



CUDMIRRAH – BERRARA BUSHCARE ACTION PLAN REVIEW 2017

Document Number: D16/404551 • **Adopted:** 26/9/2017 • **Minute Number:** MIN17.831 •
File: 26280E • **Produced By:** Planning & Development Services Group • **Review Date:**
26/9/2020

CONTACT INFORMATION

Group Name:	Cudmirrah – Berrara Bushcare Group		
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Reserve Name:	Errol Bond, Third Ave, Kirby's Beach & Berrara Cove		
Reserve Number:	BCU925		
Land Tenure:	Crown T/M	Comm. Land Type:	Natural Area

1. BUSHCARE GROUP GOALS

The goals of the Cudmirrah – Berrara Bushcare Group are as follows:

1. Restore, manage and maintain the biodiversity of the natural area public reserve within and surrounding the villages of Cudmirrah – Berrara and Swan Lake with a focus on the following areas:
 - I. Swan Lake foreshore adjacent to Errol Bond Reserve;
 - II. Third Ave Reserve dunes west of Swan Lake entrance and adjacent to Surfside caravan park;
 - III. Kirbys Beach dunes; and
 - IV. Berrara Cove foreshore.
2. Develop and undertake environmental education projects/activities aimed at raising awareness amongst residents and visitors of the reserve's environmental values and how they can help protect them.
3. Raise awareness of the volunteer work that the Bushcare Group is doing in the villages and continue to actively communicate with the Cudmirrah – Berrara Progress Association.

2. **BUSHCARE GROUP ACHEIVEMENTS TO DATE – (What successes has your Bushcare Group achieved in relation to your achieving the goals and actions in your current Bushcare Group Action Plan and what lessons or new skills/knowledge have you learnt from these achievements?)**

Successes/Goals/Actions achieved to date	Lessons learnt
Control of noxious and environmental weeds along the Errol Bond Foreshore Reserve	Bushcare Group volunteers have increased their skills and knowledge in native plant identification and bush regeneration
Regeneration of 1.98 hectares of Bangalay Sand Forest Complex, which is listed as an Endangered Ecological Community under the NSW Threatened Species Conservation Act 1995 at Kirbys Beach dunes	The Bushcare Group have learnt that the key to successfully restoring bushland is consistent follow up weed control on a regular basis
Regeneration of 2.1 hectares of Bangalay Sand Forest Complex which is listed as Endangered Ecological Community Under the NSW Threatened Species Conservation Act 1995 at the Third Ave Reserve dunes	
Revegetation of the Berrara Creek Flats Reserve as per the Plan of Management	The importance of maintaining on-going communication with the local residents and the Cudmirrah – Berrara Progress Association
Village-wide targeted weed control and education program to control Winter Senna (<i>Senna pendula</i>) on private land	
Control of Madiera Vine (<i>Andredera cordifolia</i>) on the small tributary of Berrara Creek adjacent to the corner of Lakeland & Waterhaven Aves	

3. **SHOALHAVEN BUSHCARE GROUP ACTIVITIES TABLE** (to be used in conjunction with attached site map/s)
KEY: Priority = frequency of site visits H = High (every 12 months); M = Medium (1-3 years); L= Low (3+Years)

GROUP ACTION (these should relate to your project description)	PRIORITY	METHOD	TIME
Area A – Errol Bond Foreshore Reserve Current and Existing Actions <ol style="list-style-type: none"> Continue with follow up manual control of Asparagus Fern (<i>Asparagus aethiopicus</i>) and Winter Senna (<i>Senna pendula</i>) re-growth on the areas that the Bushcare group have already worked 	H	Current and Existing Actions <ol style="list-style-type: none"> Manual control methods and remove reproductive parts of the plants (seeds and rhizomes) 	1. On-going
Area B - Southern side of Swan Lake Entrance Current and Existing Actions <ol style="list-style-type: none"> Bushcare Group to assist Council, as resources permit, with on-going weed control targeting Bitou Bush (<i>Chrysanthemoides monilifera ssp. rotundata</i>) and Winter Senna (<i>Senna pendula spp. pendula</i>) 	M	Current and Existing Actions <ol style="list-style-type: none"> Manual and chemical control techniques 	1. On-going
Area C – Third Ave Dunes – Between Surfside Caravan Park and Swan Lake entrance New Actions <ol style="list-style-type: none"> Council to support the Bushcare Group to continue to undertake secondary restoration, weed control and revegetation works, following the 3 years grant funded project to restore the dunes by providing the following: 	H	New Actions <ol style="list-style-type: none"> Manual and chemical control techniques 	1. On-going

