6.0 PLANTING STRATEGY

The dunal area is subdivided into four zones: Dry Heathland, Behind Dune and Wet Swamp, Dunal Area, Exposed Dune and Beach as illustrated in Figure 12. It is envisaged that planting arrangement for the foredune area uses native species pictured on the following pages. Any planting within the dunal buffer rehabilitation zone, adjacent to the residential boundaries must consider the requirements for bushfire protection outlined in the attached Bushfire Risk Management Plan; a minimum of 5m canopy separation is required between any trees (including *Banksia* sp.) planting within Section A - Dry Heath zone.

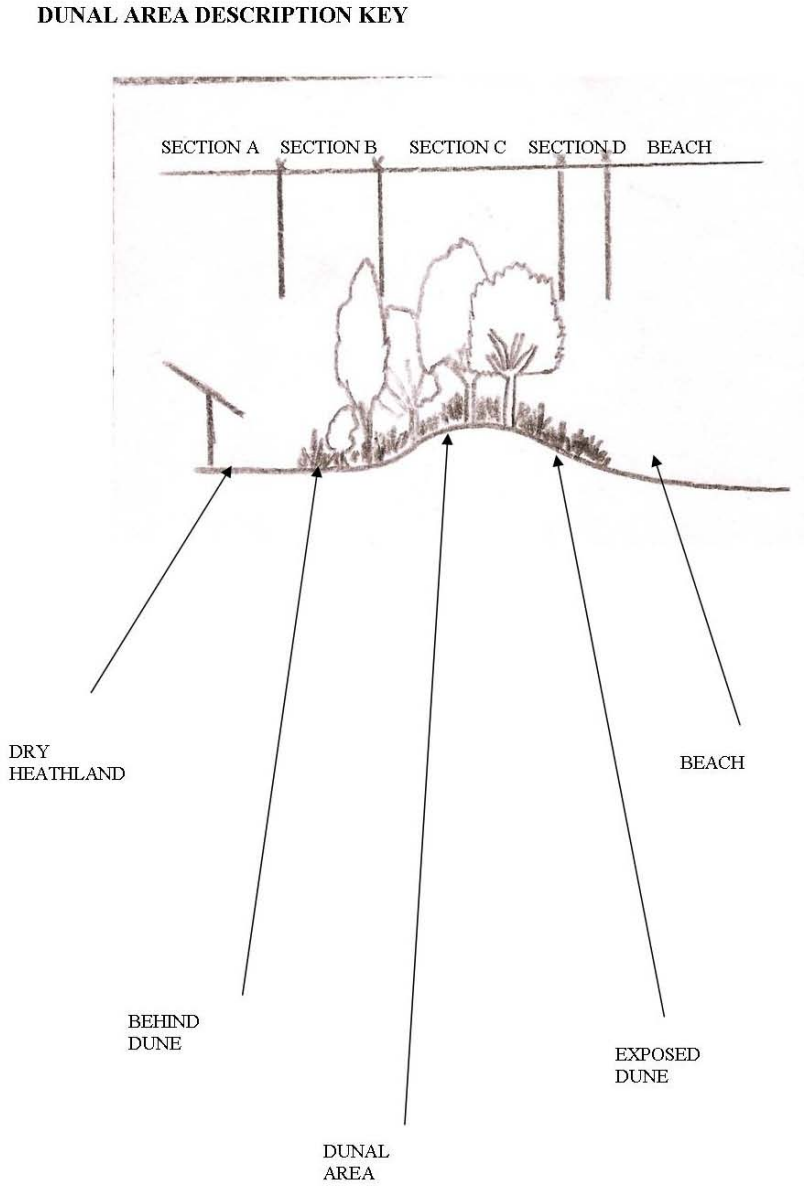


Figure 12 Planting zones over the foredune

Figure 13-Existing Topographical Analysis

The Pelican Beach site is located between the Pacific Highway and Campbells Beach with a fall from 27.000 at the highway to 6.00 on the foreshore. The site has previously been developed with an Italian restaurant and carpark on the higher part of the site, the main resort buildings approximately halfway down and on the lower level of the site and the resort recreational facilities on the lower ground behind the beach. Illustration 3 provides an overview of the topography of the site.

