

# Appendix K

## Flora

## Appendix K Flora

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### **K.6 Refinery Vegetation Communities**

# Appendix K.1

## Potentially occurring Significant Species

### K.5 Potentially occurring Significant Species

Table 1-1 Potentially occurring significant flora species at refinery site

Scientific Name	Status		Source	
	NCA <sup>1</sup>	EPBC <sup>2</sup>	EPA <sup>3</sup>	DEH <sup>4</sup>
<i>Alyxia magnifolia</i>	R		B	
<i>Atalaya collina</i>	E	E	B	C
<i>Bosistoa selwynii</i>		V		C
<i>Bosistoa transversa</i>		V		C
<i>Bulbophyllum globuliforme</i>	R	V	?	C
<i>Cupaniopsis shirleyana</i>	V	V	?	C
<i>Dansiea elliptica</i>	R		B	
<i>Indigofera baileyi</i>	R		B	
<i>Macropteranthes fitzalanii</i>	R		B	
<i>Parsonsia larcomensis</i>	V	V	B	?
<i>Quassia bidwillii</i>	V	V		C
<i>Senna acclinis</i>	R		B	
<i>Zieria</i> sp. (Mt Larcom N.Gibson TO18)	V		A, B	

Table 1-2 Potentially occurring significant flora species at RSF site

Scientific Name	Status		Source	
	NCA <sup>1</sup>	EPBC <sup>2</sup>	EPA <sup>3</sup>	DEH <sup>4</sup>
<i>Actephila sessilifolia</i>	R		B	
<i>Alyxia magnifolia</i>	R		A, B	
<i>Atalaya collina</i>	E	E	A, B	C
<i>Atalaya rigida</i>	R		A, B	
<i>Bosistoa selwynii</i>		V		C
<i>Bosistoa transversa</i>		V		C
<i>Bulbophyllum globuliforme</i>	R	V	?	C
<i>Cupaniopsis shirleyana</i>	V	V	A, B	C
<i>Cycas megacarpa</i>	E	E	A	?
<i>Dansiea elliptica</i>	R		A, B	
<i>Parsonsia larcomensis</i>	V	V	A, B	C
<i>Parsonsia lenticellata</i>	R		A	
<i>Quassia bidwillii</i>	V	V	A, B	C
<i>Zieria</i> sp. (Mt Larcom N.Gibson TO18)	V		B	

# Appendix K.1

## Potentially occurring Significant Species

### Status

1 NCA Status: Indicates the conservation status of each taxon under the *Nature Conservation Act 1992*.

The codes are; Extinct in the wild (PE), Endangered (E), Vulnerable (V), Rare (R),

Near threatened (NT), Least concern (C)

2 EPBC Status: Indicates the conservation status of each taxon under the *Environment Protection and Biodiversity Conservation Act 1999*. The codes are: Conservation Dependent (CD), Critically Endangered (CE), Endangered (E), Extinct (EX),

Extinct in the Wild (XW), Vulnerable (V) and Threatened (includes taxa listed as CD, CE, E, EX, V and XW).

### Source

3 EPA (A): Queensland Environmental Protection Agency WildNet. Database records retrieved 05/06/05  
(B): Queensland Herbarium HERBRECS database records retrieved 19/6/06

4 DEH (C): Commonwealth Department of Environment and Heritage EPBC online protected matters area search accessed 26/06/06

# Appendix K.2 Flora Survey Methodology

## K.2 Flora Survey Methodology

### K.2.1 Overall Approach

The flora survey employed an assessment of floral taxa and vegetation communities in keeping with the methodology employed by the Queensland Herbarium for the survey of Regional Ecosystems and vegetation communities (Neldner *et al.*, 2004). Preliminary identification of the vegetation communities of the project areas was conducted prior to the commencement of fieldwork. Preliminary identification included vegetation community definition from stereo image 1: 25 000 colour aerial photography (DNR, 1999) and interpretation of 1:100 000 Regional Ecosystems coverage Version 5.0 for the region (EPA, 2005a).

Preliminary community definition was used to identify locations for representative field survey sample plots to obtain floristic and structural data and ground truth communities. Field surveys involved a botanical assessment at a number of representative sites within each vegetation community, employing a number of standard methods within: primary sample plots; secondary sample plots; and random meander search areas. A target of three primary transects per vegetation was not achievable in some vegetation communities due to their limited extent within the study site. A number of vehicle traverses of the study site were also undertaken throughout the survey period to identify changes in landform and identify community boundaries. Community structural formation classes were assessed according to Specht (1970). Regional ecosystem classification of communities was determined as per Sattler and Williams (1999), and in accordance with the Regional Ecosystems Description Database {REDD (EPA, 2005b)}.

Final vegetation mapping was undertaken utilising field survey data and aerial photograph interpretation of stereo pair images at a scale of 1:1,000 (Aerometrix, 2005).

Data from a previous survey of a portion of the refinery site (URS 2003) has been incorporated into this report. Methods applied during the previous survey were similar to those used in the current survey as detailed below.

The survey was conducted under Queensland Environmental Protection Agency Scientific Purposes Permit number WISP02056304.

### K.2.2 Survey Conditions

Fieldwork for the floral survey was conducted across both the RSF and refinery sites during an 8 day period between the 13 to 20 June 2006. Weather was typical for mid winter in the region, being fine and cool with limited rain. Bureau of Meteorology daily weather observations from Gladstone indicate the average minimum temperature for the survey period was 15.0<sup>0</sup> C, and the mean daily maximum was 23.1<sup>0</sup> C. Rainfall was minimal for the period, however one minor rain event occurred on the 19<sup>th</sup> yielding 4.4 mm. Wind strength was calm to moderate and primarily from the south east during the period (BoM, 2006).

## Appendix K.2 Flora Survey Methodology

### K.2.3 Nomenclature

Taxonomic nomenclature used for the description of floral species is according to Henderson (2002). Introduced species (as per Henderson, 2002) are signified in all text by an asterisk (\*). Any additional changes in Taxonomic nomenclature have been incorporated as described in Jessup (2002, 2003 and 2005). Field references utilised for the identification and description of floral species include: Andersen (2003); Brooker and Kleinig (1994); Milson (2000); and, Stanley and Ross (1989, 1995 and 2002).

### K.2.4 Specimen Identification

Where available, fruiting and/or flowering specimens were taken to assist with identification, where plant species were not identified in the field. For those species not field identified, samples were pressed and dried and positive identifications of plant specimens were subsequently made under laboratory conditions or forwarded to the Queensland Herbarium for identification. All identifications were made by qualified botanists with experience identifying flora taxa of south-east Queensland coastal ecosystems.

### K.2.5 Primary Plots

Field surveys employed 34 (26 RSF sites and 8 Refinery sites) primary sample plots within the vegetated cover of the study sites (EIS Figure 8.5.1 and EIS Figure 9.9.1). Primary plots were comprised of 10 x 50m (500 m<sup>2</sup>) transects.

Descriptive site information recorded at primary transects included; location, orientation, aspect, slope, soil type, landform, disturbance, fire history and general notes on ecological integrity. Several time-encoded digital photographs were taken at each plot as a visual reference. Locations of transects were recorded using a handheld GPS unit.

Floristic analysis included plant identification and species diversity characterisation of all flora present. Relative abundance was assigned for all species recorded.

Structural analysis included recording the height class and life form of the dominant species within each strata present. Height of each strata was recorded using a hand help laser hypsometer. Foliage projection Cover (FPC) of the mid and upper strata was calculated along the transect, where foliage projection intersected the 50m centre tape. FPC of the ground layer was determined using ocular estimation of cover within five 1m subplots spaced at 10m intervals along the primary transect.

Methods utilised within the previous survey of the refinery site (URS 2003) were similar to those used in the current survey. Data collected was similar to that described above however the previous survey studied 20 x 20 m quadrats (opposed to 10 x 50 m transects used in the current survey). Data from four primary transects surveyed in 2003 were incorporated into this survey.

## Appendix K.2 Flora Survey Methodology

### **K.2.6 Secondary Plots**

38 secondary plots (31 RSF sites and 7 Refinery sites) were utilised to ground truth vegetation units and confirm dominant characteristic species (EIS Figure 8.5.1 and EIS Figure 9.9.1).

Descriptive site information recorded at secondary sites included; location, orientation, aspect, slope, soil type, landform, disturbance, fire history and general notes on ecological integrity. Several time encoded digital photographs were taken at each plot as a visual reference. Locations of transects were recorded using a handheld GPS unit.

Floristic analysis included determination of the dominant species within the mid and canopy strata. Structural analysis included recording the height class and life form of the dominant species within the mid and canopy strata. Height of each strata was recorded using a hand help laser hypsometer.

### **K.2.7 Meander Searches**

Following assessment of each primary plot and selected secondary plots, an area of approximately 1 ha surrounding each plot was searched for 20 minutes utilising the random meander technique (Cropper, 1993). Care was taken to avoid sampling in different vegetation types to those of the plots. Meander searches were employed to:

- Identify additional less abundant species not recorded within survey plots;
- Identify any potential significant threatened or species not identified within the survey plot;
- Confirm the representativeness of plot locations; and
- Confirm boundaries and ecotonal areas between vegetation communities.







## Appendix K.3 Refinery Species List

Scientific Name	Common Name	Refinery Primary Sites										
		URS (2003)	1	2	5	7	9	11	12	13	16	
<i>Eragrostis sororia</i>	Woodland Lovegrass							P				
<i>Eragrostis spartinoides</i>	Love Grass	x										
<i>Erythrina vespertilio</i>	Batswing Coral Tree				I							
<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	x	P	P	U		P		P			P
<i>Eucalyptus exserta</i>	Queensland Peppermint	x										
<i>Eucalyptus tereticornis</i>	River Red Gum	x	P		P		I	P	P			P
<i>Euphorbia cyathophora</i> *	Painted Spurge	x										
<i>Eustrephus latifolius</i>	Wombat Berry	x	U		U		U	I				
<i>Evolvulus alsinoides</i>	Blue periwinkle	x										
<i>Exocarpus latifolius</i>	Broad-leaved Cherry			P								
<i>Ficus opposita</i>	Sandpaper Fig		P	I					P			
<i>Fimbristylis dichotoma</i>	Common Finger Rush	x										
<i>Flemingia parviflora</i>		x										
<i>Gahnia aspera</i>	Sawsedge	x			P							
<i>Galactia teniflora</i>		x										
<i>Glycine tabacina</i>	Glycine Pea	x										
<i>Glycine tomentella</i>	Woolly Glycine						P					
<i>Gomphocarpus physocarpus</i> *	Balloon Cotton Bush	x										I
<i>Gomphrena celosioides</i>	Gomphrena Weed	x							I			
<i>Grewia latifolia</i>	Dogs Balls	x	C	P			P	P	P			U
<i>Haloscaria indica</i>	Samphire										I	
<i>Hardenbergia violacea</i>	Native Sarsparilla	x										
<i>Helichrysum lanuginosum</i>	White Everlasting Daisy	x										
<i>Heteropogon contortus</i>	Giant Speargrass	x	A	C	C	A	U	O	U			O
<i>Hibiscus heterophyllus</i>	Native Hibiscus	x										
<i>Hybanthus stellarioides</i>	Spade Flower	x										
<i>Hyparrhenia rufa</i> subsp. <i>rufa</i> *	Thatch Grass	x	U			U	I					A
<i>Indigofera pratensis</i> var. <i>pratensis</i>	Forest Indigo	x										
<i>Isotropis filicaulis</i>		x										
<i>Jacksonia scoparia</i>	Dogwood	x										
<i>Jagera pseudorhus</i>	Foambark	x		P								
<i>Jasminum simplicifolium</i> subsp. <i>australiense</i>	Native Jasmine			P								
<i>Juncus polyanthemus</i>	a rush	x									I	
<i>Justica procumbens</i>		x										
<i>Lantana camara</i> *	Lantana	x		P		I						
<i>Lantana montevidensis</i> *	Creeping Lantana		O	A				I	P			U
<i>Lepidium bonariense</i> *									P			
<i>Leucas linifolia</i> *	Leucas	x										
<i>Lomandra longifolia</i>	Mat rush						U					P
<i>Lomandra confertifolia</i> subsp. <i>pallida</i>	Matrush	x			p							