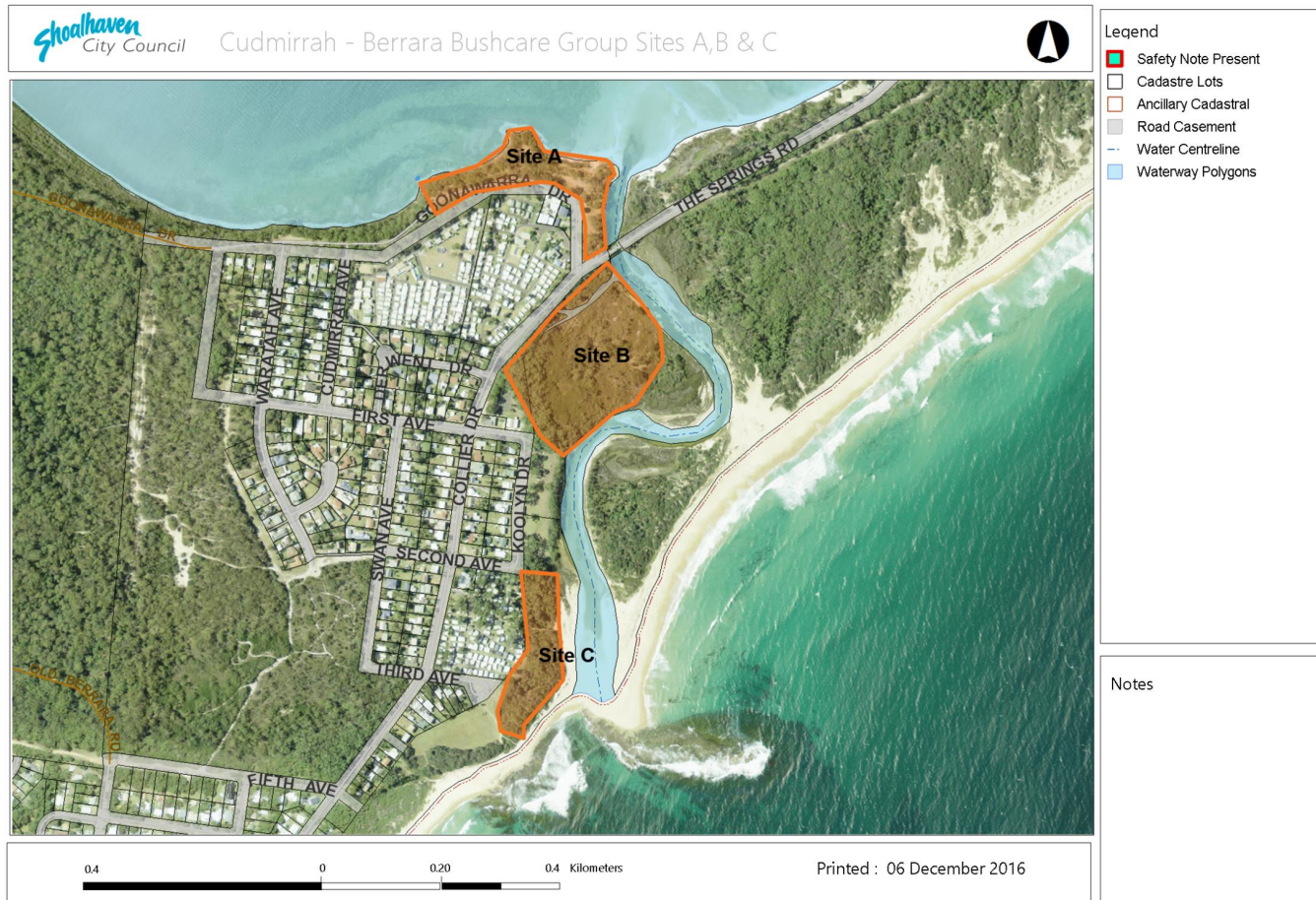
GROUP ACTION (these should relate to your project description)	PRIORITY	METHOD	TIME
<ul style="list-style-type: none"> a. On-site Bushcare Support Officers for 3 hours per month to provide training in bush regeneration skills and knowledge to volunteers b. Assistance with secondary weed control of dense infestations within budgetary constraints c. Provision of materials/equipment such as plants and tools <p>2. Bushcare Group to continue to undertake supplementary planting in the dunes as required using species from the plans revegetation/planting list</p>		<p>2. Undertake revegetation in Autumn using suggested revegetation/planting species list</p>	<p>2. On- going</p>
<p>Area D – Third Ave foreshore reserve south of lookout to small gully</p> <p>Current and Existing Actions</p> <ul style="list-style-type: none"> 1. Bushcare Group to continue with follow up weed control, primarily targeting Asparagus Fern and Winter Senna. 2. Bushcare Group to monitor fore-dune area for Sea Spurge (<i>Euphorbia paralias</i>) and Southern African Gladiolus (<i>Gladiolus carinatus</i>) and remove as required <i>Note: Ensure gloves are worn when handling Sea Spurge as sap is toxic</i> 	<p>M</p>	<p>Current & Existing Actions</p> <ul style="list-style-type: none"> 1. Manual and chemical weed control techniques 2. Manual control, insuring that gloves are worn when pulling the Sea Spurge, 	<ul style="list-style-type: none"> 1. On-going 2. On- going

