



## 6.2 b Baseline Vegetation Monitoring of Edge Effect 3D



**Baseline Vegetation Monitoring of Edge Effect,  
Ella Bay Road, Flying Fish Point,  
Northeastern Queensland.**



**Draft Report prepared for Satori Resorts**

*on behalf of*

**Biodiversity Assessment and Management Pty. Ltd.**



**3D Environmental  
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# **1. Introduction**

Three (3) d Environmental has been commissioned by Biodiversity Assessment and Management (BAAM) to undertake a baseline monitoring programme of vegetation adjacent to the Ella Bay Road. The purpose of the monitoring is to derive sufficient data to interpret the current extent of edge effects on rainforest as a result of the existing road infrastructure between Flying Fish Point and the proposed Satori Resort at Ella Bay. The road traverses various tenures including Unallocated State Land and National Park. Vegetation monitoring sites were established in the National Park to specifically measure impacts of the existing road to vegetation within the Wet Tropics World Heritage area.

Establishing permanent monitoring sites enables a repeatable process to determine temporal trends in the condition of vegetation adjacent to the existing road edge and any zonation in vegetation condition that may be attributed to the ‘edge effect’ of existing linear infrastructure. Edge effects comprise “changes in the abiotic and biotic environment associated with the abrupt, artificial margins between natural habitat and a clearing” (Gooseem 2007). Edge effects brought about by changes to the forest edge microclimate through greater light availability, temperature extremes and increased moisture stress (Goosem 2007), include increased cover and abundance of disturbance-adapted plants including weeds, wiry lianes and early successional species, as well as increased levels of branch fall and tree mortality.

In north eastern Queensland forests, previous studies indicate that gradients in microclimate and vegetation response away from linear disturbance features generally do not extend for distances greater than 25-30m (Turton and Freiburger, 1997). This may be complicated by the unsealed nature of the existing road where dust generation imposes an additional influence on vegetation condition. Weeds such as lantana (*Lantana camara*), bramble (*Rubus alceifolius*) and *Solanum* spp. are known to penetrate from the rainforest edge up to seven metres into the forest along roads and powerline corridors (Siegenthaler and Turton, 2000).

## **2. Aims and Methods**

### **2.1 Study Area**

The study was conducted in the Flying Fish Point locality approximately 5.5km east-north-east of Innisfail, north eastern Queensland. The requirement to perform sites both within and outside of the Ella Bay National Park was a condition requested by the ‘Wet Tropics Management Authority’ (WETMA). Transect sites were positioned along the Ella Bay Road at four locations within approximately 0.5 km of the coast on level to gently sloping and steep hilly terrain at elevations between 1 and 60 m above sea level. Sites were located on various geologies including alluvial outwash plains, colluvial footslopes and hillslopes formed on metamorphic rocks. The area is vegetated

by mesophyll vine forest and sclerophyll open forest which has invariably been heavily affected by heavy wind disturbance from Cyclone Larry in 2006. The site logging history is unknown. The study area receives an average annual rainfall of 3 626 mm, has an average daily minimum temperature of 19.3°C and an average daily maximum temperature of 28°C (Bureau of Meteorology, 2008).

## 2.2 Methods

The initial field survey was carried out from 21-25 October 2008. A second phase of fieldwork within the National Park was undertaken between 10-13 December 2008 following delays in the issue of necessary scientific purposes permits. The October survey established two permanent plots in continuous cyclone-disturbed rainforest. One plot (EBM1) was located on the eastern side of the Ella Bay Road and the other (EBM2) directly opposite, extending west to the colluvial footslope of the Seymour Range. The road is unsealed with a width of approximately 8-10m. Roadsides were unslashed at the time of survey with a narrow 1-2m verge between the road edge and the forest edge. The road margins supported an abundance of exotic lianes dominated by bramble (*Rubus alceifolius*), exotic shrubs and herbs such as devils fig (*Solanum torvum*) and snake weed (*Stachytarpheta cayennensis*). Exotic grasses such as giant panic (*Megathyrsus maximum* var. *maximum*) and carpet grass (*Axonopus fissifolius*) are also prominent, mixed with regenerating native species and vines such as wait-a-while (*Calamus australis*). Further along the Ella Bay Road, encroaching into Ella Bay National Park are significant roadside infestations of singapore daisy (*Sphagneticola trilobata*) and lantana (*Lantana camara*). The history of weed management such as spraying and slashing of the road verges by the Johnstone Shire Council is unknown although the extent of growth observed suggests that weed management is infrequent.

The December survey established one permanent plot (EBMNP1) in cyclone-disturbed mesophyll rainforest within the National Park. The plot was located on the western side of the unsealed road, and extends to the west with the final transect located on the base of the metamorphic footslope. The road width at this location is 12m incorporating 6m of unsealed road and a 3m verge either side. A second National Park plot (EBMNP2) was established approximately two kilometers to the north of EBMNP1 in *Lophostemon suaveolens* open forest on a steep metamorphic hillslope (RE7.11.34), sitting on an exposed coastal escarpment approximately 100 m from the coast. The general unsuitability of terrain within the National Park for establishment of permanent monitoring sites meant that additional sites within mesophyll vine forest could not be completed. All surveys within the National Park area were carried out under the authority of EPA permit WITK05501308.

Methods used to establish plots and collect baseline data follow a modified version of those employed by Pohlman *et al.* (2007, 2008) and are informed by Gooseem (2007). The plot based approach comprised a single transect running perpendicular to the road edge for a distance of 50m. A series of

linear transects parallel to the forest/road interface were established, using the perpendicular transect as a base for measurement. The parallel transects are 50m in length, and are established at 0, 4, 12, 25, and 50m from the road edge. Each transect was surveyed using 50 x 1m<sup>2</sup> contiguous quadrats (250 quadrats in total/site). Baseline data collected on field proformas and notebooks included detailed information on the structural variables of cover (overstorey, understorey and groundcover), stem diameter, stem density, species frequency and species richness.

The proportional cover of the species within the quadrats was measured using a densitometer via the line intercept method at 1m intervals along five 50m lines per transect. Cover values are expressed as percentage Foliage Projected Cover (FPC) with values grouped within life form classes for comparative purposes. Groundcover values include life forms classes and categories for the percentage proportion of leaf litter and bare ground. Stem diameters of >5cm were measured within each 50 x 1m<sup>2</sup> quadrat. Data is expressed as total diameter breast height (dbh) in mm per transect. Stems counts were carried out within each 50 x 1m<sup>2</sup> quadrat and all data is expressed as frequency of stems per 50m<sup>2</sup> transect for all growth forms. Species richness values incorporated all species encountered within each 1x1m plot, including crown intercept transect records for each stratum.

All transects are permanently marked with galvanized star pickets and flagging tape. A Garmin GPS 60 (Geographic Positioning System) was used to record site locations (GDA94) for the roadside transects only as heavy foliage cover made GPS recordings for inner transects impossible (Appendix 4). Digital photographic records were established at each end of the parallel transects.

Flora species unable to be identified in the field were collected and pressed on site. Problematic taxa were later identified by a recognized Wet Tropics flora specialist, Mr Bob Jago. Unidentified species were limited to seedlings and are listed to family or genus level. Structural and floristic data was entered into an Excel spreadsheet with nomenclature following Bostock and Holland (2007). Vouchers of flora species have been provided to the Queensland Herbarium as required under permit conditions.

### **3. Results and Discussion**

Foliage Projective Cover (FPC) percentage values for overstorey of Plot 1 (EBM1) show a gradual increase along the transect gradient although a significant decrease in cover occurred along the outermost 50m transect because of tree fall (refer Table 10). The overall range of values was from 6-70% with the majority comprising native tree and shrub species. Mean overstorey cover across all transects is 46%.

EBM2 values show a less even distribution of FPC between transects with a mean cover of 52%. The FPC measured along the immediate road edge (0m transect) was significantly higher when compared to

the 0m transect established in EBM1. This may be due to the presence of a steep cut-away bank on the road edge adjacent to the 0m transect on EBM2. Similar to the EBM1 transect, the lowest cover value (38%) was recorded for the innermost 50m transect whilst the mean cover at 53% (with a range of between 38%-70%) between the two sites was also similar. Overstorey cover was dominated by native trees and shrubs with a lower percentage of native vines.

Within plot EBM(NP)1 sampled within the National Park, the trend of a gradual increase in overstorey cover demonstrated in measured transects extending away from the road edge, with a sharp decrease in cover measured along the outermost 50m transect was exhibited again as a result of canopy tree fall which was observed to be severe at the break of slope position. In sclerophyll open forest sampled at EBM(NP)2, FPC between 0-25m away from the road edge remained stable (30-44%). The significant increase measured at the outermost 50m transect can be attributed to the influence of rainforest encroachment into the open forest community, facilitated by the upper slope position and the removal of fire from the system.

Mean understorey cover values across all plots indicate FPC of between 50% and 77% (Table 2). The exposed nature of the eastern road edge at EBM1 is reflected by measured FPC of 52%, compared to the higher values recorded in the interior transects. Such a trend is however noticeable across all plots. In terms of understorey species composition per life form, mean values for all plots show a high proportion of native vines although trees and shrubs offer the major contribution to cover. The percentage FPC of native vines in the understorey is lowest on the forest edge (measured in the 0m transect) with a trend of gradual increase in frequency into the forest interior. Understorey cover provided by exotic species is minimal and limited to exotic shrubs (*Solanum torvum*) which occurred on the 25m transect of the plot EBM1 plot and along the 12m transect of the EBM2.