## Appendix K.3 Refinery Species List

Scientific Name	Common Name	Refinery Primary Sites										
		URS (2003)	1	2	5	7	9	11	12	13	16	
<i>Planchonia careya</i>	Cocky Apple	x	P		U		U	U	P		P	
<i>Pleiogynium timorense</i>	Burdekin Plum	x										
<i>Pogonolobus reticulatus</i>	Medicine Bush	x	P	P	C	I	P	P	P		P	
<i>Polyscias elegans</i>	Celerywood			I							I	
<i>Potamogeton crispus</i>	Curly Pondweed	x										
<i>Potamogeton javanicus</i> *	Javan Pondweed	x										
<i>Pouteria sericea</i>	Mongo	x										
<i>Psuederanthemum variabile</i>	Love Flower	x										
<i>Psychotria daphnoides</i>	Smooth Psychotria	x										
<i>Pterocaulon redolens</i>		x										
<i>Rhizophora stylosa</i>	Spotted Mangrove									C		
<i>Rhynchosia minima</i>	Rhynchosia	x										
<i>Rivina humilis</i> *	Coralberry; Turkeyberry			P								
<i>Sarcostemma viminale</i>	Caustic Vine	x										
<i>Scoparia dulcis</i> *								P				
<i>Sida cordifolia</i>	Flannel Weed	x										
<i>Sida corrugata</i>	Creeping Flannel Weed	x										
<i>Sida rhombifolia</i> *	Common Flannel Weed	x									U	
<i>Sida subspicata</i>	Spiked Sida		U	P				P	U			
<i>Sida trichopoda</i>	High Sida				P	C						
<i>Sigesbeckia orientalis</i> *	Indian Weed	x										
<i>Smilax australis</i>	Native Sarsaparilla	x										
<i>Solanum nigrum</i> subsp. <i>nigrum</i> *	Wild Potato	x										
<i>Sorghum nitidum</i> forma. <i>aristatum</i>	Brown Sorghum	x										
<i>Sorghum plumosum</i>	Plume Sorghum	x										
<i>Spermacoce brachystema</i>		x										
<i>Sporobolus virginicus</i>	Saltwater Couch									U		
<i>Stachytarpheta jamaicensis</i> *	Jamacian Snake Vine	x	P	O	U	C			C		I	
<i>Stellaria media</i> *									P			
<i>Tephrosia dietrichiae</i>	Dietrich's Pea	x										
<i>Tephrosia filipes</i> var. <i>filipes</i>		x										
<i>Tephrosia juncea</i>		x										
<i>Themeda quadrivalvis</i> *	Grader Grass		I									
<i>Themeda triandra</i>	Kangaroo Grass	x										
<i>Tridax procumbens</i> *	Tridax Daisy	x										
<i>Verbena bonariensis</i> *	Purple Top	x										
<i>Verbena tenuisecta</i> *	Mayne's Pest	x										
<i>Verbesina encelioides</i> *	Crownbeard	x										
<i>Vernonia cinerea</i>	Vernonia	x										
<i>Vigna lanceolata</i>	Maloga				P				P			

## Appendix K.3 Refinery Species List

Scientific Name	Common Name	Refinery Primary Sites									
		URS (2003)	1	2	5	7	9	11	12	13	16
<i>Vigna vexillata</i> var. <i>angustifolia</i>	Wild Cowpea	x									
<i>Vittadinia diffusa</i>		x									
<i>Vittadinia sulcata</i>		x									
<i>Wahlenbergia gracilis</i>	Blue Bells	x									
<i>Wedelia spilanthoides</i>		x									
<i>Xanthorrhoea johnsonii</i>	Grass Tree	x			P						
<i>Zinnia peruviana</i> *									P		
<i>Zornia dyctiocarpa</i>		x									

- A - Abundant = >100 plants per transect
- C - Common = 50-100 plants per transect
- O - Occasional = 20-50 plants per transect
- U - Uncommon = 5-20 plants per transect
- P - Present = <5 plants per transect
- I - Incidental = occurred nearby transect
- \* = introduced species





## Appendix K.4 RSF Species List

Scientific Name	Common Name	RSF Primary Sites																											
		17	18	19	23	24	27	29	30	32	33	35	41	42	44	45	48	55	56	57	58	60	63	65	66	67	68		
<i>Ficus virens</i>	Banyan			P																									
<i>Gahnia aspera</i>	Sawsedge										I					P					P								
<i>Geitonoplesium cymosum</i>	Scrambling Lilly										P					U													
<i>Glochidion lobocarpum</i>																	P												
<i>Glycine tabacina</i>	Glycine Pea				I															P		P							
<i>Glycine tomentella</i>	Woolly Glycine													I									U		P				
<i>Gomphocarpus physocarpus</i> *	Balloon Cotton Bush		P	U			I					P			I		P						P						
<i>Gomphrena celosioides</i>	Gomphrena Weed																							I					
<i>Grewia latifolia</i>	Dogs Balls	P		I	O		I	O		P			P	U			P	P	P			U	P						
<i>Gymnostachys anceps</i>																	P					P							
<i>Heteropogon contortus</i>	Giant Speargrass	P	A	O	A	C	A	A		A	C			U	A	A		C	A	A	A		A	A	A	C			
<i>Hibiscus diversifolius</i>										P																			
<i>Hoya australis</i>	Native Hoya																I												
<i>Hypparrhenia rufa</i> subsp. <i>rufa</i> *	Thatch Grass															I													
<i>Imperata cylindrica</i>	Blady Grass											P	P																
<i>Ipomoea lonchophylla</i>	Cow vine		P																										
<i>Ixora biflora</i>																	P												
<i>Jagera pseudorhus</i>	Foambark				P						P							I											
<i>Jasminum didymum</i> subsp.	Native Jasmine										P																		
<i>Juncus usitatus</i>	a rush					I																							
<i>Lantana camara</i> *	Lantana	U		U				U		P	C	P		O	P		P	P											
<i>Lantana montevidensis</i> *	Creeping Lantana				I		P							U															
<i>Lomandra longifolia</i>	Mat rush						P			P	O	U											P						
<i>Lomandra multiflora</i>	Many-flowered Mat Rush																I					P							
<i>Lophostemon suaveolens</i>	Swamp Box			I		I			I		P						P					P							
<i>Ludwigia octovalvis</i>	Willow Primrose					I																							
<i>Macrozamia macleayi</i>																	P					P							
<i>Malvastrum americanum</i> *	Spiked Malvastrum		P	O				P								U		P											
<i>Marsdenia viridiflora</i> subsp. <i>viridiflora</i>							P																						
<i>Maytenus cunninghamii</i>																										P			
<i>Maytenus dispermus</i>	Orange Bush										P																		
<i>Melaleuca bracteata</i>	Black Teatree																								U				
<i>Melaleuca fluvialis</i>	Paper barked Teatree																									I			
<i>Melaleuca leucadendra</i>	Long Leaved Teatree			U														U											
<i>Melinis repens</i> *	Red Natal Grass		U																										
<i>Melodorum leichhardtii</i>	Zig-zag Vine																P					P							
<i>Microsorium punctatum</i>											I																		
<i>Myoporum debile</i>						P										I										P			
<i>Neolitsea dealbata</i>	White Bolly Gum										P						P					P							



# Appendix K.4 RSF Species List

Scientific Name	Common Name	RSF Primary Sites																											
		17	18	19	23	24	27	29	30	32	33	35	41	42	44	45	48	55	56	57	58	60	63	65	66	67	68		
<i>Notelaea microcarpa</i> var. <i>microcarpa</i>	Narrow-leaved Native Olive									P																			
<i>Olea paniculata</i>	Native Olive																				P								
<i>Opismenus aemulus</i>				P							C					C	U				U								
<i>Opuntia stricta</i> *	Common Prickly Pear					P				I																I			
<i>Opuntia tomentosa</i> *	Velvety Tree Pear																I												
<i>Oxalis corniculata</i> var. <i>corniculata</i> *	Creeping Oxalis	P			O	P	I	P				P		P	U					P			P		U	P			
<i>Pandorea pandorana</i>	Wonga Vine																					P							
<i>Panicum effusum</i> v <i>simile</i>	Hairy Panicum	P	P							P														P					
<i>Panicum lacunaria</i>					P					P																			
<i>Panicum similie</i>					P																								
<i>Parsonsia lanceolata</i>	Rough Silkpod																									P			
<i>Passiflora suberosa</i> *	Corky Passion Flower			P	I			P		P				P	U						P								
<i>Pavetta australiensis</i>																P													
<i>Peperomia blanda</i> var <i>floribunda</i>																					P								
<i>Petalostigma pubescens</i>	Quinine Tree					I																							
<i>Phyllanthus virgatus</i>					P																		P						
<i>Pimelea linifolia</i> subsp. <i>linifolia</i>																						I							
<i>Pittosporum multiflorum</i>																P					P								
<i>Planchonia careya</i>	Cocky Apple																						I						
<i>Pleiogynium timorense</i>	Burdekin Plum																				P								
<i>Pogonolobus reticulatus</i>	Medicine Bush	P					P			P				P															
<i>Polyscias elegans</i>	Celerywood										P						P				P								
<i>Portulaca oleracea</i>	Pigweed		U						I				P																
<i>Pouteria sericea</i>	Mongo										P						P				P								
<i>Psuederanthemum variabile</i>	Love Flower																				P		P		P				
<i>Psychotria daphnoides</i>	Smooth Psychotria										P																		
<i>Psydrax odorata</i>						I											P												
<i>Pterocaulon sphacelatum</i>					P	P		P	I	P						P													
<i>Rostellularia adscendens</i>		P																											
<i>Secamone elliptica</i>	Corky Milk Vine																									P			
<i>Sida cordifolia</i>	Flannel Weed	C	C	P			O									P						P							
<i>Sida rhombifolia</i> *	Common Flannel Weed																									P			
<i>Sida subspicata</i>	Spiked Sida			C	C	C		C		U		P	O	C	P														
<i>Sida trichopoda</i>	High Sida	C		U	C		C	P	O																				
<i>Smilax australis</i>	Native Sarsaparilla										P						P					I							
<i>Solanum esuriale</i>	Quena																				P								
<i>Solanum seaforthianum</i> *	Brazilian Nightshade																P												
<i>Solanum stelligerum</i>											P						P					P							

## Appendix K.4 RSF Species List

Scientific Name	Common Name	RSF Primary Sites																											
		17	18	19	23	24	27	29	30	32	33	35	41	42	44	45	48	55	56	57	58	60	63	65	66	67	68		
<i>Solanum torvum</i> *	Devils Fig			P																									
<i>Sorghum nitidum forma. aristatum</i>	Brown Sorghum															P													
<i>Sporobolus creber</i>	Western Rat's Tail	P			P	U	P		P	P					P												O		
<i>Sporobolus natalensis</i> *	Giant Rat's Tail																								P		I		
<i>Streblus brunonianus</i>	Whalebone Tree			P																									
<i>Stylosanthes scabra</i> *	Shrubby Stylo																						P		P		P		
<i>Synedrellopsis grisebachii</i> *				P	U	P	U																						
<i>Tetragymma nitens</i>	a tetragymma										U																		
<i>Themeda triandra</i>	Kangaroo Grass				P	U		O				O									U			U					
<i>Trophis scandens</i>	Burny Vine			I																									
<i>Vittadinia tenuissima</i>					P	I		P				P																	
<i>Zornia muriculata</i>																P													

- A - Abundant = >100 plants per transect
- C - Common = 50-100 plants per transect
- O - Occasional = 20-50 plants per transect
- U - Uncommon = 5-20 plants per transect
- P - Present = <5 plants per transect
- I - Incidental = occurred nearby transect
- \* = introduced species

## Refinery Vegetation Communities

## K.5 Refinery Vegetation Communities

The following table provides a summary of the classification of vegetation units identified at the Refinery site during the flora survey. Vegetation units for the study sites have been delineated on the basis of dominant structural and floristic elements of each community and the land zone typically associated with each vegetation unit. The area of each vegetation unit within the study site varies considerably between vegetation types, with some communities represented only marginally within the project area.

Community descriptions including general floristic description of dominant species, evidence of previous disturbance, fire history, incidence of exotic species and general disturbance notes are provided for each vegetation unit. Structural and floristic data describing the dominant species within each strata at each primary site surveyed at the Refinery site are also provided in a series of tables below.

