



TAPITALLEE BUSHCARE ACTION PLAN

Document Number: D12/188629 • **Adopted:** • **Minute Number:** • **File:** 26279E •
Produced By: Planning & Development Services • **Review Date:**

CONTACT INFORMATION

Group Name:	Tapitallee Reserve Bushcare Group
Contact:	Jo Evans
Reserve Name:	Reserve No: NIL061
Land Tenure:	SCC
Comm. Land Type:	Natural Area - Bushland

1. BUSHCARE GROUP GOALS

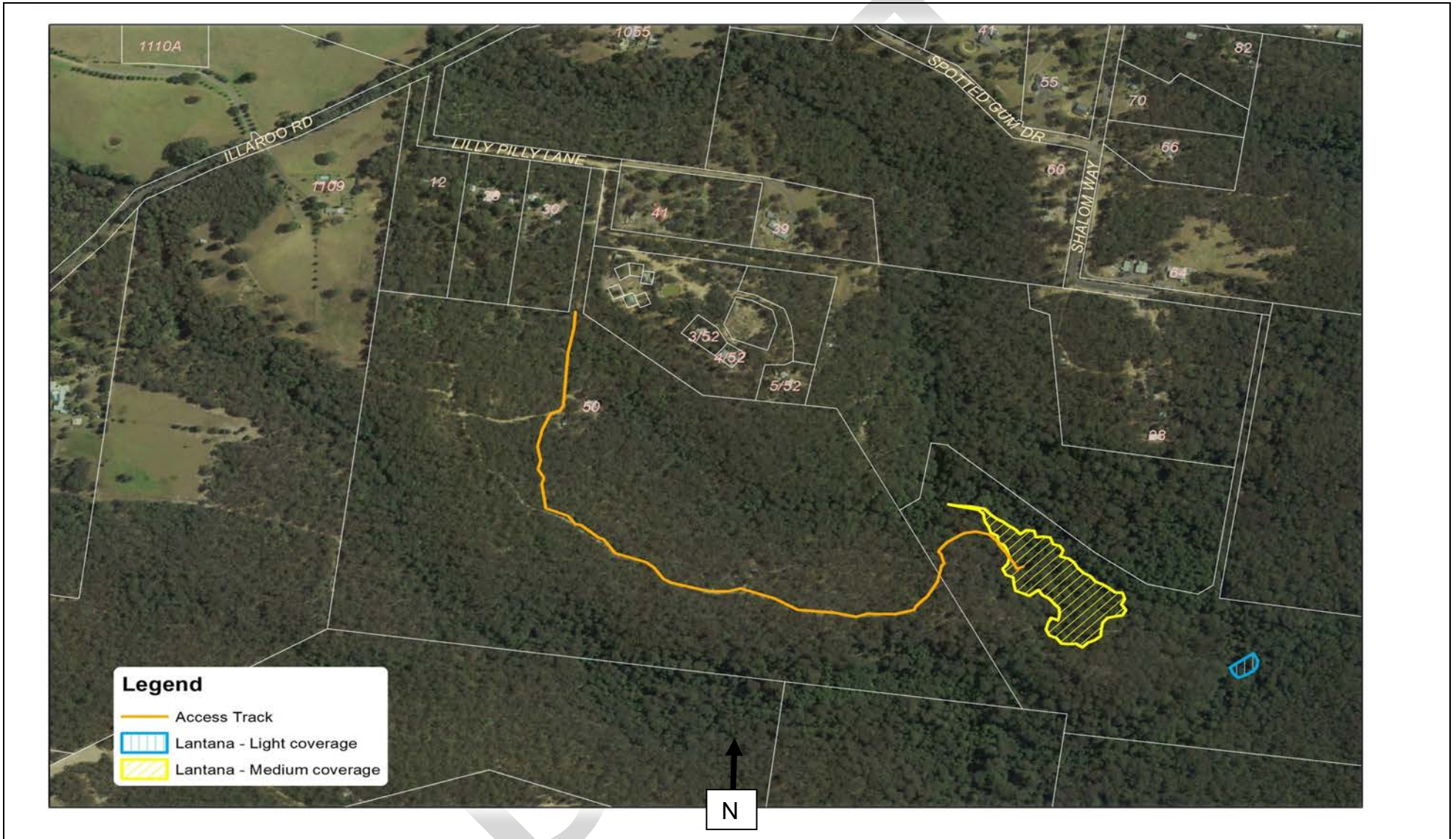
<p>Aim:</p> <p>To restore the biodiversity of the wet sclerophyll forest within the areas surrounding Lilli Pilli Lane, including the Council reserve and adjacent private land by undertaking a strategic community weed control and awareness raising program.</p>