The sharp reduction in the contribution of exotic species to ground cover values recorded in transects measured away from the road edge provides a significant indicator to influence of an edge effect for rainforest sites. Exotic species dominated by Rubus combine to achieve 40% FPC at the road edge (0m transect) on EBM1, 36% at EBM2, 20% at EBMNP1. This compares to mean cover values of native species at 16%, 10% and 12% respectively. Weeds characteristic of the forest margin include *Ageratum conyzoides*, *Axonopus ficiifolius*, *Cleome trifolia*, *Crassocephalum crepidioides*, *Cyperus brevicaule*, *Hyptis capitata*, *Lantana camara*, *Mimosa pudica*, *Passiflora edulis*, *Rubus alceifolius*, *Scoparia dulcis*, *Solanum torvum*, and *Synedrella nodiflora*. The occurrence of exotic species at the 4, 12, 25 and 50m transects are otherwise limited to sporadic stems of exotic shrubs such as *Solanum torvum* and *Rubus alceifolius* within canopy gaps. No weeds were recorded within the open forest transects.

A total of 280 plant species were recorded across the four plot sites with 24 exotic species (9%) (refer Appendix 2). This compares to the 204 species (sixteen exotic/8%) recorded in a study of weed

incursions along the Palmerston powerline corridor by Goosem and Turton (2007). For EBM1, mean species richness per transect was 51 taxa with a range of between 44-68 taxa. A total of 22 species occurred in the canopy across the EBM1 plot, with a mean species per transect of seven and a range of 5-11. Dominant canopy species in the plots established in rain forest (EBM1, EBM2, EBM(NP)1) are *Aleurites rockinghamensis*, *Alstonia scholaris*, *Cananga odorata*, *Commersonia bartramia*, *Cryptocarya grandis*, *Dysoxylum mollisimum*, *Endiandra globosa*, *Endiandra montana*, *Litsea leefeana*, *Myristica insipida*, *Syzygium cormiflorum*, *Toechima erythrocarpa*. Consistent species in the canopy of open forest at EBMNP2 are *Acacia celsa*, *Alstonia muelleriana*, *Chionanthus ramiflorus*, *Cryptocarya vulgaris*, *Endiandra hypolephra*, *Euroschinus falcata*, *Litsea fawcettiana*, *Lophostemon suaveolens*, and *Litsea bindoniana*.

The transects within the EBM2 plot exhibited a mean species richness of 56 (45-65). Twenty-three species are recorded in the canopy, although species composition of the canopy differs considerably between the eastern and western sides of the road with only eight species shared between both plots. Species richness values shown in Table 7 indicate a gradual decline in the number of species recorded as the distance away from the road edge increases. While the decline in the number of native species remains relatively stable across plots, the decrease in exotic species away from the immediate road edge is again pronounced and is consistent with the findings of Goosem and Turton (2006) for the Palmerston corridor. Mean species richness in rainforest in the National Park plot (EPMNP1) was slightly higher than recorded for other plots (63, range 57-69) although displayed almost identical percentage values for total natives and total exotics. In the open forest plot [EBM(NP)2] species richness values were significantly lower and no exotic species were recorded.

There is a notable higher incidence of early successional species in the 0 and 4 metre transects (17 species) in comparison to the 12, 25 and 50m transects (10 species). Whilst the decline provides evidence toward edge-induced changes in floristic composition particularly between 0-4m, the uniformity of early successional species throughout the forest interior may also support the findings of previous studies. Goosem and Turton (2006) found floristic composition to be altered between 25 and 45 metres into the rainforest. However, it is difficult to apply this given the extent of the current data set and without taking into account the influence of repeated cyclone damage and logging history on floristic composition. The high incidence of early successional species throughout the canopy and understorey (e.g. *Acacia celsa*, *Litsea bindoniana*, *L. fawcettiana*, and *L. leefeana*) of the open forest plot is influenced by the cessation of the historic fire regime where recent succession to rainforest is apparent. Lower fire incidence is facilitated by the position of the road and the steep road cutting which has effectively prevented the spread of fires lit from the coast.

## 4. Conclusion

Field evidence suggests that the Ella Bay Road is an example of a long established narrow and unsealed road type where disturbance of forest edges caused by road maintenance such as grading, slashing and spraying of weeds is minimal. Cover, density and floristic data collected in rainforest vegetation as part of this study clearly indicate that changes to floristic composition in the form of exotic weeds and occurrence of higher numbers of early successional taxa extend into the forest edge between 0m and 4m. Weed incursions occur within the forest interior however, they are a minor and transient component of the site flora and part of a successional response to increased light and temperature associated with gross disturbance and canopy loss from recent cyclonic activity.

A higher incidence of earlier successional species between 0m and 4m from the road edge is evident, although the occurrence of similar values at 12, 25 and 50m transects may be due to a history of natural and anthropogenic induced forest disturbance. Overstorey cover values inward from the road edge range from 32-70% and show a gradual increase away from the edge. This may be attributable to edge effect. The data however suggests that a reduction in canopy cover in the forest interior is significantly higher and corresponds to the position of the footslope. Understorey cover remained relatively constant across all transects. The high proportion of woody and wiry native lianas responding to increased light conditions is likely to be the result of the heavily disturbed canopy. Under stable conditions, it is expected that overstorey cover would increase over time, given ongoing recruitment of broken crowns and growth of successional species.

In contrast to the results of rainforest plots, non-rainforest within the Ella Bay National Park exhibits significantly lower species richness with no exotic species recorded and a higher incidence of early successional species throughout. The incremental increase in overstorey and understorey cover and a decrease in vegetative grassy ground cover apparent along the transect gradient (moving away from the road edge) is attributable to a reduced incidence of fire and a succession to rainforest. In this case, therefore the position of the road may have played a role in altering a fire regime that has previously been a major influence on maintaining the open forest structure.

In studies examining microclimatic variables as indicators to edge effects in nearby rain forested areas of the Wet Tropics, Goosem and Turton (2007) suggest that narrow roads have far less severe or extensive microclimatic edge effects than wide, paved roadways which may lack canopy extension. Furthermore, they conclude that newly created open edges or those maintained by continual grading, mowing or vegetation trimming along the road verge incur an increase in the severity of microclimatic edge effects, which in turn result in changes to floristic composition, structure and habitat.

Based on the location of the monitoring plots at the Ella Bay Road site, it is likely that factors such as the narrow road design, time since construction, and an assumed infrequent roadside management regime, contribute to a relatively stable forest edge that has buffered the invasion of exotic weeds into the forest interior and limited the impact of edge effect. However, forest structure and floristics have been significantly influenced by recent disturbance from Cyclone Larry as well as past cyclones (and perhaps logging in some locations), and by changed fire regimes for non-rainforest habitat. The relationships between structural and floristic changes and environmental variables such as landform, slope and aspect following Cyclone Larry are considered elsewhere (Turton 2008, Pohlman *et al.* 2008, Metcalfe *et al.* 2008). Further analysis of the Ella Bay Road data set would enable more detailed examination of such variables and it is reasonable to assume that they have a significant bearing on forest structure and floristics.

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## Appendices

### Appendix 1. Data summaries

Table 1. Mean overstorey FPC % for life form classes

Transect	Metres from Edge	FPC Cover % Overstorey T1/T2				Total FPC
		Native Tree/ Shrub/ Palm	Native Vine	Exotic Tree / Shrub	Exotic Vine	
<b>Eastern</b>						
EBM1/1	0	30%	8%	0%	0%	38%
EBM1/2	4	38%	0%	0%	0%	38%
EBM1/3	12	54%	2%	0%	0%	56%
EBM1/4	25	60%	10%	0%	0%	70%
EBM1/5	50	32%	0%	0%	0%	32%
Mean		43%	4%	0%	0%	47%
<b>Western</b>						
EBM2/1	0	50%	0%	0%	0%	50%
EBM2/2	4	58%	0%	0%	0%	58%
EBM2/3	12	48%	0%	0%	0%	48%
EBM2/4	25	66%	4%	0%	0%	70%
EBM2/5	50	38%	0%	0%	0%	38%
Mean		52%	1%	0%	0%	53%
<b>National Park</b>						
1		36%	0%	0%	0%	36%
EBMNP1/1	0	42%	0%	0%	0%	42%
EBMNP1/2	4	64%	10%	0%	0%	74%
EBMNP1/3	12	56%	0%	0%	0%	56%
EBMNP1/4	25	6%	0%	0%	0%	6%
EBMNP1/5	50	41%	2%	0%	0%	35%

Transect	Metres from Edge	FPC Cover % Overstorey T1/T2				Total FPC
		Native Tree/ Shrub/ Palm	Native Vine	Exotic Tree / Shrub	Exotic Vine	
EBM(NP)2/1	0	44%	2%	0%	0%	46%
EBM(NP)2/2	4	44%	0%	0%	0%	44%
EBM(NP)2/3	12	48%	8%	0%	0%	56%
EBM(NP)2/4	25	30%	0%	0%	0%	30%
EBM(NP)2/5	50	70%	2%	0%	0%	72%
Mean		<b>47%</b>	<b>2%</b>	<b>0%</b>	<b>0%</b>	<b>50%</b>

