
**DRAFT VEGETATION MANAGEMENT PLAN
EXTENSION OF SAND QUARRY
CLEARY BROS (BOMBO)
GERROA**

**A report prepared by
KEVIN MILLS & ASSOCIATES PTY LIMITED**

SEPTEMBER 2006

06/04/2

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KEVIN MILLS & ASSOCIATES
ECOLOGICAL AND ENVIRONMENTAL CONSULTANTS
114 NORTH CURRAMORE ROAD
JAMBEROO NSW 2533
ABN 346 816 238 93

for

CLEARY BROS (BOMBO) PTY LIMITED
PO BOX 210
PORT KEMBLA NSW 2505

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1 INTRODUCTION

This Vegetation Management Plan (VMP) was prepared on behalf of Cleary Bros (Bombo) Pty Limited, operators of the Gerroa Sand Quarry at Gerroa in the Municipality of Kiama. The purpose of the Plan is to describe a compensatory reforestation scheme and an enhancement program for the forest vegetation surrounding the proposed extension of the sand quarry.

A study by Kevin Mills & Associates (2005) described in detail the flora, fauna, vegetation communities and habitats across the whole of the Cleary Bros (Bombo) land at Gerroa. Most recently, a flora and fauna report was prepared by Kevin Mills & Associates (2006) as a part of the Environmental Assessment for the proposed extension of the sand quarry. These reports form companion documents to this Vegetation Management Plan and should be considered together. Much detailed information in those documents is not repeated here.

This VMP identifies the objectives and management issues associated with the retention, enhancement and replanting of forest communities in the vicinity of the proposed sand quarry extension. The document also describes the management strategies and actions required to meet the identified objectives. The VMP is largely map-based, so that this document must be read in conjunction with the Vegetation Management Map; this is a large scale plan attached to the VMP.

2 THE PROJECT AREA

The existing sand quarry has operated for many years and is located directly north and west of Berry Beach Road and Seven Mile Beach Road, respectively. The current proposal is to expand this quarry northwards for a distance of about 700 metres. This involves clearing about 1.7 hectares of natural forest, 1.6 hectares of modified forest and 0.3 hectares of planted forest. The project area for the purposes of this VMP is the land surrounding the sand quarry and those areas selected for replanting elsewhere on the Company's property. These areas are shown on the accompanying Vegetation Management Map.

The project area is located about three kilometres to the southwest of Gerroa. The general area is on coastal sand dunes and flats in the east, extending onto the clayey soils derived from the Berry Siltstone in the west. The property is mostly cleared of its original forest and now supports exotic grassland. Immediately to the north of the existing quarry there is a stand of forest on sand dunes that will be cleared as a part of the extension of the quarry. To the west of the existing and proposed quarry extension, there is a substantial area of forest, composed of several different communities; some of these are listed as endangered ecological communities under the *Threatened species Conservation Act 1995* (NSW). This forest will not be affected by the proposed quarry extension.

The project area is about 700 metres inland from Seven Mile Beach, with drainage being directly into the sand dunes, towards the existing dredge pond and to Blue Angle Creek on the western edge of the proposed quarry. This creek is a tributary of the Crooked River, located about 2.5 kilometres to the north.

3 EXISTING VEGETATION AND HABITATS

3.1 Plant Species Present

A native plant list was prepared for the whole of the company's property by Kevin Mills & Associates (2005). This plant list is provided in Appendix 1, where the name of the species, both the botanical and common name, and the family to which each belongs, is stated. The list contains the names of 135 native species. Most of these species can be found in and around the forest on or adjacent to the quarry. This list is used later to identify native species suitable for use in the proposed planting programs.

3.2 Vegetation Communities

Four forest communities have been identified in the area; the following descriptions of these communities are extracted from the report by Kevin Mills & Associates (2006). The aim of the reforestation program is to develop forest communities that mirror these natural forests.