2. **SHOALHAVEN BUSHCARE GROUP ACTIVITIES TABLE (to be in conjunction with attached site map)**

NOTE: Priority should be rated as H = High (within 12 months); M = Medium (1-3 years); L = Low

GROUP ACTION	PRIORITY	METHOD	TIME
Contain and reduce <i>Lantana camara</i> in creek beds and in native vegetation south of Lilli Pilli Lane	H	Council and Bushcare Group work together to train and support group in weed control technique	Growing season
Cut paths to access Lantana infestations and survey area for any other weeds	H	Using brush cutters to cut tracks and GPS locations	Winter
Control road side weed infestations along Illaroo Rd	M	GPS locations and work with Councils Noxious Weeds Officer to control Fireweed	On Going
Follow control of all identified sites	H	Review maps and monitor for outbreaks of new infestations	On Going

3. TAPITALLEE BUSHCARE GROUP ACTION PLAN MAP



4. BUSHCARE GROUP WHS EQUIPMENT REQUIREMENTS

Type of Activity	Yes	SWMS name included
Manual weed control (cut and paint, scrape and paint etc)	√	SWMSNR040 Weed Control Activities
Chemical control (spraying of herbicides)	√	SWMSNR040 Weed Control Activities
Planting		
Minor construction (walking track, fencing, outdoor furniture)		
Propagation and seed collection		
Education (school groups, field days etc)		
Other		

5. COUNCIL SUPPORT

- a. Technical advice and support
- b. Tools and First Aid kit
- c. Materials/Plants (within limit of budget)
- d. Training support
- e. Assistance with weed control and cutting access tracks

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

Yes

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

PPE Equipment Required	Date issued
First Aid Kit	2009
Gloves	2009
Sunscreen	2009
Insect repellent	2009

8. POSSIBLE FUTURE FUNDING

Project	Funding source
Work with adjacent landholders, noxious weeds and Bangalee Bushcare Group to apply for funds to assist with Lantana control in the catchment	State and/or federal government

9. 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 – Plan of Management – Natural Areas	2003	Shoalhaven City Council
Catchment Action Plan	2007	Southern Rivers Catchment Management Authority

10. SITE WEED LIST

Noxious	Environmental	Control Method
Lantana camara		Hand pull or cut and paint smaller isolated plants larger infestations should be splatter gunned in the warmer growing season when plant is in flower

11. BUSHCARE SITE SPECIES LIST

OVERSTOREY TREES	
Botanical	Common
<i>Acmena smithii</i>	Lilly Pilli
<i>Corymbia gummifera</i>	Bloodwood
<i>Corymbia maculata</i>	Spotted Gum
<i>Eucalyptus agglomerata</i>	Blue Leaf Stringybark
<i>Eucalyptus paniculata ssp. paniculata</i>	Grey Ironbark
<i>Livistonia australis</i>	Cabbage Gum
<i>Syncarpia glomulifera</i>	Turpentine
SHRUBS	
Botanical	Common
<i>Acacia terminalis</i>	Sunshine Wattle