Table 6-1 Summary of the vegetation communities of the Refinery site

Code	Community Description	Land zone	Regional Ecosystem	Area on site (ha)	Primary Sites	Secondary Sites
<b>1a</b>	Marine Sand Flats	Quaternary estuarine and marine deposits	RE 12.1.2	14.8	n/a	
<b>1b</b>	<i>Sporobolus virginicus</i> grassland on marine clay plains		RE 12.1.2	3.8	P11 <sup>1</sup>	
<b>2a</b>	<i>Eucalyptus tereticornis</i> Woodland to Open Forest	Quaternary alluvial soils	RE 12.3.3	2.3	-	<b>14</b>
<b>2b</b>	<i>Eucalyptus tereticornis</i> , <i>Casuarina cunninghamiana</i> , +/- <i>Callistemon viminalis</i> and <i>Melaleuca leucadendra</i> Fringing Forest on Quaternary alluvial plains along watercourses.		RE 12.3.7	1.2	PPS9 <sup>1</sup>	<b>6</b>
<b>2c</b>	<i>Eucalyptus tereticornis</i> , <i>Lophostemon suaveolens</i> , <i>Corymbia intermedia</i> and <i>Corymbia clarksoniana</i> Woodland with a grassy understorey on alluvial plains near coast		RE 12.3.11	30.9	1, 9, P5 <sup>1</sup>	<b>3</b>
<b>2d</b>	<i>Melaleuca viridiflora</i> +/- <i>Eucalyptus tereticornis</i> Open Woodland on alluvial plains near coast		RE 12.3.11	6.7	P11 <sup>1</sup>	
<b>2e</b>	<i>Eucalyptus tereticornis</i> , <i>Lophostemon suaveolens</i> and <i>Melaleuca nervosa</i> Open Forest Woodland on alluvial plains near coast		RE 12.3.11	25.9	11, P1 <sup>1</sup> , P2 <sup>1</sup>	
<b>2f</b>	Open-forest of <i>Eucalyptus siderophloia</i> with vine forest understorey on sub-coastal Quaternary alluvial plains		RE 12.3.11 a	10.1	<b>2</b>	
<b>2g</b>	<i>Eucalyptus tereticornis</i> and/or <i>Eucalyptus</i> spp. tall woodland on alluvial plains		RE 11.3.4	61.8	16, P6 <sup>1</sup> , P7 <sup>1</sup> , P8 <sup>1</sup> , P9 <sup>1</sup>	<b>10</b>
<b>2k</b>	<i>Eucalyptus crebra</i> , <i>Melaleuca</i> spp. Woodland on alluvial plains		RE 11.3.29	7.2	<b>12</b>	
<b>3a</b>	<i>Corymbia citriodora</i> , <i>Eucalyptus crebra</i> open forest on metamorphics ± interbedded volcanics	Hills and lowlands on metamorphosed sedimentary rocks	RE 12.11.6	48.3	PPS3 <sup>1</sup>	<b>4, 8, 15</b>

## Refinery Vegetation Communities

Code	Community Description	Land zone	Regional Ecosystem	Area on site (ha)	Primary Sites	Secondary Sites
3b	<i>Eucalyptus crebra</i> woodland on metamorphics ± interbedded volcanics		RE 12.11.7	20.8	5	
4a	Modified pastoral grassland with scattered emergent Eucalypt spp.	Quaternary alluvial soils	n/a	14.8	7	
4b	Non remnant shrubby regrowth of Acacia and / or Eucalypt spp.		n/a	9.7		

primary sites from 2003 study (URS, 2003)

### **Vegetation Unit 1a: Marine Sand Flats (RE 12.1.2)**

This saltmarsh vegetation community occurs at the north east of the Refinery site within the intertidal zone associated with the Calliope River. This community is distinctive in that it is largely bare flat with some blue-green algal mats and isolated clumps of *Sporobolus virginicus* (saltwater couch) and halophytic forb and shrub species. Species also recorded include *Portulaca olearceae*, *Sarcocornia quinqueflora* and *Sueda australis*.

Given the absence of floristic structure and dominance of bare ground within this community primary survey data was not recorded for this RE.

### **Vegetation Unit 1b: Sporobolus virginicus grassland on marine clay plains (RE 12.1.2)**

This marine grassland community was restricted to the northeast of the Refinery site where it occurred within and adjacent to the Marine Sand Flats. This community is generally found in close proximity to high water mark and is characterised by the dominance of *Sporobolus virginicus* (saltwater couch) which forms a continuous, uniform carpet of grass cover to 0.2 m in height. Isolated clumps of mangroves and saltmarsh forb species are irregularly found within the grassland assemblage.

Structural and floristic descriptions of the dominant species in each strata for primary sites surveyed within this vegetation unit are described in the table below.

Primary Sample Site P11 (URS 2003) Refinery site 314291m E 7362454m N (GDA 94)	
Strata	Dominant species
<b>Emergent 1.5 m</b>	<i>Aegiceras corniculatum</i>
	<i>Melaleuca viridiflora</i>
<b>Ground Layer &lt;0.2 m</b>	<i>Portulaca olearceae</i>

## Refinery Vegetation Communities

Primary Sample Site P11 (URS 2003) Refinery site 314291m E 7362454m N (GDA 94)	
	<i>Sarcocornia quinqueflora</i>
	<i>Sporobolus virginicus</i>
	<i>Sueda australis</i>

FPC: Foliage Projection Cover

**Vegetation Unit 2a: *Eucalyptus tereticornis* Woodland to Open Forest (RE 12.3.3)**

This vegetation community was found to be restricted to a small area at the west of the Refinery site. This community includes a canopy dominated by *Eucalyptus tereticornis* (forest red gum) with a variety of sub-dominant species including *E. crebra*, *Lophostemon suaveolens*, *Corymbia intermedia* and *C. tessellaris*. This community was variable ranging from woodland in drier areas to open forest in moister sites.

Primary site data was not recorded for this community but classification is based on data provided from the previous URS study (2003) and qualitative observations recorded during the current survey.

Secondary Sample Site 14. Refinery site 314920m E 7361085m N (GDA 94)	
Strata	Dominant species
Canopy 20 m	<i>Eucalyptus crebra</i>
	<i>Eucalyptus tereticornis</i>
	<i>Corymbia tessellaris</i>

**Vegetation Unit 2b:*****Eucalyptus tereticornis*, *Casuarina cunninghamiana*, +/- *Callistemon viminalis* and *Melaleuca leucadendra* Fringing Forest on Quaternary alluvial plains along watercourses. (RE 12.3.7)**

This riparian vegetation community was found to be restricted to a narrow band along the ephemeral drainage lines at the west of the Refinery site. Predominant canopy species include *E. tereticornis* (forest red gum), *Casuarina cunninghamiana* (river she-oak) although canopy species from surrounding communities are often present. The mid-storey is dominated by *Melaleuca leucadendra* (long-leaved teatree) and *Callistemon viminalis* (weeping bottlebrush). In more sheltered areas protected from grazing and fire, vineforest species become present in the understorey.

Structural and floristic descriptions of the dominant species in each strata for primary sites surveyed within this vegetation unit are described in the table below.

## Refinery Vegetation Communities

Primary Sample Site PPS9 (URS 2003). Refinery site 313778m E 7360410m N (GDA 94)	
Strata	Dominant species
<b>Canopy 16-20 m</b> <b>FPC: 10-35%</b>	<i>Casuarina cunninghamiana</i>
	<i>Corymbia intermedia</i>
	<i>Eucalyptus tereticornis</i>
	<i>Lophostemon suaveolens</i>
<b>Mid-Storey 3-10 m</b>	<i>Callistemon viminalis</i>
	<i>Corymbia intermedia</i>
	<i>Lophostemon suaveolens</i>
	<i>Melaleuca lecuadendra</i>
<b>Shrub Layer 1-4 m</b>	<i>Acacia disparrima</i>
	<i>Alphitonia excelsa</i>
	<i>Planchonia careya</i>
	<i>Pogonolobus reticulatus</i>
<b>Ground Layer &lt;1.5 m</b> <b>FPC: 10-80%</b> <b>Litter: 20-60%</b>	<i>Dianella brevipedunculata</i>
	<i>Eustrephus latifolius</i>
	<i>Hyparrhenia rufa subsp. rufa</i> *
	<i>Lantana montevidensis</i> *
	<i>Melinis repens</i> *
	<i>Passiflora suberosa</i> *
<i>Themeda triandra</i>	

FPC: Foliage Projection Cover

Secondary Sample Site 6. Refinery site 313771m E 7360413m N (GDA 94)	
Strata	Dominant species
<b>Canopy 18-20 m</b>	<i>Casuarina cunninghamiana</i>
	<i>Melaleuca lecuadendra</i>

***Vegetation Unit 2c: Eucalyptus tereticornis, Lophostemon suaveolens, Corymbia intermedia and Corymbia clarksoniana Woodland with a grassy understorey on alluvial plains near coast. (RE 12.3.11)***

This vegetation community occurs on the alluvial plains at the centre and south of the Refinery site. The community is characterised by *Eucalyptus tereticornis* (forest red gum) as the dominant canopy species with sub-dominant species including *Lophostemon suaveolens*, *Corymbia intermedia* and *E. crebra*. This community is floristically similar to Vegetation Unit 2e from which it differs due to the presence of *Corymbia* species and taller height. The mid-storey is relatively dense and supports *Melaleuca*

## Refinery Vegetation Communities

*viridiflora*, *L. suaveolens* and *C. intermedia*. The shrub layer is sparse and the ground cover is dominated native grass and herb species.

Structural and floristic descriptions of the dominant species in each strata for primary sites surveyed within this vegetation unit are described in the table below.

Primary Sample Site 1. Refinery site 314465 mE 7359669 mN (GDA 94)	
Strata	Dominant species
<b>Canopy 20 m</b> <b>FPC: 52%</b>	<i>Eucalyptus tereticornis</i>
	<i>Corymbia intermedia</i>
<b>Mid-Storey 15-18 m</b> <b>FPC: 62%</b>	<i>Lophostemon suaveolens</i>
	<i>Corymbia intermedia</i>
	<i>Eucalyptus crebra</i>
<b>Shrub Layer 2-5 m</b> <b>FPC: 66%</b>	<i>Acacia disparrima</i>
	<i>Alphitonia excelsa</i>
	<i>Planchonia careya</i>
	<i>Pogonolobus reticulatus</i>
<b>Ground Layer &lt;1 m</b> <b>FPC: 60%</b> <b>Litter: 40 %</b>	<i>Alphitonia excelsa</i>
	<i>Aristida queenslandica</i>
	<i>Arundinella nepalensis</i>
	<i>Cymbopogon refractus</i>
	<i>Eustrephus latifolius</i>
	<i>Grewia latifolia</i>
	<i>Heteropogon contortus</i>
	<i>Hyparrhenia rufa</i> subsp. <i>rufa</i> *
	<i>Lantana montevidensis</i> *
	<i>Lophostemon suaveolens</i>
	<i>Passiflora suberosa</i> *
	<i>Pogonolobus reticulatus</i>
<i>Sida subspicata</i>	

FPC: Foliage Projection Cover

Primary Sample Site 9. Refinery site 313925 mE 7361005 mN	
Strata	Dominant species
<b>Canopy 18-20 m</b> <b>FPC: 36%</b>	<i>Corymbia intermedia</i>
	<i>Eucalyptus crebra</i>

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Primary Sample Site 9. Refinery site 313925 mE 7361005 mN	
	<i>Lophostemon suaveolens</i>
<b>Mid-Storey 12-15 m</b> <b>FPC: 35%</b>	<i>Corymbia intermedia</i>
	<i>Eucalyptus crebra</i>
	<i>Lophostemon suaveolens</i>
<b>Shrub Layer 2-8 m</b> <b>FPC: 16%</b>	<i>Melaleuca viridiflora</i>
	<i>Planchonia careya</i>
<b>Ground Layer &lt;1 m</b> <b>FPC: 50%</b> <b>Litter: 20%</b> <b>Bare: 30%</b>	<i>Arundinella nepalensis</i>
	<i>Eustrephus latifolius</i>
	<i>Heteropogon contortus</i>
	<i>Lomandra longifolia</i>
	<i>Lophostemon suaveolens</i>
	<i>Planchonia careya</i>

FPC: Foliage Projection Cover

Primary Sample Site P5 (URS 2003). Refinery site 314050 mE 7361698 mN (GDA 94)	
Strata	Dominant species
<b>Canopy 18-22 m</b>	<i>Eucalyptus tereticornis</i>
	<i>Lophostemon suaveolens</i>
<b>Mid-Storey 12-16 m</b>	<i>Corymbia clarksoniana</i>
	<i>Corymbia intermedia</i>
	<i>Eucalyptus tereticornis</i>
	<i>Lophostemon suaveolens</i>
	<i>Planchonia careya</i>
<b>Shrub Layer 5.5-8 m</b>	<i>Acacia disparrima</i>
	<i>Breynia oblongifolia</i>
	<i>Planchonia careya</i>
	<i>Pogonolobus reticulatus</i>
<b>Ground Layer &lt;1.6 m</b> <b>FPC: 40-70%</b> <b>Litter: 25-55%</b>	
	<i>Cyperus gracilis</i>
	<i>Eragrostis</i> sp.
	<i>Grewia latifolia</i>
	<i>Imperata cylindrical</i>



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Primary Sample Site P5 (URS 2003). Refinery site 314050 mE 7361698 mN (GDA 94)	
	<i>Sida cordifolia</i> *
	<i>Myoporum debile</i>
	<i>Themeda triandra</i>

FPC: Foliage Projection Cover

Secondary Sample Site 6. Refinery site 314354m E 7359789m N (GDA 94)	
Strata	Dominant species
<b>Canopy 20-25 m</b>	<i>Corymbia intermedia</i>
	<i>Lophostemon suaveolens</i>

***Vegetation Unit 2d :Melaleuca viridiflora +/- Eucalyptus tereticornis Open Woodland on alluvial plains near coast (RE 12.3.11)***

Vegetation Unit 2d occurs at the northeast of the Refinery site where it forms a narrow ecotonal band of vegetation on the landward side of *Sporobolus virginicus* (saltwater couch) grassland and marine sand flats (Vegetation Units 1a and 1b). This community consists of a low dense canopy dominated by *Melaleuca viridiflora* (broad leaved teatree). Occasionally *E. tereticornis* is present as an emergent especially closer to the ecotone with Vegetation Unit 2e. The shrub layer is generally absent and the ground cover is dominated by *Sporobolus virginicus* in the more saline areas or *Imperata cylindrical* on the landward side.

Structural and floristic descriptions of the dominant species in each strata for primary sites surveyed within this vegetation unit are described in the table below.