Littoral Rainforest

Alternative Name: Simple Littoral Rainforest

Code: SIM-LRF

Key Species: *Glochidion ferdinandi*, *Guioa semiglauca*, *Eucalyptus botryoides*

Description: This is a simple rainforest community, being dominated by only a handful of species. The dominant tree is Cheese Tree *Glochidion ferdinandi*, with occasional Guioa *Guioa semiglauca*. A few shrub specimens of Hairy Clerodendrum *Clerodendrum tomentosum*, Native Olive *Notelaea longifolia* and Breyntia *Breyntia oblongifolia* occur. There is an overstorey of Bangalay *Eucalyptus botryoides* and Blackbutt *Eucalyptus pilularis* above the dense canopy of Cheese Tree. The ground cover is mainly composed of "non-rainforest" species, such as Spiny-headed Mat-rush *Lomandra longifolia*, Wandering Sailor *Commelina cyanea* and Flax-lily *Dianella caerulea*. Creepers are relatively common, with 10 species being recorded. These include Snake Vine *Stephania japonica*, Slender Grape *Cayratia clematidea* and Wombat Berry *Eustrephus latifolius*.

Blackbutt - Banksia Forest

Alternative Name: Blackbutt-Banksia Tall Forest

Code: PIL-BAN

Key Species: *Eucalyptus pilularis*, *Banksia integrifolia*, *Eucalyptus botryoides*

Description: This tall forest is dominated by Blackbutt *Eucalyptus pilularis*. The associated trees are Rough-barked Apple *Angophora floribunda* and Bangalay *Eucalyptus botryoides*, although these species are uncommon in the forest in the investigation area. The understorey is composed of small trees and shrubs, including Coast Banksia *Banksia integrifolia*, Cheese Tree *Glochidion ferdinandi*, Tree Broom-heath *Monotoca elliptica* and Maiden's Wattle *Acacia maidenii*. The common smaller shrubs and other plants in the forest include Spiny-headed Mat-rush *Lomandra longifolia*, Bracken *Pteridium esculentum*, Blady Grass *Imperata cylindrica* and Kangaroo Grass *Themeda australis*. Creepers such as Climbing Guinea Flower *Hibbertia scandens* and Native Raspberry *Rubus parvifolius*. Dense stands of the introduced rambling shrub Lantana *Lantana camara* occur in many places.

Bangalay - Banksia Forest

Alternative Name: Bangalay Sand Forest

Code: BOT-BAN

Key Species: *Eucalyptus botryoides*, *Banksia integrifolia*, *Angophora floribunda*, *Acacia maidenii*

Description: The trees present in this forest are mainly Bangalay *Eucalyptus botryoides* and Rough-barked Apple *Angophora floribunda*, with occasional Maiden's Wattle *Acacia maidenii*. The open understorey is a grassland of native and some introduced species, mainly the result of grazing and "underscrubbing". The common native species include Kangaroo Grass *Themeda australis*, Common Bracken *Pteridium esculentum*, Spiny-headed Mat-rush *Lomandra longifolia*, Couch Grass *Cynodon dactylon*, Small-leaved Bramble *Rubus parvifolius* and Blady Grass *Imperata cylindrica*. Scattered shrubs include Breyenia *Breyenia oblongifolia* and Corkwood *Duboisia myoporoides*.

Swamp Sclerophyll Forest

Alternative Name: Swamp Mahogany – Paperbark Forest

Code: ROB-MEL

Key Species: *Eucalyptus robusta*, *Melaleuca linariifolia*, *Livistona australis*, *Casuarina glauca*,
Eucalyptus botryoides

Description: This forest contains the wetland trees Swamp Mahogany *Eucalyptus robusta*, Swamp Oak *Casuarina glauca* and Narrow-leaved Paperbark *Melaleuca linariifolia*. Other characteristic species, most associated with wet sites, include Cabbage Palm *Livistona australis*, Harsh Ground Fern *Hypolepis muelleri*, Tall Sedge *Carex appressa*, Tall Saw-sedge *Gahnia clarkei*, Common Reed *Phragmites australis* and, climbing the trees, Monkey-rope Vine *Parsonsia straminea*. On drier sites, Bangalay *Eucalyptus botryoides* is common and the following species are prominent, Coast Banksia *Banksia integrifolia*, Golden Wattle *Acacia longifolia* and Corkwood *Duboisia myoporoides*.

