



global environmental solutions

Culburra West Urban Development Project

Ecological & Riparian Issues & Assessment Report

Appendix I Cross-sections from the Crookhaven River

22 March 2013

Cross-section No. 1 Point 1

Swamp Oak Forest

Swamp Oak *Casuarina glauca* (12m)
Sea Rush *Juncus kraussii* (1m)
Lesser Joyweed *Alternanthera denticulata* (0.2m)
New Zealand Spinach *Tetragonia tetragonioides* (0.4m)
Forest Nightshade *Solanum prinophyllum* (0.2m)
Paspalidium distans (0.2m)
Native Wandering Jew *Commelina cyanea* (0.2m)
Whiteroot *Pratia purpurascens* (0.1m)
Kidney Weed *Dichondra repens* (0.1m)



Cross-section No. 1 Point 2

Cleared Paddock

Paspalum *Paspalum dilatatum* (0.4m)
Purpletop *Verbena bonariensis* (0.3m)
Fireweed *Senecio madagascariensis* (0.3m)
Weeping Grass *Microlaenea stipoides* (0.2m)
Brown's Lovegrass *Eragrostis brownii* (0.2m)
Common Couch *Cynodon dactylon* (0.2m)
Lamb's Tongue *Plantago lanceolata* (0.2m)



Cross-section No. 2 Point 1

Swamp Oak Forest

Swamp Oak *Casuarina glauca* (12m)
Boobialla *Myoporum acuminatum* (6m)
Sea Rush *Juncus kraussii* (1m)



Cross-section No. 2 Point 2

Swamp Forest

Swamp Oak *Casuarina glauca* (12m)

Prickly-leaved Tea Tree *Melaleuca styphelioides* (10m)

Lantana *Lantana camara* (3m)



Cross-section No. 2 Point 3

Blackbutt Open Forest

Blackbutt *Eucalyptus pilularis* (28m)

Woollybutt *Eucalyptus longifolia* (20m)

Prickly-leaved Tea Tree *Melaleuca styphelioides* (12m)

Lantana *Lantana camara* (4m)



Cross-section No. 3 Point 1

Swamp Oak Forest

Swamp Oak *Casuarina glauca* (10m)

Sea Rush *Juncus kraussii* (1m)

Baumea juncea (1m)

Saltwater Couch *Sporobolus virginicus* (0.2m)



Cross-section No. 3 Point 2

Swamp Oak Forest (with Lantana and Tick Bush)

Swamp Oak *Casuarina glauca* (12m)

Lantana *Lantana camara* (4m)

Tick Bush *Kunzea ambigua* (4m)

Prickly Beard-heath *Leucopogon juniperinus* (1m)

Bordered Panic *Entolasia marginate* (0.3m)

Weeping Grass *Microlaenea stipoides* (0.2m)

Glycine clandestina (0.2m)

Whiteroot *Pratia purpurascens* (0.1m)

Creeping Beard Grass *Oplismenus imbecillis* (0.1m)

Slender Lagenophora *Lagenophora gracilis* (0.1m)



Cross-section No. 3 Point 3

Moist Forest

Bangalay *Eucalyptus botryoides* (28m)

Grey Ironbark *Eucalyptus paniculata* (28m)

Common Silkpod *Parsonsia straminea* (15m)

Tick Bush *Kunzea ambigua* (3m)

Tall Saw-sedge *Gahnia clarkei* (2m)



Cross-section No. 3 Point 4

Hard-leaved Scribbly Gum Forest

Scribbly Gum *Eucalyptus haemostoma* (25m)

Bangalay *Eucalyptus botryoides* (22m)

Tick Bush *Kunzea ambigua* (4m)

Tall Saw-sedge *Gahnia clarkei* (2m)



Cross-section No. 4 Point 1

Swamp Oak Forest

Swamp Oak *Casuarina glauca* (10m)

Swamp Paperbark *Melaleuca ericifolia* (2.5m)

Sea Rush *Juncus kraussii* (1m)

Baumea juncea (1m)

Saltwater Couch *Sporobolus virginicus* (0.2m)



Cross-section No. 4 Point 2

Swamp Oak Forest (with dense Lantana)