Primary Sample Site P11 (URS 2003). Refinery site 314291m E 7362454m N (GDA 94)	
Strata	Dominant species
<b>Emergent 12-16 m</b>	<i>Eucalyptus tereticornis</i>
<b>Mid-Storey 2-4m</b>	<i>Melaleuca viridiflora</i>
<b>Shrub Layer 1-2 m</b>	<i>Acacia disparrima</i>

## Refinery Vegetation Communities

Primary Sample Site P11 (URS 2003). Refinery site 314291m E 7362454m N (GDA 94)	
	<i>Alphitonia excelsa</i>
	<i>Lantana camara</i> *
	<i>Pogonolobus reticulatus</i>
<b>Ground Layer &lt;0.5 m</b> <b>FPC: 10-80%</b> <b>Litter: 20-60%</b>	<i>Crinum pedunculatum</i>
	<i>Dianella brevipedunculata</i>
	<i>Imperata cylindrica</i>
	<i>Lantana montevidensis</i> *
	<i>Spermacoce brachystema</i>
	<i>Sporobolus virginicus</i>
	<i>Stachytarpheta jamaicensis</i> *

FPC: Foliage Projection Cover

***Vegetation Unit 2e: Eucalyptus tereticornis, Lophostemon suaveolens and Melaleuca nervosa Open Forest Woodland on alluvial plains near coast (RE 12.3.11)***

This vegetation community was found to be restricted to a narrow band at the north of the Refinery site where it occurs on the landward side of Vegetation Unit 2d. This community supports an open canopy co-dominated by *Eucalyptus tereticornis* and *Lophostemon suaveolens*. The mid-storey varies from sparse to dense and is dominated by *Melaleuca nervosa*. The groundcover is generally sparse and is dominated by tall grasses and herb species.

Structural and floristic descriptions of the dominant species in each strata for primary sites surveyed within this vegetation unit are described in the table below.

Primary Sample Site 11. Refinery site 314493 mE 7361075 mN (GDA 94)	
Strata	Dominant species
<b>Canopy 20 m</b> <b>FPC: 56%</b>	<i>Eucalyptus tereticornis</i>
<b>Mid-Storey 10-12m</b> <b>FPC: 46%</b>	<i>Eucalyptus tereticornis</i>
	<i>Lophostemon suaveolens</i>
	<i>Melaleuca viridiflora</i>
<b>Shrub Layer 2-5 m</b>	<i>Planchonia careya</i>

## Refinery Vegetation Communities

Primary Sample Site 11. Refinery site 314493 mE 7361075 mN (GDA 94)	
	<i>Pogonolobus reticulatus</i>
<b>Ground Layer &lt;1 m</b> <b>FPC: 5%</b> <b>Litter: 30%</b> <b>Bare: 30%</b>	<i>Arundinella nepalensis</i>
	<i>Eucalyptus tereticornis</i>
	<i>Heteropogon contortus</i>
	<i>Lophostemon suaveolens</i>

FPC: Foliage Projection Cover

Primary Sample Site P1 and P2 (URS 2003). Refinery site 314185 mE 7362353 mN (GDA 94) – P1 314226 mE 7362196 mN (GDA 94) – P2	
Strata	Dominant species
<b>Canopy 12-16 m</b>	<i>Eucalyptus tereticornis</i>
	<i>Lophostemon suaveolens</i>
<b>Mid-Storey 6-8 m</b>	<i>Eucalyptus tereticornis</i>
	<i>Lophostemon suaveolens</i>
	<i>Melaleuca nervosa</i>
	<i>Melaleuca viridiflora</i>
	<i>Planchonia careya</i>
<b>Shrub Layer 0.5-6 m</b>	<i>Acacia disparrima</i>
	<i>Alphitonia excelsa</i>
	<i>Planchonia careya</i>
	<i>Pogonolobus reticulatus</i>
<b>Ground Layer &lt;1.5 m</b> <b>FPC: 40-70%</b> <b>Litter: 25-55%</b>	<i>Arundinella nepalensis</i>
	<i>Dianella brevipedunculata</i>
	<i>Eragrostis</i> sp.
	<i>Grewia latifolia</i>
	<i>Lantana camara</i> *
	<i>Melinis repens</i> *
	<i>Myoporum debile</i>
	<i>Themeda triandra</i>

FPC: Foliage Projection Cover

## Refinery Vegetation Communities

**Vegetation Unit 2f: Open-forest of *Eucalyptus siderophloia* with vine forest understorey on sub-coastal Quaternary alluvial plains (RE 12.11.3a)**

This vegetation community occurs at the south of the Refinery site and is characterised by a tall canopy dominated by *Eucalyptus crebra* (narrow-leaved ironbark) with a relatively dense mid-storey and shrub layer of vine forest species including *Exocarpus latifolius* (broad-leaved cherry), *Maytenus dispermus* (orange bush) and *Neolitsea dealbata* (white bolly gum). The ground cover is generally sparse and supports native grasses and introduced shrub species.

Structural and floristic descriptions of the dominant species in each strata for primary sites surveyed within this vegetation unit are described in the table below.

Primary Sample Site 2. Refinery site 314233 mE 7360081 mN (GDA 94)	
Strata	Dominant species
<b>Canopy 20-25 m</b> <b>FPC: 30%</b>	<i>Eucalyptus crebra</i>
<b>Mid-Storey 8-15 m</b> <b>FPC: 36%</b>	<i>Corymbia tessellaris</i>
	<i>Eucalyptus crebra</i>
	<i>Exocarpus latifolius</i>
	<i>Jagera pseudorhus</i>
	<i>Maytenus dispermus</i>
	<i>Neolitsea dealbata</i>
<b>Shrub Layer 2-3 m</b> <b>FPC: 62%</b>	<i>Capparis ornans</i>
	<i>Cassinia laevis</i>
	<i>Corymbia tessellaris</i>
	<i>Exocarpus latifolius</i>
	<i>Pogonolobus reticulatus</i>
<b>Ground Layer &lt;1 m</b> <b>FPC: 25 %</b> <b>Bare: 45 %</b>  <b>Bare: 30 %</b>	<i>Aristida queenslandica</i>
	<i>Heteropogon contortus</i>
	<i>Lantana montevidensis</i> *
	<i>Panicum effusum v simile</i>
	<i>Passiflora suberosa</i> *
	<i>Sida subspicata</i>
<i>Stachytarpheta jamaicensis</i> *	

FPC: Foliage Projection Cover

## Refinery Vegetation Communities

**Vegetation Unit 2g: *Eucalyptus tereticornis* and/or *Eucalyptus* spp. tall woodland on alluvial plains. (RE 11.3.4)**

This woodland community occurs on alluvial plains around the centre of the Refinery site. This community is characterised by the dominance of tall *Eucalyptus tereticornis* (forest red gum) with occasional scattered *Eucalyptus crebra* (narrow-leaved ironbark) in the canopy. Both *E. tereticornis* and *Acacia disparrima* (hickory wattle) co-dominate the sparse understorey. The ground cover is typically a low open grassland modified from grazing disturbance, primarily dominated by native grasses including *Aristida personata*, *Aristida queenslandica* and *Heteropogon contortus*.

Structural and floristic descriptions of the dominant species in each strata for primary sites surveyed within this vegetation unit are described in the table below.

Primary Sample Site 16. Refinery site 313488 mE 7361773 mN (GDA 94)	
Strata	Dominant species
<b>Canopy 12-15 m</b> <b>FPC: 36%</b>	<i>Eucalyptus crebra</i>
	<i>Eucalyptus tereticornis</i>
	<i>Corymbia tessellaris</i>
<b>Mid-Storey 8-10 m</b> <b>FPC: 20%</b>	<i>Eucalyptus crebra</i>
	<i>Eucalyptus tereticornis</i>
	<i>Corymbia tessellaris</i>
<b>Shrub Layer 1-2 m</b> <b>FPC: 50%</b>	<i>Planchonia careya</i>
	<i>Pogonolobus reticulatus</i>
<b>Ground Layer &lt;1 m</b> <b>FPC: 80%</b> <b>Litter: 15%</b> <b>Bare: 5%</b>	<i>Aristida queenslandica</i>
	<i>Arundinella nepalensis</i>
	<i>Bidens pilosa</i> var. <i>pilosa</i> *
	<i>Grewia latifolia</i>
	<i>Heteropogon contortus</i>
	<i>Hyparrhenia rufa</i> subsp. <i>rufa</i> *
	<i>Lantana montevidensis</i> *
	<i>Panicum maximum</i> *
<i>Sida rhombifolia</i> *	

FPC: Foliage Projection Cover

## Refinery Vegetation Communities

Primary Sample Site P6, P7, P8 and P9 (URS 2003). Refinery site 313994 mE 7361821 mN (GDA 94) – P6 313655 mE 7362081 mN (GDA 94) – P7 313918 mE 7362346 mN (GDA 94) – P8 313924 mE 7362153 mN (GDA 94) – P9	
Strata	Dominant species
<b>Canopy 16-25 m</b>	<i>Corymbia clarksoniana</i>
	<i>Corymbia intermedia</i>
	<i>Corymbia tessellaris</i>
	<i>Eucalyptus tereticornis</i>
	<i>Lophostemon suaveolens</i>
<b>Mid-Storey 3-12 m</b>	<i>Corymbia intermedia</i>
	<i>Corymbia tessellaris</i>
	<i>Eucalyptus tereticornis</i>
	<i>Lophostemon suaveolens</i>
	<i>Melaleuca nervosa</i>
<b>Shrub Layer 1-3 m</b>	<i>Acacia disparrima</i>
	<i>Alphitonia excelsa</i>
	<i>Planchonia careya</i>
	<i>Pogonolobus reticulatus</i>
<b>Ground Layer &lt;1.5 m</b> <b>FPC: 40-70%</b> <b>Litter: 25-55%</b>	<i>Dianella brevipedunculata</i>
	<i>Eragrostis</i> sp.
	<i>Grewia latifolia</i>
	<i>Lantana montividentis</i> *
	<i>Eustrephus latifolus</i> *
	<i>Myoporum debile</i>
	<i>Glycine tabacina</i>

FPC: Foliage Projection Cover

Secondary Sample Site 10. Refinery site 314213m E 73612701m N (GDA 94)	
Strata	Dominant species
<b>Canopy 20-25 m</b>	<i>Eucalyptus crebra</i>
	<i>Eucalyptus tereticornis</i>
	<i>Corymbia tessellaris</i>
	<i>Lophostemon suaveolens</i>

## Refinery Vegetation Communities

**Vegetation Unit 2k: *Eucalyptus crebra* woodland on alluvial plains (RE 11.3.29)**

Vegetation Unit 2k occurs at the east of the Refinery site where it borders the Calliope River. The vegetation community supports a canopy dominated by *Eucalyptus crebra*, *E. tereticornis* and *L. suaveolens*. The mid-storey supports *Acacia disparrima*, *E. tereticornis* and *L. suaveolens*. The shrub layer is generally sparse and includes *Alphitonia excelsa* and *Pogonolobus reticulatus*. The groundcover is typically a low open grassland modified from grazing disturbance, primarily dominated by *Panicum maximum* and other introduced grass species.

Structural and floristic descriptions of the dominant species in each strata for primary sites surveyed within this vegetation unit are described in the table below.

Primary Sample Site 12. Refinery site 314457 mE 7360925 mN (GDA 94)	
Strata	Dominant species
<b>Canopy 18 m</b> <b>FPC: 40%</b>	<i>Eucalyptus crebra</i>
	<i>Eucalyptus tereticornis</i>
	<i>Lophostemon suaveolens</i>
<b>Mid-Storey 8-10 m</b> <b>FPC: 36%</b>	<i>Acacia disparrima</i>
	<i>Corymbia tessellaris</i>
	<i>Eucalyptus tereticornis</i>
	<i>Lophostemon suaveolens</i>
<b>Shrub Layer 2-5 m</b>	<i>Alphitonia excelsa</i>
	<i>Ficus opposita</i>
	<i>Planchonia careya</i>
	<i>Pogonolobus reticulatus</i>
<b>Ground Layer &lt;1 m</b> <b>FPC: 60%</b> <b>Litter: 25%</b> <b>Bare: 15%</b>	<i>Aristida queenslandica</i>
	<i>Bidens pilosa</i> var. <i>pilosa</i> *
	<i>Heteropogon contortus</i>
	<i>Lantana montevidensis</i> *
	<i>Panicum maximum</i> *
	<i>Passiflora suberosa</i> *
	<i>Sida subspicata</i>
	<i>Stachytarpheta jamaicensis</i> *

FPC: Foliage Projection Cover

## Refinery Vegetation Communities

**Vegetation Unit 3a :Corymbia citriodora, Eucalyptus crebra open forest on metamorphics ± interbedded volcanics (RE 12.11.6)**

Vegetation Unit 3a occurs on the rocky slopes of the low hills at the west of the Refinery site. This community is characterised by the co-dominance of *Corymbia citriodora* and *E. crebra* in the canopy. These areas are more prone to fire and as a result the shrub layer is generally sparse to absent. The groundcover is also sparse and includes native grass and forb species.

Structural and floristic descriptions of the dominant species in each strata for primary and secondary sites surveyed within this vegetation unit are described in the table below.