Phragmites Reedland

Alternative Name: -

Code: PHR-RDL

Key Species: *Phragmites australis*

Description: This community covers small areas within the Swamp Sclerophyll Forest. The main species is Common Reed *Phragmites australis* that generally grows quite densely. It is a part of the identified endangered ecological community, known as Swamp Sclerophyll Forest.

3.3 Significant Vegetation Communities

Three endangered ecological communities occur in the project area; these are Littoral Rainforest, Bangalay Sand Forest and Swamp Sclerophyll Forest on Coastal Floodplains. Another endangered ecological community, known as Swamp Oak Forest, was originally extensive on Foys Swamp, but almost all of this has been cleared. The distribution of these communities in the area is shown on the maps in the reports by Kevin Mills & Associates (2005, 2006). The aim of the reforestation program is to replicate these communities, along with the Blackbutt - Banksia Forest, through an extensive reforestation scheme. Each community grows in a particular environment so that species selection to match the site conditions is an important part of the replanting program.

4 MANAGEMENT OBJECTIVES

The following management objectives have been identified for the Gerroa Sand Quarry Vegetation Management Plan.

- i) To identify and secure offset reforestation areas in compensation for the removal of about 1.7 hectares of native forest and 1.6 hectares of modified forest; these areas should in total provide a compensation ratio of at least 4:1 for the area of forest removed; i.e. 13 hectares.
- ii) To describe a reforestation program for the above areas that includes replanting the natural communities of the locality, particularly those removed by the proposal.
- iii) To develop a maintenance program that ensures the success of the reforestation program.
- iv) To describe techniques for managing the perimeter of the quarry working area to preserve and enhance the adjacent existing forest.
- v) To develop a monitoring and reporting regime that ensures a successful outcome for the above management objectives.

5 MANAGEMENT STRATEGIES AND ACTIONS

This section presents, in a tabular form, the management strategies and actions to achieve the objectives identified in the previous section of the Plan. The following table describes the management issue and the desired management outcomes, followed by strategies and actions that have been identified to address each issue. This table should be read in conjunction with the accompanying Draft Vegetation Management Map. The annotated map is an integral part of the Vegetation Management Plan.

The following matters have been identified as the key management issues to be addressed in this VMP.

- i) identify the land areas to be replanted/enhanced;
- ii) define the forest communities to be re-created;
- iii) describe the techniques to be used in the planting program;
- iv) identify plant species to be used in the planting program;
- v) use on-site organic materials;
- vi) describe a maintenance regime;
- vii) develop specific management actions for the quarry-forest boundary;
- viii) develop a monitoring and reporting regime.

The successful completion of the actions set out in this plan is the responsibility of the Company's site manager. Note that some of the actions have been completed and now require endorsement from the consent authority, prior to their finalisation. We envisage that the Draft Plan and Map will be further developed following input from the Consent Authority. In particular, the Map would be annotated after field investigation with more detail on the type and locations of reforestation and with details on the methods to be employed.

The Company has made a commitment to undertake this reforestation for the life of the sand mine plus three years after cessation of mining. Additionally, regular monitoring by a qualified person and reporting to the consent authority will ensure the success of the project. All works would be guided by a qualified bush regenerator or similar.

Note that the reforestation areas are located so that these would not be affected should a golf course be constructed on the rural property at some time in the future in accordance with concept plans currently being developed. In addition to the revegetation proposed here, the plantings of forest on the golf course is likely to total approximately 10 hectares, should that project proceed.