GROUP ACTION (these should relate to your project description)	PRIORITY	METHOD	TIME
<p>New Actions</p> <ol style="list-style-type: none"> 1. Council and Bushcare Group establish a 1 metre wide mulched buffer strip along the boundary of the mown edge and bushland interface to prevent on-going encroachment of exotic grasses. 2. Bushcare Group to maintain mulched buffer strip. 		<p>New Actions</p> <ol style="list-style-type: none"> 1. Council to spray edge and provide mulch for Bushcare Group to spread 2. Spray and top up mulch as required 	<ol style="list-style-type: none"> 1. Winter 2. As required
<p>Area E – Kirbys Beach</p> <p>Current and Existing Actions</p> <ol style="list-style-type: none"> 1. Bushcare Group to continue to undertake follow up restoration and weed control works from Fifth Ave (pumping station) south to Kirbys steps. 2. Council to undertake secondary weed control on dunes north of Fifth Ave (pumping station). 	H	<ol style="list-style-type: none"> 1. Manual and chemical control techniques as required 	<ol style="list-style-type: none"> 1. On-going
<p>Area F – Berrara Cove</p> <p><i>No work is to be undertaken within 1 metre of cliff edges</i></p> <p>Current and Existing Actions</p> <ol style="list-style-type: none"> 1. Control weeds 2. Spot spray Buffalo Grass in areas where it has actively invaded good quality understory native vegetation 3. Notify Council if viewing platform area requires vegetation control to maintain vistas 	M	<ol style="list-style-type: none"> 1. Manual and chemical control techniques 2. Chemical control using 1:200 ratio of glyphosate: water in cooler season 3. As required 	All on-going

GROUP ACTION (these should relate to your project description)	PRIORITY	METHOD	TIME
<p>4. Maintain existing plantings on reserve adjacent to 38 Silver Sands Drive</p> <p>5. Continue to spray edges of bushland to control Buffalo Grass</p> <p>New Actions</p> <ol style="list-style-type: none"> 1. Council to engage specialist contractors to undertake woody weed control on cliff face 2. Spot spray Buffalo Grass in areas where it has actively invaded good quality understory native vegetation 3. Understory planting in sprayed areas using ground cover species that have a mature height of 1 metre or less 		<p>4. As required</p> <p>5. Chemical control using 1:200 ratio of glyphosate: water in cooler season</p> <ol style="list-style-type: none"> 1. Council to engage contractors as required 2. Chemical control using 1:200 ratio of glyphosate: water in cooler season 3. See section 12 suggested planting/revegetation species list 	<ol style="list-style-type: none"> 1. 2017 2. Winter 3. Autumn
<p>Area G - Berrara Creek Reserve</p> <p>Current and Existing Actions</p> <ol style="list-style-type: none"> 1. Bushcare Group and Council to undertake follow up weed control of Madeira Vine, Winter Senna and Mile-a Minute 	L	<ol style="list-style-type: none"> 1. Manual and chemical weed control techniques 	<ol style="list-style-type: none"> 1. On going
<p>Community Education/Awareness Raising</p> <p>Current and Existing Actions</p> <ol style="list-style-type: none"> 1. Undertake a “Grow Me Instead” weed replacement project targeting Winter Senna on 		<ol style="list-style-type: none"> 1. Council and Bushcare Group to prepare information pack on 	<ol style="list-style-type: none"> 1. 2017-18