Primary Sample Site PPS3 (URS 2003). Refinery site 313171 mE 7361342 mN (GDA 94)	
Strata	Dominant species
<b>Canopy 12-20 m</b>	<i>Corymbia citriodora</i>
	<i>Eucalyptus crebra</i>
<b>Mid-Storey 5-12 m</b>	<i>Corymbia citriodora</i>
	<i>Eucalyptus crebra</i>
<b>Shrub Layer 0.5-2 m</b>	<i>Acacia disparrima</i>
	<i>Alphitonia excelsa</i>
	<i>Planchonia careya</i>
	<i>Pogonolobus reticulatus</i>
<b>Ground Layer &lt;0.3 m</b> <b>FPC: 30-60%</b> <b>Litter: 10-40%</b>	<i>Dianella brevipedunculata</i>
	<i>Eustrephus latifolius</i>
	<i>Grewia latifolia</i>
	<i>Lantana camara</i> *
	<i>Melinis repens</i> *
	<i>Myoporum debile</i>
	<i>Themeda triandra</i>

FPC: Foliage Projection Cover

Secondary Sample Site 4. Refinery site 314046m E 7360238m N (GDA 94)	
Strata	Dominant species
<b>Canopy 20-25 m</b>	<i>Eucalyptus tereticornis</i>
	<i>Corymbia citriodora</i>



## Refinery Vegetation Communities

Secondary Sample Site 8. Refinery site 313358m E 7361037m N (GDA 94)	
Strata	Dominant species
<b>Canopy 12-15 m</b>	<i>Eucalyptus crebra</i>
	<i>Corymbia citriodora</i>

Secondary Sample Site 15. Refinery site 313257m E 7361622m N (GDA 94)	
Strata	Dominant species
<b>Canopy 12-15 m</b>	<i>Eucalyptus crebra</i>
	<i>Corymbia citriodora</i>

**Vegetation Unit 3b: *Eucalyptus crebra* woodland on metamorphics ± interbedded volcanics (RE 12.11.7)**

This vegetation community occurs on the rocky slopes of the low hills at the south west of the Refinery site. The canopy of this community is composed of a mixed assemblage of eucalypt species including *E. crebra*, *E. tereticornis* and *C. intermedia*. These areas are more prone to fire and as a result the shrub layer is generally sparse to absent. The groundcover is also sparse and includes native grass and forb species.

Structural and floristic descriptions of the dominant species in each strata for primary sites surveyed within this vegetation unit are described in the table below.

Primary Sample Site 5. Refinery site 313987 mE 7360044 mN (GDA 94)	
Strata	Dominant species
<b>Canopy 18-20 m</b> <b>FPC: 70%</b>	<i>Eucalyptus crebra</i>
	<i>Eucalyptus tereticornis</i>
	<i>Corymbia intermedia</i>
<b>Mid-Storey 10-12 m</b>	<i>Acacia disparrima</i>

## Refinery Vegetation Communities

Primary Sample Site 5. Refinery site 313987 mE 7360044 mN (GDA 94)	
<b>FPC: 22%</b>	
<b>Shrub Layer 2-5 m</b> <b>FPC: 10%</b>	<i>Allocasuarina torulosa</i>
	<i>Canthium odoratum</i>
	<i>Planchonia careya</i>
	<i>Pogonolobus reticulatus</i>
<b>Ground Layer &lt;1 m</b> <b>FPC: 15 %</b> <b>Litter: 65</b> <b>Bare: 20%</b>	<i>Aristida queenslandica</i>
	<i>Arundinella nepalensis</i>
	<i>Eustrephus latifolius</i>
	<i>Heteropogon contortus</i>
	<i>Pogonolobus reticulatus</i>
	<i>Stachytarpheta jamaicensis</i> *

FPC: Foliage Projection Cover

**Vegetation Unit 4a: Modified pastoral grassland with scattered emergent Eucalypt spp.**

This modified community occurs at the south of the Refinery site where woodland communities have been cleared for pastoral land. This community supports a variety of native and exotic ground cover species including *Heteropogon contortus*, *Melinis repens*\* and *Panicum maximum*\*.

Structural and floristic descriptions of the dominant species in each strata for primary sites surveyed within this vegetation unit are described in the table below.

Primary Sample Site 7. Refinery site 314186 mE 7360649 mN (GDA 94)	
Strata	Dominant species
<b>Ground Layer &lt;1 m</b> <b>FPC: 100 %</b>	<i>Aristida queenslandica</i>
	<i>Cenchrus ciliaris</i> *
	<i>Heteropogon contortus</i>
	<i>Hyparrhenia rufa subsp. rufa</i> *
	<i>Melinis repens</i> *
	<i>Panicum maximum</i> *
	<i>Passiflora suberosa</i> *
	<i>Sida trichopoda</i>
<i>Stachytarpheta jamaicensis</i> *	

FPC: Foliage Projection Cover

## Refinery Vegetation Communities

### ***Vegetation Unit 4b: Non remnant shrubby regrowth of Acacia and / or Eucalypt spp.***

This modified vegetation community occurs at the centre of the Refinery site where vegetation was previously cleared for quarrying and is now regenerating. This Vegetation Unit consists of shrubby Eucalypt and Acacia species regrowth. Given the absence of structural or floristic diversity in this vegetation community primary site surveys were not undertaken.

## RSF Vegetation Communities

## K.6 RSF Vegetation Communities

The following table (Table 5-1) provides a summary of the classification of vegetation units identified at the RSF site during the flora survey. Vegetation units for the study sites have been delineated on the basis of dominant structural and floristic elements of each community and the land zone typically associated with each vegetation unit. The area of each vegetation unit within the study site varies considerably between vegetation types, with some communities represented only marginally within the project area. Community descriptions including general floristic description of dominant species, evidence of previous disturbance, fire history, incidence of exotic species and general disturbance notes are provided for each vegetation unit. Structural and floristic data describing the dominant species within each strata at each primary site surveyed at the RSF site are also provided in a series of tables below.

Table 5-1 Summary of Vegetation Communities at the RSF

Code	Community Description	Land zone	Regional Ecosystem	Area on site (ha)	Primary Sites	Secondary Sites
2g	<i>Eucalyptus tereticornis</i> and/or <i>Eucalyptus</i> spp. tall woodland on alluvial plains	Quaternary alluvial soils	RE 11.3.4	128.7	17, 41, 42	23, 31, 38, 43
2h	<i>Melaleuca leucadendra</i> and/or <i>M. fluviatilis</i> , <i>Nauclea orientalis</i> open forest fringing drainage lines		RE 11.3.25 b	47.3	19, 55	34, 69, 71
2i	<i>Melaleuca bracteata</i> woodland to open-forest. Occurs on fringing alluvial soils or near-channel levees on heavy wet clays.		RE 11.3.25 d	3.4	67	64
2j	<i>Eucalyptus moluccana</i> woodland to open forest on margins of alluvial plains		RE 11.3.26	9.9	68	70
3d	<i>Corymbia citriodora</i> , <i>Eucalyptus crebra</i> , open forest on old sedimentary rocks with varying degrees of metamorphism and folding. Coastal ranges	Hills and lowlands on metamorphosed sedimentary rocks	RE 11.11.3	74.8	23	26
3e	<i>Eucalyptus crebra</i> woodland on old sedimentary rocks with varying degrees of metamorphism and folding. Coastal ranges		RE 11.11.4	595.5	27, 29, 32, 35, 44, 56, 57, 58, 63	21, 39, 40, 47, 49, 50, 51, 52, 61, 62
3f	<i>Eucalyptus tereticornis</i> dominated woodland on old sedimentary rocks with varying degrees of metamorphism and folding. Coastal ranges		RE 11.11.4a	32.3	-	37
3g	<i>Eucalyptus moluccana</i> dominated woodland on old sedimentary rocks with varying degrees of metamorphism and folding. Coastal ranges		RE 11.11.4c	54.4	30	-
3h	<i>Eucalyptus crebra</i> woodland on deformed and metamorphosed sediments and interbedded volcanics. Undulating plains		RE 11.11.15	89.7	24	25

## RSF Vegetation Communities

Code	Community Description	Land zone	Regional Ecosystem	Area on site (ha)	Primary Sites	Secondary Sites
3i	Vine thicket, with no <i>Araucaria cunninghamii</i> emergents on old sedimentary rocks in hilly terrain		RE 11.11.5a	1.7	33, 48, 60	53, 54
4a	Modified pastoral grassland with scattered emergent <i>Eucalypt</i> spp.	Quaternary alluvial soils, Hills and lowlands on metamorphosed sedimentary rocks	n/a	999.2	18, 45, 65, 66	20, 22, 45, 46
4b	Non remnant shrubby regrowth of <i>Acacia</i> and / or <i>Eucalypt</i> spp.		n/a	93.4	-	28, 36, 59

**Vegetation Unit 2g: *Eucalyptus tereticornis* and/or *Eucalyptus* spp. tall woodland on alluvial plains (RE 11.3.4)**

This woodland community occurs on alluvial plains around the centre of the RSF site. This community is characterised by the dominance of tall *Eucalyptus tereticornis* (forest red gum) with occasional scattered *Eucalyptus crebra* (narrow-leaved ironbark) in the canopy. Both *E. tereticornis* and *Acacia disparrima* (hickory wattle) co-dominate the sparse understorey. The ground cover is typically a low open grassland modified from grazing disturbance, primarily dominated by native grasses including *Aristida personata* and *Aristida queenslandica* and *Heteropogon contortus*.

Structural and floristic descriptions of the dominant species in each strata for primary sites surveyed within this vegetation unit are described in the tables below.

Primary Sample Site 41. RSF site 303080m E 7354981m N (GDA 94)	
Strata	Dominant species
<b>Canopy 25-30 m</b> <b>FPC: 90%</b>	<i>Eucalyptus tereticornis</i>
<b>Mid-Storey 12-15 m</b> <b>FPC: 4%</b>	<i>Eucalyptus tereticornis</i>
<b>Shrub Layer 3-6 m</b> <b>FPC: 8%</b>	<i>Acacia disparrima</i> <i>Eucalyptus tereticornis</i>
<b>Ground Layer &lt;2 m</b> <b>FPC: 45%</b> <b>Litter: 20%</b> <b>Bare: 35%</b>	<i>Aristida personata</i> <i>Cyperus gracilis</i> <i>Sida subspicata</i>

Primary Sample Site 42. RSF site 302753m E 7355070m N (GDA 94)
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## RSF Vegetation Communities

Primary Sample Site 42. RSF site 302753m E 7355070m N (GDA 94)	
Strata	Dominant species
<b>Mid-Storey 8-10 m</b> <b>FPC: 20%</b>	<i>Corymbia tessellaris</i>
	<i>Eucalyptus crebra</i>
	<i>Eucalyptus tereticornis</i>
<b>Shrub Layer 3-6 m</b> <b>FPC: 8%</b>	<i>Acacia disparrima</i>
	<i>Corymbia tessellaris</i>
	<i>Eucalyptus crebra</i>
	<i>Eucalyptus tereticornis</i>
<b>Ground Layer &lt;1 m</b> <b>FPC: 75%</b> <b>Litter: 5%</b> <b>Bare: 20%</b>	<i>Aristida personata</i>
	<i>Heteropogon contortus</i>
	<i>Lantana camara</i> *
	<i>Lantana montevidensis</i> *
	<i>Sida subspicata</i>

FPC: Foliage Projection Cover

Primary Sample Site 17. RSF site 303021m E 7354125m N (GDA 94)	
Strata	Dominant species
<b>Canopy 18-20 m</b> <b>FPC: 70%</b>	<i>Eucalyptus crebra</i>
	<i>Corymbia erythrophloia</i>
<b>Mid-Storey 12 m</b> <b>FPC: 8%</b>	<i>Eucalyptus crebra</i>
<b>Shrub Layer 2-3 m</b> <b>FPC: 6%</b>	<i>Acacia disparrima</i>
	<i>Lantana camara</i> *
	<i>Pogonolobus reticulatus</i>
	<i>Sida cordifolia</i>
	<i>Sida trichopoda</i>
<b>Ground Layer &lt;1 m</b> <b>FPC: 40 %</b> <b>Litter: 10</b> <b>Bare: 50 %</b>	<i>Aristida queenslandica</i>
	<i>Heteropogon contortus</i>
	<i>Enteropogon acicularis</i>

## RSF Vegetation Communities

Secondary Sample Site 23. RSF site 305172m E 7352770m N (GDA 94)	
Strata	Dominant species
<b>Canopy 15-18 m</b>	<i>Eucalyptus crebra</i>
	<i>Corymbia citriodora</i>
<b>Mid-Storey</b>	<i>Eucalyptus crebra</i>
	<i>Corymbia citriodora</i>

Secondary Sample Site 31. RSF site 303088m E 7354934m N (GDA 94)	
Strata	Dominant species
<b>Canopy 20-25 m</b>	<i>Eucalyptus crebra</i>
	<i>Eucalyptus tereticornis</i>
	<i>Corymbia tessellaris</i>

Secondary Sample Site 38. RSF site 303458m E 7355677m N (GDA 94)	
Strata	Dominant species
<b>Canopy 20 m</b>	<i>Eucalyptus crebra</i>
	<i>Eucalyptus tereticornis</i>
	<i>Lophostemon suaveolens</i>

Secondary Sample Site 43. RSF site 302619m E 7354950m N (GDA 94)	
Strata	Dominant species
<b>Canopy</b>	<i>Eucalyptus crebra</i>
	<i>Eucalyptus tereticornis</i>
	<i>Corymbia tessellaris</i>

## RSF Vegetation Communities

**Vegetation Unit 2h: *Melaleuca leucadendra* and/or *M. fluviatilis*, *Nauclea orientalis* open forest fringing drainage lines (RE 11.3.25 b)**

This riparian vegetation community was found to be restricted to the banks of the small ephemeral water courses of the RSF site. This community is characterised by the dominance of *Melaleuca leucadendra* (long leaved teatree) with occasional scattered emergent *Eucalyptus tereticornis* (forest red gum) in the canopy. The mid-storey and shrub layers vary from open to dense and include *Melaleuca leucadendra*, *Callistemon viminalis* and *Acacia fasciculifera*. The shrub layer also supports a number of declared weed species including *Cryptostegia grandiflora* (rubber vine) and *Lantana camara*. The ground cover is highly altered from grazing disturbance and supports a sparse cover of native grasses.

