum	X		X						X	
*Paspalum urvillei**	X									
*Passiflora edulis**	X									
*Passiflora foetida**			X							
*Passiflora suberosa**	X	X	X		X		X			
*Passiflora subpeltata**	X	X	X					X	**X**	
Patersonia sericea var. sericea								X		
Pavetta australiensis var. australiensis		X								
Pennisetum alopecuroides		X								
Peripleura hispidula		X								
Persicaria hydropiper		X								
Persoonia cornifolia					X					
Persoonia media			X							
Persoonia sericea								X		
Persoonia virgate					X					
Petrophile canescens								X		
Philydrum lanuginosum	X									
Phyllanthus gunnii								X		
Phyllanthus mitchellii								X		
Phyllanthus virgatus	X	X	X		X		X	X		
Pimelea linifolia			X		X					
Plantago debilis		X								
Platylobium formosum					X					
Plectranthus parviflorus		X						X		
Pleiogynium timorense		X								
Poa cheelii									**X**	

Species	Regional Ecosystem									
	12.3.6	12.3.7	12.3.11	12.9-10.2	12.9-10.4	12.9-10.12**	12.9-10.17	12.9-10.19	12.11.3	12.11.5
Poa sieberiana								X		
Polycarpaea corymbosa var. minor		X								
Polygala linariifolia							X			
*Polygala paniculata**			X							
Polymeria calycina	X	X	X		X					
Pomax umbellata					X			X		
Poranthera microphylla			X							
*Portulaca oleracea**		X								
*Praxelis clematidea**							X			
Pseuderanthemum variabile			X					X		
Psychotria loniceroides					X					
Pteridium esculentum	X	X	**X**		**X**					
Pterostylis nutans			X							
Pterostylis ophioglossa								X		
Pultenaea microphylla	X							X		
Pultenaea petiolaris								X		
Pultenaea retusa					X					
Pultenaea spinosa			X							
Pycnospora lutescens		X	X							
Rhynchosia minima		X								
*Richardia brasiliensis**		X	X							
*Rivina humilis**		X	X							
Rostellularia adscendens			X							
Rostellularia obtusa			X							
Rubus parvifolius			X							
Sacciolepis indica	X	X	X							
*Salvia coccinea**		X								
Sarga leiocladum			X						X	
Sarga plumosum		X								
*Schefflera actinophylla**			X							
*Schinus terebinthifolius**			X							
Schizaea bifida					X					
Schoenus apogon			X							
Scleria brownii		X								

Species	Regional Ecosystem									
	12.3.6	12.3.7	12.3.11	12.9-10.2	12.9-10.4	12.9-10.12**	12.9-10.17	12.9-10.19	12.11.3	12.11.5
Scleria levis			X		X					
Scleria tricuspidata	X									
Scleria mackaviensis		X							X	X
Scleria sp.									X	
Scleria spacelata					X			**X**	X	
Scleria tricuspidata							X			
*Scoparia dulcis**	X									
Senna floribunda		X								
*Senna pendula var. glabrata**		X	X							
Seringia corollata								X		
*Sida cordifolia**		X								
Sida filiformis								X		
Sida hackettiana		**X**								
*Sida cordifolia**	X									
*Sida rhombifolia**		**X**	X							
Sigesbeckia orientalis		X	X					X		
Smilax australis		X	X							
Smilax glyciphylla			X		X					
Solanum americanum	X	X			X					
Solanum ellipticum								X		
*Solanum mauritianum**		X	X							
Solanum nemophilum								X		
Solanum nigrum	X	X	X							
*Solanum seaforthianum**	X	X	X							
Solanum stelligerum								X		
*Sonchus oleraceus**	X	X	X							
Sorghum x almum	X									
Sporadanthus caudatus			X							
Sporobolus creber		X								X
Sporobolus elongatus		X								
Sporobolus laxus		X								
Stellaria media		X								
Stephania japonica	X	X	X		X					
Stylidium laricifolium								X		

Species	Regional Ecosystem									
	12.3.6	**12.3.7**	**12.3.11**	**12.9-10.2**	**12.9-10.4**	**12.9-10.12****	**12.9-10.17**	**12.9-10.19**	**12.11.3**	**12.11.5**
Syagrus romanzoffiana		X								
Syzygium australe		X								
Themeda triandra	**X**	X	**X**	**X**	**X**		**X**	**X**	**X**	**X**
*Tradescantia fluminensis**		X								
Trema tomentosa	X	X								
Tricoryne elatior			X							
*Tridax procumbens**		X								
Triglochin procerum	X									
Trophis scandens subsp. scandens		X	X							
Turraea pubescens		X								
*Urochloa decumbens**									X	X
*Urochloa mutica**			X							
Velleia spathulata	X									
*Verbena bonariensis**	X									
Viola banksii			X							
Viola hederacea			X		X					
Wahlenbergia gracilis		X					X			
Westringia eremicola								X		
Wikstroemia indica					X					
Xanthorrhoea johnsonii								**X**		
Xanthorrhoea latifolia					X		X			
*Xanthium occidentale**		X								
Xanthosia pilosa					X					
Xyris juncea	X									
Zieria minutiflora					X					
Zornia dyctiocarpa var. dyctiocarpa		X								

Source: Adapted from Queensland Government (2015). Note: * exotic species; **X =** dominant species; **Species list was not available for RE 12.9-10.12; Koala habitat and rehabilitation units (RU) and crossing rehabilitation units (CRU) within the each RE: **12.3.6**: ORU2, ORU4, ORU5, ORU7, CRU1, CRU2, CRU3, CRU15; **12.3.7**: ORU2, ORU4, ORU5, ORU6, ORU7, CRU3, CRU11, CRU15; **12.3.11**: ORU2, ORU4, ORU5, ORU6, ORU7, CRU3, CRU11, CRU15; **12.9-10.2**: ORU1, ORU3, ORU4, ORU8, ORU12, ORU13, ORU14, ORU15, ORU17, ORU20, **12.9-10.17**: ORU1, ORU3, ORU4, ORU8, ORU9, ORU10, ORU11, ORU12, ORU13, ORU14, ORU15, ORU16, ORU17, ORU18, ORU20, **12.9-10.19**: ORU9, ORU14, ORU16; **12.11.3:** ORU19, ORU21, ORU22, **12.11.5**: ORU19, ORU21, ORU22, ORU23.

Appendix B Species Composition

Site	18	19	23	24	25	26	27	28	29	30	31	32	33	44	45	46	47	48	49	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69
Canopy Tree (T1)																																			
Acacia concurrens																																			
Acacia disparrima subsp. disparrima													1																						
Allocasuarina littoralis																																1			
Alphitonia excelsa																																			
Angophora leiocarpa						1				1	1					1			1		1							1		1	1	1			
Angophora woodsiana																																	1		
Corymbia citriodora subsp. variegata																																			1
Corymbia henryi																																			
Corymbia intermedia						1			1	1	1		1		1	1			1		1							1	1	1	1	1			1
Corymbia trachyphloia subsp. trachyphloia																																	1	1	
Eucalyptus acmenoides																					1							1	1	1	1				1
Eucalyptus carnea																																			
Eucalyptus crebra																																			
Eucalyptus fibrosa subsp. fibrosa																																			
Eucalyptus major																																			
Eucalyptus microcorys															1																				
Eucalyptus moluccana		1			1									1																					
Eucalyptus planchoniana																														1		1		1	
Eucalyptus resinifera																													1		1		1		
Eucalyptus seeana						1									1									1											
Eucalyptus siderophloia			1					1						1	1	1			1		1			1											1
Eucalyptus tereticornis		1			1	1			1	1					1																				
Eucalyptus tindaliae						1																						1		1					1
Lophostemon confertus																												1							
Lophostemon suaveolens						1		1	1						1						1			1											
Melaleuca quinquenervia									1	1																									
*Pinus elliottii**			1			1			1						1		1	1									1								
T1 - Species Richness	**0**	**2**	**2**	**0**	**2**	**7**	**0**	**2**	**5**	**4**	**2**	**0**	**2**	**2**	**7**	**3**	**1**	**1**	**3**	**0**	**5**	**0**	**0**	**3**	**0**	**1**	**0**	**5**	**3**	**5**	**4**	**4**	**3**	**2**	**5**
Small Tree (T2-T3)																																			
Acacia concurrens		1							1										1			1			1										
Acacia disparrima subsp. disparrima											1	1															1								
Acacia leiocalyx																		1	1			1			1		1								
Allocasuarina littoralis	1				1																								1				1		
Allocasuarina torulosa		1																																	
Alphitonia excelsa	1	1	1		1		1					1			1			1	1																
Angophora leiocarpa					1							1					1			1	1	1	1					1	1	1	1	1			
Corymbia citriodora subsp. variegata																																			1
Corymbia henryi																																			
Corymbia intermedia							1				1	1						1				1													
Corymbia tessellaris			1				1						1																						
Corymbia trachyphloia subsp. trachyphloia																																		1	
Eucalyptus acmenoides																															1		1		
Eucalyptus crebra																																			

Site	18	19	23	24	25	26	27	28	29	30	31	32	33	44	45	46	47	48	49	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69
Eucalyptus fibrosa subsp. fibrosa																																			
Eucalyptus microcorys																																			
Eucalyptus moluccana			1																																
Eucalyptus montivaga		1																																	
Eucalyptus planchoniana																																1		1	
Eucalyptus propinqua							1																												
Eucalyptus resinifera																							1				1		1		1		1		
Eucalyptus seeana																								1											
Eucalyptus siderophloia				1																		1													
Eucalyptus tereticornis			1																			1													
Eucalyptus tindaliae																														1					
Lophostemon confertus													1															1	1	1	1	1	1		
Lophostemon suaveolens			1	1		1	1		1	1	1	1		1	1	1	1	1	1	1		1	1		1		1								1
Melaleuca decora																1			1																
Melaleuca linariifolia						1			1							1									1										
Melaleuca quinquenervia										1	1																								
Melaleuca saligna			1																																
*Pinus elliottii**						1								1					1							1					1				
T2 and T3 Species Richness	**2**	**4**	**6**	**2**	**3**	**3**	**5**	**0**	**3**	**2**	**4**	**5**	**2**	**2**	**2**	**3**	**2**	**4**	**6**	**2**	**1**	**7**	**3**	**1**	**4**	**1**	**4**	**2**	**4**	**3**	**5**	**3**	**4**	**2**	**2**
Shrub Layer (S1)																																			
Acacia regrowth												1		1									1	1											
Eucalyptus regrowth																								1								1	1		
Abutilon auritum											1																								
Acacia complanata																																			
Acacia concurrens	1		1	1			1			1	1					1	1			1		1	1	1		1	1			1		1	1	1	
Acacia disparrima subsp. disparrima			1			1										1													1			1		1	
Acacia fimbriata																1																			
Acacia juncifolia																														1	1				
Acacia leiocalyx						1	1	1			1						1			1		1	1	1		1									
Acacia maidenii		1																																	
Acrotriche aggregata																																			
Allocasuarina littoralis							1																												
Alphitonia excelsa							1				1	1	1			1				1				1	1	1						1	1		1
Angophora leiocarpa																																1	1		
Angophora woodsiana																																			
Babingtonia similis																															1				
Banksia integrifolia																																1	1		
Banksia spinulosa																													1		1				
Breynia oblongifolia																																			
Bursaria spinosa																																			
*Cinnamomum camphora**																1																			
Clerodendrum floribundum																													1	1	1				
Corymbia intermedia																																			1
Corymbia trachyphloia subsp. trachyphloia																																			
Cryptandra rigida																																		1	