**Table 2. Mean understorey FPC % for life form classes**

Transect	Metres From Road Edge	Cover S1/S2				Total FPC
		Native Tree/ Shrub /Palm	Native Vine	Native herb/fern	Exotic tree/ shrub	
<b>Eastern</b>						
EBM1/1	0	46%	6%	0%	0%	52%
EBM1/2	4	60%	24%	0%	0%	84%
EBM1/3	12	48%	32%	0%	0%	80%
EBM1/4	25	28%	38%	2%	4%	72%
EBM1/5	50	26%	48%	0%	0%	74%
Mean		<b>42%</b>	<b>30%</b>	<b>0.5%</b>	<b>0.1%</b>	<b>73%</b>
<b>Western</b>						
EBM2/1	0	76%	2%	0%	0%	78%
EBM2/2	4	38%	40%	4%	0%	82%
EBM2/3	12	36%	42%	2%	0%	82%
EBM2/4	25	40%	46%	0%	0%	86%
EBM2/5	50	30%	26%	0%	0%	56%
Mean		<b>44%</b>	<b>31%</b>	<b>1.2%</b>	<b>0.5%</b>	<b>77%</b>
<b>National Park</b>						
<b>1</b>						
EBM(NP)1/1	0	56%	8%	0%	0%	2%
EBM(NP)1/2	4	60%	34%	0%	0%	94%
EBM(NP)1/3	12	42%	34%	0%	0%	76%
EBM(NP)1/4	25	50%	22%	4%	0%	76%
EBM(NP)1/5	50	26%	28%	2%	0%	56%
Mean		<b>47%</b>	<b>25%</b>	<b>1%</b>	<b>0%</b>	<b>73%</b>
<b>National Park</b>						
<b>2</b>						
EBM(NP)2/1	0	22%	4%	0%	0%	26%
EBM(NP)2/2	4	32%	8%	0%	0%	40%
EBM(NP)2/3	12	30%	26%	0%	0%	56%
EBM(NP)2/4	25	30%	24%	2%	0%	56%
EBM(NP)2/5	50	70%	4%	0%	0%	74%
Mean		<b>36%</b>	<b>13.5%</b>	<b>0.5%</b>	<b>0%</b>	<b>50%</b>

**Table 3. Mean groundcover FPC % for life form classes**

Transect	Metres from Edge	Native Tree / Shrub	Native Vine	Native herb / fern	Native Grass / Sedge	Exotic tree / shrub	Exotic Vine	Exotic Grass	Exotic Herb	Leaf Litter / Log	Bare Ground	Total Vegetative G'cover
<b>Eastern</b>												
EBM1/1	0	6%	8%	0%	2%	4%	16%	20%	0%	44%	0%	56%
EBM1/2	4	4%	14%	0%	0%	0%	2%	0%	0%	80%	0%	20%
EBM1/3	12	0%	8%	0%	0%	0%	0%	0%	0%	92%	0%	8%
EBM1/4	25	0%	8%	0%	0%	0%	0%	0%	0%	88%	4%	8%
EBM1/5	50	8%	0%	0%	0%	0%	0%	0%	0%	82%	10%	8%
Mean		<b>3.6%</b>	<b>7.2%</b>	<b>0%</b>	<b>0.4%</b>	<b>0.8%</b>	<b>3.6%</b>	<b>4%</b>	<b>0%</b>	<b>77.2%</b>	<b>2.8%</b>	<b>20%</b>
<b>Western</b>												
EBM2/1	0	0%	2%	4%	6%	12%	18%	0%	54%	0%	46%	46%
EBM2/2	4	0%	2%	0%	0%	0%	0%	0%	98%	0%	2%	2%
EBM2/3	12	0%	0%	0%	0%	0%	0%	0%	86%	14%	0%	0%
EBM2/4	25	0%	0%	0%	0%	0%	0%	0%	94%	6%	0%	0%
EBM2/5	50	6%	0%	0%	8%	0%	0%	0%	62%	24%	14%	14%
Mean		<b>1.2%</b>	<b>0.8%</b>	<b>0.8%</b>	<b>3%</b>	<b>1.2%</b>	<b>2.4%</b>	<b>3.6%</b>	<b>0%</b>	<b>78.8%</b>	<b>8.8%</b>	<b>12%</b>
<b>National Park 1</b>												
EBM(NP)1/1	0	4%	2%	4%	2%	0%	8%	6%	6%	66%	2%	32%
EBM(NP)1/2	4	0%	4%	6%	2%	0%	0%	0%	0%	86%	2%	12%
EBM(NP)1/3	12	18%	10%	2%	0%	0%	0%	0%	0%	70%	0%	30%
EBM(NP)1/4	25	14%	16%	2%	0%	0%	0%	0%	0%	62%	0%	38%
EBM(NP)1/5	50	10%	22%	2%	0%	0%	0%	0%	0%	62%	4%	33%
Mean		<b>8.4%</b>	<b>10.4%</b>	<b>3.2%</b>	<b>0.8%</b>	<b>0%</b>	<b>1.6%</b>	<b>1.2%</b>	<b>1.2%</b>	<b>69.2%</b>	<b>1.6%</b>	<b>29%</b>
<b>National Park 2</b>												
EP(NP)2/1	0	0%	14%	0%	36%	0%	0%	0%	0%	50%	0%	50%
EP(NP)2/2	4	0%	8%	2%	36%	0%	0%	0%	0%	54%	0%	46%
EP(NP)2/3	12	4%	2%	2%	16%	0%	0%	0%	0%	72%	4%	24%
EP(NP)2/4	25	0%	18%	2%	28%	0%	0%	0%	0%	52%	0%	48%
EP(NP)2/5	50	4%	4%	0%	4%	0%	0%	0%	0%	86%	2%	12%
Mean		<b>1.6%</b>	<b>9.2%</b>	<b>1.2%</b>	<b>24%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>62.8%</b>	<b>1.2%</b>	<b>36%</b>

**Table 4. DBH Values**

Transect		Metres from Edge		DBH >5cm (50m <sup>2</sup> ) Native Tree/Shrub
Eastern	Western	0	4	0 mm
EBM1/1	EBM2/1	0	4	2 060 mm
EMB1/2	EBM2/2	4	12	710 mm
EBM1/3	EBM2/3	12	25	1 463 mm
EBM1/4	EBM2/4	25	50	1 648 mm
EBM1/5	EBM2/5	50		<b>1 176mm</b>
<b>Mean</b>				
National Park 1				
EBM(NP)1/1	EBM(NP)1/1	0	0	0mm
EBM(NP)1/2	EBM(NP)1/2	4	4	270mm
EBM(NP)1/3	EBM(NP)1/3	12	12	1 080mm
EBM(NP)1/4	EBM(NP)1/4	25	25	1 840mm
EBM(NP)1/5	EBM(NP)1/5	50	50	280mm
<b>Mean</b>				<b>694mm</b>
National Park 2				
EBM(NP)2/1	EBM(NP)2/1	0	0	960mm
EBM(NP)2/2	EBM(NP)2/2	4	4	320mm
EBM(NP)2/3	EBM(NP)2/3	12	12	1 040mm
EBM(NP)2/4	EBM(NP)2/4	25	25	1 500mm
EBM(NP)2/5	EBM(NP)2/5	50	50	1 888mm
<b>Mean</b>				<b>1 142mm</b>

**Table 5. % stems per life form 50m<sup>2</sup>**

Transect	Metres from Edge	Native Tree/Shrub	Native vine	Exotic Vine	Exotic tree/shrub
<b>Eastern</b>					
<b>EBM1/1</b>	0	35%	9.8%	53.5%	1.4%
<b>EBM1/2</b>	4	100%	0%	0%	0%
<b>EBM1/3</b>	12	91%	9%	0%	0%
<b>EBM1/4</b>	25	57%	43%	0%	0%
<b>EBM1/5</b>	50	77.5%	22.5%	0%	0%
<b>Western</b>					
<b>EBM2/1</b>	0	97%	0%	0%	3%
<b>EBM2/2</b>	4	95%	5%	0%	0%
<b>EBM2/3</b>	12	79%	4%	0%	17%
<b>EBM2/4</b>	25	95%	0%	0%	5%
<b>EBM2/5</b>	50	100%	0%	0%	0%
<b>National Park 1</b>					
<b>EBM(NP)1/1</b>	55%	3%	42%	0%	0%
<b>EBM(NP)1/2</b>	95%	0%	5%	0%	0%
<b>EBM(NP)1/3</b>	84%	16%	0%	0%	0%
<b>EBM(NP)1/4</b>	65%	34%	0%	1%	0%
<b>EBM(NP)1/5</b>	79%	21%	0%	0%	0%
<b>National Park 2</b>					
<b>EBM(NP)2/1</b>	93%	7%	0%	0%	0%
<b>EBM(NP)2/2</b>	100%	0%	0%	0%	0%
<b>EBM(NP)2/3</b>	90%	10%	0%	0%	0%
<b>EBM(NP)2/4</b>	90%	10%	0%	0%	0%
<b>EBM(NP)2/5</b>	100%	0%	0%	0%	0%