Structural and floristic descriptions of the dominant species in each strata for primary sites surveyed within this vegetation unit are described in the table below.

Primary Sample Site 19. RSF site 302954 mE 7353043 mN (GDA 94)	
Strata	Dominant species
<b>Emergent 25 m</b>	<i>Eucalyptus tereticornis</i>
<b>Canopy 18-20 m</b> <b>FPC: 82%</b>	<i>Casuarina cunninghamiana</i>
	<i>Ficus virens</i>
	<i>Melaleuca leucadendra</i>
<b>Mid-Storey 10-12 m</b> <b>FPC: 24%</b>	<i>Callistemon viminalis</i>
<b>Shrub Layer 1-2 m</b> <b>FPC: 4%</b>	<i>Aphananthe philippinensis</i>
	<i>Cryptostegia grandiflora</i> *
	<i>Ficus virens</i>
	<i>Gomphocarpus physocarpus</i> *
	<i>Lantana camara</i> *
<b>Ground Layer &lt;1 m</b> <b>FPC: 45%</b> <b>Litter: 40%</b> <b>Bare: 15%</b>	<i>Aristida personata</i>
	<i>Bothriochloa bladhii</i> subsp. <i>Bladhii</i>
	<i>Breynia oblongifolia</i>
	<i>Chloris divaricata</i>
	<i>Chloris virgata</i> *
	<i>Cyperus gracilis</i>
	<i>Heteropogon contortus</i>
	<i>Malvastrum americanum</i> *
<i>Sida subspicata</i>	



## RSF Vegetation Communities

Primary Sample Site 19. RSF site 302954 mE 7353043 mN (GDA 94)	
	<i>Sida trichopoda</i>

FPC: Foliage Projection Cover

Primary Sample Site 55. RSF site 300809 mE 7357763 mN (GDA 94)	
Strata	Dominant species
<b>Emergent 25-30 m</b>	<i>Eucalyptus tereticornis</i>
<b>Canopy 20 m</b> <b>FPC: 52%</b>	<i>Corymbia tessellaris</i>
	<i>Melaleuca leucadendra</i>
<b>Mid-Storey</b> <b>FPC: 30%</b>	<i>Acacia fasciculifera</i>
	<i>Callistemon viminalis</i>
	<i>Melaleuca leucadendra</i>
<b>Shrub Layer</b> <b>FPC: 16%</b>	<i>Acacia disparrima</i>
	<i>Breynia oblongifolia</i>
	<i>Callistemon viminalis</i>
	<i>Cryptostegia grandiflora</i> *
	<i>Gomphocarpus physocarpus</i> *
	<i>Lantana camara</i> *
<b>Ground Layer &lt;1 m</b> <b>FPC: 60%</b> <b>Litter: 15%</b> <b>Bare: 25%</b>	<i>Aristida personata</i>
	<i>Arundinella nepalensis</i>
	<i>Heteropogon contortus</i>
	<i>Malvastrum americanum</i> *
	<i>Oplismenus aemulus</i>

FPC: Foliage Projection Cover

Secondary Sample Site 34. RSF site 302599m E 7355522m N (GDA 94)	
Strata	Dominant species
<b>Canopy 18-20 m</b>	<i>Casuarina cunninghamiana</i>
	<i>Melaleuca leucadendra</i>

## RSF Vegetation Communities

Secondary Sample Site 69. RSF site 300440m E 7358818m N (GDA 94)	
Strata	Dominant species
<b>Canopy</b>	<i>Melaleuca fluvialis</i>

Secondary Sample Site 71. RSF site 300342m E 7358408m N (GDA 94)	
Strata	Dominant species
<b>Canopy</b>	<i>Melaleuca fluvialis</i>

***Vegetation Unit 2i: Melaleuca bracteata woodland to open-forest. Occurs on fringing alluvial soils or near-channel levees on heavy wet clays. (RE 11.3.25 d)***

This riparian vegetation community was found to be restricted to the north of the RSF site where it occurred on the alluvial plains and banks of the small ephemeral water courses. This community is characterised by the dominance of *Melaleuca bracteata* (black teatree) in the canopy. The shrub layer is dominated by a number of species including *Canthium coprosmoides*, *Cupaniopsis anacardioides* and *Melaleuca bracteata*. The ground cover is typically sparse from grazing disturbance, primarily dominated by a number of native grass and herb species.

Structural and floristic descriptions of the dominant species in each strata for primary sites surveyed within this vegetation unit are described in the table below.

Primary Sample Site 67. RSF site 3003753 mE 7358995 mN (GDA 94)	
Strata	Dominant species
<b>Canopy 10-12 m</b> <b>FPC: 84%</b>	<i>Melaleuca bracteata</i>
<b>Shrub Layer 3-8 m</b> <b>FPC: 30%</b>	<i>Acacia disparrima</i>
	<i>Breynia oblongifolia</i>
	<i>Canthium coprosmoides</i>
	<i>Carissa ovata</i>
	<i>Cupaniopsis anacardioides</i>
	<i>Melaleuca bracteata</i>

## RSF Vegetation Communities

Primary Sample Site 67. RSF site 3003753 mE 7358995 mN (GDA 94)	
<b>Ground Layer &lt;1 m</b> <b>FPC: 30%</b> <b>Litter: 10%</b> <b>Bare: 60%</b>	<i>Cyperus gracilis</i>
	<i>Heteropogon contortus</i>
	<i>Oxalis corniculata var. corniculata</i> *

FPC: Foliage Projection Cover

Secondary Sample Site 64. RSF site 301324m E 7358736m N (GDA 94)	
Strata	Dominant species
<b>Canopy 20 m</b>	<i>Eucalyptus tereticornis</i>
	<i>Corymbia tessellaris</i>
	<i>Melaleuca leucadendra</i>

**Vegetation Unit 2j: *Eucalyptus moluccana* woodland to open forest on margins of alluvial plains (RE 11.3.26)**

This vegetation community was found to be restricted to a small area at the north-west of the RSF site where it occurs on alluvial plains. This community is characterised by a tall canopy of *Eucalyptus moluccana* (gum-topped box) with mid-storey of *E. tereticornis*, *E. moluccana* and *Corymbia tessellaris*. The shrub layer is sparse and includes *Acacia disparrima* and regenerating *E. moluccana*. The ground cover is typical of a moderately grazed community and supports a sparse layer of native grasses including *Cymbopogon refractus* and *Sporobolus creber*.

Structural and floristic descriptions of the dominant species in each strata for primary sites surveyed within this vegetation unit are described in the table below.

Primary Sample Site 68. RSF site 300555 mE 7358903 mN (GDA 94)	
Strata	Dominant species
<b>Canopy 20-25 m</b> <b>FPC: 44%</b>	<i>Eucalyptus moluccana</i>
<b>Mid-Storey 15-18 m</b> <b>FPC: 30%</b>	<i>Corymbia tessellaris</i>
	<i>Eucalyptus moluccana</i>
	<i>Eucalyptus tereticornis</i>

## RSF Vegetation Communities

Primary Sample Site 68. RSF site 300555 mE 7358903 mN (GDA 94)	
<b>Shrub Layer 2-4 m</b>	<i>Acacia disparrima</i>
	<i>Eucalyptus moluccana</i>
<b>Ground Layer &lt;1 m</b> <b>FPC: 20%</b> <b>Litter: 50%</b> <b>Bare: 30%</b>	<i>Cymbopogon refractus</i>
	<i>Cyperus gracilis</i>
	<i>Eragrostis sororia</i>
	<i>Sporobolus creber</i>

FPC: Foliage Projection Cover

Secondary Sample Site 70. RSF site 300310m E 7358806m N (GDA 94)	
<b>Strata</b>	<b>Dominant species</b>
<b>Canopy</b>	<i>Eucalyptus moluccana</i>

**Vegetation Unit 3d: *Corymbia citriodora*, *Eucalyptus crebra*, open forest on old sedimentary rocks with varying degrees of metamorphism and folding. Coastal ranges (RE 11.11.3)**

This vegetation community occurs along the hills adjacent to the southeast boundary of the study RSF site. The canopy of this community is co-dominated by *Corymbia citriodora* (Lemon-scented Gum) and *Eucalyptus crebra* (narrow-leaved ironbark). The mid-storey and shrub layers are moderately sparse supporting *Lophostemon suaveolens* (swamp box), *Alphitonia excelsa* (soap tree) and *Acacia disparrima* (hickory wattle). The ground layer is in relatively good condition and supports a diversity of native grass and herb species including *Aristida queenslandica*, *Grewia latifolia* and *Lomandra longifolia*. It is likely that the steep rocky terrain of this area has limited the grazing impact on the community.

Structural and floristic descriptions of the dominant species in each strata for primary sites surveyed within this vegetation unit are described in the table below.

Primary Sample Site 23. RSF site 305173 mE 7352771 mN (GDA 94)
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## RSF Vegetation Communities

Primary Sample Site 23. RSF site 305173 mE 7352771 mN (GDA 94)	
Strata	Dominant species
<b>Canopy 15-18 m</b> <b>FPC: 82%</b>	<i>Eucalyptus crebra</i>
	<i>Corymbia citriodora</i>
<b>Mid-Storey 8-10 m</b> <b>FPC: 30%</b>	<i>Acacia disparrima</i>
	<i>Lophostemon suaveolens</i>
<b>Shrub Layer 2-4 m</b> <b>FPC: 8%</b>	<i>Acacia disparrima</i>
	<i>Alphitonia excelsa</i>
<b>Ground Layer &lt;1 m</b> <b>FPC: 50%</b> <b>Litter: 10%</b> <b>Bare: 40 %</b>	<i>Aristida queenslandica</i>
	<i>Cyperus gracilis</i>
	<i>Eragrostis sororia</i>
	<i>Grewia latifolia</i>
	<i>Heteropogon contortus</i>
	<i>Lomandra longifolia</i>
	<i>Oxalis corniculata</i> var. <i>corniculata</i> *
	<i>Sida subspicata</i>
	<i>Sida trichopoda</i>
<i>Synedrellopsis grisebachii</i> *	

FPC: Foliage Projection Cover

Secondary Sample Site 26. RSF site 304867m E 7358736m N (GDA 94)	
Strata	Dominant species
<b>Canopy 25 m</b>	<i>Eucalyptus crebra</i>
	<i>Corymbia citriodora</i>

***Vegetation Unit 3e: Eucalyptus crebra woodland on old sedimentary rocks with varying degrees of metamorphism and folding. Coastal ranges (RE 11.11.4)***

This was the most common native vegetation community within the RSF site and dominated the low hills throughout the east and north of the site. This community is characterised by the dominance of *Eucalyptus crebra* (narrow-leaved ironbark) in the canopy. Sub-dominant canopy species include *Lophostemon suaveolens*, *E. tereticornis*, *E. exserta*, *Corymbia tessellaris*, *C. erythrophloia* and *C.*

## RSF Vegetation Communities

*clarksoniana*. The midstorey was generally sparse and the ground cover typically supported a diversity of native grass species including *Aristida personata*, *Chloris divaricata*, and *Themeda triandra*.

The ecological integrity of this community varies significantly across the site. Generally the areas near the eastern boundary of the site were in better condition due to less grazing impacts.

Structural and floristic descriptions of the dominant species in each strata for primary sites surveyed within this vegetation unit are described in the table below.