Site	18	19	23	24	25	26	27	28	29	30	31	32	33	44	45	46	47	48	49	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69
Daviesia umbellulata																												1							
Eucalyptus carnea							1																												
Eucalyptus crebra							1																												
Eucalyptus fibrosa subsp. fibrosa																																			
Eucalyptus major																																			
Eucalyptus microcorys																																			
Eucalyptus moluccana		1			1																														
Eucalyptus resinifera																																	1		
Eucalyptus siderophloia								1																											
Eucalyptus tereticornis		1	1																																
Eucalyptus tindaliae																																			1
Gahnia clarkei																																			
Gahnia sieberiana					1																														
*Gomphocarpus physocarpus**	1	1			1																														
Gompholobium virgatum																																1			
Grevillea robusta																																			
Hovea pannosa																																1			
Jacksonia scoparia																								1		1									
*Lantana camara**					1		1				1	1				1		1			1				1										
Leptospermum polygalifolium					1				1								1							1	1		1		1		1				
Lophostemon confertus												1												1				1	1	1	1		1		1
Lophostemon suaveolens						1			1			1					1					1	1				1					1			
Melaleuca decora					1				1						1																				
Melaleuca linariifolia									1																										
Melaleuca salicina																																			
Melaleuca saligna															1																				
Melaleuca sieberi																											1								
Melichrus adpressus																																			
Melichrus urceolatus																																			
Monotoca scoparia																																	1		
Ozothamnus diosmifolius																																			
Parsonsia straminea																1																			
*Passiflora suberosa**	1																																		
*Pinus elliottii**				1		1		1		1		1					1						1												
Pittosporum multiflorum														1																		1			1
Podolobium ilicifolium																																			
Pultenaea flexilis																																		1	
Pultenaea microphylla																																			
Pultenaea spinosa																																			
Pultenaea villosa																																1		1	
Smilax australis																																			
*Solanum mauritianum**																																			
Xanthorrhoea johnsonii																														1			1		
Fake lepto site65																															1				
S1 - Species Richness	**3**	**4**	**3**	**2**	**6**	**4**	**7**	**3**	**4**	**2**	**5**	**6**	**1**	**4**	**0**	**7**	**5**	**1**	**0**	**1**	**3**	**1**	**5**	**8**	**3**	**4**	**4**	**2**	**5**	**5**	**7**	**10**	**10**	**4**	**6**

Site	18	19	23	24	25	26	27	28	29	30	31	32	33	44	45	46	47	48	49	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69
Ground Layer (G)																																			
Moss																																			
Acacia regrowth												1	1	1					1			1	1	1	1	1	1		1	1			1	1	
Eucalyptus regrowth										1					1				1		1		1			1		1		1	1	1	1	1	
Acacia amblygona																															1				1
Acacia concurrens						1											1																		
Acacia disparrima subsp. disparrima																																			
Acacia leiocalyx																																			
Acacia maidenii																																			
Acacia quadrilateralis																																1		1	
Acrotriche aggregata																												1							
*Ageratum houstonianum**	1	1				1			1	1			1			1																			
Alphitonia excelsa																					1	1											1		
Aristida calycina																																			
Aristida vagans													1																						
Astrotricha longifolia																												1	1	1	1	1			
*Baccharis halimifolia**										1			1														1								
*Bidens bipinnata**						1			1		1		1										1		1										
*Bidens pilosa**	1									1						1				1															
Bursaria spinosa																																			
Carex appressa																																			
Cayratia clematidea																																			
Centella asiatica																																			
Centipeda minima	1		1		1			1			1																								
Cheilanthes distans					1																				1										
Cheilanthes tenuifolia																																			
Chloris divaricata							1	1																											
*Chloris gayana**											1																								
Chrysocephalum apiculatum						1	1		1																										
Commelina diffusa																												1							
*Conyza sumatrensis**	1																																		
Corybas barbarae																															1				
Craspedia variabilis												1							1			1													
*Crassocephalum crepidioides**	1									1		1	1		1			1							1										
Cullen tenax																																			
Cymbonotus lawsonianus																																			
Cymbopogon refractus			1					1			1			1					1																
Cynodon dactylon var. dactylon			1					1																											
Cyperus bowmanii									1		1		1																				1		
Cyperus trinervis																																			
Daviesia umbellulata																															1		1	1	
Desmodium gunnii	1	1	1		1	1				1	1		1		1	1			1	1	1							1							
Desmodium heterocarpon var. heterocarpon			1																																
Desmodium rhytidophyllum						1				1	1			1		1			1	1				1		1			1	1			1		1
Dianella brevipedunculata																																			

Site	18	19	23	24	25	26	27	28	29	30	31	32	33	44	45	46	47	48	49	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69
Dianella caerulea	1	1	1		1		1					1								1	1				1	1	1	1	1	1	1	1			
Dianella longifolia																															1				
Dichondra repens	1	1			1																														
Drosera sp.																							1												
Einadia hastata																																			
Enchylaena tomentosa																																			
Entolasia stricta																												1	1	1	1	1		1	1
Eucalyptus tereticornis	1																																		
Eustrephus latifolius			1								1					1																		
Geitonoplesium cymosum																					1														
Glycine clandestina																																			
*Gomphocarpus physocarpus**																																1			
Goodenia hederacea												1	1														1							1	
Goodenia rotundifolia						1		1	1				1								1	1		1			1	1		1				1	
Hardenbergia violacea			1																			1						1	1		1				
Hybanthus monopetalus																																			
Hydrocotyle tripartita										1															1										
*Hypochaeris radicata**									1		1																								
Imperata cylindrica	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1					1	1		
*Ipomoea cairica**																1	1																		
Juncus usitatus	1					1			1									1																	
*Lantana camara**		1					1		1				1		1			1	1	1	1						1					1			
*Lantana montevidensis**			1			1	1		1			1		1		1		1	1	1	1														
Lepidosperma laterale										1																	1			1					
Leptospermum polygalifolium							1					1						1	1				1					1					1		
Lindsaea incisa							1												1																
Lindsaea microphylla										1										1	1				1	1						1			
Lobelia purpurascens	1	1	1		1	1	1	1	1	1	1	1				1			1		1	1	1	1		1	1			1		1		
Lomandra confertifolia													1																1	1				
Lomandra confertifolia subsp. pallida																																			
Lomandra longifolia			1				1	1						1	1					1	1			1										1	
Lomandra multiflora			1		1		1				1	1	1	1	1	1	1			1	1		1	1			1	1	1	1	1		1		1
Lophostemon suaveolens																																1			
Melichrus urceolatus																												1		1					
*Melinis minutiflora**																																			
*Melinis repens**											1		1																						
Monotoca scoparia																																1		1	
Notelaea ovata																																		1	
Oplismenus aemulus																																			
Oplismenus imbecillis																					1			1		1		1	1	1	1		1		
Ottochloa gracillima																			1																
Oxalis radicosa																																			
Panicum maximum											1	1	1																						
Parsonsia straminea																									1								1		
*Passiflora suberosa**		1								1		1		1	1	1					1												1		

Site	18	19	23	24	25	26	27	28	29	30	31	32	33	44	45	46	47	48	49	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69
Patersonia sericea var. sericea																												1							
Pennisetum clandestinum																																			
Persoonia media															1																				
Phyllanthus virgatus																																			
Pimelea linifolia				1	1	1			1										1		1	1	1	1		1	1		1		1				
Pinus elliottii													1				1		1								1				1				
Plantago lanceolata					1				1																										
Poa labillardieri		1	1		1		1	1	1		1		1	1					1		1	1				1	1						1		
Poa sieberiana					1																														
Podolobium scandens																														1	1				
Polygala linariifolia						1																													
Polygonum aviculare					1																														
Polymeria calycina	1		1	1				1																											
Pseuderanthemum variabile																																			
Pteridium esculentum														1	1	1	1			1	1			1	1		1				1	1			
Pterocaulon redolens	1																																		
Pterostylis ophioglossa																																			
Pultenaea retusa																																		1	
Pultenaea spinosa																																			
Ripogonum elseyanum																																			
Senecio madagascariensis																											1								
*Setaria sphacelata**																					1				1										
*Sida cordifolia**		1									1	1	1																						
*Sida cordifolia**	1																																		
Smilax australis																																			
Solanum americanum																									1										
Stephania japonica										1		1						1		1															
Tagetes minuta										1																									
Themeda triandra			1	1	1	1	1	1	1	1	1			1			1		1	1		1	1	1		1	1					1	1		
*Trifolium repens**																																			
*Urochloa decumbens**		1																																	
*Verbena bonariensis**	1																																		
*Verbena officinalis**	1																																		
Veronica sp.	1																																		
Viola hederacea																					1							1							
Wahlenbergia gracilis																																			
Xanthorrhoea johnsonii																															1			1	
Youngia japonica														1																					
G1 - Specie Richness	**18**	**13**	**16**	**4**	**14**	**16**	**13**	**11**	**17**	**16**	**17**	**13**	**20**	**12**	**10**	**13**	**7**	**8**	**17**	**13**	**21**	**10**	**11**	**11**	**12**	**11**	**17**	**15**	**11**	**16**	**18**	**13**	**16**	**11**	**6**
Species Richness	**23**	**23**	**27**	**8**	**25**	**30**	**25**	**16**	**29**	**24**	**28**	**24**	**25**	**20**	**19**	**26**	**15**	**14**	**26**	**16**	**30**	**18**	**19**	**23**	**19**	**17**	**25**	**24**	**23**	**29**	**34**	**30**	**33**	**19**	**19**

Note: * denotes exotic species.