**Table 6. % frequency of species per life form 50m<sup>2</sup>**

Transect	Metres from Edge	Native Tree/ Shrub	Native vine	Native Grass	Native Fern	Native Herb / Fern	Exotic Vine	Exotic tree/ shrub	Exotic Grass	Exotic Herb
<b>Eastern</b>										
EBM1/1	0	41%	11.5%	0%	0%	62%	1.5%	0%	0%	0%
EBM1/2	4	30.4%	52.8%	8.8%	4%	2.4%	0%	0%	0%	1.6%
EBM1/3	12	33%	62%	3%	1%	0%	0%	0%	0%	0%
EBM1/4	25	36%	61%	0%	2%	1%	0%	0%	0%	0%
EBM1/5	50	44%	49%	3%	3%	0%	0%	0%	0%	0%
<b>Western</b>										
EBM2/1	0	28%	24%	11%	12%	10%	1%	8%	8%	6%
EBM2/2	4	53.5%	34%	0.5%	11%	1%	0%	0%	0%	0%
EBM2/3	12	51%	32%	1%	14%	0%	2%	0%	0%	0%
EBM2/4	25	52%	35%	0%	11%	0%	2%	0%	0%	0%
EBM2/5	50	29%	55%	4%	1%	1%	0%	0%	0%	0%
<b>National Park 1</b>										
EBM(NP)1/1	0	20%	20%	7%	6%	13%	2%	9%	9%	23%
EBM(NP)1/2	4	47.50%	32.50%	3%	10%	5%	0%	0.50%	0.50%	1.50%
EBM(NP)1/3	12	60%	32%	0%	8%	0%	0%	0%	0%	0%
EBM(NP)1/4	25	43%	40%	2%	15%	1%	0.00%	0%	0%	0%
EBM(NP)1/5	50	36%	49%	1%	10%	3%	0%	0%	0%	0%
<b>National Park 2</b>										
EP(NP)2/1	0	24%	51%	24%	1%	0%	0%	0%	0%	0%
EP(NP)2/2	4	35%	40%	23%	2%	0%	0%	0%	0%	0%
EP(NP)2/3	12	42%	38%	19%	1%	0%	0%	0%	0%	0%
EP(NP)2/4	25	32%	52%	14%	2%	0%	0%	0%	0%	0%
EP(NP)2/5	50	52%	42%	5%	1%	0%	0%	0%	0%	0%

**Table 7. Species richness**

Transect	Metres from Edge	Species Richness (Number of species)										% total exotics	% total natives	Species Richness %
		Native Shrub	Tree/ Shrub	Native vine	Native Grass	Native Fern	Native Herb/ Vine	Exotic shrub	Exotic Grass	Exotic	Total Species	Total natives	Total Exotics	
<b>Eastern</b>														
EBM1/1	0	20	22	4	5	2	1	4	10	68	51	17	75%	25%
EBM1/2	4	23	18	1	2	1	0	0	3	48	44	4	92%	8%
EBM1/3	12	27	14	2	1	0	0	0	0	44	44	0	100%	0%
EBM1/4	25	30	14	0	3	1	1	0	0	49	47	2	96%	4%
EBM1/5	50	28	14	1	1	0	0	0	0	44	44	0	100%	0%
Mean		<b>26</b>	<b>16</b>	<b>2</b>	<b>2</b>	<b>0.8</b>	<b>0.4</b>	<b>0.8</b>	<b>3</b>	<b>51</b>	<b>46</b>	<b>5</b>	<b>92.6%</b>	<b>7.4%</b>
<b>Western</b>														
EBM2/1	0	35	17	1	5	1	2	2	2	65	58	7	89%	11%
EBM2/2	4	35	17	1	5	1	0	0	0	58	58	0	100%	0%
EBM2/3	12	36	14	1	5	0	1	0	0	57	56	1	98%	2%
EBM2/4	25	35	14	0	4	0	1	0	0	54	53	1	98%	2%
EBM2/5	50	26	16	1	1	0	0	0	0	45	44	1	98%	2%
Mean		<b>31</b>	<b>16</b>	<b>0.8</b>	<b>4</b>	<b>0.6</b>	<b>0.8</b>	<b>0.4</b>	<b>0.4</b>	<b>56</b>	<b>47</b>	<b>2</b>	<b>96.6%</b>	<b>3.4%</b>
<b>National Park 1</b>														
EBM(NP)1/1	0	31	14	4	3	4	2	3	8	69	52	17	75%	25%
EBM(NP)1/2	4	33	16	3	3	2	0	1	2	60	55	5	92%	8%
EBM(NP)1/3	12	42	14	0	1	0	0	0	0	57	57	0	100%	0%
EBM(NP)1/4	25	45	14	2	4	1	0	0	0	65	64	1	98%	2%
EBM(NP)1/5	50	38	19	1	5	2	0	0	0	65	63	2	97%	3%
Mean		<b>37</b>	<b>15</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>0.5</b>	<b>0.8</b>	<b>2</b>	<b>63</b>	<b>58</b>	<b>5</b>	<b>92%</b>	<b>8%</b>
<b>National Park 2</b>														
EBM(NP)2/1	0	20	8	2	2	0	0	0	0	32	32	0	100%	0%
EBM(NP)2/2	4	14	2	3	1	0	0	0	0	20	20	0	100%	0%
EBM(NP)2/3	12	26	8	2	1	0	0	0	0	37	37	0	100%	0%
EBM(NP)2/4	25	18	10	2	2	0	0	0	0	32	32	0	100%	0%
EBM(NP)2/5	50	24	7	2	1	0	0	0	0	34	34	0	100%	0%
Mean		<b>20</b>	<b>7</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>31</b>	<b>31</b>	<b>0</b>	<b>100%</b>	<b>0%</b>

## Appendix 2. Species Data By Transect

(\* indicates exotic species) (# denotes early successional trees and shrubs)

Species	Life form Code	EBMI/1 (0m)	EBMI/2 (4m)	EBMI/3 (12m)	EBMI/4 (25m)	EBMI/5 (50m)	EBMNP1/1 (0m)	EBMNP1/2 (4m)	EBMNP1/3 (12m)	EBMNP1/4 (25m)	EBMNP1/5 (50m)	EBMNP2/1 (0m)	EBMNP2/2 (4m)	EBMNP2/3 (12m)	EBMNP2/4 (25m)	EBMNP2/5 (50m)	Misc	
<i>Acacia celata#</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0
<i>Acacia farnesiana#</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
<i>Acacia polystachya#</i>	Native Tree	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
<i>Acmena divaricata</i>	Native Tree / Shrub	1	1	1	1	1	1	0	1	0	1	1	1	0	0	0	0	0
<i>Acmena hemilampra</i> subsp. <i>hemilampra</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<i>Acmenopelta clariflora</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Acronychia acronychioides</i>	Native Tree / Shrub	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
<i>Acronychia vestita</i>	Native Tree / Shrub	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Adenanthera pavonina</i>	Native Tree / Shrub	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
<i>Aegeratum conyzoides*</i>	Exotic Herb	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Aleurites rockinghamensis</i>	Native Tree / Shrub	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
<i>Alphitonia incana#</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
<i>Alpinia caerulea</i>	Native Herb / fern	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0
<i>Alstonia muelleriana#</i>	Native Tree / Shrub	1	1	1	1	1	0	0	0	1	0	0	1	1	0	1	0	0
<i>Alstonia scholaris</i>	Native Tree / Shrub	1	0	1	1	0	1	0	1	1	1	1	0	0	0	0	0	0
<i>Alyxia spicata</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0
<i>Archidendron hendersonii</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
<i>Archirhodomyrtus beckleri</i>	Native Tree / Shrub	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	1	0
<i>Archontophoenix alexandrae</i>	Native Tree / Shrub	1	1	1	1	0	1	1	1	1	1	1	1	0	0	0	0	1
<i>Asplenium nidus</i>	Native Herb / fern	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
<i>Attractocarpus hirtus</i>	Native Tree / Shrub	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0
<i>Austrostremnia stipitaria</i>	Native Vine	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
<i>Austrostremnia blackii</i>	Native Vine	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
<i>Callerya pilipes</i> (Rare)	Native Vine	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
<i>Axonopus feijolius*</i>	Exotic grass/sedge	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
<i>Barringtonia racemosa</i>	Native Tree / Shrub	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0	0

Species	Life form Code	EBM1/1 (0m)	EBM1/2 (4m)	EBM1/3 (12m)	EBM1/4 (25m)	EBM1/5 (50m)	EBMNP1/1 (0m)	EBMNP1/2 (4m)	EBMNP1/3 (12m)	EBMNP1/4 (25m)	EBMNP1/5 (50m)	EBMNP2/1 (0m)	EBMNP2/2 (4m)	EBMNP2/3 (12m)	EBMNP2/4 (25m)	EBMNP2/5 (50m)	Misc
<i>Bellschmitzia bancroftii</i>	Native Tree / Shrub	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
<i>Bellschmitzia obusifolia</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
<i>Bidens pilosa</i> *	Exotic Herb	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
<i>Blechnum cartilagineum</i>	Native Herb / fern	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
<i>Blechnum</i> sp.	Native Herb / fern	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
<i>Bowenia spectabilis</i>	Native Herb / fern	1	0	0	0	1	1	0	0	1	0	1	1	0	0	0	0
<i>Breynia cernua</i> #	Native Tree / Shrub	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
<i>Breynia oblongifolia</i> #	Native Tree / Shrub	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
<i>Bronbya platynema</i>	Native Tree / Shrub	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0
<i>Calamus australis</i> #	Native Vine	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0
<i>Calamus caryotoides</i>	Native Vine	0	1	1	1	1	0	0	1	0	0	0	1	1	0	0	0
<i>Calamus radicans</i>	Native Vine	0	0	0	1	0	0	1	0	1	0	1	1	1	0	0	1
<i>Calophyllum australitana</i>	Native Tree / Shrub	0	0	0	0	1	0	1	1	0	0	1	1	1	1	0	0
<i>Calophyllum sil</i>	Native Tree / Shrub	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Cananga odorata</i>	Native Tree / Shrub	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Carallia brachiatia</i>	Native Tree / Shrub	1	0	0	1	1	0	0	0	1	1	0	1	0	1	0	0
<i>Caronia protensa</i>	Native Vine	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
<i>Cassytha filiformis</i>	Native Vine	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
<i>Castanopertyrum australe</i>	Native Tree / Shrub	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
<i>Castanospora alpina</i> #	Native Tree / Shrub	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
<i>Cayratia trifolia</i>	Native Vine	1	1	0	1	0	1	0	0	0	1	0	0	0	0	0	0
<i>Centella asiatica</i>	Exotic Herb	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
<i>Cerbera floribunda</i>	Native Tree / Shrub	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
<i>Chionanthus ramiflorus</i> #	Native Tree / Shrub	0	0	0	0	1	1	0	0	0	1	0	0	0	1	1	0
<i>Cissus penninervis</i>	Native Vine	0	0	0	0	0	0	0	1	0	0	1	0	1	1	1	0
<i>Claoxylon tenerifolium</i> #	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
<i>Cleome trifolia</i> *	Exotic Herb	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Clerodendrum tomentosum</i> #	Native Tree / Shrub	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
<i>Clerodendron tracyanum</i> #	Native Tree / Shrub	0	1	0	0	0	1	0	0	1	0	1	1	1	1	1	0
<i>Cnesmocarpion dasyanthia</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0