Management Issue	Desired Outcome	Strategy	Actions
(i) Identify the land areas to be replanted/enhanced	The reforestation areas are delineated and fenced (where necessary to prevent disturbance from stock) as soon as practicable following development approval.	The areas to be planted are to be identified on the plan and the location of fencing is delineated and are to be endorsed by the consent authority.	1.1 These areas are identified on the accompanying plan. 1.2 Areas to be submitted to the Consent Authority for endorsement and modified, if required. 1.3 Finalise boundaries of areas before fencing, then fence.
(ii) Define the forest communities to be re-created	The distribution of the vegetation types to be re-created is delineated on the plan.	The distribution of the vegetation types is clearly shown on the plan and are to be endorsed by the consent authority.	2.1 Areas of each forest type are delineated on the accompanying plan. 2.2 Proposal to be submitted to the Consent Authority for endorsement and modified, if required. 2.3 Finalise distribution of forest types before planting begins.
(iii) Describe the techniques to be used in the planting program	The methods to be used for reforestation are clearly described and ready for field use.	The methods are set out in the plan and are to be endorsed by the consent authority.	3.1 Planting techniques are shown on the accompanying plan. 3.2 Proposals to be submitted to the Consent Authority for endorsement and modified, if required. 3.3 Finalise methods to be used and issue a fresh plan to accommodate modifications, if any.
(iv) Identify plant species to be used in the planting program.	Plantings are restricted to local native species, planted in their appropriate communities.	Appropriate species are to be selected and planted in defined locations to re-create the following natural forest communities of the locality: - Littoral Rainforest; - Bangalay - Banksia Forest; - Swamp Sclerophyll Forest; - Blackbutt - Banksia Forest;	4.1 A list of appropriate species is attached to this plan. 4.2 Proposed lists to be submitted to the Consent Authority for endorsement and modified, if required. 4.3 Finalise species lists for each community and annotate fresh plan.

		- Swamp Oak Floodplain Forest.	
(v) Use of on-site organic materials.	Appropriate use is made of cleared organic material from the development area.	The vegetation removed from the site should, where practical, be used to assist in the establishment of the planting areas. The top 20 cm of sandy soil (containing seeds and other propagation material), logs and timber debris are all useful in re-establishing forest habitat on the presently cleared land that is dominated by exotic plants.	5.1 Site manager will ensure that this material is appropriately stored and re-used to best advantage. Material must be stored for a minimal amount of time before use.
(vi) Describe a maintenance regime.	An appropriate maintenance program is incorporated into the plan and endorsed by the Consent Authority.	A maintenance program is to be developed that covers the following key matters: <ul style="list-style-type: none"> - slashing; - watering; - weeds; - replacing dead trees; - feral animals. 	<p>6.1 Slashing. Slashing of the exotic grassland on the planting areas will be required for some time. This should be carried out as required.</p> <p>6.2 Watering. Watering of plantings will be required for some time after planting. Watering frequency must respond to local rainfall.</p> <p>6.3 Weeds. Noxious weeds are to be controlled at all times. Other troublesome weeds may occur from time to time; it is the responsibility of the site manager to ensure infestations that threaten the reforestation are dealt with as soon as practicable.</p> <p>6.4 Replacing dead plants. Dead plants are to be replaced with the same or other appropriate species as soon as</p>

			<p>practicable after plant death.</p> <p>6.5 Feral animals. Rabbits and Foxes are to be controlled as required. Control methods must be in accordance with guidelines from the Rural Lands Protection Board.</p>
(vii) Develop specific management actions for the quarry-forest boundary.	Procedures are in place to ensure that the forests immediately adjacent to the quarry are not adversely affected.	Appropriate measures are to be incorporated into the quarry management plan to protect adjoining areas of forest.	<p>7.1 The limits of the approved quarry are to be highlighted on site during clearing works in each area; a temporary, coloured plastic fence would be appropriate.</p> <p>7.2 The edge of the approved quarry shall be permanently pegged on site and no clearing or excavation is permitted beyond this point.</p> <p>7.3 The site manager is to include a presentation on this plan as part of site inductions for on-site staff.</p>
(viii) Develop a monitoring and reporting regime.	A satisfactory monitoring and reporting regime is in place to ensure the success of the reforestation program and appropriate management of the quarry perimeter.	The reforestation areas are to be monitored for a period of five (5) years to ensure that these are progressing satisfactorily towards the planned forest communities. An annual report by a botanist is to be prepared after a site inspection in autumn each year.	<p>8.1 The site manager is responsible for initiating the required reports.</p> <p>8.2 Reports to be submitted to the Consent Authority for their information and comment.</p> <p>8.3 Recommendations contained in the reports are to be discussed with the site manager and implemented as appropriate.</p>

The following approximate areas of revegetation and rehabilitation have been calculated based on the accompanying plan.