Appendix B continued...

Site	101	102	103	104	107	109	110	111	112	113	114	115	123	124	127	128	129	130	131	132	133	134	135	136	137	138	143	144
Canopy Layer (T1)																												
Acacia concurrens								1																				
Acacia disparrima subsp. disparrima							1	1								1		1				1	1				1	
Allocasuarina littoralis																								1				
Alphitonia excelsa																	1								1			
Angophora leiocarpa				1													1			1			1					
Angophora woodsiana													1															
Corymbia citriodora subsp. variegata		1	1	1																								
Corymbia henryi																			1			1		1	1		1	1
Corymbia intermedia		1	1	1													1						1					
Corymbia trachyphloia subsp. trachyphloia											1	1	1	1	1	1		1	1	1	1					1		
Eucalyptus acmenoides			1	1							1	1	1	1	1		1		1				1				1	1
Eucalyptus carnea																		1										
Eucalyptus crebra																1		1		1	1		1			1	1	
Eucalyptus fibrosa subsp. fibrosa													1	1	1				1			1						
Eucalyptus major																		1		1	1						1	1
Eucalyptus microcorys															1	1			1	1	1		1	1	1			
Eucalyptus moluccana																												
Eucalyptus planchoniana																												
Eucalyptus resinifera								1							1	1	1											
Eucalyptus seeana																												
Eucalyptus siderophloia		1	1	1	1	1	1				1	1	1	1	1				1			1	1	1	1		1	1
Eucalyptus tereticornis																									1	1		
Eucalyptus tindaliae													1															
Lophostemon confertus		1														1		1	1	1			1	1	1	1		
Lophostemon suaveolens												1																
Melaleuca quinquenervia																												
*Pinus elliottii**											1	1				1	1											
T1 - Species Richness	**0**	**4**	**4**	**5**	**1**	**1**	**2**	**3**	**0**	**0**	**4**	**5**	**6**	**4**	**6**	**7**	**6**	**6**	**7**	**6**	**4**	**4**	**8**	**5**	**6**	**4**	**5**	**4**
Small Tree (T2-T3)																												
Acacia concurrens							1						1	1														
Acacia disparrima subsp. disparrima	1					1	1	1					1	1				1	1	1		1	1	1	1	1	1	1
Acacia leiocalyx													1					1										
Allocasuarina littoralis																								1				1
Allocasuarina torulosa																	1											
Alphitonia excelsa	1						1	1					1			1		1	1	1	1	1	1	1	1	1	1	1
Angophora leiocarpa				1																								
Corymbia citriodora subsp. variegata		1	1																									
Corymbia henryi																			1									
Corymbia intermedia		1		1																								
Corymbia tessellaris																												
Corymbia trachyphloia subsp. trachyphloia														1	1				1	1				1				
Eucalyptus acmenoides		1		1												1			1									1
Eucalyptus crebra																				1	1		1					

Site	101	102	103	104	107	109	110	111	112	113	114	115	123	124	127	128	129	130	131	132	133	134	135	136	137	138	143	144
Eucalyptus fibrosa subsp. fibrosa																			1			1						
Eucalyptus microcorys															1							1		1				
Eucalyptus moluccana																												
Eucalyptus montivaga																												
Eucalyptus planchoniana																												
Eucalyptus propinqua																												
Eucalyptus resinifera		1																										
Eucalyptus seeana																												
Eucalyptus siderophloia	1	1	1	1			1			1			1				1							1		1		
Eucalyptus tereticornis							1																					
Eucalyptus tindaliae													1															
Lophostemon confertus			1	1									1			1		1	1	1	1	1	1	1	1			
Lophostemon suaveolens	1					1		1		1	1											1						
Melaleuca decora																												
Melaleuca linariifolia																												
Melaleuca quinquenervia																												
Melaleuca saligna																												
*Pinus elliottii**										1	1	1				1		1										
T2 and T3 Species Richness	**4**	**5**	**3**	**5**	**0**	**2**	**5**	**3**	**0**	**3**	**2**	**1**	**7**	**3**	**2**	**4**	**2**	**5**	**7**	**5**	**3**	**6**	**4**	**7**	**3**	**3**	**2**	**4**
Shrub Layer (S1)																												
Acacia regrowth	1				1	1																						
Eucalyptus regrowth									1								1						1	1				1
Abutilon auritum																												
Acacia complanata																					1							
Acacia concurrens				1	1	1	1			1	1	1							1		1							
Acacia disparrima subsp. disparrima	1	1		1		1	1												1	1		1		1	1			1
Acacia fimbriata																												
Acacia juncifolia													1	1														
Acacia leiocalyx							1				1	1	1			1	1											
Acacia maidenii															1													
Acrotriche aggregata													1		1													
Allocasuarina littoralis																												
Alphitonia excelsa		1	1		1	1	1	1		1	1		1	1		1	1	1	1	1	1	1	1	1	1	1	1	
Angophora leiocarpa										1																		
Angophora woodsiana													1															
Babingtonia similis																												
Banksia integrifolia																												
Banksia spinulosa																												
Breynia oblongifolia													1															
Bursaria spinosa														1														
*Cinnamomum camphora**																1	1						1					
Clerodendrum floribundum		1		1					1																			
Corymbia intermedia										1																		
Corymbia trachyphloia subsp. trachyphloia													1					1										
Cryptandra rigida																												

Site	101	102	103	104	107	109	110	111	112	113	114	115	123	124	127	128	129	130	131	132	133	134	135	136	137	138	143	144
Daviesia umbellulata		1	1	1																								
Eucalyptus carnea																												
Eucalyptus crebra																					1							
Eucalyptus fibrosa subsp. fibrosa																						1						
Eucalyptus major																											1	
Eucalyptus microcorys																									1			
Eucalyptus moluccana																												
Eucalyptus resinifera																												
Eucalyptus siderophloia										1							1											
Eucalyptus tereticornis																												
Eucalyptus tindaliae																												
Gahnia clarkei																1												
Gahnia sieberiana																												
*Gomphocarpus physocarpus**																												
Gompholobium virgatum																												
Grevillea robusta																										1		
Hovea pannosa																												
Jacksonia scoparia				1														1				1						
*Lantana camara**			1	1		1	1	1				1				1	1	1		1	1	1	1	1	1	1	1	
Leptospermum polygalifolium									1	1																		
Lophostemon confertus		1		1	1													1	1		1	1	1	1				
Lophostemon suaveolens							1		1	1	1																	
Melaleuca decora																												
Melaleuca linariifolia																												
Melaleuca salicina							1																					
Melaleuca saligna																												
Melaleuca sieberi																												
Melichrus adpressus														1		1												
Melichrus urceolatus																				1			1	1				1
Monotoca scoparia																												
Ozothamnus diosmifolius	1				1			1									1						1					
Parsonsia straminea																												
*Passiflora suberosa**																										1	1	
*Pinus elliottii**	1				1					1						1												
Pittosporum multiflorum	1	1	1		1																					1		
Podolobium ilicifolium							1								1													
Pultenaea flexilis																												
Pultenaea microphylla																							1				1	1
Pultenaea spinosa																			1									
Pultenaea villosa	1	1	1	1	1												1											
Smilax australis																		1								1		
*Solanum mauritianum**																	1											
Xanthorrhoea johnsonii				1																								
Fake lepto site65																												
S1 - Species Richness	**6**	**7**	**5**	**9**	**8**	**5**	**8**	**3**	**4**	**8**	**4**	**3**	**7**	**4**	**3**	**7**	**9**	**6**	**5**	**4**	**6**	**6**	**8**	**6**	**4**	**6**	**4**	**4**

Site	101	102	103	104	107	109	110	111	112	113	114	115	123	124	127	128	129	130	131	132	133	134	135	136	137	138	143	144
Ground Layer (G)																												
Moss																		1									1	
Acacia regrowth	1		1	1	1				1								1											
Eucalyptus regrowth	1	1	1		1										1	1						1	1	1				
Acacia amblygona																												1
Acacia concurrens															1													
Acacia disparrima subsp. disparrima																											1	
Acacia leiocalyx										1																		
Acacia maidenii																			1									
Acacia quadrilateralis																												
Acrotriche aggregata		1												1														
*Ageratum houstonianum**				1			1		1	1	1						1											
Alphitonia excelsa		1				1	1						1		1		1	1	1		1	1		1			1	1
Aristida calycina																	1						1					
Aristida vagans																												
Astrotricha longifolia							1							1														
*Baccharis halimifolia**						1			1	1		1																
*Bidens bipinnata**																									1	1		
*Bidens pilosa**							1		1	1																		
Bursaria spinosa																			1							1		
Carex appressa	1				1	1			1																			
Cayratia clematidea	1			1																								
Centella asiatica							1																					
Centipeda minima																												
Cheilanthes distans																							1					
Cheilanthes tenuifolia							1			1																		
Chloris divaricata																												
*Chloris gayana**																												
Chrysocephalum apiculatum																												
Commelina diffusa																									1			
*Conyza sumatrensis**																												
Corybas barbarae				1																								
Craspedia variabilis										1							1											
*Crassocephalum crepidioides**							1																					
Cullen tenax													1				1											
Cymbonotus lawsonianus										1																		
Cymbopogon refractus								1																				1
Cynodon dactylon var. dactylon			1						1																			
Cyperus bowmanii																												
Cyperus trinervis					1																							
Daviesia umbellulata	1		1	1	1								1	1	1				1									
Desmodium gunnii	1										1							1			1		1					
Desmodium heterocarpon var. heterocarpon																1												
Desmodium rhytidophyllum			1	1						1		1				1	1	1		1	1		1	1	1		1	
Dianella brevipedunculata							1			1				1														