GROUP ACTION (these should relate to your project description)	PRIORITY	METHOD	TIME
<p>private properties within the villages and surrounds.</p> <p>New Actions</p> <ol style="list-style-type: none"> 1. Develop information/fact sheet on the Bushcare Group and what they are trying to achieve, for distribution to visitors and residents 2. Hold a tour of the Bushcare site/s and invite the community. 		<p>identification, control and replacement of Winter Senna</p> <ol style="list-style-type: none"> 2. Bushcare Group note where Winter Senna is growing on private properties 3. Bushcare Group door knock properties and provide residents with information pack and replacement plants. Bushcare Group and Council to design and produce fact sheet <p>New Actions</p> <ol style="list-style-type: none"> 1. Bushcare and Council to host tour 	<ol style="list-style-type: none"> 2. 2018 3. 2018

4. a) BERRARA – CUDMIRRAH BUSHCARE GROUP ACTION PLAN MAP SITES A, B & C



b) BERARRA – CUDMIRRAH BUSHCARE GROUP ACTION PLAN MAP SITES D, E, F & G



5. BUSHCARE GROUP WHS & EQUIPMENT REQUIREMENTS

Type of Activity	Yes	Safe Work Instruction (SWI)
Chemical control (spraying of herbicides)	√	SWI129

6. COUNCIL SUPPORT Council will provide support in the following areas:

- Provision of a qualified bush regenerator to provide on-site support in Bushcare skills/knowledge and work, health and safety issues for 3 hours per month;
- Provision of materials/equipment within budgetary constraints;
- Assistance with additional weed control services within budgetary constraints;
- Provision of technical advice and support;
- Assistance with grant funding application and management; and
- Provision of PPE.

7. HAS A SITE HAZARD AND RISK ASSESSMENT BEEN COMPLETED FOR THE BUSHCARE SITE?

Yes No

8. LIST THE PERSONAL PROTECTION EQUIPMENT REQUIRED FOR VOLUNTEERS WHILST WORKING ON THE SITE

PPE Equipment Required	Date issued
First Aid Kit	2016
Gloves	2016
Sunscreen	2016
Insect repellent	2016

9. POSSIBLE FUTURE FUNDING

Project	Funding source
Assistance with weed control on cliff faces and other high risk areas	Various

10. PLAN WILL BE REVIEWED EVERY THREE YEARS

Next review due: 26/9/2017

11. PLEASE LIST OTHER LOCAL OR REGIONAL MANAGEMENT PLANS OR STRATEGIES THAT THIS PLAN RELATES TO

Name of document	Year it was produced	Produced by
Generic Community Land – Natural Areas Plan of Management	2001	Shoalhaven City Council
Foreshore Reserves Policy	2005	Shoalhaven City Council
Swan Lake and Berrara Creek Natural Resources Management Strategy	2002	Shoalhaven City Council

12. BUSHCARE SITE RECOMMENDED PLANTING/REVEGETATION SPECIES LIST

OVERSTOREY TREES (Applies to Areas A,B,C & E)	
Botanical	Common
<i>Banksia integrifolia</i>	Coastal Banksia
<i>Casuarina glauca</i>	Swamp She Oak
<i>Eucalyptus botryoides</i>	Bangalay Gum
SHRUBS (Does not apply to area F)	
Botanical	Common
<i>Acacia longifolia spp sophorae</i>	Coastal Wattle
<i>Acacia longifolia spp. longifolia</i>	Sydney Golden Wattle
<i>Correa alba</i>	White Correa
<i>Correa reflexa</i>	Common Correa
<i>Myoporum insulare spp boniesse</i>	Boobialla
<i>Pittosporum revolutum</i>	Rough Pittosporum
<i>Rhagodia candolleana</i>	Seablite
<i>Werstringia fruticosa</i>	Coastal Rosemary
UNDERSTOREY (grasses, herbs, climbers) (All areas)	
Botanical	Common
<i>Dianella caerulea</i>	Native Flax Lilly
<i>Gharnia clarkei</i>	Cutting Grass
<i>Hardenbergia violacea</i>	Happy Wanderer
<i>Hibbertia scandens</i>	Golden Guinea Flower
<i>Kennedia rubicunda</i>	Dusky Coral Pea
<i>Lomandra longifolia</i>	Spiny Matt Rush
<i>Parsonsia straminea</i>	Monkey Rope Vine
<i>Scaevola albida</i>	Fab Flower
<i>Stephania japonica</i>	Snake Vine