Swamp Oak *Casuarina glauca* (12m)

Boobialla *Myoporum acuminatum* (6m)

Lantana *Lantana camara* (4m)

Tall Saw-sedge *Gahnia clarkei* (2m)



Cross-section No. 4 Point 3

Moist Forest

Bangalay *Eucalyptus botryoides* (26m)

Lantana *Lantana camara* (3m)

Tick Bush *Kunzea ambigua* (2.5m)

Narrow-leaved Bottlebrush *Callistemon linearis* (2.5m)

Tall Saw-sedge *Gahnia clarkei* (2m)

Sandfly Zieria *Zieria smithii* (1m)

Spiny-headed Mat-rush *Lomandra longifolia* (0.5m)



Cross-section No. 4 Point 4

Blackbutt Open Forest

Blackbutt *Eucalyptus pilularis* (28m)
Bangalay *Eucalyptus botryoides* (26m)
Rough-barked Apple *Angophora floribunda* (20m)
Common Silkpod *Parsonsia starminea* (10m)
Sweet Pittosporum *Pittosporum undulatum* (7m)
Black She-oak *Allocasuarina littoralis* (6m)
Lantana *Lantana camara* (3m)
Hickory Wattle *Acacia implexa* (3m)
Tick Bush *Kunzea ambigua* (2.5m)
Common Bracken *Pteridium esculentum* (1m)
Spiny-headed Mat-rush *Lomandra longifolia* (1m)
Wiry Panic *Entolasia stricta* (0.5m)
Whiteroot *Pratia purpurascens* (0.2m)
Ivy-leaved Violet *Viola hederaceae* (0.1m)



Cross-section No. 5 Point 1

Swamp Oak Forest

Swamp Oak *Casuarina glauca* (2m)

Grey Saltbush *Atriplex cinerea* (0.5m)

Seablite *Suaeda australis* (0.5m)

Saltwater Couch *Sporobolus virginicus* (0.2m)

New Zealand Spinach *Tetragonia tetragonioides* (0.4m)

Samphire *Sarcocornia quinqueflora* (0.1m)



Cross-section No. 5 Point 2

Swamp Oak Forest (with dense Lantana)

Swamp Oak *Casuarina glauca* (4m)

Lantana *Lantana camara* (2m)



Cross-section No. 5 Point 3

Swamp Oak Forest (on ridge)

Swamp Oak *Casuarina glauca* (4m)

Lantana *Lantana camara* (2m)



Cross-section No. 5 Point 4

Forest Red Gum Forest

Forest Red Gum *Eucalyptus tereticornis* (28m)

Rough-barked Apple *Angophora floribunda* (26m)

Lantana *Lantana camara* (3m)

Tall Sedge *Carex appressa* (0.5m)

Basket Grass *Oplismenus aemulus* (0.2m)

Native Wandering Jew *Commelina cyanea* (0.2m)

Ivy-leaved Violet *Viola hederaceae* (0.1m)

Kidney Weed *Dichondra repens* (0.1m)



Cross-section No. 5 Point 5

Bangalay/Woollybutt/Rough-barked Apple Forest (dry)

Bangalay *Eucalyptus botryoides* (28m)

Rough-barked Apple *Angophora floribunda* (26m)

Sweet Pittosporum *Pittosporum undulatum* (5m)

Lantana *Lantana camara* (3m)



Cross-section No. 5 Point 6

Blackbutt Open Forest

Blackbutt *Eucalyptus pilularis* (28m)

Bangalay *Eucalyptus botryoides* (28m)

Rough-barked Apple *Angophora floribunda* (20m)

Sweet Pittosporum *Pittosporum undulatum* (6m)

Lantana *Lantana camara* (2m)



Cross-section No. 6 Point 1

Swamp Oak Forest

Swamp Oak *Casuarina glauca* (15m)
Lantana *Lantana camara* (3m)
Sea Rush *Juncus kraussii* (1m)
Spiny-headed Mat-rush *Lomandra longifolia* (1m)
Common Bracken *Pteridium esculentum* (1m)
Saltwater Couch *Sporobolus virginicus* (0.1m)
Hydrocotyle peduncularis (0.1m)