Site	101	102	103	104	107	109	110	111	112	113	114	115	123	124	127	128	129	130	131	132	133	134	135	136	137	138	143	144
Dianella caerulea		1	1			1		1	1			1					1		1					1				1
Dianella longifolia																							1					
Dichondra repens																												
Drosera sp.																												
Einadia hastata						1			1																			
Enchylaena tomentosa	1									1							1											
Entolasia stricta	1	1	1	1	1	1	1	1					1	1	1	1	1	1	1	1	1	1	1	1	1		1	1
Eucalyptus tereticornis																												
Eustrephus latifolius				1			1				1							1		1		1	1		1			
Geitonoplesium cymosum		1	1			1																						
Glycine clandestina																											1	
*Gomphocarpus physocarpus**							1										1											
Goodenia hederacea			1	1																								
Goodenia rotundifolia			1	1		1		1	1	1	1	1			1	1	1	1										
Hardenbergia violacea				1												1	1											
Hybanthus monopetalus																			1									
Hydrocotyle tripartita																												
*Hypochaeris radicata**									1	1																		
Imperata cylindrica	1		1		1	1	1	1	1	1	1	1				1				1	1		1			1	
*Ipomoea cairica**																									1			
Juncus usitatus																												
*Lantana camara**	1				1		1	1			1					1	1	1	1	1	1						1	
*Lantana montevidensis**							1	1			1					1	1	1		1	1	1	1	1	1		1	
Lepidosperma laterale			1	1					1								1	1		1		1		1				
Leptospermum polygalifolium																												
Lindsaea incisa																												
Lindsaea microphylla										1							1									1		
Lobelia purpurascens	1			1	1	1	1	1	1	1						1	1	1	1	1	1	1	1	1		1	1	1
Lomandra confertifolia				1									1	1	1					1	1	1	1		1	1	1	1
Lomandra confertifolia subsp. pallida																	1											
Lomandra longifolia	1						1		1					1	1			1		1	1	1					1	1
Lomandra multiflora		1	1	1	1		1	1	1				1	1	1	1	1	1	1	1	1	1	1	1	1		1	1
Lophostemon suaveolens																												
Melichrus urceolatus		1		1	1	1							1					1	1	1		1	1				1	
*Melinis minutiflora**	1																1											
*Melinis repens**																	1											
Monotoca scoparia																											1	
Notelaea ovata																												
Oplismenus aemulus							1									1						1			1			
Oplismenus imbecillis		1		1	1	1										1		1		1			1	1			1	
Ottochloa gracillima							1	1														1	1		1			
Oxalis radicosa							1																1		1	1		
Panicum maximum						1			1	1							1											
Parsonsia straminea																												1
*Passiflora suberosa**	1		1	1		1	1							1		1	1	1	1	1	1	1	1	1	1	1		

Site	101	102	103	104	107	109	110	111	112	113	114	115	123	124	127	128	129	130	131	132	133	134	135	136	137	138	143	144
Patersonia sericea var. sericea																												
Pennisetum clandestinum																									1			
Persoonia media																												
Phyllanthus virgatus																			1									
Pimelea linifolia							1		1		1	1				1								1				
Pinus elliottii				1					1							1												
Plantago lanceolata																												
Poa labillardieri									1						1		1		1									
Poa sieberiana																												
Podolobium scandens																		1					1					
Polygala linariifolia																	1											
Polygonum aviculare																												
Polymeria calycina																												
Pseuderanthemum variabile																			1									
Pteridium esculentum									1	1	1	1				1	1											
Pterocaulon redolens																												
Pterostylis ophioglossa																			1									
Pultenaea retusa																												
Pultenaea spinosa													1		1													
Ripogonum elseyanum																										1		
Senecio madagascariensis																												
*Setaria sphacelata**							1																					
*Sida cordifolia**	1							1		1	1	1					1						1					
*Sida cordifolia**																												
Smilax australis							1		1		1				1	1	1	1	1	1	1			1		1	1	
Solanum americanum																									1	1		
Stephania japonica							1	1									1						1					
Tagetes minuta			1				1		1							1												
Themeda triandra		1	1	1			1	1	1	1	1	1			1	1	1	1				1			1		11	1
*Trifolium repens**							1																					
*Urochloa decumbens**																												
*Verbena bonariensis**																												
*Verbena officinalis**									1																			
Veronica sp.																												
Viola hederacea									1								1											
Wahlenbergia gracilis						1				1																		
Xanthorrhoea johnsonii				1													1	1		1								
Youngia japonica																												
G1 - Specie Richness	**16**	**10**	**20**	**25**	**12**	**15**	**28**	**13**	**27**	**23**	**14**	**11**	**8**	**9**	**13**	**20**	**33**	**20**	**17**	**16**	**13**	**16**	**23**	**13**	**17**	**13**	**18**	**11**
Species Richness	**26**	**26**	**32**	**44**	**21**	**23**	**43**	**22**	**31**	**34**	**24**	**20**	**28**	**20**	**24**	**38**	**50**	**37**	**36**	**31**	**26**	**32**	**43**	**31**	**30**	**26**	**29**	**23**

Note: * denotes exotic species.

Appendix C Percent ground cover

Site	18	19	23	24	25	26	27	28	29	30	31	32	33	44	45	46	47	48	49	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69
Shrub Layer (S1)																																			
Acacia regrowth												3.6		2.4					0.8					0.4												
Abutilon auritum											0.2																								
Acacia amblygona																													1.2	1.2					
Acacia concurrens			1.2																																
Acacia juncifolia																															1.2				
Acacia leiocalyx							25.2	0.4																											
Acacia maidenii		0.4																																	
Acrotriche aggregata																												3.2							
Alphitonia excelsa											1.2	0.4												7.2											
Angophora woodsiana																																	5.6		
Banksia spinulosa																															8.0				
Clerodendrum floribundum																													7.2						
Corymbia henryi																																			
Daviesia umbellulata																												0.4							
Eucalyptus acmenoides																					0.8														
Eucalyptus moluccana		2.0			7.2																														
Eucalyptus siderophloia								6.4																											
Eucalyptus tereticornis	9.2	6.0	2.4																																
*Gomphocarpus physocarpus**					0.2																														
*Lantana camara**												0.4																							
Leptospermum polygalifolium																																			
Lophostemon confertus												1.6																					4.0		
Lophostemon suaveolens				8.0					0.8														3.2	7.2	2.8	2.4								
Melaleuca linariifolia									2.4																										
*Pinus elliottii**				0.2				0.2				0.1										3.2	1.0			2.0									
Podolobium ilicifolium																																			
Pultenaea villosa																																1.2			
Ground Layer (G1)																																			
Bareground	3.6	12.0	20.8	25.8	28.6	6.0	24.6	33.6	5.6	53.2	18.4	8.8	24.4	2.0	31.4	27.6	28.6	41.2	8.2	29.2		22	5.8	7.2	16.4	6.8	7.6	6.8	0.8	8.8	9.6	5.6	14.4	5.6	0.4
Coarse Woody Debris (>10 cm DBH)		2.4			10	1.6	0.4		2.6		0.2	9.6	1.2		10.4	2.0	0.4		2.8		1.2	3.2		2.4			5.6	3.2	5.2	2.0	0.6	13.2	5.2	3.2	7.2
Standing Dead Wood	0.4						1.6				2.4			0.4																		0.8		2.4	
Litter	20.4	23.6			32		24.6	3.2		16.2	55.1	56.7	21.8	65.4	3.2	6.8	10.8	23.2	1.4	9.6	67.6	31.2	27.4	34	0.6	34.8	14.8	48	29	41.6	40.1	39.6	51.6	46	56.4
Rock																		0.4					0.8					8.0	3.6	15.6				13.6	12.4
Moss																																			
Acacia regrowth												1.2	6.8	11.6					8.0			12.8	14.8	16	0.8	1.2	3.2		12	4.0			2.4	0.4	
Eucalyptus regrowth										0.4					1.2				14.0		0.4		5.6					4.0		2.4	0.8	5.6	1.6	6.4	
Acacia amblygona																															4.6				2.4
Acacia concurrens						0.8											13.2																		
Acacia disparrima subsp. disparrima																																			
Acacia leiocalyx																																			
Acrotriche aggregata																																			
*Ageratum houstonianum**	7.2	1.6								4.4																									
Alphitonia excelsa																					3.2	2											0.8		

Site	18	19	23	24	25	26	27	28	29	30	31	32	33	44	45	46	47	48	49	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69
Alternanthera pungens																		4.4																	
Aristida calycina																																			
Astrotricha longifolia																												1.2	1.6		1.2				
*Bidens bipinnata**						0.2																													
*Bidens pilosa**	0.4									3.2						4.4		2.0																	
Bursaria spinosa																																			
Carex appressa																																			
Centella asiatica																																			
Centipeda minima	1.6		0.8		0.4			0.4			0.4																								
*Chloris gayana**											12.0																								
Chrysocephalum apiculatum						9.6	3.2		0.4																										
Craspedia variabilis																			0.8																
*Crassocephalum crepidioides**													0.4		0.2										0.4										
Cullen tenax																																			
Cymbopogon refractus								8.0																											
Cynodon dactylon var. dactylon			0.8					0.8																											
Cyperus bowmanii					0.2								0.8																						
Daviesia umbellulata																															2.4		3.2		
Desmodium gunnii		0.4	2.0		1.2	0.8				0.4	0.8					0.8			5.6		1.2														
Desmodium heterocarpon var. heterocarpon			0.6																																
Desmodium rhytidophyllum						2.4				1.2						4.0			3.2	0.4						0.8				0.8					
Dianella brevipedunculata																																			
Dianella caerulea		2.8			1.2																0.4						0.4	0.4		0.4	0.2				
Drosera sp.																							0.4												
Einadia hastata																																			
Enteropogon unispiceus																												19.2	27.4	16	11.25	6.0		20.4	16.4
Eustrephus latifolius											0.2																								
Geitonoplesium cymosum																					0.4														
*Gomphocarpus physocarpus**																		0.4														1.2			
Goodenia hederacea																											1.6							0.4	
Goodenia rotundifolia				0.4		0.8		1.2	4.8													9.6						0.4							
Hardenbergia violacea																															2.8				
Hybanthus enneaspermus																																			
Hydrocotyle tripartita										0.4															0.4										
*Hypochaeris radicata**											0.1																								
Imperata cylindrica	48.8	46	64.6	35.2		40.2	15.2	16.2	62	6	2.0		5.6	5.6	4.0	18.4	18.4	18.8	46.8	30.8	4.4	12.4	2.8	8.4	18.6	4.0	3.2					2.8	4.4		
*Ipomoea cairica**																0.4	2.0																		
Juncus usitatus						7.0			2.4																										
*Lantana camara**	4.0	0.8					0.8						0.8		1.2				0.8	9.6	0.4														
*Lantana montevidensis**							3.2							3.4		10			0.4																
Lepidosperma laterale																																			
Leptospermum polygalifolium																			1.6																
Lindsaea incisa							0.2																												
Lindsaea microphylla																					3.2				12	0.8									
Lobelia purpurascens			2.0		0.4	0.8	0.4	1.0	2.0	2.0	0.4	0.8				0.8					1.6	1.2	0.4	0.4			1.6			0.8			0.8		