Bangalay Sand Forest/Littoral Rainforest	6.0 ha
Blackbutt - Banksia Forest	3.0 ha
Swamp Sclerophyll Forest/Swamp Oak Forest	6.3 ha
Swamp Oak Forest	5.5 ha
Total Revegetated Forest	20.8 ha
Rehabilitated Forest (mainly Blackbutt Forest)	5.9 ha
Grand Total of Forest to be Planted/Rehabilitated	26.7 ha

6 REFERENCES

Kevin Mills & Associates (2005). Overview of the Flora and Fauna, Cleary Bros (Bombo) Property at Gerroa. Prepared for Cleary Bros (Bombo) Pty Limited, Port Kembla, February.

Kevin Mills & Associates (2006). Flora and Fauna Assessment, Extension of Cleary Bros (Bombo) Sand Quarry, Gerroa, Municipality of Kiama. Prepared for Cleary Bros (Bombo) Pty Limited, Port Kembla, March.

New South Wales (1993). *Noxious Weeds Act 1993*. NSW Government, Sydney.

New South Wales (1995). *Threatened Species Conservation Act 1995*. NSW Government, Sydney.

APPENDIX 1

NATIVE PLANT SPECIES LIST FOR THE CLEARY BROS (BOMBO) PROPERTY AT GERROA

PTERIDOPHYTA (Ferns)

DENNSTAEDTIACEAE

Hypolepis muelleri Wakef.

Harsh Ground Fern

Pteridium esculentum (Forster f.) Cockayne

Common Bracken

SINOPTERIDACEAE

Pellaea falcata (R. Br.) Fee

Sickle Fern

ANGIOSPERMAE (Flowering Plants)

ALISMATACEAE

Alisma plantago-aquatica L.

Water Plantain

AMARYLLIDACEAE

Crinum pedunculatum R. Br.

Swamp Lily

APIACEAE

Centella asiatica (L.) Urban

Indian Pennywort

Hydrocotyle laxiflora DC.

Stinking Pennywort

Lilaeopsis polyantha (Gand.) H. Eichler

Creeping Crantzia

APOCYNACEAE

Parsonsia straminea (R. Br.) F. Muell.

Monkey-rope Vine

ARECACEAE

Livistona australis (R. Br.) Mart.

Cabbage Palm

ASCLEPIADACEAE

Marsdenia rostrata R. Br.

Common Milk Vine

Tylophora barbata R. Br.

Bearded Tylophora

ASTERACEAE

Cassinia aculeata (Labill.) R. Br.

Common Cassinia

Cassinia quinquefaria R. Br.

Rosemary Cassinia

Ozothamnus diosmifolius (Vent.) DC.

Everlasting

Senecio bipinnatisectus Belcher

Groundsel

Senecio hispidulus A. Rich.

Rough Fireweed

Sigesbeckia orientalis L.

Indian Weed

BIGNONIACEAE

Pandorea pandorana (Andrews) Steenis

Wonga Vine

CAMPANULACEAE

Wahlenbergia gracilis (Forster f.) A. DC.

Australian Bluebell

CASUARINACEAE

Casuarina glauca Sieber ex Sprengel

Swamp Oak

CLUSIACEAE*Hypericum gramineum* Forster f.

Small St John's Wort

COMMELINACEAE*Commelina cyanea* R. Br.

Wandering Sailor

CONVOLVULACEAE*Dichondra repens* Forster & Forster f.

Kidney Weed

CYPERACEAE*Baumea articulata* (R. Br.) S. T. Blake

Jointed Twig-rush

Carex appressa R. Br.

Tall Sedge

Carex longebrachiata Boeck.

Bergalia Tussock

Eleocharis acuta R. Br.

Common Spike-rush

Eleocharis equisetina C. Presl

Spike-rush

Eleocharis sphacelata R. Br.

Tall Spike-rush

Gahnia clarkei Benl

Tall saw-sedge

Isolepis nodosa (Rottb.) R. Br.

Knobby Club-rush

Schoenoplectus validus (Vahl) A. & D. Love

River Club-rush

DILLENIACEAE*Hibbertia obtusifolia* DC.