<i>Allocasuarina littoralis</i>	Forest She Oak
<i>Allocasuarina torulosa</i>	Black She Oak
<i>Banksia spinulosa</i>	Hair Pin Banksia
<i>Ceratopetalum gummiferum</i>	New South Wales Christmas Bush
<i>Indigofera australis</i>	Indigofera
<i>Kunzea ambigua</i>	Tick Bush
<i>Leptospermum polygalifolium</i>	Tanton
<i>Macrozamia communis</i>	Burrawang
<i>Notaaea longifolia</i>	Mock Olive
<i>Persoonia levis</i>	Smooth Geebung
<i>Persoonia linearis</i>	Narrow Leaf Geebung
<i>Persoonia nutans</i>	Nodding Geebung
<i>Pittosporum revolutum</i>	Rough Fruited Pittosporum
<i>Pittosporum undulatum</i>	Sweet Daphnae
<i>Stenocarpus salingnus</i>	Scrub Beefwood
<i>Synoum glandulosum</i>	Scentless Rosewood
<i>Ziera smithii</i>	Sand Fly Ziera
UNDERSTOREY (grasses, herbs, orchids)	
Botanical	Common
<i>Blechnum cartilagineum</i>	Gristle Fern
<i>Clerodendrum tomentosum</i>	Clerodendrum
<i>Dianella caerulea</i>	Native Flax
<i>Dianella revoluta</i>	Native Blue Flax
<i>Helichrysum elatura</i>	White Paper Daisy
<i>Hypolepis muelleri</i>	Harsh Ground Fern
<i>Lepidosperma laterale</i>	N/A
<i>Lomandra fluviatilis</i>	N/A
<i>Lomandra longifolia</i>	Spiny Matt Rush
<i>Micolaena stipoides</i>	Weeping Grass
<i>Olearia microphylla</i>	Bridal Daisy Bush
<i>Pratia purpurascens</i>	White Root
<i>Ziera pilosa</i>	N/A
UNDERSTOREY (vines & climbers)	
Botanical	Common
<i>Cissus hypoglauca</i>	Water Vine
<i>Clematis aristata</i>	Old Mans Beard
<i>Geitonoplesium cymosum</i>	Scrambling Lily
<i>Hibbertia dentata</i>	Twinging Guinea Flower
<i>Pandora pandorama</i>	Wonga Vine
<i>Stephania japonica</i>	Snake Vine

Bushcare Group Name:.....

Coordinator Name:

Signature:

Date:/...../.....

DRAFT



UPPER KANGAROO VALLEY BUSHCARE ACTION PLAN

Document Number: D12/112784 • **Adopted:** • **Minute Number:** • **File:** 26279E •
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CONTACT INFORMATION

Group Name:	Upper Kangaroo Valley Bushcare Group
Contact:	Tess Heighes
Reserve Name:	Picnic Area
Reserve No:	Part of road reserve
Land Tenure:	SCC
Comm. Land Type:	Road Reserve

1. BUSHCARE GROUP GOALS

<p>Aim</p> <p>Maintain and improve the endemic vegetation in the riparian area of the Upper Kangaroo River from Gerringong Creek Road to Parish's Road being part of the Shoalhaven Council's Road Side picnic area.</p>
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2. SHOALHAVEN BUSHCARE GROUP ACTIVITIES TABLE (to be in conjunction with attached site map)
NOTE: Priority should be rated as H = High (within 12 months); M = Medium (1-3 years); L = Low

GROUP ACTION	PRIORITY	METHOD	TIME
<ul style="list-style-type: none"> • Eradicate new outbreaks of Madeira Vine and assist with mapping and promoting Council Madeira control program in the Bushcare site area • Keep area free of Large and Small Leaf Privet • Keep area free of Lantana • Control Japanese Honeysuckle • Keep area free of Moth Vine and Cape Ivy • Keep area free of Blackberry • Plant Hypolepsis and other endemic understory plants in designated areas where Tradescantia can be controlled 	<p>H H H M M H M</p>	<ul style="list-style-type: none"> • Spot spray with recommended herbicide and follow up scrape and paint with vigilant® • Cut and paint or hand pull • Cut and paint or spot spray • Scrape and paint or spot spray • Hand pull or spot spray • Council to include on spraying program • Divide existing ferns and transplant in the understory 	<p>On Going</p>

3. UPPER KANGAROO VALLEY BUSHCARE GROUP ACTION PLAN MAP



4. BUSHCARE GROUP WHS EQUIPMENT REQUIREMENTS

Type of Activity	Yes	SWMS name included
Manual weed control (cut and paint, scrape and paint etc)	√	SWMSNR040 Weed Control Activities
Chemical control (spraying of herbicides)	√	SWMSNR040 Weed Control Activities
Planting	√	SWMSNR030 Planting, Propagation and Seed Collection
Minor construction (walking track, fencing, outdoor furniture)		
Propagation and seed collection		
Education (school groups, field days etc)		
Other		

5. COUNCIL SUPPORT

- a. Technical advice and support
- b. Tools and first Aid kit
- c. Materials/Plants (within limit of budget)
- d. Training support
- e. Assistance with weed control
- f. Inspection and maintenance of pedestrian suspension bridge and river access tracks