Site	18	19	23	24	25	26	27	28	29	30	31	32	33	44	45	46	47	48	49	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69
Lomandra confertifolia																													4.6	0.8					
Lomandra confertifolia subsp. pallida																																			
Lomandra longifolia							0.6	2.4							14.4																				1.6
Lomandra multiflora					0.8												0.4						0.4					2	3.4	1.2	2		0.2		3.2
Lophostemon suaveolens																																0.4			
Melichrus urceolatus																												2.4							
*Melinis minutiflora**																																			
*Melinis repens**											0.8		0.4																						
Monotoca scoparia																																		1.2	
Oplismenus aemulus																																			
Oplismenus imbecillis																										1.2		0.8	2.8	3.6	0.8		1.4		
Ottochloa gracillima																		2.8	0.4																
Oxalis radicosa																																			
Panicum maximum											2.4	13.6	32.8																						
Parsonsia straminea																																	2.4		
*Passiflora suberosa**		0.4								1.2		0.4		4.8	0.8	4.4					0.8														
Pennisetum clandestinum																																			
Persoonia media															0.8																				
Phyllanthus virgatus																																			
Pimelea linifolia				0.4	0.6	0.4			4.8													0.4	0.2			1.2	1.2		0.4		1.2				
Pinus elliottii						2.6			1.4								4.6	1.0	0.6								0.8				0.05				
Poa labillardieri		1.2	4.0					7.6	0.4		0.1		0.2					1.2	2.2		0.4	0.8				0.8	10.8								
Podolobium scandens																															2.0				
Polygala linariifolia																																			
Polymeria calycina	2.4		0.8	0.6				0.2																											
Pseuderanthemum variabile																																			
Pteridium esculentum						3.2									32.4	20.4	21.6	2.0		20.4	6.4			9.6	8.0					1.2	4.8				
Pterostylis ophioglossa																																			
Pultenaea retusa																																		0.4	
*Setaria sphacelata**																					6.4				40										
*Sida cordifolia**												2.8	4.8																						
Smilax australis																																			
Solanum americanum																																			
*Solanum mauritianum**																		0.2																	
Tagetes minuta										0.2								1.2																	
Themeda triandra				29	4	18.8		18.4		11.2	1.2			4.0				1.2	2.4			1.2	37.2	7.2		44	48.8				1.2	1.6		
*Verbena bonariensis**	0.8																																		
Xanthorrhoea johnsonii																															1.2				
Youngia japonica														0.4																					
Total living ground cover	**74.4**	**61.6**	**79.2**	**73.8**	**16.2**	**87.6**	**48.8**	**63.2**	**81.4**	**30.6**	**21.8**	**24.9**	**52.6**	**32.2**	**55.0**	**63.6**	**60.2**	**35.6**	**87.6**	**61.2**	**30.0**	**43.6**	**66.8**	**56.4**	**83.0**	**58.4**	**71.6**	**42.0**	**64.2**	**46.8**	**40.9**	**23.2**	**28.4**	**42.8**	**36.0**

Note: * denotes exotic species.

Appendix C continued...

Site	101	102	103	104	107	109	110	111	112	113	114	115	123	124	127	128	129	130	131	132	133	134	135	136	137	138	143	144
Shrub Layer (S1)																												
Acacia regrowth	0.8	1.2							0.4															0.8			0.4	
Abutilon auritum																												
Acacia amblygona																												
Acacia concurrens																												
Acacia juncifolia																												
Acacia leiocalyx																												
Acacia maidenii																												
Acrotriche aggregata																												
Alphitonia excelsa		0.4	3.6				0.4							0.8						1.2			0.4		1.2			
Angophora woodsiana																												
Banksia spinulosa																												
Clerodendrum floribundum																												
Corymbia henryi																								2.8				
Daviesia umbellulata			1.2																									
Eucalyptus acmenoides			2.8																									
Eucalyptus moluccana																												
Eucalyptus siderophloia										0.8																		
Eucalyptus tereticornis																												
*Gomphocarpus physocarpus**																												
*Lantana camara**						17	4.8	1.2										7.6		1.2					6.4		3.2	
Leptospermum polygalifolium										3.2																		
Lophostemon confertus																	0.8							1.6				
Lophostemon suaveolens																												
Melaleuca linariifolia																												
*Pinus elliottii**																												
Podolobium ilicifolium															2.4													
Pultenaea villosa			0.4	1.6	3.2																							
Ground Layer (G1)																												
Bareground	9.6		1.6	1.0	4.8	4.4	16.2	0.4	6.4	13.6	16.4	23.2	0.8	1.2	8.8	0.4	14	5.2	1.6	2.8	2.4		1.6	10.6	1.0		1.6	0.4
Coarse Woody Debris (>10 cm DBH)	5.2	2.4	2.0	6.8	34	1.8	1.2	2.8				0.6	7.2	2	1.2	1.6	5.2	3.2	2.4	0.8	8.0	2.0		4.0	2.0	2.0	1.6	2.4
Standing Dead Wood		0.2																		0.4			0.8	1.2				0.2
Litter	40.8	82	44.8	63	24	60.4	39.6	73.6	11.6	5.2	7.8	11.2	61.8	72.2	67.4	58	16	26.6	62	32.4	48.0	48.8	60.8	49.4	48.8	21.0	48.8	51.0
Rock		3.0	24.8	6.4			2.0										2				1.6			8.8	15.0	27.0	0.4	
Moss																		0.8									0.8	
Acacia regrowth	0.4		3.6	0.8	2.0				3.2								2.4	0.4										
Eucalyptus regrowth					3.2								9.4		5.6	4						2.4	1.6	2				
Acacia amblygona																												
Acacia concurrens															0.8													
Acacia disparrima subsp. disparrima																											3.2	
Acacia leiocalyx										4.4																		
Acrotriche aggregata														4.8														
*Ageratum houstonianum**				0.4			2.4			1.6																		
Alphitonia excelsa		0.4				0.4							0.8		1.2		1.2	1.2			0.4	0.8		0.8			2.8	0.8

Site	101	102	103	104	107	109	110	111	112	113	114	115	123	124	127	128	129	130	131	132	133	134	135	136	137	138	143	144
Alternanthera pungens																												
Aristida calycina																	6											
Astrotricha longifolia														0.4														
*Bidens bipinnata**																									0.4	2		
*Bidens pilosa**									0.4																			
Bursaria spinosa																			2.4									
Carex appressa	4.0				4.8																							
Centella asiatica							1.2																					
Centipeda minima																												
*Chloris gayana**																												
Chrysocephalum apiculatum																												
Craspedia variabilis										2.4																		
*Crassocephalum crepidioides**																												
Cullen tenax													0.8				0.4											
Cymbopogon refractus																												
Cynodon dactylon var. dactylon			0.4						10																			
Cyperus bowmanii																												
Daviesia umbellulata	1.2			0.8	4.0								0.8	4.2	1													
Desmodium gunnii	0.2										1.6							0.8			3.6							
Desmodium heterocarpon var. heterocarpon																0.8												
Desmodium rhytidophyllum				0.8								0.8				1.2	2	0.8		4.4	0.8				0.4		0.8	
Dianella brevipedunculata							0.8							0.8														
Dianella caerulea									1.6			0.8												0.4				0.4
Drosera sp.																												
Einadia hastata						0.4																						
Enteropogon unispiceus		1.2	5.6	13.2	9.6	6.2	1.6	2.4					15.6	10.8	9.6	12.4	5.6	8.4	12.8	6.4	5.2	14.8	8.8	11.2	0.4		3.6	3.6
Eustrephus latifolius				0.2			1.6				0.2									1.2			0.4		0.4			
Geitonoplesium cymosum																												
*Gomphocarpus physocarpus**																												
Goodenia hederacea																												
Goodenia rotundifolia						1.0			0.4		0.4	0.2				2	3.2											
Hardenbergia violacea				0.4												0.4												
Hybanthus enneaspermus																			0.4									
Hydrocotyle tripartita																												
*Hypochaeris radicata**																												
Imperata cylindrica	3.2		4.0		5.6	7.8	6	6.4	4.8	25.2	57.8	39.2				5.6				0.8	0.8					10		
*Ipomoea cairica**																												
Juncus usitatus																												
*Lantana camara**	29.6				0.4		4.6	0.8			1.2					0.4	5.2		0.4	2.4	3.6						7.6	
*Lantana montevidensis**											1.6					5.2		12		3.2	5.6		0.4				0.4	
Lepidosperma laterale																				2		8						
Leptospermum polygalifolium																												
Lindsaea incisa																												
Lindsaea microphylla										0.4																		
Lobelia purpurascens	1.0				1.4	0.6	3.6	2.8	0.8	2.8						0.8	1.6	5.2	2	2	0.8	1.6	2.8				3.2	1.6

Site	101	102	103	104	107	109	110	111	112	113	114	115	123	124	127	128	129	130	131	132	133	134	135	136	137	138	143	144
Lomandra confertifolia				3.2									1.2	1.6						2.8	2	5.2	14.8		8	10	9.6	29.6
Lomandra confertifolia subsp. pallida																	0.8											
Lomandra longifolia							2.0								1.2			1.6		0.8	4.8	1.6					0.8	1.6
Lomandra multiflora		1.6	1.2		2.8								1.6	1.2	0.8	0.4	2.8	1	2.4	4	4.4	8.8	1.2	1.2	3.2		0.4	8.0
Lophostemon suaveolens																												
Melichrus urceolatus				0.4														5.6		1.2		0.4	0.8					
*Melinis minutiflora**	4.0																21.6											
*Melinis repens**																	0.4											
Monotoca scoparia																											2.0	
Oplismenus aemulus		3.6					0.2									0.4						0.4						
Oplismenus imbecillis				0.2	0.2											1.2		1.2		2			3.6				1.6	
Ottochloa gracillima							5.2	3.6															0.4					
Oxalis radicosa							2.4																		0.4			
Panicum maximum										2.8							2.4											
Parsonsia straminea																												
*Passiflora suberosa**								0.8								2.8		5.6		22.8	8	0.8	0.4	4.4	8.8	4.5	6.4	
Pennisetum clandestinum																									0.4			
Persoonia media																												
Phyllanthus virgatus																			1.2									
Pimelea linifolia									2.4	6.4	2.4	1.2				0.8								0.4				
Pinus elliottii																0.8												
Poa labillardieri									11	3.6							2.8		8.8									
Podolobium scandens																		3.6										
Polygala linariifolia																	0.4											
Polymeria calycina																												
Pseuderanthemum variabile																			2.4									
Pteridium esculentum											5.0	12.8					1.2											
Pterostylis ophioglossa																			1.2									
Pultenaea retusa																												
*Setaria sphacelata**							4.2	5.2																				
*Sida cordifolia**											4.4	6.4											0.8					
Smilax australis																		0.8		5.2				0.4		10		
Solanum americanum																										1.5		
*Solanum mauritianum**																												
Tagetes minuta																												
Themeda triandra		4.0		0.4					30.6	26.4		3.6				0.8	2	4				4			2.4		1.2	
*Verbena bonariensis**																												
Xanthorrhoea johnsonii				0.4														4.4										
Youngia japonica																												
Total living ground cover	**44.4**	**15.4**	**47.6**	**29.2**	**37.2**	**33.4**	**43.0**	**23.2**	**65.6**	**80.0**	**74.6**	**65.0**	**30.2**	**24.6**	**22.6**	**40.0**	**65.0**	**34.0**	**63.6**	**41.6**	**48.8**	**36.4**	**34.8**	**47.4**	**65.0**	**48.0**	**46.0**	**46.0**

Note: * denotes exotic species.