Species	Life form Code	EBM1/1 (0m)	EBM1/2 (4m)	EBM1/3 (12m)	EBM1/4 (25m)	EBM1/5 (50m)	EBMNP1/1 (0m)	EBMNP1/2 (4m)	EBMNP1/3 (12m)	EBMNP1/4 (25m)	EBMNP1/5 (50m)	EBMNP2/1 (0m)	EBMNP2/2 (4m)	EBMNP2/3 (12m)	EBMNP2/4 (25m)	EBMNP2/5 (50m)	Misc
<i>Commelinia diffusa</i>	Native Herb / fern	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
<i>Commersonia bartramia</i> #	Native Tree / Shrub	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
<i>Connarus conchocarpus</i>	Native Vine	0	1	1	1	0	1	1	1	1	1	1	1	0	0	0	0
<i>Corynocarpus cribbianus</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coveniella poecilophilia</i>	Native Herb / fern	0	0	0	0	0	1	1	0	1	1	1	1	0	0	0	0
<i>Crassoccephalum crepidoides</i> *	Exotic Herb	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Cryptocarya bidwillii</i>	Native Tree / Shrub	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
<i>Cryptocarya cunninghamii</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Cryptocarya grandis</i>	Native Tree / Shrub	0	1	0	0	0	1	1	0	1	1	1	1	0	0	1	0
<i>Cryptocarya hypoleuca</i>	Native Tree / Shrub	0	1	1	0	0	1	1	0	0	0	1	1	0	0	0	1
<i>Cryptocarya laevigata</i>	Native Tree / Shrub	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
<i>Cryptocarya mackinnoniana</i>	Native Tree / Shrub	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
<i>Cryptocarya murrayi</i>	Native Tree / Shrub	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
<i>Cryptocarya obliqua</i>	Native Tree / Shrub	0	0	0	1	0	1	1	0	1	0	0	0	0	0	0	0
<i>Cryptocarya pleurosterna</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
<i>Cryptocarya vulgaris</i> #	Native Tree / Shrub	0	0	0	1	0	0	1	1	1	1	1	1	0	0	0	0
<i>Cupaniopsis flagelliformis</i> var. <i>flagelliformis</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Cupaniopsis foersteri</i>	Native Herb / fern	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Cyanthillium cinereum</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Cyathea cooperi</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
<i>Cyathea rebeccae</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
<i>Cyclophyllum multiflorum</i> #	Native Tree / Shrub	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
<i>Cyclodium interruptus</i>	Native Herb / fern	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
<i>Cyperus brevicaule</i> *	Exotic grass/sedge	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
<i>Cyperus sp.</i>	Native Grass/Sedge	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
<i>Daphnandra repandula</i>	Native Tree / Shrub	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
<i>Darlingia darlingiana</i> #	Native Tree / Shrub	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Davidsonia pruriens</i>	Native Tree / Shrub	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
<i>Decaspermum humile</i>	Native Tree / Shrub	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0

Species	Life form Code	EBM1/1 (0m)	EBM1/2 (4m)	EBM1/3 (12m)	EBM1/4 (25m)	EBM1/5 (50m)	EBMNP1/1 (0m)	EBMNP1/2 (4m)	EBMNP1/3 (12m)	EBMNP1/4 (25m)	EBMNP1/5 (50m)	EBMNP2/1 (0m)	EBMNP2/2 (4m)	EBMNP2/3 (12m)	EBMNP2/4 (25m)	EBMNP2/5 (50m)	Misc
<i>Dianella odorata</i>	Native Herb / fern	1	0	0	0	1	0	0	0	1	0	1	1	1	1	1	1
<i>Dillenia alata</i>	Native Tree / Shrub	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Dioscorea transversa</i>	Native Vine	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
<i>Diospyros cupulosa</i>	Native Tree / Shrub	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
<i>Diplacylos palmatus</i>	Native Vine	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
<i>Diploglottis smithii</i>	Native Tree / Shrub	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
<i>Draceana fragrans*</i>	Exotic Shrub	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
<i>Drynaria rigidula</i>	Native Herb / fern	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
<i>Dysoxylum alliaceum</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
<i>Dysoxylum arborescens</i>	Native Tree / Shrub	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
<i>Dysoxylum gaudichaudianum</i>	Native Tree / Shrub	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Dysoxylum klameri</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
<i>Dysoxylum latifolium</i>	Native Tree / Shrub	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
<i>Dysoxylum mollissimum</i>	Native Tree / Shrub	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0
<i>Dysoxylum oppositifolium</i>	Native Tree / Shrub	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
<i>Dysoxylan pettigrewianum</i>	Native Tree / Shrub	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
<i>Elaeocarpus grandis</i>	Native Tree / Shrub	0	0	1	0	0	1	0	0	1	0	0	1	0	0	0	0
<i>Embelia curvinervia</i>	Native Vine	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
<i>Emmenopteris alphonseae</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<i>Emilia sonchifolia</i> var. <i>sonchifolia</i> *	Exotic Herb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Endiandra compressa</i>	Native Tree / Shrub	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Endiandra coriacea</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
<i>Endiandra globosa</i>	Native Tree / Shrub	0	0	1	0	0	1	1	0	0	0	0	1	0	0	0	0
<i>Endiandra hypoleptophra</i> #	Native Tree / Shrub	0	0	0	0	0	1	0	0	1	0	0	0	1	1	1	0
<i>Endiandra lepidodendron</i>	Native Tree / Shrub	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0
<i>Endiandra longipedicellata</i>	Native Tree / Shrub	0	0	1	0	1	1	0	0	0	0	0	0	1	0	0	0
<i>Endiandra monothysa</i>	Native Tree / Shrub	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0
<i>Endiandra montana</i>	Native Tree / Shrub	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Endiandra sankeana</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Entada phaseloides</i>	Native Vine	1	1	0	1	1	0	0	1	1	0	0	0	0	0	0	0

Species	Life form Code	EBM1/1 (0m)	EBM1/2 (4m)	EBM1/3 (12m)	EBM1/4 (25m)	EBM1/5 (50m)	EBMNP1/1 (0m)	EBMNP1/2 (4m)	EBMNP1/3 (12m)	EBMNP1/4 (25m)	EBMNP1/5 (50m)	EBMNP2/1 (0m)	EBMNP2/2 (4m)	EBMNP2/3 (12m)	EBMNP2/4 (25m)	EBMNP2/5 (50m)	MIsC
<i>Entolasia stricta</i>	Native Grass/Sedge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Eippirenum pinnatum</i>	Native Vine	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
<i>Erycibe coccinea</i>	Native Vine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Eupomatiopsis bennetti</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
<i>Eupomatiopsis laurina</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
<i>Euroschinus falcatus#</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Eustrephus latifolius</i>	Native Vine	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Faradraea splendida</i>	Native Vine	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
<i>Ficus congesta#</i>	Native Tree / Shrub	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
<i>Ficus drupacea</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Ficus fraseri#</i>	Native Tree / Shrub	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Ficus hispida</i>	Native Tree / Shrub	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Ficus leptocephala</i>	Native Tree / Shrub	0	0	0	0	1	1	1	0	1	0	0	0	0	0	0	0
<i>Flagellaria indica</i>	Native Vine	0	1	1	1	0	1	1	1	1	0	1	1	1	1	1	0
<i>Gahnia aspera</i>	Native Grass/Sedge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Ganophyllum falcatum</i>	Native Tree / Shrub	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
<i>Garcinia warrenii</i>	Native Tree / Shrub	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
<i>Glochidion sumatranum#</i>	Native Tree / Shrub	1	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0
<i>Glossocarya hemiderna</i>	Native Vine	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
<i>Glycine</i> sp. *	Exotic Vine	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
<i>Gmelina fasciculiflora</i>	Native Tree / Shrub	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0
<i>Gomphandra austroalleana</i>	Native Tree / Shrub	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0
<i>Grevillea baileyanai#</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
<i>Guioa acutifolia#</i>	Native Tree / Shrub	1	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0
<i>Guioa lasioneura#</i>	Native Tree / Shrub	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Harpullia rhyncarpa</i>	Native Tree / Shrub	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
<i>Hedychium adicans</i>	Native Herb / fern	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
<i>Helicia noroniana</i>	Native Tree / Shrub	0	1	0	0	0	1	0	0	1	1	0	0	0	0	0	0
<i>Hibbertia scandens</i>	Native Vine	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
<i>Hippocratea barbata</i>	Native Vine	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0