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

Yes

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

PPE Equipment Required	Date issued
First Aid Kit	2012
Gloves	2012
Sunscreen	2012
Insect repellent	2012

8. POSSIBLE FUTURE FUNDING

Project	Funding source
Assistance with weed control	SCC or SRCMA

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

Name of document	Year it was produced	Produced by
Catchment Action Plan	2008	SRCMA

10. RECOMMENDED PLANTING/REVEGETATION SPECIES LIST

UNDERSTOREY (grasses, herbs, climbers)	
Botanical	Common
<i>Adiantum formosum</i>	Giant Maiden Hair Fern
<i>Geranium homeanum</i>	Northern Cransbill
<i>Histiopteris incisa</i>	Batwing Fern
<i>Hypolepis muelleri</i>	Harsh Ground Fern
<i>Lomandra longifolia</i>	Spiny Matt Rush
<i>Pteridium esculentum</i>	Bracken Fern
<i>Urtica incisa</i>	Native Thistle

11. SITE WEED LIST

Noxious	Environmental	Control Method
<i>Rubus fruticosus</i> (Blackberry)		Scrape and paint canes for small isolated plants or larger plants can be sprayed with selective herbicide during flower and fruit
	<i>Ageratina riparia</i> (Mistflower)	Spray with a selective herbicide or hand pull smaller infestations
	<i>Lonicera japonica</i> (Japanese Honeysuckle)	Spot spray infestations with a non-selective herbicide and remove and bag any ripe seed
	<i>Sida rhombifolia</i> (Paddy's Lucerne)	Hand pull smaller infestations. Larger infestations can be sprayed with a non-selective herbicide
	<i>Tradescantia fluminescens</i> (Wandering Jew)	Roll and rake smaller infestations and remove all plants material. Larger infestations can be treated using a selective herbicide or solarisation by covering with black plastic
	<i>Adredera cordifolia</i> (Madeira Vine)	Small infestations can be stemmed scrapped and neat glyphosate or vigilant® apply. Larger infestation should be sprayed with a registered herbicide such as Starane®
	<i>Araujia sericifera</i> (Moth Vine)	Stem scrape and paint with undiluted Glyphosate or hand pull smaller plants. Bag and remove all fruit from site
	<i>Delaira odorata</i> (Cape Ivy)	Spot spray with glyphosate at rate of 1%

12. BUSHCARE SITE SPECIES LIST

OVERSTOREY TREES	
Botanical	Common
<i>Acacia melanoxylon</i>	Blackwood
<i>Acmena smithii</i>	Lilli Pilli
<i>Backhousia myrtifolia</i>	Grey Myrtle
<i>Casuarina cunninghamiana</i>	River She Oak
<i>Eucalyptus amplifolia</i>	Cabbage Gum
<i>Syzigium australe</i>	Magenta Lilly Pilli
<i>Toona ciliata</i>	Red Cedar
SHRUBS	
Botanical	Common
<i>Acacia maidenii</i>	Maidens Wattle

<i>Acronychia oblongifolia</i>	Acronychia
<i>Breynia oblongifolia</i>	Native Privet
<i>Callicoma serratifolia</i>	Black Wattle
<i>Claoxylon australe</i>	Brittlewood
<i>Cryptocarya glaucescens</i>	Native Laurel
<i>Cyathea cooperi</i>	King Fern
<i>Ehretia acuminata</i>	Koda
<i>Euroschinus falcata</i>	Brush Cudgerie
<i>Hakea sericifolia</i>	Willow Hakea
<i>Hymenanthera dentata</i>	Tree Violet
<i>Notelaea oblongifolia</i>	Mock Olive
<i>Pittosporum revolutum</i>	Rough Fruited Pittosporum
<i>Trema aspera</i>	Native Peach
<i>Tristania laurina</i>	Water Gum
UNDERSTOREY (grasses, herbs, orchids)	
Botanical	Common
<i>Adiantum formosum</i>	Giant Maiden Hair Fern
<i>Geranium homeanum</i>	Northern Cransbill
<i>Histiopteris incisa</i>	Batwing Fern
<i>Hypolepis muelleri</i>	Harsh Ground Fern
<i>Lomandra longifolia</i>	Spiny Matt Rush
<i>Pteridium esculentum</i>	Bracken Fern
<i>Urticia incisa</i>	Native Thistle
UNDERSTOREY (vines & climbers)	
Botanical	Common
<i>Cayratia clematidea</i>	Slender Grape
<i>Eustrephus latifoliosus</i>	Wombat Berry
<i>Pandora pandorama</i>	Wonga Vine
<i>Parsonisa straminea var. straminea</i>	Common Silkpod
<i>Stephania japonica</i>	Snake Vine

Bushcare Group Name:.....