Grey Guinea Flower

EPACRIDACEAE*Monotoca elliptica* (Smith) R. Br.

Tree Broom-heath

EUPHORBIACEAE*Breynia oblongifolia* Muell. Arg.

Breynia

Glochidion ferdinandi (Muell. Arg.) Bailey var. *ferdinandi*

Cheesetree

Glochidion ferdinandi (Muell. Arg.) Bailey var. *pubens*

Hairy Cheesetree

Omalanthus populifolius Graham

Bleeding Heart

EUPOMATIACEAE*Eupomatia laurina* R. Br.

Bolwarra

FABACEAE**FABOIDEAE (subfamily)***Desmodium varians* (Labill.) G. Don.

Slender Tick-trefoil

Glycine clandestina J.C. Wendl.

Twining Glycine

Kennedia rubicunda (Schneev.) Vent.

Dusky Coral-pea

MIMOSOIDEAE (subfamily)*Acacia binervata* DC.

Two-veined Hickory

Acacia implexa Benth.

Hickory Wattle

Acacia longifolia (Andrews) Willd.

Golden Wattle

Acacia maidenii F. Muell.

Maiden's Wattle

Acacia mearnsii De Wild.

Black Wattle

Acacia suaveolens (Smith) Willd.

Sweet Wattle

Acacia ulicifolia (Salisb.) Court

Prickly Moses

GERANIACEAE*Geranium solanderi* Carolin

Native Geranium

GOODENIACEAE*Goodenia bellidifolia* Smith

Rocket Goodenia

HALORAGACEAE*Gonocarpus teucroides* DC.

Raspwort

HYDROCHARITACEAE*Ottelia ovalifolia* (R. Br.) Rich.

Swamp Lily

JUNCACEAE*Juncus kraussii* Hochst.*Juncus planifolius* R. Br.*Juncus prismatocarpus* R. Br.*Juncus usitatus* L.A.S. Johnson

Sea Rush

Broad Rush

Branching Rush

Common Rush

JUNCAGINACEAE*Triglochin procerum* R. Br.**LAMIACEAE***Lycopus australis* R. Br.

Australian Gypsywort

LAURACEAE*Cassytha pubescens* R. Br.*Endiandra sieberi* Nees

Downy Dodder-laurel

Hard Corkwood

LOBELIACEAE*Lobelia alata* Labill.*Pratia purpurascens* (R. Br.) E. Wimmer

Angled Lobelia

Lobelia Pratia

LOMANDRACEAE*Lomandra longifolia* Labill.

Spiny-headed Mat-rush

LORANTHACEAE*Amyema pendulum* (Sieber ex Sprengel) Tieghem

Drooping Mistletoe

LYTHRACEAE*Lythrum hyssopifolia* L.*Lythrum salicaria* L.

Hyssop Loosestrife

Purple Loosertife

MELIACEAE*Synoum glandulosum* (Smith) A. Juss.

Rosewood

MENISPERMACEAE*Stephania japonica* (Thunb.) Miers

Snake Vine

MORACEAE*Ficus coronata* Spin*Ficus macrophylla* Desf. ex Pers.*Ficus obliqua* Forster f.*Ficus superba* Miq.

Sandpaper Fig

Moreton bay Fig

Small-leaved Fig

Deciduous Fig

MYRSINACEAE

Rapanea howittiana Mez

Muttonwood

MYRTACEAE

Angophora floribunda (Smith) Sweet

Rough-barked Apple

Eucalyptus botryoides Smith

Bangalay

Eucalyptus pilularis Smith

Blackbutt

Eucalyptus robusta Smith

Swamp Mahogany

Eucalyptus tereticornis Smith

Forest Red Gum

Leptospermum juniperinum Smith

Prickly Teatree

Melaleuca ericifolia Smith

Swamp Paperbark

Melaleuca linariifolia Smith

Narrow-leaved Paperbark

Melaleuca styphelioides Smith

Prickly-leaved Paperbark

OLEACEAE

Notelaea longifolia Vent.

Native Olive

ORCHIDACEAE

Acianthus fornicatus R. Br.

Pixie Caps

Dendrobium teretifolium R. Br.