Species	Life form Code	EBMI/1 (0m)	EBMI/2 (4m)	EBMI/3 (12m)	EBMI/4 (25m)	EBMI/5 (50m)	EBMNPI/1 (0m)	EBMNPI/2 (4m)	EBMNPI/3 (12m)	EBMNPI/4 (25m)	EBMNPI/5 (50m)	EBMNP2/1 (0m)	EBMNP2/2 (4m)	EBMNP2/3 (12m)	EBMNP2/4 (25m)	EBMNP2/5 (50m)	Misc
<i>Homalium circumpinnaeum</i>	Native Tree / Shrub	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
<i>Homalium</i> sp. (Johnstone River N. Michael 176)	Native Tree / Shrub	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
<i>Hydnioleia wendlandiana</i>	Native Palm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hypolyptilon compactum</i>	Native Grass/Sedge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hypserpa decumbens</i>	Native Vine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hypsperpa laurina</i>	Native Vine	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
<i>Hypsis capitata*</i>	Exotic Herb	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
<i>Ichnocarpus frutescens</i>	Native Vine	1	0	1	1	0	0	1	0	0	1	0	0	0	0	0	0
<i>Ipomoea</i> sp. 1	Native Vine	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Irvingia australis</i>	Native Tree / Shrub	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
<i>Jasminum didymum</i> subsp. <i>didymum</i>	Native Vine	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Lantana camara</i> *	Exotic Shrub	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Lepidozania hopei</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
<i>Licuala ramsayi</i>	Native Tree / Shrub	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
<i>Lindsaea ensifolia</i> subsp. <i>ensifolia</i>	Native Herb / fern	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
<i>Linospadix minor</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
<i>Litsea bindoniana</i> #	Native Tree / Shrub	1	1	0	0	1	0	0	1	0	1	0	0	1	1	1	0
<i>Litsea fawcettiana</i> #	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0
<i>Litsea leefeana</i> #	Native Tree / Shrub	1	0	0	1	0	1	0	1	0	1	0	0	1	1	1	0
<i>Lophostemon stueveolens</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0
<i>Ludwigia octovalvis</i>	Native Herb / fern	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Logodium reticulata</i>	Native Vine	0	1	1	1	0	0	1	1	0	1	1	0	1	0	0	1
<i>Macaranga involucrata</i> var. <i>mallotoides</i> #	Native Tree / Shrub	1	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1
<i>Macaranga tanarius</i> #	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
<i>Mackinlaya macrosciada</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
<i>Mallotus paniculata</i> #	Native Tree / Shrub	0	1	1	0	0	0	1	1	0	1	1	0	1	0	0	0
<i>Megathyrsus maximum</i> var. <i>maximum</i> *	Exotic grass/sedge	1	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0
<i>Melastoma malabathricum</i> subsp. <i>malabathricum</i>	Native Tree / Shrub	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
<i>Melia azederach</i> #	Native Tree / Shrub	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0

Species	Life form Code	EBMI/1 (0m)	EBMI/2 (4m)	EBMI/3 (12m)	EBMI/4 (25m)	EBMI/5 (50m)	EBMNPI/1 (0m)	EBMNPI/2 (4m)	EBMNPI/3 (12m)	EBMNPI/4 (25m)	EBMNPI/5 (50m)	EBMNP2/1 (0m)	EBMNP2/2 (4m)	EBMNP2/3 (12m)	EBMNP2/4 (25m)	EBMNP2/5 (50m)	MIsC
<i>Melicope bonwickii#</i>	Native Tree / Shrub	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
<i>Melicope broadbentiana</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Melicope xanthoxyloides</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Melodinus australis</i>	Native Vine	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0
<i>Melodinus bacellianus</i>	Native Vine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Melodorum leichhardtii</i>	Native Vine	0	1	0	1	0	1	0	0	0	0	0	0	0	0	1	0
<i>Merremia peltata</i>	Native Vine	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0
<i>Mimosa pudica*</i>	Exotic Herb	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
<i>Mischocarpus lachnocarpus</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Morinda sp. 1</i>	Native Vine	1	1	0	0	1	1	0	0	0	1	1	0	0	0	0	0
<i>Mucuna gigantea</i>	Native Vine	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
<i>Musa banksii</i>	Native Tree / Shrub	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
<i>Myristica insipida</i>	Native Tree / Shrub	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	0
<i>Neolitsea dealbata#</i>	Native Tree / Shrub	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
<i>Neosepicea jucunda</i>	Native Vine	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0
<i>Ochrosia elliptica</i>	Native Tree / Shrub	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
<i>Omolanthus novoguineensis#</i>	Native Tree / Shrub	0	0	0	0	0	1	0	1	1	0	1	1	1	0	0	0
<i>Opismenus aemulus</i>	Native Grass/Sedge	1	0	1	0	1	1	1	0	0	1	1	0	0	0	0	0
<i>Pachygone ovata</i>	Native Vine	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
<i>Palauquium galactoxylon</i>	Native Tree / Shrub	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
<i>Palmeria scandens</i>	Native Vine	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
<i>Pandanus monticola</i>	Native Tree / Shrub	0	1	1	0	1	1	1	1	0	1	1	0	0	1	0	0
<i>Pandora pandorana</i>	Native Vine	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
<i>Panicum incomptum</i>	Native Grass/Sedge	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
<i>Parapachystome longifolia</i>	Native Vine	0	1	0	1	0	0	0	1	1	0	1	1	0	0	0	0
<i>Parsonisia longipetiolata</i>	Native Vine	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
<i>Parsonisia velutina</i>	Native Vine	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
<i>Paspalum scrobiculatum</i>	Exotic grass/sedge	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Passiflora edulis*</i>	Exotic Vine	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
<i>Passiflora foetida*</i>	Exotic Vine	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0

Species	Life form Code	EBM1/1 (0m)	EBM1/2 (4m)	EBM1/3 (12m)	EBM1/4 (25m)	EBM1/5 (50m)	EBMNP1/1 (0m)	EBMNP1/2 (4m)	EBMNP1/3 (12m)	EBMNP1/4 (25m)	EBMNP1/5 (50m)	EBMNP2/1 (0m)	EBMNP2/2 (4m)	EBMNP2/3 (12m)	EBMNP2/4 (25m)	EBMNP2/5 (50m)	Misc
<i>Phaleria clerodendrum</i> #	Native Tree / Shrub	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0
<i>Phyllanthus</i> sp.*	Exotic Herb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Piliostigma tropica</i> #	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
<i>Piper caninum</i>	Native Vine	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0
<i>Piper nove-hollandiae</i>	Native Vine	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Playcium bifurcata</i>	Native Herb / fern	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Podocarpus grayae</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Polyalithia painiana</i> (Rare)	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<i>Polyscias australiam</i> #	Native Tree / Shrub	1	0	1	1	0	0	0	1	1	0	0	1	1	0	1	1
<i>Polyscias elegans</i> #	Native Tree / Shrub	0	0	0	0	1	1	0	0	0	0	1	1	0	0	1	0
<i>Polyscias murrayi</i> #	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Pothos longipes</i>	Native Vine	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0
<i>Pouteria brownlessiana</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
<i>Pouteria chartacea</i>	Native Tree / Shrub	1	0	1	1	1	0	0	0	0	0	1	1	0	0	0	0
<i>Pouteria xeroarpa</i>	Native Tree / Shrub	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
<i>Prunus turneriana</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
<i>Pseuderanthemum variable</i>	Native Herb / fern	1	1	0	1	1	0	0	1	0	0	1	0	0	0	0	0
<i>Psychotria dallachiana</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
<i>Rhodamnia spongiosa</i>	Native Tree / Shrub	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
<i>Rhodomyrtus macrocarpa</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
<i>Rhodomyrtus sessiliflora</i> #	Native Tree / Shrub	1	0	1	1	1	0	1	0	1	0	1	1	0	0	0	0
<i>Rhodomyrtus trineura</i> subsp. <i>trineura</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
<i>Rhynchosciara robertsoniana</i>	Native Tree / Shrub	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
<i>Ripogonum album</i>	Native Vine	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
<i>Rourea brachyandra</i> (Rare)	Native Vine	0	0	1	1	0	1	0	1	1	0	1	1	0	1	1	0
<i>Rubus alceifolius</i> *	Exotic Vine	1	1	0	1	0	1	1	0	1	1	0	1	1	0	0	0
<i>Salacia chinensis</i>	Native Vine	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
<i>Sambucus australasica</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
<i>Sarcopetalum harveyanum</i>	Native Vine	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Sarcopteryx martyana</i>	Native Tree / Shrub	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0