Coordinator Name:

Signature:

Date: / /



VINCENTIA BUSHCARE ACTION PLAN VIOLET CLARKE & ORION BEACH RESERVES

Document Number: D13/63908 • **Adopted:** • **Minute Number:** • **File:** 26280E •
Produced By: Planning & Development Services • **Review Date:**

CONTACT INFORMATION

Group Name:	Vincentia Bushcare Group
Contact:	Barbara Liddle
Reserve Name:	Violet Clarke & Orion Beach
Reserve Number:	BVI508, BVI512, BVI622 & BVI623
Land Tenure:	SCC& Crown TM
Comm. Land Type:	Park and Natural Area

1. BUSHCARE GROUP GOALS

The goals of the Bushcare Action Plan are as follows:

1. To improve the biodiversity of the remnant vegetation of Violet Clarke and Orion Beach Reserves, that provides habitat for local fauna, including the state listed endangered Eastern Bristle Bird (*Dasyornis brachypterus*) and the vulnerable Giant Burrowing Frog (*Heleioporus australiacus*)
2. Staged removal and control of invasive exotic vegetation to encourage recruitment of native vegetation within the reserves.
3. Raise community awareness of the biodiversity values of the reserves and how local residents can reduce their impacts on the local biodiversity.
4. Build the capacity of the Bushcare Group to restore the reserve's biodiversity.

2. **SHOALHAVEN BUSHCARE GROUP ACTIVITIES TABLE (to be in conjunction with attached site map)**

NOTE: Priority should be rated as H = High (within 12 months); M = Medium (1-3 years); L = Low

GROUP ACTION	PRIORITY	METHOD	TIME
Vincentia Bushcare, with support from Shoalhaven Council apply for grant funding to assist the Bushcare Group with the restoration works at Orion Beach and Violet Clarke Reserves.	H	Vincentia Bushcare to apply for funding with Council the grant administrator/manager	April 2012 Completed
Hold an information day for interested residents and other s to be part of the Bushcare Group	H	On site BBQ and education	Nov 2012 Completed
STAGE 1 – VIOLET CLARKE RESERVE			
Map locations of weed species and densities using GPS and produce a weed species map (as per appendix 1)	H	Shoalhaven Council's Bushcare Coordinator to undertake weed mapping as in-kind support for grant project	Dec 2012 Completed
Prepare a bushland restoration plan for Violet Clarke Reserve	H	Shoalhaven Council and Vincentia Bushcare Group prepare draft Bushcare Group Action Plan for final approval by Council	March 2013
Seek quotes from suitably qualified and experienced bush regeneration companies to undertake primary weed removal/control as per the recommendations in this plan	H	Shoalhaven Council to seek quotes and jointly select company to undertake bush regeneration works	March 2013
<ul style="list-style-type: none"> • Bush regeneration contractor to undertake primary control of all Kahili Ginger Lily (<i>Hedychium gardnerianum</i>) within the Violet Clarke Reserve • Bushcare Group to undertake follow up control of Kahili Ginger Lily (<i>Hedychium gardnerianum</i>) via manual removal of re-growth rhizomes (see 	H	<ul style="list-style-type: none"> • Larger, dense infestations should be slashed and regrowth sprayed with Metsulfuron -methyl at recommended rates • Smaller isolated plants can be manually removed by digging out rhizomes and removing from site. All seed should also be cut off and removed from site (for further 	2013 on going (Spraying should be done during Spring-Summer)