Rat's-tail Orchid

PHILESIACEAE

Eustrephus latifolius R. Br.

Wombat Berry

Geitonoplesium cymosum (R. Br.) A. Cunn. ex Hook.

Scrambling Lily

PHORMIACEAE

Dianella caerulea Sims

Flax-lily

PITTOSPORACEAE

Billardiera scandens Smith

Common Apple-berry

Citriobatus pauciflorus Cunn. ex Ettingsh.

Orange Thorn

Pittosporum revolutum Aiton

Yellow Pittosporum

Pittosporum undulatum Vent.

Sweet Pittosporum

POACEAE

Cymbopogon refractus (R. Br.) A. Camus

Barbed Wire Grass

Cynodon dactylon (L.) Pers.

Couch Grass

Dichelachne crinita (L.) Hook. f.

Longhair Plumegrass

Echinopogon caespitosus C. E. Hubb.

Tufted Hedgehog-grass

Echinopogon ovatus (G. Forst.) P. Beauv.

Forest Hedgehog-grass

Entolasia stricta (R. Br.) Hughes

Wiry Panic

Eragrostis? brownii (Kunth) Nees

Common Love-grass

Hemarthria uncinata R. Br.

Mat Grass

Imperata cylindrica P. Beauv. var. *major* (Nees) C. E. Hubb.

Blady Grass

Microlaena stipoides (Labill.) R. Br.

Weeping Grass

Oplismenus aemulus (R. Br.) Roem. & Schult.

Australian Basket-grass

Oplismenus imbecillus (R. Br.) Roem. & Schult.

Pademelon Grass

Paspalum distichum L.

Water Couch

Phragmites australis (Cav.) Trin. ex Steud.

Common Reed

Themeda australis (R. Br.) Stapf

Kangaroo Grass

POLYGONACEAE

Persicaria decipiens (R. Br.) K. L. Wilson Slender Knotweed
Persicaria strigosa (R. Br.) Gross Spotted Knotweed

POTOMOGETONACEAE

Potamogeton tricarinatus F. Muell & A. Benn. ex A. Benn. Floating Pondweed

PROTEACEAE

Banksia integrifolia L. f. Coast Banksia
Persoonia linearis Andrews Narrow-leaved Geebung

RANUNCULACEAE

Clematis aristata R. Br. ex DC. Australian Clematis
Ranunculus inundatus R. Br. ex DC. River Buttercup

RESTIONACEAE

Restio tetraphyllus Labill. subsp. *meiostachyus*
L. Johnson & O. D. Evans Tassel Cord-rush

RHAMNACEAE

Alphitonia excelsa (Fenzl) Reisseck ex Benth. Red Ash

ROSACEAE

Rubus parvifolius L. Native Raspberry

RUBIACEAE

Morinda jasminoides Cunn. Morinda

RUTACEAE

Melicope micrococca (F. Muell.) T. Hartley White Euodia
Zieria smithii Jackson Sandfly Zieria

SAPINDACEAE

Dodonaea triquetra Wendl. Long-leaved Hop-bush
Guioa semiglauca (F. Muell.) Radlk. Guioa

SCROPHULARIACEAE

Bacopa monniera (L.) Pennell Bacopa

SMILACACEAE

Smilax glycyphylla Sm. Thornless Sarsaparilla

SOLANACEAE

Duboisia myoporoides R. Br. Corkwood

SPARGANIACEAE

Sparganium antipodum Graebner Floating Bur-reed

STACKHOUSIACEAE

Stackhousia viminea Smith Slender Stackhousia

STERCULIACEAE

Commersonia fraseri Gay Bush Kurrajong

TYPHACEAE

Typha orientalis C. Presl

Broad-leaved Cumbungi

VERBENACEAE

Clerodendrum tomentosum R. Br.

Hairy Clerodendrum

VIOLACEAE

Viola hederacea Labill.