Species	Life form Code	EBMI/1 (0m)	EBMI/2 (4m)	EBMI/3 (12m)	EBMI/4 (25m)	EBMI/5 (50m)	EBMNPI/1 (0m)	EBMNPI/2 (4m)	EBMNPI/3 (12m)	EBMNPI/4 (25m)	EBMNPI/5 (50m)	EBMNP/1 (0m)	EBMNP/2 (4m)	EBMNP/3 (12m)	EBMNP/4 (25m)	EBMNP/5 (50m)	EBMNP/2/1 (0m)	EBMNP/2/2 (4m)	EBMNP/2/3 (12m)	EBMNP/2/4 (25m)	EBMNP/2/5 (50m)	Misc	
<i>Schefflera actinophylla</i>	Native Tree / Shrub	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Scleria polycarpa</i>	Native Grass/Sedge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Scleria sphacelata</i>	Native Grass/Sedge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Scleria sp. 1</i>	Native Grass/Sedge	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Scoparia dulcis*</i>	Exotic Herb	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Senecarpus australiensis</i>	Native Tree / Shrub	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Smilax australis</i>	Native Vine	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
<i>Smilax glyciphylla</i>	Native Vine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Solanum intorsum</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Solanum torvum*</i>	Exotic Shrub	1	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
<i>Spermacoce latifolia*</i>	Exotic Herb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Stachytarpheta cayennensis*</i>	Exotic Herb	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Stephania japonica</i> var. <i>discolor</i>	Native Vine	1	1	0	1	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
<i>Symplocos cochinchinensis</i> var. <i>pilosula</i>	Native Tree / Shrub	0	0	1	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
<i>Synechrella nodiflora*</i>	Exotic Herb	1	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
<i>Synima coquerelorum</i>	Native Tree / Shrub	0	1	1	1	1	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0
<i>Synima macrophylla</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Syzygium callitrichneum</i>	Native Tree / Shrub	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Syzygium caninortex</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Syzygium corniflorum</i>	Native Tree / Shrub	1	1	0	1	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0
<i>Syzygium forte</i> subsp. <i>forte</i>	Native Tree / Shrub	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Syzygium kuranda</i>	Native Tree / Shrub	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Tabernea montana orientalis#</i>	Native Tree / Shrub	0	0	0	1	0	0	1	0	1	0	0	0	1	1	0	0	1	0	1	1	0	0
<i>Tarrena dallachiana#</i>	Native Tree / Shrub	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
<i>Terminalia sericocarpa</i>	Native Tree / Shrub	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0
<i>Tetracerá diemeliana</i>	Native Vine	1	0	0	0	0	1	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
<i>Terracera nordiana</i> var. <i>wuthiana</i>	Native Vine	1	1	1	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Tetrasanandra pubescens</i>	Native Tree / Shrub	0	0	1	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	0	0
<i>Tinospora smilacina</i>	Native Vine	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Species	Life form Code	EBM1/1 (0m)	EBM1/2 (4m)	EBM1/3 (12m)	EBM1/4 (25m)	EBM1/5 (50m)	EBMNP1/1 (0m)	EBMNP1/2 (4m)	EBMNP1/3 (12m)	EBMNP1/4 (25m)	EBMNP1/5 (50m)	EBMNP2/1 (0m)	EBMNP2/2 (4m)	EBMNP2/3 (12m)	EBMNP2/4 (25m)	EBMNP2/5 (50m)	Misc
<i>Toechima datemelianum</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Toechima erythrocarpum</i>	Native Tree / Shrub	1	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0
<i>Trema tomentosa</i> var. <i>asperata</i> #	Native Tree / Shrub	1	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0
<i>Trichospernum pleiotrigma</i> ##	Native Tree / Shrub	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Triumphetta rhomboidea</i> *	Exotic Shrub	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Trophis scandens</i> subsp. <i>scandens</i>	Native Vine	1	1	1	0	1	1	1	1	0	1	1	0	0	0	0	0
<i>Urena lobata</i> *	Exotic Shrub	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
<i>Uvaria concavum</i>	Native Vine	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Vareca amicorum</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Viticipremna queenslandica</i>	Native Tree / Shrub	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
<i>Wrightia leavis</i> subsp. <i>milligae</i>	Native Tree / Shrub	0	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0
<i>Xanthophyllum octandrum</i>	Native Tree / Shrub	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
<i>Vine 1</i> <i>inlet.</i>	Native Vine	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
<i>Vine 2</i> <i>inlet opp. Lys</i>	Native Vine	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
<i>Fern 1</i>	Native Herb / fern	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
<i>Poaceae</i> sp. <i>indet</i>	Native Grass/Sedge	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
<b>TOTAL</b>		<b>68</b>	<b>50</b>	<b>43</b>	<b>49</b>	<b>44</b>	<b>65</b>	<b>59</b>	<b>57</b>	<b>54</b>	<b>32</b>	<b>69</b>	<b>60</b>	<b>57</b>	<b>65</b>	<b>32</b>	<b>34</b>
<b>280 species, 24 exotic</b>																	<b>3</b>

## Appendix 3. Botanical Collections

Species	Transect	GPS Coordinates	Habit	Habitat
<i>Callerya pilipes</i> (Rare)	EBMNP1	0401511 E 8066150 N	Vine	Rare in understorey of heavily disturbed mesophyll vine forest on metamorphic footslopes.
<i>Dysoxylum alliaceum</i>	EBMNP1	0401511 E 8066150 N	Tree 14m	Occasional in understorey of heavily disturbed mesophyll vine forest on metamorphic footslopes.
<i>Dysoxylum arborescens</i>	EBMNP1	0401511 E 8066150 N	Tree 10m	Uncommon in understorey of heavily disturbed mesophyll vine forest on metamorphic footslopes.
<i>Dysoxylum klanderi</i>	EBMNP1	0401511 E 8066150 N	Tree 8m	Incommon in understorey of heavily disturbed mesophyll vine forest on metamorphic footslopes.
<i>Parsonsia longipetiolata</i>	EBMNP1	0401511 E 8066150 N	Vine	Occasional in understorey of heavily disturbed mesophyll vine forest on metamorphic footslopes.
<i>Polyalthia patinata</i> (Rare)	EBMNP1	0401511 E 8066150 N	Sapling shrub 3m	Rare in understorey of heavily disturbed mesophyll vine forest on metamorphic footslopes.
<i>Solanum intonsum</i>	EBMNP1	0401511 E 8066150 N	Shrub 2m	Uncommon in understorey of heavily disturbed mesophyll vine forest on metamorphic footslopes.
<i>Dianella odorata</i>	EBMNP2	0401376 E 8067629 N	Herb to 50cm	Occasional in groundcover of <i>Lophostemon suaveolens</i> open forest on steep metamorphic slope close to sea.
<i>Scleria sphacelata</i>	EBMNP2	0401376 E 8067629 N	Sedge	Abundant in groundcover of <i>Lophostemon suaveolens</i> open forest on steep metamorphic slope close to sea.
<i>Trema tomentosa</i> var. <i>aspera</i>	EBMNP2	0401376 E 8067629 N	Shrub 3m	Occasional in groundcover of <i>Lophostemon suaveolens</i> open forest on steep metamorphic slope close to sea.

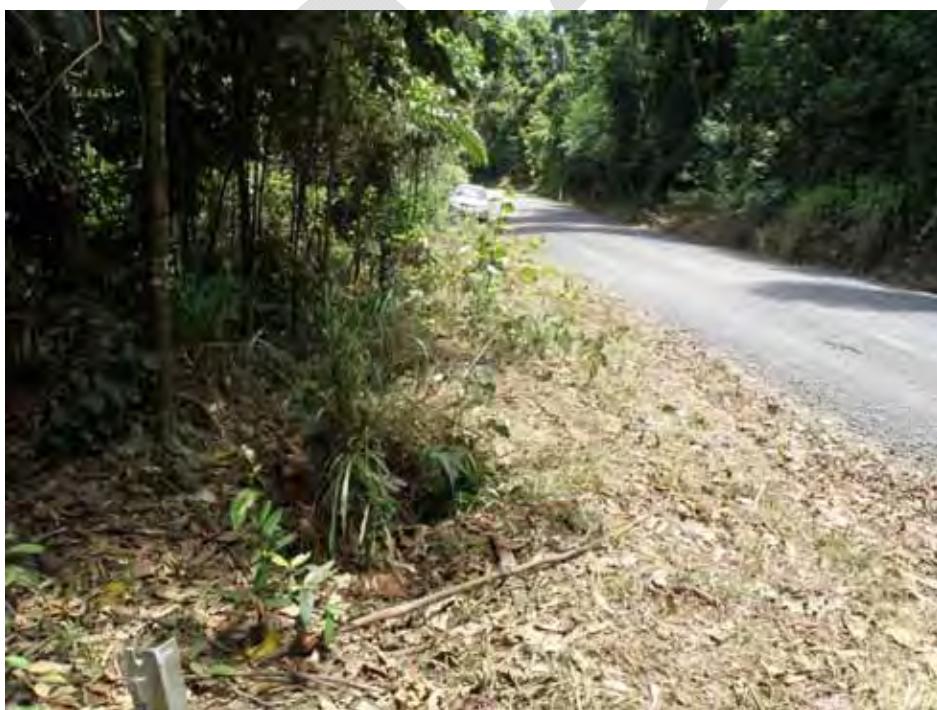
## **Appendix 4. Site Locations**

<b>Plot/Transect</b>	<b>Start</b>	<b>End</b>
EBM1/1	401542 E 8065828 N	401544 E 8065781 N
EBM2/1	401543 E 8065870 N	401545 E 8065762 N
EBM(NP)1/1	401511 E 8066150N	401502 E 8066090 N
EBM(NP)2/1	401376 E 8067629 N	401410 E 8067629 N