Appendix D Overlapping cover (%) within canopy tree (T1), small tree (T2-T3) and shrub (S1) stratum.

Site	18	19	23	24	25	26	27	28	29	3	31	32	33	44	45	46	47	48	49	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69
Canopy Layer (T1)																																			
Standing dead wood																5.0													1.0						
Acacia concurrens																																			
Acacia disparrima subsp. disparrima													15.5																						
Allocasuarina littoralis																																3.4			
Allocasuarina torulosa					6.0																														
Alphitonia excelsa																																			
Angophora leiocarpa						3.0				3.7	1.0										1.4							5.1		18.4	2.0	14.5			
Angophora woodsiana																																	15.4		
Corymbia citriodora subsp. variegata																																			1.4
Corymbia henryi																																			
Corymbia intermedia						1.0			7.2	35.1	2.6		13.0		18.8	19.0					38.0							2.0	53.8		35.6	4.2			3.0
Corymbia trachyphloia subsp. trachyphloia																																	8.4	5.2	
Eucalyptus acmenoides																					41.0							23.0	13.8		2.4				8.0
Eucalyptus carnea																																			
Eucalyptus crebra																																			
Eucalyptus fibrosa subsp. fibrosa																																			
Eucalyptus major																																			
Eucalyptus microcorys																																			
Eucalyptus moluccana	32.0	56.6			31.0																														
Eucalyptus planchoniana																														7.2		4.2		19.4	
Eucalyptus resinifera																													28		16.4		22.0		
Eucalyptus seeana						3.6																		15											
Eucalyptus siderophloia															67.8	13.0					18.0														6.8
Eucalyptus tereticornis	1.0	7.2		3.0	8.2					31.0																									
Eucalyptus tindaliae						1.2																						4.6		28.8					46.6
Lophostemon confertus																												2.2							
Lophostemon suaveolens						28.0			1.1						6.4						4.2			9.4											
Melaleuca quinquenervia									8.6	4.2																									
*Pinus elliottii**			5.0			13.1			7.7								6.0	48.6								37.2									
Average Canopy Tree Cover (T1)	**42.0**	**63.8**	**5.0**	**4.0**	**67.1**	**33.6**	**74.0**	**21.6**		**28.5**		**93**	**37.0**	**6.0**	**48.6**						**111.6**			**24.4**		**37.2**		**36.9**	**96.6**	**54.4**	**92.4**	**26.3**	**45.8**	**24.6**	**74.8**
Small Tree Cover (T2-T3)																																			
Standing Dead Wood								6.9			2.1							2.0										2.0							
Acacia concurrens																																			
Acacia disparrima subsp. disparrima								13.4	76.6																		6.2								
Acacia leiocalyx																																			
Allocasuarina littoralis		2.0		4.0																															
Allocasuarina torulosa																																			
Alphitonia excelsa									9.0																										
Angophora leiocarpa																					4.4							1.5	14.2	7.6	4.0	13.3			
Corymbia citriodora subsp. variegata																																			1.0
Corymbia henryi																																			
Corymbia intermedia								24.0	5.0													6.0													

Site	18	19	23	24	25	26	27	28	29	3	31	32	33	44	45	46	47	48	49	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69
Corymbia trachyphloia subsp. trachyphloia																																		5.6	
Eucalyptus acmenoides																															5.0		2.4		
Eucalyptus crebra							8.4																												
Eucalyptus fibrosa subsp. fibrosa																																			
Eucalyptus microcorys																																			
Eucalyptus moluccana	56.0	1.0	3.0																																
Eucalyptus planchoniana																																3.6		3.4	
Eucalyptus resinifera																											6.9		4.8		4.2		3.4		
Eucalyptus seeana																								2.0											
Eucalyptus siderophloia				4.0																		11.4													
Eucalyptus tereticornis					2.6																	2.0													
Eucalyptus tindaliae																														4.8					
Lophostemon confertus													4.0															1.4	11.2	2.6	8	3.5	1.0		
Lophostemon suaveolens				13.0		4.4		2.0	2.8	2.8	1.8	1.0		8.1	19.2	15.2		2.0	4.3			23	2.8		1.8		1.5								2.0
Melaleuca decora																			1.7																
Melaleuca linariifolia						12.9			4.6																										
Melaleuca quinquenervia										5.4	3.6																								
*Pinus elliottii**								6.0						2.2					2.1							5.6								
Average Small Tree Cover (T2 - T3)	**56**	**12**	**3.0**	**17.0**	**6.6**	**17.3**	**8.4**	**8.0**	**7.4**		**49.7**	**91.6**	**4.0**	**12.4**	**19.2**	**15.2**		**4.0**	**17.1**		**4.4**	**42.4**	**2.8**	**2.0**	**1.8**	**5.6**	**14.6**	**13.9**	**3.2**	**15**	**21.2**	**2.4**	**6.8**	**9.0**	**3.0**
Shrub Cover (S1)																																			
Standing dead wood											1.0																								
Acacia regrowth																							1												
Eucalyptus regrowth																								2								2.3	1.0		
Acacia concurrens				1.0			3.0																	2		1.0						1.2			
Acacia disparrima subsp. disparrima																													6.0						
Acacia leiocalyx																																			
Allocasuarina littoralis	4.4						1.6																												
Alphitonia excelsa							2.2				2.1	3.0																				1.5	1.0		
Angophora leiocarpa																																1.3			
Angophora woodsiana																																			
Astrotricha longifolia																															2.0				
Banksia integrifolia																																1.4			
*Cinnamomum camphora**																																			
Corymbia tessellaris								1.0																											
Corymbia trachyphloia subsp. trachyphloia																																			
Daviesia umbellulata																												5.1				22.3			
Eucalyptus crebra							2.2																												
Eucalyptus fibrosa subsp. fibrosa																																			
Eucalyptus major																																			
Eucalyptus microcorys																																			
Eucalyptus moluccana		1.0			8.5																														
Eucalyptus resinifera																																	1.3		
Eucalyptus siderophloia																																			
Eucalyptus tereticornis	28.0																																		
Eucalyptus tindaliae																																			3.2

Site	18	19	23	24	25	26	27	28	29	3	31	32	33	44	45	46	47	48	49	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69
Jacksonia scoparia																																			
*Lantana camara**																																			
Lophostemon confertus																												2.1	36.4	3.0	2.0	12.2	3.4		5.0
Lophostemon suaveolens			1.0			1.0						12.0					2.0					18	13.6			1.0								
Melaleuca decora					1.0									2.2																				
Melaleuca linariifolia									3.4																										
Melaleuca quinquenervia																																			
Melaleuca saligna														1.0																				
Melichrus urceolatus																																			
Ozothamnus diosmifolius																																			
*Passiflora suberosa**																																			
*Pinus elliottii**																																			
Pultenaea spinosa																																			
Smilax australis																																			
Xanthorrhoea johnsonii																															6.0				
Average Shrub Cover(S1)	**32.4**		**2.0**	**1.0**	**9.5**	**1.0**	**9.0**	**1.0**	**3.4**		**3.1**	**15.0**		**3.2**			**2.0**					**18**	**23.6**	**4.0**			**2.0**	**7.2**	**42.4**	**3.0**	**12.0**	**42.2**	**6.7**		**8.2**

Note: * denotes exotic species.

Appendix D continued...

Site	101	102	103	104	107	109	110	111	112	113	114	115	123	124	127	128	129	13	131	132	133	134	135	136	137	138	143	144
Canopy Tree Cover (T1)																												
Standing dead wood		3.6	4.6	5.0											4.4		7.2				2.0	1.1			15.6	28.4		
Acacia concurrens								11.1																				
Acacia disparrima subsp. disparrima							5.6	48.2								5.4		12.3				3.7	14.4				9.6	
Allocasuarina littoralis																								3.2				
Allocasuarina torulosa																												
Alphitonia excelsa							2.8										1.0								8.8			
Angophora leiocarpa			13.5														13.0			15.2								
Angophora woodsiana													12.7															
Corymbia citriodora subsp. variegata	43.2	27.7	1.7																									
Corymbia henryi																			4.0			3.2		36.5	17.8		8.4	
Corymbia intermedia	6.1	29.6	16.8														7.4						15.6					
Corymbia trachyphloia subsp. trachyphloia													72.8	5.4	28.7	5.8		8.5	17.5	4.6	2					56.8		
Eucalyptus acmenoides		24.6	16.6										18.4	14.8	11.9		6.4		12.9						21		19.6	14.8
Eucalyptus carnea																		7.1										
Eucalyptus crebra																18		3.2		26.8	3.2					14	19.8	
Eucalyptus fibrosa subsp. fibrosa													17.5	17.4	1.2				6.2			58.9						
Eucalyptus major																		7.1		4.4	22.8						1.4	12.0
Eucalyptus microcorys															1.9	18.8			8.2	15.8	81.6		7.2	9.0	16.4			
Eucalyptus moluccana																												
Eucalyptus planchoniana																												
Eucalyptus resinifera								4.4							6.6	9.4	2.8											
Eucalyptus seeana							3.6																					
Eucalyptus siderophloia	68.1	28.2	58.0	13.2	12.0		3.3				2.5		12.0	41.2	27.1				74.0			16.0	2.4	13.3	2		1.6	25.2
Eucalyptus tereticornis																									13.4	4.2		