Native Violet

VISCACEAE

Notothixos subaureus Oliver

Golden Mistletoe

VITACEAE

Cayratia clematidea (F. Muell.) Domin

Slender Grape

Cissus hypoglauca A. Gray

Water Vine

APPENDIX 2

LIST OF PLANT SPECIES FOR PLANTING PROGRAM

Note that the list is extensive and that some species may never be available for planting; not all species will be available at a particular time, so the final species mix will be determined during the planting program. The species listed are those that already occur on the land; other suitable species may be identified on nearby land; these species are also appropriate for use in the planting program.

Littoral Rainforest

Trees

<i>Alphitonia excelsa</i> (Fenzl) Reisseck ex Benth.	Red Ash
<i>Eucalyptus botryoides</i> Smith	Bangalay
<i>Glochidion ferdinandi</i> (Muell. Arg.) Bailey var. <i>ferdinandi</i>	Cheesetree
<i>Guioa semiglauc</i> (F. Muell.) Radlk.	Guioa
<i>Livistona australis</i> (R. Br.) Mart.	Cabbage Palm
<i>Melicope micrococca</i> (F. Muell.) T. Hartley	White Euodia
<i>Notelaea longifolia</i> Vent.	Native Olive
<i>Omalanthus populifolius</i> Graham	Bleeding Heart
<i>Pittosporum undulatum</i> Vent.	Sweet Pittosporum
<i>Rapanea howittiana</i> Mez	Muttonwood
<i>Synoum glandulosum</i> (Smith) A. Juss.	Rosewood

Shrubs/Ground Covers

<i>Clerodendrum tomentosum</i> R. Br.	Hairy Clerodendrum
<i>Duboisia myoporoides</i> R. Br.	Corkwood
<i>Pittosporum revolutum</i> Aiton	Yellow Pittosporum

Swamp Forest

Trees

<i>Casuarina glauca</i> Sieber ex Sprengel	Swamp Oak
<i>Eucalyptus botryoides</i> Smith	Bangalay
<i>Eucalyptus robusta</i> Smith	Swamp Mahogany
<i>Livistona australis</i> (R. Br.) Mart.	Cabbage Palm
<i>Melaleuca linariifolia</i> Smith	Narrow-leaved Paperbark

Shrubs

<i>Citriobatus pauciflorus</i> Cunn. ex Ettingsh.	Orange Thorn
<i>Lomandra longifolia</i> Labill.	Spiny-headed Mat-rush
<i>Melaleuca ericifolia</i> Smith	Swamp Paperbark

Upland Forest

Trees

<i>Angophora floribunda</i> (Smith) Sweet	Rough-barked Apple
<i>Banksia integrifolia</i> L. f.	Coast Banksia
<i>Acacia binervata</i> DC.	Two-veined Hickory
<i>Acacia implexa</i> Benth.	Hickory Wattle
<i>Acacia maidenii</i> F. Muell.	Maiden's Wattle
<i>Eucalyptus botryoides</i> Smith	Bangalay
<i>Eucalyptus pilularis</i> Smith	Blackbutt
<i>Glochidion ferdinandi</i> (Muell. Arg.) Bailey var. <i>ferdinandi</i>	Cheesetree

Shrubs/Understorey Plants

Acacia longifolia (Andrews) Willd.

Breynia oblongifolia Muell. Arg.

Duboisia myoporoides R. Br.

Hibbertia scandens (Willd.) Gilg

Kennedia rubicunda (Schneev.) Vent.

Lomandra longifolia Labill.

Monotoca elliptica (Smith) R. Br.

Notelaea longifolia Vent.

Zieria smithii Jackson

Golden Wattle

Breynia

Corkwood

Climbing Guinea Flower

Dusky Coral-pea

Spiny-headed Mat-rush

Tree Broom-heath

Native Olive

Sandfly Zieria

Wetland Herbs (creek-side and low-lying areas)

Baumea articulata (R. Br.) S. T. Blake

Carex appressa R. Br.

Crinum pedunculatum R. Br.

Isolepis nodosa (Rottb.) R. Br.

Phragmites australis (Cav.) Trin. ex Steud.

Restio tetraphyllus Labill. subsp. *meiostachyus*

Schoenoplectus validus (Vahl) A. & D. Love

Jointed Twig-rush

Tall Sedge

Swamp Lily

Knobby Club-rush

Common Reed

Tassel Cord-rush

River Club-rush