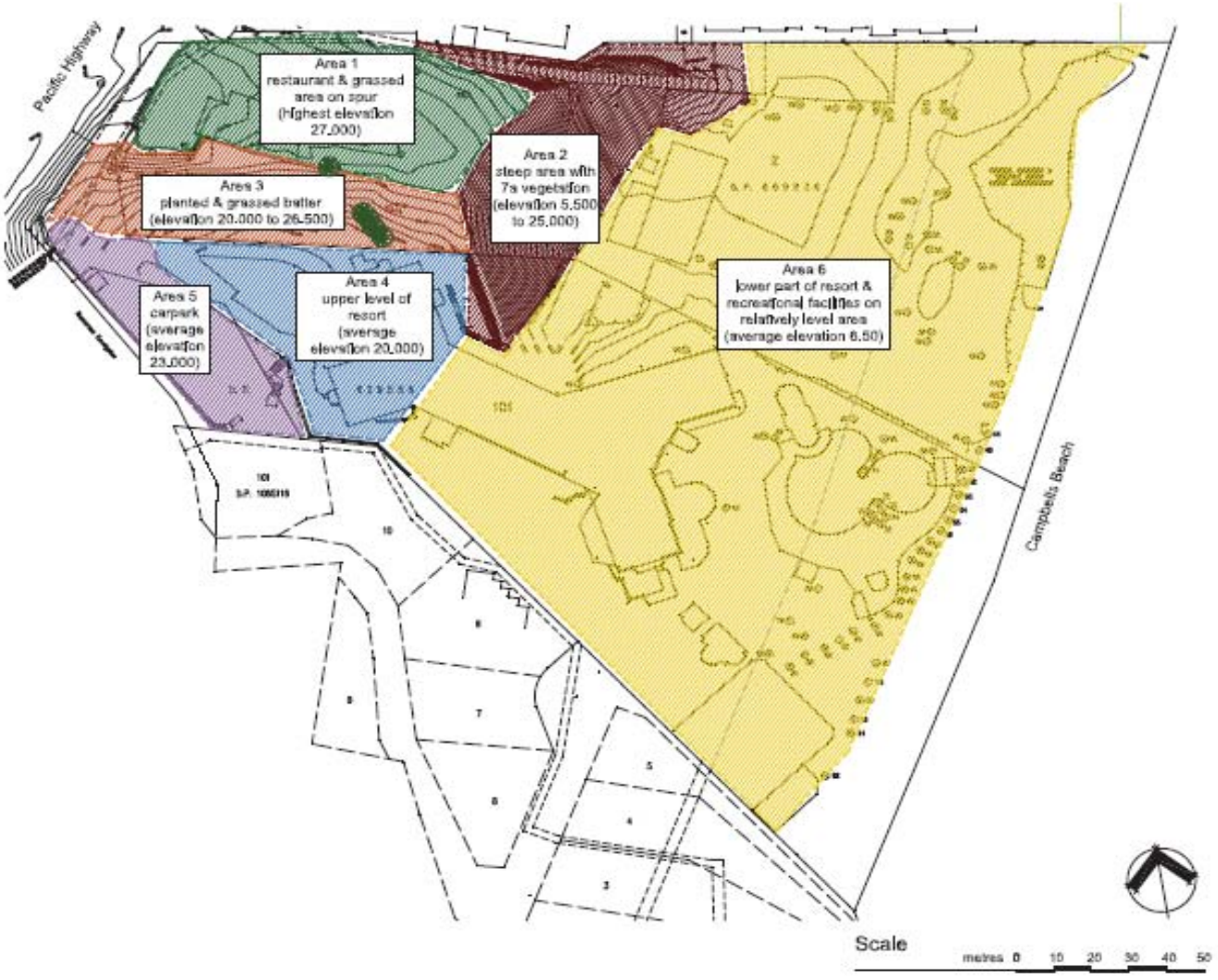