Primary Sample Site 27. RSF site 303953 mE 7354389 mN (GDA 94)	
Strata	Dominant species
<b>Mid-Storey 8 m</b> FPC: 24%	<i>Corymbia clarksoniana</i>
	<i>Eucalyptus crebra</i>
<b>Shrub Layer 2-5 m</b> FPC: 6%	<i>Acacia disparrima</i>
	<i>Alphitonia excelsa</i>
	<i>Sida trichopoda</i>
<b>Ground Layer &lt;1 m</b> FPC: 25 % Litter: 20% Bare: 55 %	<i>Aristida personata</i>
	<i>Cyperus gracilis</i>
	<i>Heteropogon contortus</i>
	<i>Sida cordifolia</i>
	<i>Synedrellopsis grisebachii</i> *

FPC: Foliage Projection Cover

Primary Sample Site 29. RSF site 303829 mE 7354914 mN (GDA 94)	
Strata	Dominant species
<b>Canopy 20 m</b>	<i>Eucalyptus crebra</i>
<b>Mid-Storey 10-12 m</b> FPC: 64%	<i>Eucalyptus crebra</i>
<b>Shrub Layer 2-3 m</b> FPC: 16%	<i>Acacia fasciculifera</i>
	<i>Alphitonia excelsa</i>
	<i>Sida subspicata</i>

## RSF Vegetation Communities

Primary Sample Site 29. RSF site 303829 mE 7354914 mN (GDA 94)	
<b>Ground Layer &lt;1 m</b> <b>FPC: 60 %</b> <b>Litter: 15 %</b> <b>Bare: 25%</b>	<i>Aristida personata</i>
	<i>Chloris divaricata</i>
	<i>Cymbopogon refractus</i>
	<i>Eustrephus latifolius</i>
	<i>Grewia latifolia</i>
	<i>Heteropogon contortus</i>
	<i>Lantana camara</i> *
<i>Themeda triandra</i>	

FPC: Foliage Projection Cover

Primary Sample Site 32. RSF site 303054 mE 7356154 mN (GDA 94)	
Strata	Dominant species
<b>Canopy 20 m</b> <b>FPC: 62%</b>	<i>Eucalyptus crebra</i>
<b>Mid-Storey 12-15 m</b> <b>FPC: 16%</b>	<i>Corymbia citriodora</i>
	<i>Corymbia intermedia</i>
	<i>Eucalyptus crebra</i>
	<i>Eucalyptus tereticornis</i>
<b>Shrub Layer 2-6 m</b> <b>FPC: 12%</b>	<i>Acacia disparrima</i>
	<i>Lantana camara</i> *
	<i>Sida subspicata</i>
<b>Ground Layer &lt;1 m</b> <b>FPC: 60%</b> <b>Litter: 20%</b> <b>Bare: 20%</b>	<i>Aristida personata</i>
	<i>Cymbopogon refractus</i>
	<i>Eragrostis sororia</i>
	<i>Heteropogon contortus</i>

FPC: Foliage Projection Cover

Primary Sample Site 35. RSF site 302970 mE 7355495 mN (GDA 94)	
Strata	Dominant species
<b>Canopy 30 m</b>	<i>Corymbia citriodora</i>

## RSF Vegetation Communities

Primary Sample Site 35. RSF site 302970 mE 7355495 mN (GDA 94)	
<b>FPC: 64%</b>	<i>Eucalyptus crebra</i>
<b>Mid-Storey 12-15 m</b> <b>FPC: 6%</b>	<i>Corymbia citriodora</i>
	<i>Eucalyptus crebra</i>
	<i>Eucalyptus tereticornis</i>
<b>Shrub Layer 3-6 m</b> <b>FPC: 4%</b>	<i>Corymbia citriodora</i>
	<i>Eucalyptus crebra</i>
	<i>Eucalyptus tereticornis</i>
	<i>Lantana camara</i> *
<b>Ground Layer &lt;1 m</b> <b>FPC: 30%</b> <b>Litter: 30%</b> <b>Bare: 40%</b>	<i>Aristida personata</i>
	<i>Cymbopogon refractus</i>
	<i>Cyperus gracilis</i>
	<i>Lomandra longifolia</i>
	<i>Themeda triandra</i>

FPC: Foliage Projection Cover

Primary Sample Site 44. RSF site 302658 mE 7356295 mN (GDA 94)	
Strata	Dominant species
<b>Canopy 18-20 m</b> <b>FPC: 54%</b>	<i>Eucalyptus crebra</i>
	<i>Eucalyptus tereticornis</i>
<b>Mid-Storey 10-12 m</b> <b>FPC: 16%</b>	<i>Corymbia intermedia</i>
	<i>Eucalyptus crebra</i>
	<i>Eucalyptus exserta</i>
<b>Shrub Layer 2-3 m</b>	<i>Acacia disparrima</i>
	<i>Pogonolobus reticulatus</i>
<b>Ground Layer &lt;1 m</b> <b>FPC: 80%</b> <b>Litter: 10%</b> <b>Bare: 10%</b>	<i>Cymbopogon refractus</i>
	<i>Eragrostis sororia</i>
	<i>Eucalyptus crebra</i>
	<i>Eucalyptus tereticornis</i>
	<i>Grewia latifolia</i>
	<i>Heteropogon contortus</i>

FPC: Foliage Projection Cover



## RSF Vegetation Communities

Primary Sample Site 56. RSF site 300842 mE 7357855 mN (GDA 94)	
Strata	Dominant species
<b>Canopy 15-18 m</b> <b>FPC: 24%</b>	<i>Eucalyptus crebra</i>
	<i>Eucalyptus tereticornis</i>
<b>Mid-Storey 8-10 m</b> <b>FPC: 12%</b>	<i>Corymbia erythrophloia</i>
	<i>Eucalyptus crebra</i>
<b>Shrub Layer 2-3 m</b> <b>FPC: 6%</b>	<i>Acacia disparrima</i>
<b>Ground Layer &lt;1 m</b> <b>FPC: 80%</b> <b>Litter: 5%</b> <b>Bare: 15%</b>	<i>Aristida personata</i>
	<i>Arundinella nepalensis</i>
	<i>Cymbopogon refractus</i>
	<i>Eragrostis sororia</i>
	<i>Heteropogon contortus</i>

FPC: Foliage Projection Cover

Primary Sample Site 57. RSF site 300518 mE 7358301 mN (GDA 94)	
Strata	Dominant species
<b>Canopy 18-20 m</b>	<i>Eucalyptus crebra</i>
<b>Mid-Storey 8-10 m</b> <b>FPC: 48%</b>	<i>Corymbia erythrophloia</i>
	<i>Eucalyptus crebra</i>
<b>Ground Layer &lt;1 m</b> <b>FPC: 75%</b> <b>Litter: 10%</b> <b>Bare: 15%</b>	<i>Aristida personata</i>
	<i>Heteropogon contortus</i>

FPC: Foliage Projection Cover

## RSF Vegetation Communities

Primary Sample Site 58. RSF site 300050 mE 7358137 mN (GDA 94)	
Strata	Dominant species
<b>Canopy 12-15 m</b> <b>FPC: 36%</b>	<i>Eucalyptus crebra</i>
<b>Mid-Storey 8-10 m</b> <b>FPC: 8%</b>	<i>Corymbia erythrophloia</i>
	<i>Eucalyptus crebra</i>
<b>Ground Layer &lt;1 m</b> <b>FPC: 60%</b> <b>Litter: 15%</b> <b>Bare: 25%</b>	<i>Aristida personata</i>
	<i>Cymbopogon refractus</i>
	<i>Heteropogon contortus</i>
	<i>Themeda triandra</i>

FPC: Foliage Projection Cover

Primary Sample Site 63. RSF site 301682 mE 7358008 mN (GDA 94)	
Strata	Dominant species
<b>Canopy 20 m</b> <b>FPC: 32%</b>	<i>Eucalyptus crebra</i>
<b>Mid-Storey 10-12 m</b> <b>FPC: 14%</b>	<i>Corymbia erythrophloia</i>
	<i>Eucalyptus crebra</i>
<b>Shrub Layer 3-5 m</b> <b>FPC: 4%</b>	<i>Acacia disparrima</i>
<b>Ground Layer &lt;1 m</b> <b>FPC: 65%</b> <b>Litter: 15%</b> <b>Bare: 20%</b>	<i>Aristida personata</i>
	<i>Cymbopogon refractus</i>
	<i>Grewia latifolia</i>
	<i>Heteropogon contortus</i>

FPC: Foliage Projection Cover

## RSF Vegetation Communities

Secondary Sample Site 21. RSF site 302405m E 7354288m N (GDA 94)	
Strata	Dominant species
<b>Canopy 18-20 m</b>	<i>Eucalyptus crebra</i>
	<i>Corymbia erythrophloia</i>
	<i>Corymbia tessellaris</i>

Secondary Sample Site 39. RSF site 304502m E 7354553m N (GDA 94)	
Strata	Dominant species
<b>Canopy 20 m</b>	<i>Eucalyptus crebra</i>
	<i>Corymbia intermedia</i>

Secondary Sample Site 40. RSF site 304439m E 7354313m N (GDA 94)	
Strata	Dominant species
<b>Canopy 25 m</b>	<i>Eucalyptus crebra</i>

Secondary Sample Site 47. RSF site 302146m E 7355753m N (GDA 94)	
Strata	Dominant species
<b>Canopy</b>	<i>Eucalyptus crebra</i>

Secondary Sample Site 49. RSF site 302583m E 7356979m N (GDA 94)	
Strata	Dominant species
<b>Canopy 18-20 m</b>	<i>Eucalyptus crebra</i>
	<i>Corymbia citriodora</i>

## RSF Vegetation Communities

Secondary Sample Site 50. RSF site 302103m E 7357247m N (GDA 94)	
Strata	Dominant species
<b>Canopy</b>	<i>Eucalyptus crebra</i>
	<i>Eucalyptus melanophloia</i>
	<i>Corymbia citriodora</i>

Secondary Sample Site 51. RSF site 302424m E 7357700m N (GDA 94)	
Strata	Dominant species
<b>Canopy 18-20 m</b>	<i>Eucalyptus crebra</i>
	<i>Corymbia citriodora</i>

Secondary Sample Site 52. RSF site 302452m E 7358495m N (GDA 94)	
Strata	Dominant species
<b>Canopy 20 m</b>	<i>Eucalyptus crebra</i>
	<i>Eucalyptus tereticornis</i>
	<i>Corymbia erythrophloia</i>

Secondary Sample Site 61. RSF site 301440m E 7357445m N (GDA 94)	
Strata	Dominant species
<b>Canopy 20 -25 m</b>	<i>Eucalyptus crebra</i>
	<i>Eucalyptus tereticornis</i>
	<i>Corymbia tessellaris</i>

Secondary Sample Site 62. RSF site 301718m E 7357642m N (GDA 94)	
Strata	Dominant species

## RSF Vegetation Communities

Secondary Sample Site 62. RSF site 301718m E 7357642m N (GDA 94)	
Canopy 20 m	<i>Eucalyptus crebra</i>

**Vegetation Unit 3f: *Eucalyptus tereticornis* dominated woodland on old sedimentary rocks with varying degrees of metamorphism and folding. Coastal ranges (RE 11.11.4a)**

This vegetation community was recorded from only one location on the RSF site where it occurred on the upper hills slopes near the eastern boundary. This community is characterised by the dominance of *Eucalyptus tereticornis* (forest red gum) with occasional scattered *Lophostemon suaveolens* in the canopy. Both *E. tereticornis* and *Acacia disparrima* (hickory wattle) co-dominate the sparse understorey. The ground cover is typically a low open grassland modified from grazing disturbance, primarily dominated by native grasses including *Aristida personata*, *Aristida queenslandica* and *Heteropogon contortus*. Secondary site data only was recorded for this Vegetation Unit.

Secondary Sample Site 37. RSF site 303623m E 7355502m N (GDA 94)	
Strata	Dominant species
Canopy 20 - 25 m	<i>Eucalyptus tereticornis</i>
	<i>Lophostemon suaveolens</i>

**Vegetation Unit 3g: *Eucalyptus moluccana* dominated woodland on old sedimentary rocks with varying degrees of metamorphism and folding. Coastal ranges (RE 11.11.4c)**

This vegetation community occurred on the lower slopes of hills near the east of the RSF site. This community is characterised by a tall canopy dominated by *Eucalyptus moluccana* (gum-topped box). The mid-storey and shrub layers are generally sparse and support *E. moluccana* and *E. crebra*. The groundcover is typically a low open grassland modified from grazing disturbance, primarily dominated by native grass species including *Aristida personata*, *Cymbopogon refractus* and *Sporobolus creber*.

Structural and floristic descriptions of the dominant species in each strata for primary sites surveyed within this vegetation unit are described in the table below.

Primary Sample Site 30. RSF site 303510 m E 7354789 m N (GDA 94)
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## RSF Vegetation Communities

Primary Sample Site 30. RSF site 303510 m E 7354789 m N (GDA 94)	
Strata	Dominant species
<b>Canopy 25-30 m</b> <b>FPC: 66%</b>	<i>Eucalyptus moluccana</i>
<b>Mid-Storey 12-15 m</b>	<i>Eucalyptus crebra</i>
	<i>Eucalyptus moluccana</i>
<b>Shrub Layer 3-8 m</b>	<i>Eucalyptus crebra</i>
	<i>Eucalyptus moluccana</i>
<b>Ground Layer &lt;1 m</b> <b>FPC: 20%</b> <b>Litter: 20%</b> <b>Bare: 60%</b>	<i>Aristida personata</i>
	<i>Cymbopogon refractus</i>
	<i>Cyperus gracilis</i>
	<i>Sida trichopoda</i>
	<i>Sporobolus creber</i>

**Vegetation Unit 3h: *Eucalyptus crebra* woodland on deformed and metamorphosed sediments and interbedded volcanics. Undulating plains (RE 11.11.15)**

This vegetation community was found to be restricted to the south of the RSF site where it occurred on the lower hill slopes. This community is characterised by the dominance of *E. crebra* in the canopy. Sub-dominant canopy species include *Corymbia clarksoniana*. The shrub layer of this community was a typically sparse due to grazing disturbance. The understorey is typically a low open grassland modified from grazing disturbance, primarily dominated native grass species including *Aristida personata*, *Chloris divaricata* and *Heteropogon contortus*.