## **Appendix 5a. Site Photographs EBM1**



**Photograph 1. EBM1/1 (0m) South to North**



**Photograph 2. EBM1/1 (0m) North to South**



**Photograph 3. EBM1/2 (4m) North to South**



**Photograph 4. EBM1/2 (4m) South to North**



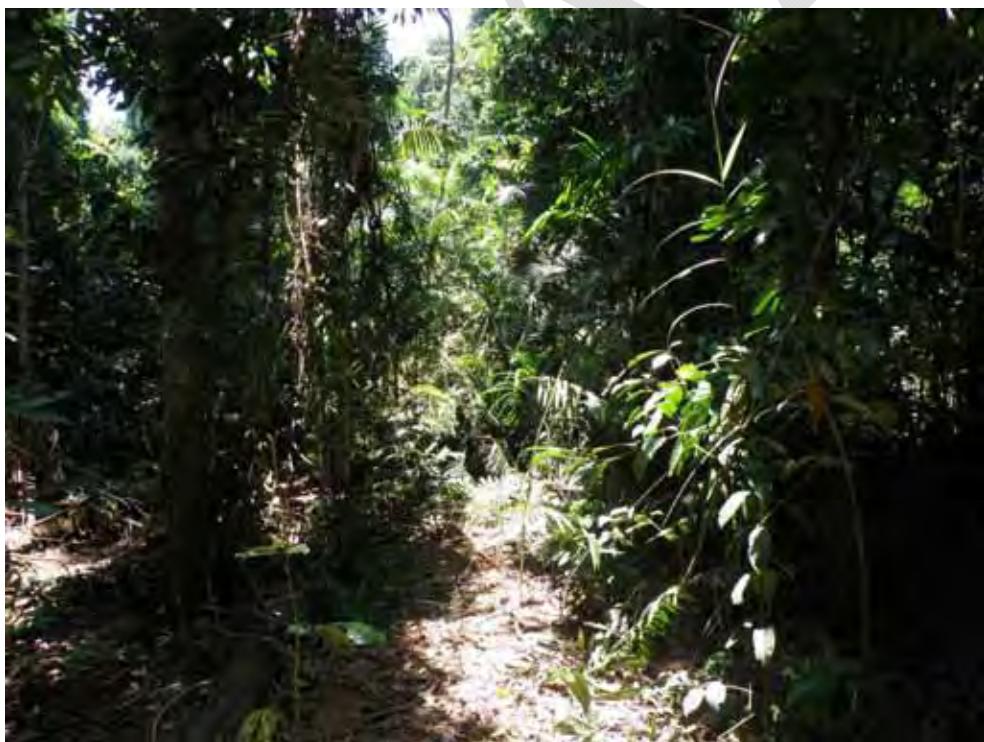
**Photograph 5. EBM1/3 (12m) South to North**



**Photograph 6. EBM1/3 (12m) North to South**



**Photograph 7. EBM1/4 (25m) South to North**



**Photograph 8. EBM1/3 (12m) North to South**



**Photograph 9. EBM1/5 (50m) North to South**



**Photograph 10. EBM1/5 (50m) South to North**

## Appendix 5b. Site Photographs EBM2



Photograph 11. EBM2/1 (0m) South to North



Photograph 12. EBM2/2 (0m) North to South



**Photograph 13. EBM2/2 (4m) North to South**



**Photograph 14. EBM2/2 (4m) South to North**



**Photograph 15. EBM2/3 (12m) North to South**



**Photograph 16. EBM2/3 (12m) South to North**



**Photograph 17. EBM2/4 (25m) South to North**



**Photograph 18. EBM2/4 (25m) North to South**



**Photograph 19. EBM2/5 (50m) South to North**



**Photograph 20. EBM2/5 (50m) North to South**

## Appendix 5c. Site Photographs Ella Bay National Park 1



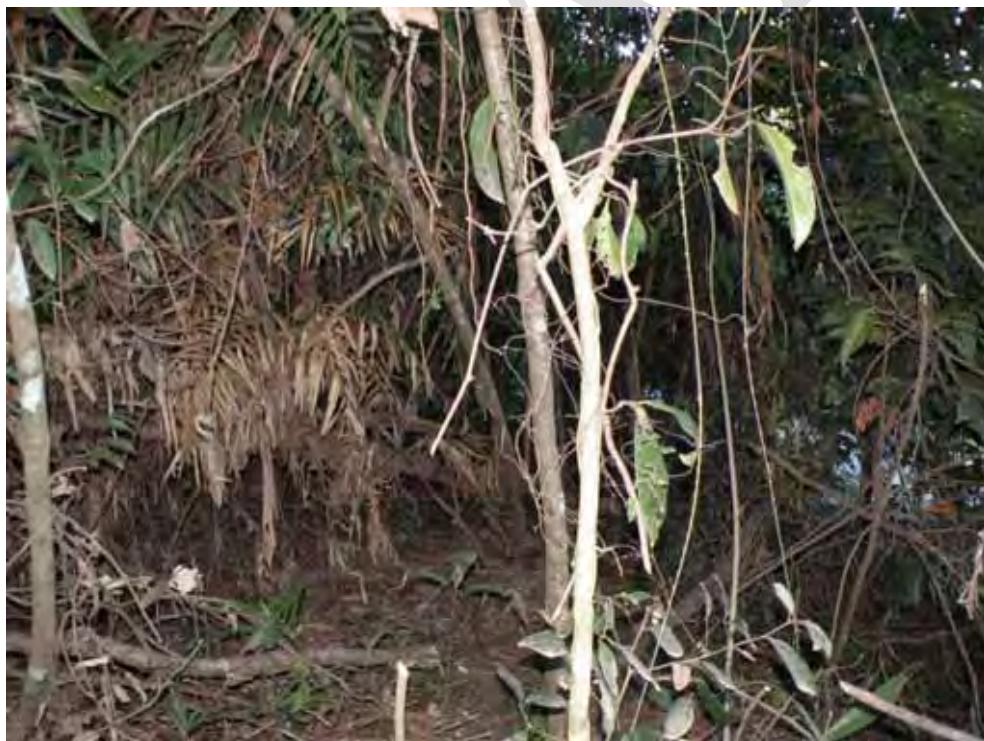
Photograph 21. EBMNP1/1 (0m) North to South



Photograph 22. EBMNP1/1 (0m) South to North



**Photograph 23. EBMNP1/2 (4m) North to South**



**Photograph 24. EBMNP1/2 (4m) South to North**



**Photograph 25. EBMNP1/3 (12m) North to South**



**Photograph 26. EBMNP1/3 (12m) South to North**



**Photograph 27. EBMNP1/4 (25m) North to South**



**Photograph 28. EBMNP1/4 (25m) South to North**



**Photograph 29. EBMNP1/5 (50m) North to South**

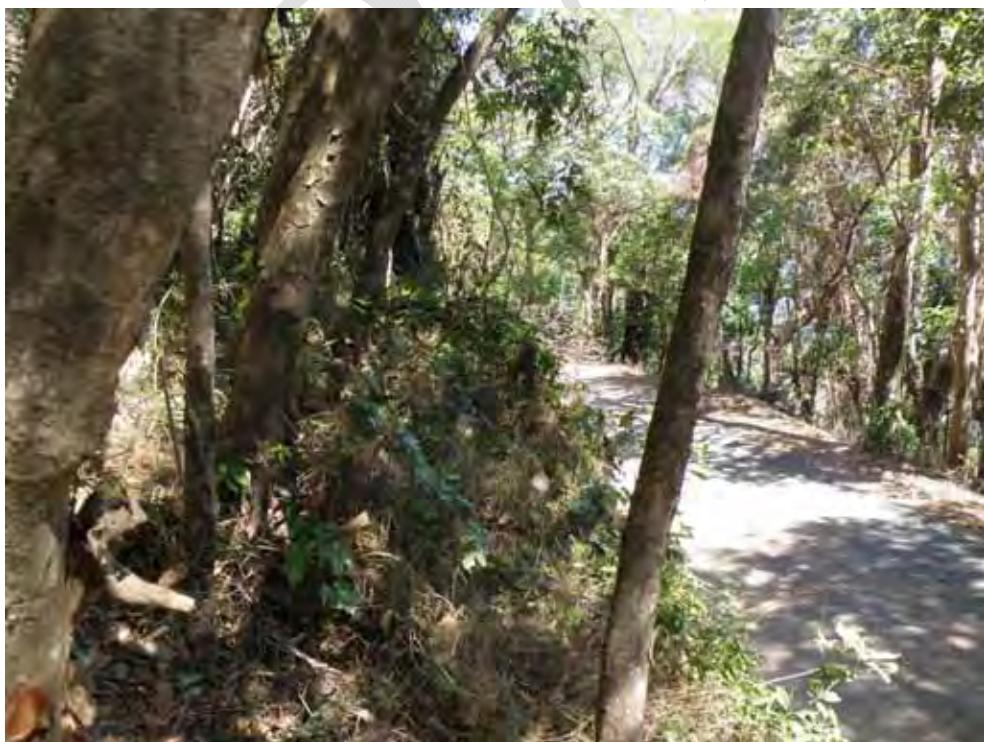


**Photograph 30. EBMNP1/5 (50m) South to North**

## Appendix 5d. Site Photographs Ella Bay National Park 2



Photograph 31. EBMNP2/1 (0m) North to South



Photograph 32. EBMNP2/1 (0m) South to North



**Photograph 33. EBMNP2/2 (4m) North to South**



**Photograph 34. EBMNP2/2 (4m) South to North**



Photograph 35. EBMNP2/3 (12m) North to South



Photograph 36. EBMNP2/3 (12m) South to North



**Photograph 37. EBMNP2/4 (25m) North to South**



**Photograph 38. EBMNP2/4 (12m) South to North**



**Photograph 39.** EBMNP2/5 (50m) North to South



**Photograph 40.** EBMNP2/5 (50m) South to North