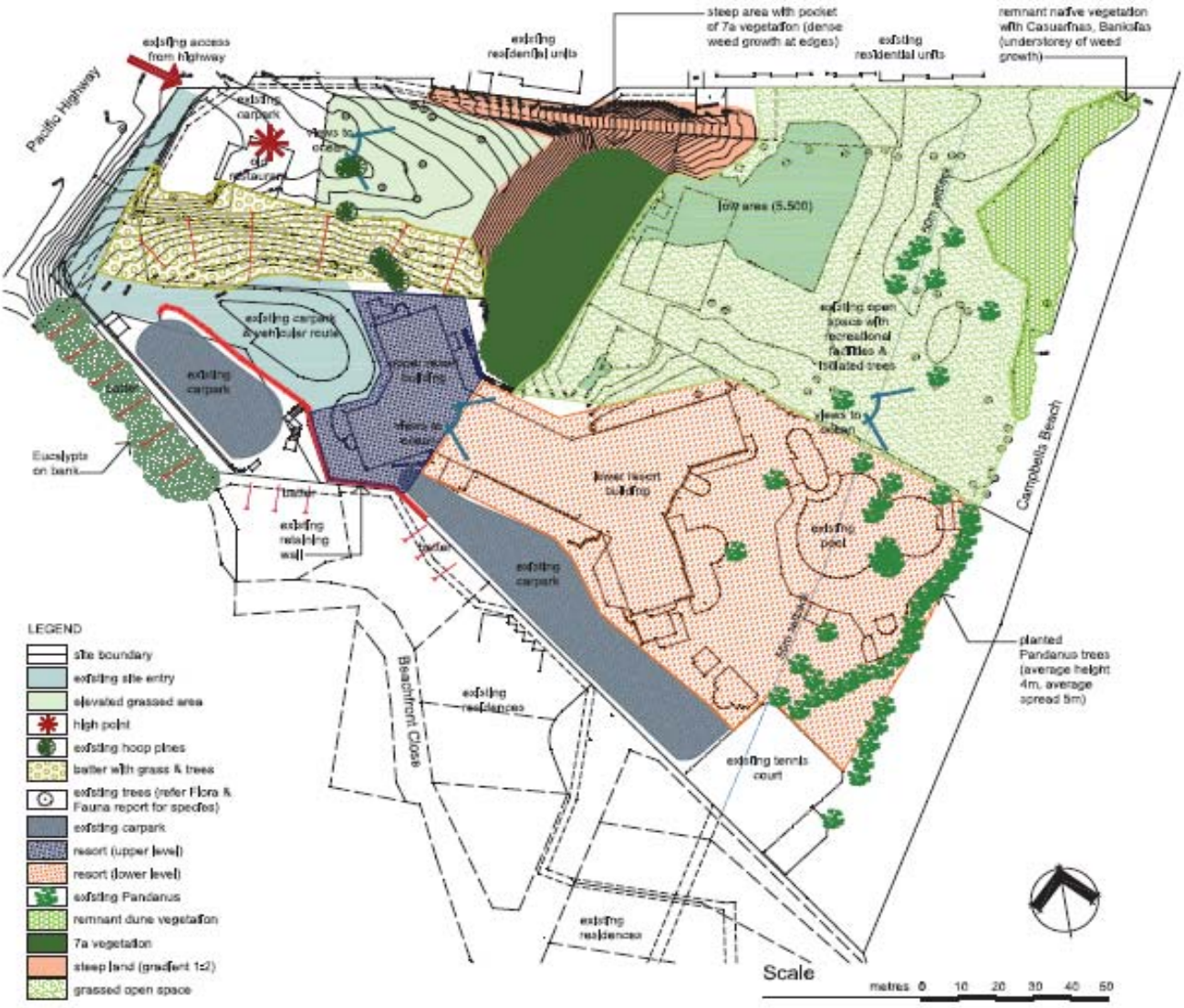