13. BUSHCARE SITE WEED LIST (The following weeds have been recorded on the site)

Noxious	Environmental	Control Method
<i>Chrysanthemoides monilifera</i> spp <i>rotundata</i> (Bitou Bush)		Manual – Hand pull and cut and paint and chemical control of larger infestations
<i>Asparagus aethiopicus</i> (Ground Asparagus Fern)		Manual control crowning out plants rhizomes and chemical control using Metsulfuron methyl
<i>Rubus fruticosus</i> (Blackberry)		Scrape and paint canes with 1:3 Glyphosate:water
<i>Asparagus asparagoides</i> (Bridal Creeper)		Release Bio control rust fungus on larger infestations or spot spray isolated plants or crown out rhizomes
<i>Lantana camara</i> (Lantana)		Manual – Hand pull and cut and paint and chemical control of larger infestations
	<i>Euphorbia paralias</i> (Sea Spurge)	Hand pull smaller infestations Note always wear gloves due to toxic sap
	<i>Coprosma repens</i> (Mirror Bush)	Manual – Hand pull and cut and paint and chemical control of larger infestations
	<i>Lonicera japonica</i> (Japanese Honeysuckle)	Chemical control using glyphosate or hand pull smaller infestations
	<i>Acetosa sagittata</i> (Turkey Rhubarb)	Chemical control using Glyphosate at 1.5% ratio/water insure follow up
	<i>Crocsmia x crocosmiiflora</i> (Montbretia)	Hand dig smaller infestation insure to remove bulbs
	<i>Senna pendula</i> spp. <i>pendula</i> (Winter Senna)	Manual – Hand pull and cut and paint and chemical control of larger infestations
	<i>Senecio angulatus</i> (Climbing Groundsel)	Chemical control of larger infestation using Metsulfuron methyl
	<i>Anredera cordifolia</i> (Madiera Vine)	Scrap and paint vines with Vigilant®

14. AREA C SITE SPECIES LIST - The following native species have been recorded on the site across a randomly selected 50 metre transect (see attached map in appendices for transect location details)

OVERSTOREY TREES	
Botanical	Common
<i>Banksia integrifolia</i>	Coastal Banksia
<i>Cassine australis</i>	Red Fruited Olive Plumb
<i>Casuarina glauca</i>	Swamp She Oak
<i>Eucalyptus botryoides</i>	Bangalay Gum
SHRUBS	
Botanical	Common
<i>Acacia implexa</i>	Hickory Wattle
<i>Acacia longifolia spp sophorae</i>	Coastal Wattle
<i>Acacia longifolia spp. longifolia</i>	Sydney Golden Wattle
<i>Acacia maidenii</i>	Maidens Wattle
<i>Brynia oblongifolia</i>	Native Coffee Bush
<i>Leptospermum laevigatum</i>	Coastal Tea Tree
<i>Leucopogon parviflorus</i>	Coastal Bearded Heath
<i>Myoporum acuminatum</i>	Mangrove Boobialla
<i>Notalea longifolia</i>	Mock Olive
<i>Notalea venosa</i>	Mock Olive
<i>Pittosporum undulatum</i>	Native Daphne
<i>Pittosporum revolutum</i>	Rough Fruited Pittosporum
<i>Rhagodia candolleana</i>	Seablite
<i>Solanum stelligerum</i>	Devils Needles
UNDERSTOREY (grasses, herbs, orchids)	
Botanical	Common
<i>Imperata cylindrica</i>	Blady Grass
<i>Lomandra longifolia</i>	Spiny Matt Rush
<i>Rhagodia condolleana</i>	Sea Berry
<i>Senecio linearifolius</i>	Native Groundsel
<i>Solanum prinophyllum</i>	Forest Nightshade
<i>Spinifex sericeus</i>	Beach Spinifex
<i>Urtica incisa</i>	Native Stinging Nettle
UNDERSTOREY (vines & climbers)	
Botanical	Common
<i>Stephania japonica</i>	Snake Vine

15. AREA E SPECIES LIST - The following native species have been recorded on the site across a randomly selected 50 metre transect (see attached map in appendices for transect location details)