Site	101	102	103	104	107	109	110	111	112	113	114	115	123	124	127	128	129	13	131	132	133	134	135	136	137	138	143	144
Eucalyptus tindaliae													1.4															
Lophostemon confertus		2.2														17.8		3.8	7.2	18			21	1.8	22.4	8.4		
Lophostemon suaveolens						8.0																						
Melaleuca quinquenervia																												
*Pinus elliottii**							8.6									4.2	13.1											
Average Canopy Tree Cover (T1)		**123.2**	**114.7**	**12.6**	**13.2**	**2.0**	**23.9**	**63.7**				**2.5**	**143.8**	**123.8**	**9.8**	**124.4**	**5.9**	**41.3**	**13.0**	**84.8**	**136.6**	**82.9**	**78.6**	**63.8**	**135.4**	**111.8**	**76.4**	
Small Tree Cover (T2-T3)																												
Standing Dead Wood				3.4		3.6	4.2						0.5			0.6				6.0				1.9				
Acacia concurrens							3.8																					
Acacia disparrima subsp. disparrima	4.8					8.4	32.7	15.9					3.8	1.4				9.1	21.2	14.2		23.0	16.8	1.9	1.4	37.2	44.8	56.2
Acacia leiocalyx										1.5																		
Allocasuarina littoralis																								5.5			6.6	
Allocasuarina torulosa																	2.3											
Alphitonia excelsa	1.2						1.4	2.6					4.1			1.8		1.0	11.9	33.6	9.2	2.1	8	5.2	36	16.8	93.8	23.8
Angophora leiocarpa				2.6																								
Corymbia citriodora subsp. variegata		3.0	2.6																									
Corymbia henryi																			3.2									
Corymbia intermedia		4.3		12.9																								
Corymbia trachyphloia subsp. trachyphloia														12.8	3.7				3.3	5.6				1.6				
Eucalyptus acmenoides		1.5		1.5									4.6			2.4			2.7								3.2	
Eucalyptus crebra																				1.6	2.8							
Eucalyptus fibrosa subsp. fibrosa													4.2						4.8			1.9						
Eucalyptus microcorys															1.2							1.5		3.1				
Eucalyptus moluccana																												
Eucalyptus planchoniana																												
Eucalyptus resinifera		4.6																										
Eucalyptus seeana																												
Eucalyptus siderophloia	2.9	0.5	2.4	5.0			9.8			2.3			1.1				4.2							1.2		12.0		
Eucalyptus tereticornis							1.7																					
Eucalyptus tindaliae													6.0															
Lophostemon confertus																6.4		6.2	4.4	14	5.6	12.1	34.2	1.4	7.6			
Lophostemon suaveolens						8.0	5.8	1.0		0.9	2.5											4.2						
Melaleuca decora																												
Melaleuca linariifolia																												
Melaleuca quinquenervia																												
*Pinus elliottii**											3.6					19.0												
Average Small Tree Cover (T2 - T3)	**8.9**	**13.9**	**5.0**	**25.4**		**2.0**	**68.4**	**19.5**		**4.7**	**6.1**		**24.3**	**23.2**	**4.9**	**39.2**	**6.5**	**16.3**	**51.5**	**75**	**17.6**	**53.7**	**59**	**3.8**	**54.0**	**66.0**	**138.6**	**89.8**
Shrub Cover (S1)																												
Standing dead wood																										2.4		
Acacia regrowth					1.0																							
Eucalyptus regrowth															0.3		1.4						2.6	0.6			1.6	
Acacia concurrens						1.3		2.1				0.3									4.4							
Acacia disparrima subsp. disparrima	1.0	0.8				1.5	14.6	2.9											1.6	3.4		9.8		5.2	9.6		7.8	
Acacia leiocalyx													1.1			2.4	0.2											

Site	101	102	103	104	107	109	110	111	112	113	114	115	123	124	127	128	129	13	131	132	133	134	135	136	137	138	143	144
Allocasuarina littoralis																												
Alphitonia excelsa		0.8				2.2	9.6	0.5			0.4			4.2		14	2.8	0.8	6.2	23.18	4.4	7.9		2.9	4.4	6.2	23.0	
Angophora leiocarpa																												
Angophora woodsiana													2.1															
Astrotricha longifolia																												
Banksia integrifolia																												
*Cinnamomum camphora**																2.4												
Corymbia tessellaris																												
Corymbia trachyphloia subsp. trachyphloia													1.3					1.3										
Daviesia umbellulata				1.1																								
Eucalyptus crebra																					3.6							
Eucalyptus fibrosa subsp. fibrosa																						1.1						
Eucalyptus major																											1.0	
Eucalyptus microcorys																									5.4			
Eucalyptus moluccana																												
Eucalyptus resinifera																												
Eucalyptus siderophloia										0.8							1.4											
Eucalyptus tereticornis																												
Eucalyptus tindaliae																												
Jacksonia scoparia																						1.7						
*Lantana camara**						36.4	71.9	1.4									12.4	4.6		15.8	41.6	1.6	36.8	2.2	65.2	66.0	15.2	
Lophostemon confertus		3.7														4.4		1.1	0.3		9.6	11.4	3.4	3.5				
Lophostemon suaveolens								1.5	3.2	0.9																		
Melaleuca decora																												
Melaleuca linariifolia																												
Melaleuca quinquenervia							1.8																					
Melaleuca saligna																												
Melichrus urceolatus																				2.2			4.8				2.0	
Ozothamnus diosmifolius																	0.3											
*Passiflora suberosa**																										2.0	3.0	
*Pinus elliottii**																4.8												
Pultenaea spinosa													1.2															
Smilax australis																		1.0								2.0		
Xanthorrhoea johnsonii				3.4																								
Fake lepto site65																												
Average Shrub Cover(S1)	**1.0**	**5.3**		**4.5**	**1.0**	**41.4**	**97.9**	**17.4**	**3.2**	**1.7**	**0.4**	**0.3**	**5.7**	**4.2**	**0.3**	**28**	**18.5**	**8.8**	**8.5**	**44.58**	**63.6**	**42.5**	**47.6**	**14.4**	**84.6**	**78.6**	**42.2**	**11.4**

Note: * denotes exotic species.

Appendix E Height (m) of canopy trees (T1), small trees (T2-T3) and shrubs (S1)

Site	18	19	23	24	25	26	27	28	29	30	31	32	33	44	45	46	47	48	49	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69
Canopy Tree Height (T1)																																			
standing dead wood																17.2													16.2						
Acacia concurrens																																			
Acacia disparrima subsp. disparrima													12.1																						
Allocasuarina littoralis																																3.4			
Allocasuarina torulosa					10.4																														
Alphitonia excelsa																																			
Angophora leiocarpa						15.4				17.7	12.4										17.4							10.4		14.6	16.2	15.2			
Angophora woodsiana																																	14.0		
Corymbia citriodora subsp. variegata																																			17.4
Corymbia henryi																																			
Corymbia intermedia						12.7			13.5	17.3	12.0		17.6		17.1	16.1					18.7							10.2	20.4		14.5	16.6			12.8
Corymbia trachyphloia subsp. trachyphloia																																	12.8	14.2	
Eucalyptus acmenoides																					16.5							19.4	14.8		13.0				14.6
Eucalyptus carnea																																			
Eucalyptus crebra																																			
Eucalyptus fibrosa subsp. fibrosa																																			
Eucalyptus major																																			
Eucalyptus microcorys																																			
Eucalyptus moluccana	18.3	19.8			19.0																														
Eucalyptus planchoniana																														19.6		10.4		14.5	
Eucalyptus resinifera																													22.4		15.9		19.6		
Eucalyptus seeana						16.4																	20.6												
Eucalyptus siderophloia															20.2	19.8					24.0														18.0
Eucalyptus tereticornis	11.6	10.6			14.0	17.3				17.7																									
Eucalyptus tindaliae																												14.2		18.8					17.3
Lophostemon confertus																												14.1							
Lophostemon suaveolens						10.2			10.6						11.4						12.0			16.8											
Melaleuca quinquenervia									12.2	10.4																									
*Pinus elliottii**			11.0			14.2			14.8								1.0	11.3							12.3										
Average Height (T1)	**15.0**	**15.2**	**11.0**		**14.5**	**14.4**			**12.8**	**15.8**	**12.2**		**14.8**		**16.2**	**17.7**	**1.0**	**11.3**			**17.7**			**18.7**		**12.3**		13.7	18.5	17.7	14.9	11.4	15.5	14.4	16.0
Small Tree Height (T2-T3)																																			
Standing Dead Wood											6.0			6.4				8.3										8.6							
Acacia concurrens																																			
Acacia disparrima subsp. disparrima											7.4	6.6														7.6									
Acacia leiocalyx																																			
Allocasuarina littoralis		8.0			9.8																														
Allocasuarina torulosa																																			
Alphitonia excelsa												5.7																							
Angophora leiocarpa																					9.4							8.0	6.9	7.8	5.0	8.0			
Corymbia citriodora subsp. variegata																																			7.0
Corymbia henryi																																			
Corymbia intermedia											8.1	9.0										7.1													

Site	18	19	23	24	25	26	27	28	29	30	31	32	33	44	45	46	47	48	49	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69
Corymbia trachyphloia subsp. trachyphloia																																		8.9	
Eucalyptus acmenoides																															8.8		7.4		
Eucalyptus crebra							5.6																												
Eucalyptus fibrosa subsp. fibrosa																																			
Eucalyptus microcorys																																			
Eucalyptus moluccana	5.0	6.4	5.5																																
Eucalyptus planchoniana																																8.4		9.6	
Eucalyptus resinifera																											7.3		8.6		7.9		7.6		
Eucalyptus seeana																								6.0											
Eucalyptus siderophloia				6.6																		8.1													
Eucalyptus tereticornis					7.2																	7.6													
Eucalyptus tindaliae																														9.6					
Lophostemon confertus													9.2															7.6	6.1	8.6	6.8	6.2	5.1		
Lophostemon suaveolens				5.5		5.9		6.4	9.6	9.6	9.0	6.0		7.7	9.2	9.0		9.3	7.7			7.3	6.9		7.3		6.8								8.4
Melaleuca decora																			6.1																
Melaleuca linariifolia						8.2			6.3																										
Melaleuca quinquenervia										9.6	6.8																								
*Pinus elliottii**								8.6						8.1					6.8							9.3								
Average Height (T2-T3)	**5.0**	**7.2**	**5.5**	**6.0**	**8.5**	**7.1**	**5.6**	**7.5**	**7.9**		**7.5**	**6.8**	**9.2**	**7.4**	**9.2**	**9.0**		**8.8**	**6.9**		**9.4**	**7.5**	**6.9**	**6.0**	**7.3**	**9.3**	**7.2**	8.1	7.2	8.7	7.1	7.5	6.7	9.3	7.7
Shrub Height (S1)																																			
Standing dead wood											3.8																			2.0				
Acacia regrowth																							2.5												
Eucalyptus regrowth																								3.0								3.6	4.6		
Acacia concurrens				3.2			3.1																3.6			3.0					2.1			
Acacia disparrima subsp. disparrima																													2.0						
Acacia leiocalyx																																			
Allocasuarina littoralis	2.2						4.3																												
Alphitonia excelsa							4.1				2.0	2.6																				3.0	1.6		
Angophora leiocarpa																																2.2			
Angophora woodsiana																																			
Astrotricha longifolia																															1.0				
Banksia integrifolia																																2.0			
*Cinnamomum camphora**																																			
Corymbia tessellaris								3.4																											
Corymbia trachyphloia subsp. trachyphloia																																			
Daviesia umbellulata																						2.3										1.8			
Eucalyptus crebra							3.4																												
Eucalyptus fibrosa subsp. fibrosa																																			
Eucalyptus major																																			
Eucalyptus microcorys																																			
Eucalyptus moluccana			4.5		3.5																														
Eucalyptus resinifera																																	3.8		
Eucalyptus siderophloia																																			
Eucalyptus tereticornis	3.0																																		