Figure 14-Site Analysis



Species relevant to Sections of Dunal Area

Section A– Dry Heathland


Coast banksia


Wallum Phebalium


Pink Waxflower


Boronia Pinnata


Narrow leaved Guinea Flower


Purple Paperbark


Woolly Aotus


Golden Everlasting

Themeda (Kangaroo Grass) interplanting

Species relevant to Sections of Dunal Area Cont.

Section B-behind dune and Wet Swamp Plantings


Round leaved Baeckia


Pink Kunzia


Woolly Aotus


Beach lilly

Trees Include
Coast Boobyalla
Three leaved Cryptocaria
Tuckeroo
Black She-oak


Coast Boobyalla

Species relevant to Sections of Dunal Area Cont.

Section C– Dunal Area
Tree Species include
Coast Banksia
Coast Golden Wattle
Screw Pine (Pandanas)
Yara (Casuarina subsp. Incana)
Coast Boobyalla

Groundcovers include
Native candytuft
Coral Heath
New Zealand Spinach
Variable Groundsel
Sea Daisy
Kangaroo Grass

Coast Banksia

Coast Boobyalla

New Zealand Spinach

Sea Daisy

Species relevant to Sections of Dunal Area Cont.

Section D– Exposed Dune Area
Predominately Groundcovers -Grasses and herbs
These include
Angular Pigface
Prickly Couch
Beach Spinifex

Angular Pigface

Beach Spinifex

6.1 Species relevant for revegetation of Zone 7(a) area

The following species are recommended for planting within the 7(a) area. Planting should be underdaken by a qualified bush regenerator (at least having membership to the Australian Association of Bush Regenerators or equivalent), using local species either obtained from specialist nurseries or from seed collected on-site and propogated untli planting between spring and summer where rainfall is likely to limit water stress. There is the potential to revegetate this area to the floristic equivalent of a littoral rainforest, through ongoing weed management and staged planting of appropriate species.

Overstorey plants

Red gum
Brushbox
Bleeding heart
Blackwood wattle
Silver-leaved desmodium
Beach acronychia
Sweet pittosporum
Dogwood
Hairy psychotria
Hairy pittosporum

Shrubs and groundcovers

Bungalow palms
Celery wood
Scentless rosewood
Bolwarra
Three veined cryptocaria
Cudgerie
Native ginger
Bracken fern
Maidenhair
Gristle fern
False bracken

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APPENDIX 1: WEED SPECIES IDENTIFIED DURING THE FLORA SURVEY.

Family	Scientific name	Common name
Trees/.		
Araliaceae	*Schefflera actinophylla*	Umbrella Tree
Arecaceae	*Syagrus romanzoffiana*	Cocos Palm
Faboideae	*Erythrina* x *skyei*	Coral Tree
Myrtaceae	*Eugenia uniflora*	Brazilian Cherry
	Psidium cattleianum	Cherry Guava
Pinaceae	*Pinus elliotii*	Slash Pine
Family not known	*Citharexylum spinosum*	Fiddlewood
Shrubs/.		
Asteraceae	*Chrysanthemoides monilifera ssp. rotunda*	Bitou Bush
	Tithonia diversifolia	Mexican Sunflower
Fabaceae	*Senna pendula var. glabrata*	Senna
Myrtaceae	*Leptospermum laevigatum*	Coastal Tea Tree
Ochnaceae	*Ochna serrulata*	Mickey Mouse Plant
Solanaceae	*Solanum mauritianum*	Tobacco Bush
Verbenaceae	*Lantana camara*	Lantana
Family not known	*Monsteiria deliciosa*	Fruit Salad Plant
Herbs/.		
Asparagaceae	*Protasparagus plumosus*	Asparagus Fern
Asteraceae	*Ageratina riparia*	Mistflower
	Bidens pilosa	Farmer's Friend
	Conyza albida	Tall Fleabane
	Gazania rigens	Gazania
	Hypochaeris glabra	Flatweed
	Senecio madagascadensis	Fireweed
	Silybum marianum	Prickly Lettuce
	Tridax procumbens	Tridax
Faboideae	*Desmodium unicinatum*	Silver-leaved Desmodium
	Macroptilium atropurpureum	Siratro
	Trifolium repens	Clover
Malvaceae	*Sida rhombifolia*	Paddys' Lucerne
Oxalidaceae	*Oxalis corniculata*	Oxalis
Plantaginaceae	*Plantago lanceolata*	Plantago
Poaceae	*Avena barbata*	Bearded Oats
	Chloris gayana	Rhodes Grass
	Cynodon dactylon	Bermuda Grass
	Melinus repens	Red Natal Grass
	Panicum antidotale	Giant Panic Grass
	Paspalum wetsteinii	Broad-leaved Paspalum
	Sporobolus fertilis	Parramatta Grass
	Stenotaphrum secundatum	Buffalo Grass
Solanaceae	*Lycopersicon esculentum*	Tomato
	Physalis minima	Wild Gooseberry
	Solanum aviculare	Blackberry Nightshade
Zingiberaceae	*Hedychium gardnerianum*	GingerLily
Vines/.		
Family	Binomial	Name
Basellaceae	*Anredera cordifolia*	Madeira Vine
Convulvulaceae	*Ipomoea cairica*	Morning Glory Vine
	Ipomoea purpurea	Common Morning Glory
Passifloraceae	*Passiflora subpeltata*	White Passionflower
Solanaceae	*Solanum seaforthianum*	Brazilian Nightshade