OVERSTOREY TREES	
Botanical	Common
<i>Banksia integrifolia</i>	Coastal Banksia
<i>Casuarina glauca</i>	Swamp She Oak
<i>Eucalyptus botryoides</i>	Bangalay Gum
<i>Leptospermum levigatum</i>	Coastal Tea Tree
<i>Pittosporum undulatum</i>	Native Daphne
SHRUBS	
Botanical	Common
<i>Acacia longifolia</i> spp. <i>sophorae</i>	Coastal Wattle
<i>Acmena smithii</i>	Liliy Pilli
<i>Breynia oblongifolia</i>	Native Coffee Bush
<i>Cassine australis</i>	Red Fruited Olive Plumb
<i>Leucopogon parviflorus</i>	Coastal Bearded-Heath
<i>Monotoca elliptica</i>	Tree Broom-heath
<i>Myoporum acuminatum</i>	Mangrove Boobialla
<i>Notalea longifolia</i>	Mock Olive
<i>Notalea venosa</i>	Mock Olive
UNDERSTOREY (grasses, herbs, orchids)	
Botanical	Common
<i>Bolboschoenus caldwellii</i>	
<i>Cakile maritima</i> spp. <i>maritima</i>	New Zealand Spinach
<i>Carpobrotus glaucescens</i>	Pig Face
<i>Centella asiatica</i>	Centella
<i>Commolina cyanea</i>	Scurvy Weed
<i>Correa alba</i>	Coastal Fuchsia
<i>Dianella caerulea</i>	Blue Flax Lily
<i>Dianella revoluta</i>	Blue Flax Lily
<i>Dichondra rapens</i>	Kidney Weed
<i>Ficcinia nodosa</i>	Knobbly Club-rush
<i>Imperata cylindrica</i>	Blady Grass
<i>Lomandra longifolia</i>	Spiny Matt Rush
<i>Oplismenus aemulus</i>	Basket Grass
<i>Oplismenus imbecillis</i>	Basket Grass
<i>Pelargonium australe</i>	Coastal Geranium
<i>Poa labillardierei</i>	Tussock Grass
<i>Scaevolea calendulacea</i>	Purple Fav Flower
<i>Senecio linearifolius</i>	Native Groundsel
<i>Sonchus hydrophilus</i>	Native Sowthistle
UNDERSTOREY (vines & climbers)	
Botanical	Common

<i>Cissus hypogluaca</i>	Slender Grapevine
<i>Eustrephus latifolius</i>	Wombat Berry
<i>Glycine microphylla</i>	Love Creeper
<i>Glycine tabacina</i>	Love Creeper
<i>Hibbertia scandens</i>	Native Guinea Flower

16. AREA F SITE SPECIES LIST - The following native species have been recorded on the site across a randomly selected 50 metre transect (see attached map in appendices for transect location details)

OVERSTOREY TREES	
Botanical	Common
<i>Banksia integrifolia</i>	Coastal Banksia
<i>Casuarina glauca</i>	Swamp She Oak
<i>Myoporum acuminatum</i>	Mangrove Boobialla
SHRUBS	
Botanical	Common
<i>Acacia longifolia</i> spp. <i>sophorae</i>	Coastal Wattle
<i>Breynia oblongifolia</i>	Native Coffee Bush
<i>Homalanthus populifolius</i>	Bleeding Heart
<i>Pittosporum undulatum</i>	Native Daphne
<i>Westringia fruticosa</i>	Native Coastal Rosemary
UNDERSTOREY (grasses, herbs, orchids)	
Botanical	Common
<i>Centella asiatica</i>	Centella
<i>Dichondra rapens</i>	Kidney Weed
<i>Entolasia marginata</i>	Boarded Panic Grass
<i>Entolasia stricta</i>	Wiry Panic Grass
<i>Gahnia clarkei</i>	Sword Sedge
<i>Lomandra longifloia</i>	Spiny Matt Rush
<i>Oplismenus aemulus</i>	Basket Grass
<i>Pratia purpurascens</i>	White Root
<i>Viola hederacea</i>	Native Violet
UNDERSTOREY (vines & climbers)	
Botanical	Common
<i>Hibbertia scandens</i>	Native Guinea Flower
<i>Kennedia rubicunda</i>	Dusky Coral Pea
<i>Parsonsia straminea</i>	Silk Pod Vine
<i>Stephania japonica</i>	Snake Vine

Appendix 1 – Map of 50 metre Vegetation Transects Locations Site C ★



Appendix 2 - Map of 50 metre Vegetation Transects Locations Sites E & F 