Cross-section No. 6 Point 2

Moist Forest (on lower steep slope)

Bangalay *Eucalyptus botryoides* (20m)

Common Silkpod *Parsonsia straminea* (15m)

Swamp Oak *Casuarina glauca* (10m)

Lantana *Lantana camara* (4m)

Tick Bush *Kunzea ambigua* (2.5m)

Spiny-headed Mat-rush *Lomandra longifolia* (1m)

Prickly Beard-heath *Leucopogon juniperinus* (1m)

Common Bracken *Pteridium esculentum* (0.5m)

Bordered Panic *Entolasia marginata* (0.2m)



Cross-section No. 6 Point 3

Blackbutt Open Forest (moist)

Blackbutt *Eucalyptus pilularis* (22m)

Swamp Oak *casuarina glauca* (17m)

Tick Bush *Kunzea ambigua* (3m)

Tall Saw-sedge *Gahnia clarkei* (2m)

Prickly Beard-heath *Leucopogon juniperinus* (1m)

Common Bracken *Pteridium esculentum* (1m)

Blueberry Lily *Dianella caerulea* (0.5m)

Bordered Panic *Entolasia marginata* (0.2m)

Whiteroot *Pratia purpurascens* (0.1m)

Creeping Beard Grass *Oplismenus imbecillis* (0.1m)

Ivy-leaved Violet *Viola hederaceae* (0.1m)

Hydrocotyle peduncularis (0.1m)



Cross-section No. 6 Point 4

Blackbutt Open Forest (dry)

Blackbutt *Eucalyptus pilularis* (28m)

Sweet Pittosporum *Pittosporum undulatum* (5m)

Tick Bush *Kunzea ambigua* (3m)

Common Bracken *Pteridium esculentum* (1m)

Spiny-headed Mat-rush *Lomandra longifolia* (1m)

Blady Grass *Imperata cylindrica* (0.3m)

Threeawn Speargrass *Aristida vagans* (0.2m)

Bordered Panic *Entolasia marginata* (0.2m)

Basket Grass *Oplismenus aemulus* (0.2m)

Whiteroot *Pratia purpurascens* (0.1m)



Cross-section No. 6 Point 5

Blackbutt Open Forest (dry top)
(See point 4)



Cross-section No. 7 Point 1

Coastal Salt Marsh

Sea Rush *Juncus kraussii* (1m)

Austral Seablite *Suaeda australis* (0.5m)

Saltwater Couch *Sporobolus virginicus* (0.1m)



Cross-section No. 7 Point 2

Swamp Oak Forest

Swamp Oak *Casuarina glauca* (10m)

Sea Rush *Juncus kraussii* (1m)



Cross-section No. 7 Point 3

Swamp Oak Forest (at track)

Swamp Oak *Casuarina glauca* (12m)

Lantana *Lantana camara* (2m)

Tall Saw-sedge *Gahnia clarkei* (2m)

Spiny-headed Mat-rush *Lomandra longifolia* (1m)

Common Bracken *Pteridium esculentum* (1m)



Cross-section No. 7 Point 4

Moist Forest

Swamp Oak *Casuarina glauca* (12m)
Tick Bush *Kunzea ambigua* (2.5m)
Tall Saw-sedge *Gahnia clarkei* (2m)
Prickly Beard-heath *Leucopogon juniperinus* (0.8m)
Blady Grass *Imperata cylindrica* (0.3m)
Whiteroot *Pratia purpurascens* (0.1m)
Slender Lagenophora *Lagenophora gracilis* (0.1m)
Hydrocotyle peduncularis (0.1m)



Cross-section No. 7 Point 5

Black She-oak Closed Forest

Woollybutt *Eucalyptus longifolia* (17m)

Black She-oak *Allocasuarina littoralis* (10m)

Narrow-leaved Bottlebrush *Callistemon linearis* (3m)

Tick Bush *Kunzea ambigua* (2.5m)

Tall Saw-sedge *Gahnia clarkei* (2m)

Baumea juncea (1m)

Bordered Panic *Entolasia matginata* (0.5m)