APPENDIX 2: REPORT FROM ACTIVE TREE SERVICES ON MUNDULLA YELLOWS SYNDROME

ACTIVE TREE SERVICES

FAR NORTH COAST OFFICE

9TH August 2006 Our Ref: ch06-12945/3

To: Craig Harman
Bushfiresafe Pty.Ltd.
20 McLaughlan St
Maclean NSW 2463

Dear Craig,

Results of Testing for Mundulla Yellows (MY) Syndrome in Pines at Pelican Beach Resort

Testing for the dieback syndrome, Mundulla Yellows (MY), was undertaken by Southern Cross University Plant Pathology Department analysing soil and tissue samples from the two pine trees located adjacent to the old restaurant building in the north-eastern corner of the Pelican Beach Site.

All samples were tested for the presence of fungi, nematodes, bacteria, phytoplasmas, viruses and virus-like organisms. Insects were collected from tree foliage and understorey vegetation to investigate the presence of pests and disease vectors at the site. Topsoil and subsoil was collected from each of the trees,, and soil properties and chemistry were assessed. Foliage chemistry from both trees was also investigated.
The results of biotic and abiotic testing were compared to analysis from known MY infected plants held by the Department of the Environment and Sustainability, enabling determination of the presence of Mundulla Yellows in the pines at Pelican Beach.

The results revealed that Mundulla Yellows Syndrome is present in the pines onsite. In addition, fungi, nematodes, bacteria, phytoplasmas, viruses and virus-like organisms effected by MY were detected in samples as far away as fifteen (15) Meters from the pines.

As a result of such findings, it is recommended that the pines be removed and surrounding area be cleared to an area of eighteen Meters in radius from the effected trees. Unfortunately the pines seem to be adversely effected beyond salvation and limiting the spread of MY is paramount. Furthermore, future plantings of the area need to be implemented using plants known not to be effected by any type of dieback syndrome.

If you would like to contact us to discuss any of the above, please contact Wayne Elliot at our Coffs Harbour Office on 1300 130 287, he will be happy to help.

Regards,

Mark Thomas

PO Box 1332, Mona Vale NSW 2102
Phone: (02) 6582 3220 Mobile: 0438 623 132 Fax: (02) 6582 2673

Appendix 3 Schedule of Existing trees

Number	Species	Common Name	Retain/Remove
T1	Syzygium species	Lilly Pilly	remove
T2	Mangifera indica	Mango	remove
T3	Mangifera indica	Mango	remove
T4	dead tree		remove
T5	Araucaria heterophylla	Norfolk Island Pine	remove
T6		Cocos Palm	remove
T7	Araucaria cunninghamii	Hoop Pine	remove
T8	Araucaria cunninghamii	Hoop Pine	remove
T9		Cotoneaster	remove
T10	Araucaria cunninghamii	Hoop Pine	remove
T11	Eucalpytus species		remove
T12	Araucaria cunninghamii	Hoop Pine	remove
T13	Araucaria cunninghamii	Hoop Pine	remove
T14	Araucaria cunninghamii	Hoop Pine	remove
T15	Araucaria cunninghamii	Hoop Pine	remove
T16	Araucaria heterophylla	Norfolk Island Pine	remove
T17	Casuarina species	She-oak	remove
T18	Araucaria heterophylla	Norfolk Island Pine	remove
T19	Araucaria heterophylla	Norfolk Island Pine	remove
T20	Araucaria heterophylla	Norfolk Island Pine	remove
T21	Casuarina species	She-oak	remove
T22	Araucaria heterophylla	Norfolk Island Pine	remove
T23	Casuarina species	She-oak	remove
T24	Casuarina species	She-oak	remove
T25	Casuarina species	She-oak	remove
T26	Araucaria heterophylla	Norfolk Island Pine	retain
T27	Pandanus pedunculatus	Screw Pine	relocate
T28	Pandanus pedunculatus	Screw Pine	relocate
T29	Pandanus pedunculatus	Screw Pine	relocate
T30	Pandanus pedunculatus	Screw Pine	relocate
T31	Araucaria heterophylla	Norfolk Island Pine	remove
T32	Pandanus pedunculatus	Screw Pine	relocate
T33	Banksia integrifolia	Coastal Banksia	remove
T34	unidentified		remove
T35	Banksia integrifolia	Coastal Banksia	retain
T36	Pandanus pedunculatus	Screw Pine	retain
T37	Banksia integrifolia	Coastal Banksia	remove
T38	Pandanus pedunculatus	Screw Pine	retain
T39	Banksia integrifolia	Coastal Banksia	retain
T40	Araucaria heterophylla	Norfolk Island Pine	retain
T41	Banksia integrifolia	Coastal Banksia	retain
T42	Casuarina species	She-oak	retain
T43	Casuarina species	She-oak	retain
T44	Casuarina species	She-oak	retain
T45	Casuarina species	She-oak	retain
T46	Araucaria heterophylla	Norfolk Island Pine	retain
T47	Pandanus pedunculatus	Screw Pine	relocate
T48	Cupaniopsis anacardioides	Tuckeroo	remove