Site	18	19	23	24	25	26	27	28	29	30	31	32	33	44	45	46	47	48	49	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69
Eucalyptus tindaliae																																			1.6
Jacksonia scoparia																																			
*Lantana camara**																																			
Lophostemon confertus																												4.1	3.5	3.0	1.8	2.1	3.6		1.0
Lophostemon suaveolens			4.5			3.0						3.8					3.0					4.6	3.4			4.8								
Melaleuca decora					2.5									4.0																				
Melaleuca linariifolia									4.7																										
Melaleuca quinquenervia																																			
Melaleuca saligna														2.2																					
Melichrus urceolatus																																			
Ozothamnus diosmifolius																																			
*Passiflora suberosa**																																			
*Pinus elliottii**																																			
Pultenaea spinosa																																			
Smilax australis																																			
Xanthorrhoea johnsonii																															1.6				
Average Height (S1)	**2.6**	**0.0**	**4.5**	**3.2**	**3.0**	**3.0**	**3.7**	**3.4**	**4.7**		**2.9**	**3.2**		**3.1**			**3.0**					**4.6**	**3.0**	**3.3**			**3.9**	3.2	2.8	2.5	1.5	2.4	3.4		1.3

Note: * denotes exotic species.

Appendix E continued

Site	101	102	103	104	107	109	110	111	112	113	114	115	123	124	127	128	129	130	131	132	133	134	135	136	137	138	143	144
Canopy Tree Height (T1)																												
standing dead wood	20.2	14.5	18.6												14.0		11.9				19.8	11.6			13.3	14.8		
Acacia concurrens								10.1																				
Acacia disparrima subsp. disparrima							10.2	11.0								12.2		6.3				10.4	11.3				10.8	
Allocasuarina littoralis																								11.4				
Allocasuarina torulosa																												
Alphitonia excelsa																	12.2								10.3			
Angophora leiocarpa			13.1														15.2			18.8			2.2					
Angophora woodsiana													14.2															
Corymbia citriodora subsp. variegata	16.6	17.0	16.4																									
Corymbia henryi																			14.2			17.4		18.8	18.9		14.6	
Corymbia intermedia	15.8	16.0	15.4														12.6						14.6					
Corymbia trachyphloia subsp. trachyphloia													17.5	14.6	13.3	16.6		16.4	11.5	12.1	19.8					21.7		
Eucalyptus acmenoides		16.6	12.6										14.0	16.6	13.5		12.2		16.4						16.2		13.8	14.1
Eucalyptus carnea																		13.3										
Eucalyptus crebra																17.8		11.6		19.8	15.4					18.2	18.9	
Eucalyptus fibrosa subsp. fibrosa													15.0	15.2	20.5				15.8			16.9						
Eucalyptus major																		14.5		18.4	20.5						18.2	17.2
Eucalyptus microcorys															10.2	11.1			16.5	19.4	15.5		15.8	15.5	16.3			
Eucalyptus moluccana																												
Eucalyptus planchoniana																												
Eucalyptus resinifera								12.2							15.6	15.2	17.2											
Eucalyptus seeana																												
Eucalyptus siderophloia	16.3	17.1	15.5	11.0	14.3	11.6				11.5			16.6	18.1	15.2				18.4				19.7	16.5	16.0		18.7	17.4

Site	101	102	103	104	107	109	110	111	112	113	114	115	123	124	127	128	129	130	131	132	133	134	135	136	137	138	143	144
Eucalyptus tereticornis																									17.8	16.8		
Eucalyptus tindaliae													16.2															
Lophostemon confertus		13.0														13.1		11.3	10.7	13.4			11.6	15.2	13.2	16.3		
Lophostemon suaveolens						11.6																						
Melaleuca quinquenervia																												
*Pinus elliottii**																10.0	11.8											
Average Height (T1)		**16.4**	**16.2**	**15.3**	**11.0**	**13.0**	**10.9**	**11.1**				**11.5**	**15.6**	**16.1**	**14.6**	**13.7**	**13.3**	**12.2**	**14.8**	**17.0**	**17.8**	**14.1**	**12.5**	**15.5**	**15.2**	**17.6**	**16.1**	**15.8**
Small Tree Height (T2-T3)																												
Standing Dead Wood				8.0		8.0	9.1						7.4			6.0				8.1		4.6		7.4				
Acacia concurrens							6.6																					
Acacia disparrima subsp. disparrima	8.4					6.5	8.0	8.4					8.8	6.5				6.5	6.9	7.8		5.7	7.0	6.4	8.8	7.6	8.1	8.2
Acacia leiocalyx										5.0																		
Allocasuarina littoralis																								8.4			7.8	
Allocasuarina torulosa																	7.9											
Alphitonia excelsa	6.1						6.7	8.6					7.0			7.1		9.8	6.4	7.5	7.2	5.9	6.8	6.4	6.7	7.8	7.7	6.0
Angophora leiocarpa				5.8																								
Corymbia citriodora subsp. variegata		9.6	9.2																									
Corymbia henryi																			8.8									
Corymbia intermedia		8.0		8.3																								
Corymbia trachyphloia subsp. trachyphloia														8.5	9.2				8.7	8.5				5.3				
Eucalyptus acmenoides		9.2		5.0									8.7			5.9			7.8								8.4	
Eucalyptus crebra																				7.8	8.9							
Eucalyptus fibrosa subsp. fibrosa													9.8						7.9			7.7						
Eucalyptus microcorys															9.2							6.2		7.6				
Eucalyptus moluccana																												
Eucalyptus planchoniana																												
Eucalyptus resinifera		8.4																										
Eucalyptus seeana																												
Eucalyptus siderophloia	8.4	5.0	9.8	7.5			8.9			6.1			9.4				9.9							7.2		9.2		
Eucalyptus tereticornis							9.4																					
Eucalyptus tindaliae													7.2															
Lophostemon confertus																8.9		9.2	8.9	9.1	8.9	6.3	9.5	5.8	9.9			
Lophostemon suaveolens						8.3	9.9	5.1		5.1	8.0											7.2						
Melaleuca decora																												
Melaleuca linariifolia																												
Melaleuca quinquenervia																												
*Pinus elliottii**											9.8					9.0												
Average Height (T2-T3)	**7.6**	**8.0**	**9.5**	**6.9**		**7.6**	**8.4**	**7.4**		**5.4**	**8.9**		**8.3**	**7.5**	**9.2**	**7.4**	**8.9**	**8.5**	**7.9**	**8.1**	**8.3**	**6.2**	**7.7**	**6.8**	**8.5**	**8.2**	**7.9**	**7.6**
Shrub Height (S1)																												
Standing dead wood																										3.0		
Acacia regrowth					1.5																							
Eucalyptus regrowth															1.9		1.7						1.7	1.2			1.8	
Acacia concurrens						3.1		5.1				1.2									2.3							
Acacia disparrima subsp. disparrima	4.6	3.0				3.5	3.5	3.4											4.9	3.8		3.6		2.6	2.7		3.6	
Acacia leiocalyx													1.2			2.0	1.2											

Site	101	102	103	104	107	109	110	111	112	113	114	115	123	124	127	128	129	130	131	132	133	134	135	136	137	138	143	144
Allocasuarina littoralis																												
Alphitonia excelsa		2.5				2.8	2.8	3.0			1.5			3.1		2.3	1.5	1.7	3.9	3.5	4.7	2.5		2.5	4.8	4.0	4.4	
Angophora leiocarpa																												
Angophora woodsiana													6.2															
Astrotricha longifolia																												
Banksia integrifolia																												
*Cinnamomum camphora**																3.7												
Corymbia tessellaris																												
Corymbia trachyphloia subsp. trachyphloia													3.8					2.6										
Daviesia umbellulata				1.5																								
Eucalyptus crebra																					4.8							
Eucalyptus fibrosa subsp. fibrosa																						3.4						
Eucalyptus major																											3.0	
Eucalyptus microcorys																									1.9			
Eucalyptus moluccana																												
Eucalyptus resinifera																												
Eucalyptus siderophloia										4.5							2.2											
Eucalyptus tereticornis																												
Eucalyptus tindaliae																												
Jacksonia scoparia																						2.3						
*Lantana camara**						2.2	1.9	1.7									1.4	1.3		1.4	1.9	2.1	1.8	2.8	2.0	2.4	1.4	
Lophostemon confertus		3.5														4.4		2.3	4.8		12.2	3.7	1.9	3.9				
Lophostemon suaveolens								3.0	2.7	3.5																		
Melaleuca decora																												
Melaleuca linariifolia																												
Melaleuca quinquenervia							4.3																					
Melaleuca saligna																												
Melichrus urceolatus																				1.4			1.5				1.0	
Ozothamnus diosmifolius																	1.9											
*Passiflora suberosa**																										2.0	2.4	
*Pinus elliottii**																4.4												
Pultenaea spinosa													1.7															
Smilax australis																		3.8								2.0		
Xanthorrhoea johnsonii				1.3																								
Average Height (S1)	**4.6**	**3.0**		**1.4**	**1.5**	**2.9**	**3.1**	**3.2**	**2.7**	**4.0**	**1.5**	**1.2**	**3.2**	**3.1**	**1.9**	**3.4**	**1.6**	**2.3**	**4.5**	**2.5**	**5.2**	**2.9**	**1.7**	**2.6**	**2.8**	**2.7**	**2.8**	**2.1**

Note: * denotes exotic species.