Structural and floristic descriptions of the dominant species in each strata for primary sites surveyed within this vegetation unit are described in the table below.

Primary Sample Site 24. RSF site 304733 m E 7352883 m N (GDA94)	
Strata	Dominant species
<b>Canopy 18 m</b>	<i>Eucalyptus crebra</i>
<b>Mid-Storey 10 m</b>	<i>Corymbia clarksoniana</i>
	<i>Eucalyptus crebra</i>
<b>Shrub Layer</b>	<i>Alphitonia excelsa</i>

## RSF Vegetation Communities

Primary Sample Site 24. RSF site 304733 m E 7352883 m N (GDA94)	
	<i>Sida subspicata</i>
<b>Ground Layer &lt;1 m</b> <b>FPC: 20 %</b> <b>Litter: 10%</b> <b>Bare: 70 %</b>	<i>Alphitonia excelsa</i>
	<i>Aristida personata</i>
	<i>Chloris divaricata</i>
	<i>Heteropogon contortus</i>
	<i>Pterocaulon sphacelatum</i>
	<i>Sporobolus creber</i>
	<i>Themeda triandra</i>

FPC: Foliage Projection Cover

Secondary Sample Site 25. RSF site 304399m E 7352878m N (GDA 94)	
Strata	Dominant species
<b>Canopy 20 m</b>	<i>Eucalyptus crebra</i>

***Vegetation Unit 3i: Vine thicket, with no Araucaria cunninghamii emergents on old sedimentary rocks in hilly terrain (RE 11.11.5a)***

This vine thicket community has an extremely limited extent within the RSF study site and was restricted to the gullies of hills within the east of the site. This community is characterised a dense canopy dominated by vine thicket species including *Pouteria sericea* and *Drypetes deplanchei*. The community was considered to be in a successional stage and not a climax vine thicket community. As such emergent species characteristic of surrounding communities were common including *Corymbia citriodora* and *Lophostemon suaveolens*.

The mid and shrub layer were relatively diverse and structurally complex supporting a number of shrub and vines species including *Alchornea ilicifolia*, *Alyxia ruscifolia* subsp. *ruscifolia* and *Geitonoplesium cymosum*. The ground cover was sparse as is typical of such communities.

Structural and floristic descriptions of the dominant species in each strata for primary sites surveyed within this vegetation unit are described in the table below.

Primary Sample Site 33. RSF site 303294 m E 7356364 m N (GDA94)	
Strata	Dominant species

## RSF Vegetation Communities

Primary Sample Site 33. RSF site 303294 m E 7356364 m N (GDA94)	
<b>Emergent 25-30 m</b>	<i>Corymbia citriodora</i>
<b>Canopy 10-12 m</b>	<i>Jagera pseudorhus</i>
	<i>Lophostemon suaveolens</i>
	<i>Neolitsea dealbata</i>
	<i>Polyscias elegans</i>
	<i>Pouteria sericea</i>
<b>Shrub Layer 3-5 m</b>	<i>Acacia fasciculifera</i>
	<i>Alchornea ilicifolia</i>
	<i>Alyxia ruscifolia</i> subsp. <i>ruscifolia</i>
	<i>Canthium odoratum</i>
	<i>Cupaniopsis anacardioides</i>
	<i>Ficus opposita</i>
	<i>Neolitsea dealbata</i>
	<i>Tetrastigma nitens</i>
<b>Ground Layer &lt;1 m</b> <b>FPC: 60%</b> <b>Litter: 15%</b> <b>Bare: 25%</b>	<i>Heteropogon contortus</i>
	<i>Lantana camara</i> *
	<i>Lomandra longifolia</i>
	<i>Oplismenus aemulus</i>

FPC: Foliage Projection Cover

Primary Sample Site 48. RSF site 302879 m E 7356869 m N (GDA 94)	
Strata	Dominant species
<b>Emergent</b>	<i>Corymbia citriodora</i>
<b>Canopy 20 m</b> <b>FPC: 64%</b>	<i>Acacia fasciculifera</i>
	<i>Drypetes deplanchei</i>
<b>Mid-Storey</b>	<i>Lophostemon suaveolens</i>
	<i>Polyscias elegans</i>
	<i>Pouteria sericea</i>



## RSF Vegetation Communities

Primary Sample Site 48. RSF site 302879 m E 7356869 m N (GDA 94)	
<b>Shrub Layer 2-5 m</b> <b>FPC: 84%</b>	<i>Alchornea ilicifolia</i>
	<i>Alyxia ruscifolia</i> subsp. <i>ruscifolia</i>
	<i>Carissa ovata</i>
	<i>Cupaniopsis anacardioides</i>
	<i>Lantana camara</i> *
	<i>Melodorum leichhardtii</i>
	<i>Neolitsea dealbata</i>
	<i>Pavetta australiensis</i>
	<i>Pittosporum multiflorum</i>
<i>Solanum seaforthianum</i> *	
<b>Ground Layer &lt;1 m</b> <b>FPC: 15%</b> <b>Litter: 65%</b> <b>Bare: 20%</b>	<i>Passiflora suberosa</i> *
	<i>Geitonoplesium cymosum</i>
	<i>Oplismenus aemulus</i>

FPC: Foliage Projection Cover

Primary Sample Site 60. RSF site 302822 m E 7357280 m N (GDA 94)	
Strata	Dominant species
<b>Canopy 15-18 m</b> <b>FPC: 86%</b>	<i>Acacia fasciculifera</i>
	<i>Drypetes deplanchei</i>
<b>Mid-Storey 4-8</b>	<i>Lophostemon suaveolens</i>
	<i>Polyscias elegans</i>
	<i>Pouteria sericea</i>
<b>Shrub Layer 2-4 m</b> <b>FPC: 68%</b>	<i>Alchornea ilicifolia</i>
	<i>Alyxia ruscifolia</i> subsp. <i>ruscifolia</i>
	<i>Carissa ovata</i>
	<i>Cupaniopsis anacardioides</i>
	<i>Lantana camara</i> *
	<i>Melodorum leichhardtii</i>
	<i>Neolitsea dealbata</i>
	<i>Pavetta australiensis</i>
	<i>Pittosporum multiflorum</i>
<i>Solanum seaforthianum</i> *	
<b>Ground Layer &lt;1 m</b> <b>FPC: 5%</b>	<i>Passiflora suberosa</i> *
	<i>Geitonoplesium cymosum</i>

## RSF Vegetation Communities

Primary Sample Site 60. RSF site 302822 m E 7357280 m N (GDA 94)	
<b>Litter: 40</b> <b>Bare: 55%</b>	<i>Oplismenus aemulus</i>

FPC: Foliage Projection Cover

Secondary Sample Site 53. RSF site 302660m E 7357722m N (GDA 94)	
Strata	Dominant species
<b>Canopy 15-20 m</b>	<i>Acacia fasciculifera</i>
	<i>Drypetes deplanchei</i>
	<i>Lophostemon suaveolens</i>
	<i>Pouteria sericea</i>

Secondary Sample Site 54. RSF site 302718m E 7357591m N (GDA 94)	
Strata	Dominant species
<b>Canopy 15-20 m</b>	<i>Acacia fasciculifera</i>
	<i>Drypetes deplanchei</i>
	<i>Lophostemon suaveolens</i>
	<i>Pouteria sericea</i>

**Vegetation Unit 4a: Modified pastoral grassland with scattered emergent *Eucalypt* spp.**

This modified community occurs throughout the low-lying west of the RSF site where woodland communities have been cleared for pastoral land. This community supports a variety of native and exotic ground cover species including *Bothriochloa bladhii* subsp. *bladhii*, *Heteropogon contortus*, *Melinis repens*\* and *Malvastrum americanum*\*.

Structural and floristic descriptions of the dominant species in each strata for primary sites surveyed within this vegetation unit are described in the table below.

## RSF Vegetation Communities

Primary Sample Site 18. RSF site	
Strata	Dominant species
<b>Ground Layer &lt;1 m</b> <b>FPC: 75%</b> <b>Litter: 0%</b> <b>Bare: 25 %</b>	<i>Bothriochloa bladhii</i> subsp. <i>bladhii</i>
	<i>Heteropogon contortus</i>
	<i>Melinis repens</i> *
	<i>Portulaca oleracea</i>
	<i>Sida cordifolia</i>

FPC: Foliage Projection Cover

Primary Sample Site 45. RSF site 303630 m E 7353788 m N (GDA 94)	
Strata	Dominant species
<b>Ground Layer &lt;1 m</b> <b>FPC: 90%</b> <b>Bare: 10 %</b>	<i>Eragrostis sororia</i>
	<i>Heteropogon contortus</i>
	<i>Malvastrum americanum</i> *
	<i>Oxalis corniculata</i> var. <i>corniculata</i> *

FPC: Foliage Projection Cover

Primary Sample Site 65. RSF site 3015555 m E 7357236 m N (GDA 94)	
Strata	Dominant species
<b>Canopy 20 m</b>	<i>Eucalyptus crebra</i>
	<i>Eucalyptus tereticornis</i>
<b>Shrub Layer</b>	<i>Gomphocarpus physocarpus</i> *
<b>Ground Layer &lt;1 m</b> <b>FPC: 70%</b> <b>Litter: 10%</b> <b>Bare: 20%</b>	<i>Glycine tomentella</i>
	<i>Heteropogon contortus</i>
	<i>Themeda triandra</i>

FPC: Foliage Projection Cover

Primary Sample Site 66. RSF site 301344 m E 7358815 m N (GDA 94)	
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## RSF Vegetation Communities

Primary Sample Site 66. RSF site 301344 m E 7358815 m N (GDA 94)	
Strata	Dominant species
<b>Ground Layer &lt;1 m</b> <b>FPC: 55%</b> <b>Litter: 5%</b> <b>Bare: 40%</b>	<i>Heteropogon contortus</i>
	<i>Psuederanthemum variabile</i>
	<i>Sporobolus natalensis</i> *
	<i>Stylosanthes scabra</i> *

FPC: Foliage Projection Cover

Secondary Sample Site 20. RSF site 301871m E 7353900m N (GDA 94)	
Strata	Dominant species
<b>Shrub Layer</b>	<i>Gomphocarpus physocarpus</i> *
<b>Ground Layer &lt;1 m</b>	<i>Bothriochloa bladhii</i> subsp. <i>bladhii</i>
	<i>Heteropogon contortus</i>
	<i>Melinis repens</i> *

Secondary Sample Site 22. RSF site 302723m E 7353422m N (GDA 94)	
Strata	Dominant species
<b>Ground Layer &lt;1 m</b>	<i>Bothriochloa bladhii</i> subsp. <i>bladhii</i>
	<i>Heteropogon contortus</i>
	<i>Melinis repens</i> *

Secondary Sample Site 45. RSF site 303629m E 7353790m N (GDA 94)	
Strata	Dominant species
<b>Ground Layer &lt;1 m</b>	<i>Bothriochloa bladhii</i> subsp. <i>bladhii</i>
	<i>Heteropogon contortus</i>

## RSF Vegetation Communities

Secondary Sample Site 46. RSF site 302172m E 7356183m N (GDA 94)	
Strata	Dominant species
<b>Shrub Layer</b>	<i>Acacia disparrima</i>
<b>Ground Layer &lt;1 m</b>	<i>Bothriochloa bladhii</i> subsp. <i>bladhii</i>
	<i>Heteropogon contortus</i>

**Vegetation Unit 4b: Non remnant shrubby regrowth of Acacia and / or Eucalypt spp.**

This modified vegetation community occurs at the centre of the site where woodlands were previously cleared and are now regenerating. This Vegetation Unit consists of shrubby Eucalypt and Acacia species regrowth. Given the absence of structural or floristic diversity in this vegetation community, only secondary site surveys were undertaken.

Secondary Sample Site 28. RSF site 303952m E 7354390m N (GDA 94)	
Strata	Dominant species
<b>Mid-storey 6-8 m</b>	<i>Eucalyptus crebra</i>

Secondary Sample Site 36. RSF site 303094m E 7355439m N (GDA 94)	
Strata	Dominant species
<b>Mid-Storey 10-12 m</b>	<i>Eucalyptus crebra</i>
	<i>Eucalyptus tereticornis</i>
	<i>Corymbia citriodora</i>
	<i>Corymbia intermedia</i>

Secondary Sample Site 59. RSF site 300112m E 7357815m N (GDA 94)	
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RSF Vegetation Communities

Secondary Sample Site 59. RSF site 300112m E 7357815m N (GDA 94)	
Strata	Dominant species
<b>Mid-Storey 5-8 m</b>	<i>Acacia disparrima</i>
	<i>Eucalyptus crebra</i>
	<i>Corymbia erythrophloia</i>