T49	Cupaniopsis anacardioides	Tuckeroo	remove
T50	Banksia integrifolia	Coastal Banksia	remove
T51	Pandanus pedunculatus	Screw Pine	retain
T52	Pandanus pedunculatus	Screw Pine	retain
T53	Pandanus pedunculatus	Screw Pine	retain
T54	Pandanus pedunculatus	Screw Pine	retain
T55	Pandanus pedunculatus	Screw Pine	retain
T56	Pandanus pedunculatus	Screw Pine	retain
T57	Pandanus pedunculatus	Screw Pine	retain
T58	Pandanus pedunculatus	Screw Pine	retain
T59	Pandanus pedunculatus	Screw Pine	retain
T60	Pandanus pedunculatus	Screw Pine	retain
T61	Pandanus pedunculatus	Screw Pine	retain
T62	Pandanus pedunculatus	Screw Pine	retain
T63	Pandanus pedunculatus	Screw Pine	retain
T64	Pandanus pedunculatus	Screw Pine	retain
T65	Pandanus pedunculatus	Screw Pine	retain
T66	Pandanus pedunculatus	Screw Pine	retain
T67	Pandanus pedunculatus	Screw Pine	retain
T68	unidentified		remove
T69	Pandanus pedunculatus	Screw Pine	retain
T70	Pandanus pedunculatus	Screw Pine	retain
T71	Pandanus pedunculatus	Screw Pine	retain
T72	Pandanus pedunculatus	Screw Pine	retain
T73	Pandanus pedunculatus	Screw Pine	retain
T74	Pandanus pedunculatus	Screw Pine	retain
T75	Pandanus pedunculatus	Screw Pine	retain
T76	Pandanus pedunculatus	Screw Pine	retain
T77	Pandanus pedunculatus	Screw Pine	retain
T78	Pandanus pedunculatus	Screw Pine	retain
T79	Pandanus pedunculatus	Screw Pine	relocate
T80	Pandanus pedunculatus	Screw Pine	relocate
T81	Pandanus pedunculatus	Screw Pine	retain
T82	Pandanus pedunculatus	Screw Pine	retain
T83	Pandanus pedunculatus	Screw Pine	retain
T84	Pandanus pedunculatus	Screw Pine	retain
T85	Pandanus pedunculatus	Screw Pine	retain
T86	Pandanus pedunculatus	Screw Pine	retain
T87	Pandanus pedunculatus	Screw Pine	retain
T88	Pandanus pedunculatus	Screw Pine	retain
T89	Pandanus pedunculatus	Screw Pine	retain
T90	Pandanus pedunculatus	Screw Pine	retain
T91	Pandanus pedunculatus	Screw Pine	retain
T92	Pandanus pedunculatus	Screw Pine	retain
T93	Pandanus pedunculatus	Screw Pine	relocate
T94	unidentified		remove
T95	unidentified		remove
T96	unidentified		remove
T97	unidentified		remove
T98	unidentified		remove

T99	unidentified		remove
T100	unidentified		remove
T101	Ficus benjamina		remove
T102		Cocos Palm	remove
T103	unidentified		remove
T104	unidentified		remove
T105	unidentified		remove