GROUP ACTION	PRIORITY	METHOD	TIME
appendix 6 "Bush Regeneration Information Sheet" NSW National Trust)		technical details on control see attached : Csurhes S & Hannan-Jones M, (August 2008), <i>Pest Plant Risk Assessment, Kahili Ginger, Hedychium gardnerianum - White Ginger, Hedychium coronarium – Yellow Ginger, Hedychium flavescens –</i> Biosecurity Queensland, Department Primary Industry and Fisheries	
<ul style="list-style-type: none"> Bush regeneration contractor to undertake primary control of all Winter Senna (<i>Senna pendula var. glabrata</i>) infestations within the reserve Bushcare Group to undertake follow up control of re-growth Winter Senna (<i>Senna pendula var. glabrata</i>) infestations within the reserve 	H	<ul style="list-style-type: none"> Larger plants should be cut and painted with glyphosate and smaller plants/infestations can be sprayed with Metsulfuron-methyl at recommended rates Hand pull smaller plants or cut and paint larger plants, bag and remove all seeds from site. (see appendix 7 "Bush regeneration information fact sheet", NSW National Trust" 	2013 2013 on going
<ul style="list-style-type: none"> Bush regeneration contractor to undertake primary control of all dense infestations of Japanese Honeysuckle (<i>Lonicera japonica</i>) within the reserve Bushcare Group to undertake follow-up control of isolated plants and re-growth Japanese Honeysuckle (<i>Lonicera japonica</i>) within the reserve 	H	<ul style="list-style-type: none"> Climbing plants over one metre to be stemmed scraped with Glyphosate and left in situ on site Dense ground covers should be sprayed with Glyphosate (360g/L) at 1:100 ratio Follow-up treatment can be done via the following methods: <ul style="list-style-type: none"> Spot spraying with Glyphosate (360g/L) at 1:100 ratio Hand pulling individual plants (See appendix 8 "bush regeneration fact 	2013 2013 on going

Comment [b1]: Not attached

GROUP ACTION	PRIORITY	METHOD	TIME
		sheet", NSW National Trust) ○ Scrape and paint (See appendix 5 "bush regeneration fact sheet", NSW National Trust)	
<p>Bush regeneration contractors to undertake targeted control of priority weed species within the green zones of attached Violet Clarke weed map as follows:</p> <ul style="list-style-type: none"> • Green Cestrum (<i>Cestrum parqui</i>) which is classified as class 3 noxious weed in the Shoalhaven • Pampas Grass (<i>Corderia spp.</i>) which is class 4 noxious weed in the Shoalhaven • Formosan Lily (<i>Lilium formosanum</i>) • Mickey Mouse Plan (<i>Ochna serrulata</i>) <p>The Bushcare Group, with assistance from Council, can undertake a staged control/removal of large stands of Fishbone Fern (<i>Nephrolepis cordifolia</i>) that occur on the urban/bushland interface. Control should only be undertaken once cooperation in removing any plants from the adjoining residential private properties is sought</p>	<p>M</p> <p>L</p>	<ul style="list-style-type: none"> • A combination of manual and chemical control should be undertaken by contractors as per best practise • Bushcare Group and Council should make direct contact with identified adjoining property owners to gain support before undertaking a staged control of large infestations Fishbone Fern (<i>Nephrolepis cordifolia</i>) and re-planting with native ground covers (Training of volunteers should be provided on identification of the native grounds ferns such as <i>Doodia spp.</i> and <i>Blechnum spp</i> which look like <i>Nephrolepis cordifolia</i> (Fish Bone Fern) 	<p>2013 – On going</p>
<p>Bushcare Group and Council to hold regular community BBQ and walk highlighting improvements made to the site and use as an opportunity to provide education. Address dumping,</p>	<p>M</p>	<p>Volunteers and Council staff – distribute pamphlets, use local media, onsite gatherings, consider plant giveaways and face to face awareness raising opportunities</p>	<p>Annually</p>

GROUP ACTION	PRIORITY	METHOD	TIME
encroachment and potentially invasive ornamental garden plant issues			
Encourage private landowners adjacent to the reserve to replace invasive garden plants	L	Plant replacement schemes, provide information on invasive ornamental garden plants via the "Grow Me Instead" booklets	Annually
Monitor the site annually for Bitou Bush (<i>Chrysanthemoides monolifera spp monolifera</i>) and Lantana (<i>Lantana camara</i>)	H	Volunteers and Council staff	Annually
Bushcare Group to undertake monitoring of improvement over time to assess regeneration	H	Council staff to train Bushcare volunteers in vegetation monitoring and setting up photo monitoring points	Annually
Rubbish removal	L	Volunteers to collect opportunistically. Green waste management to be discussed with adjoining land owners by SCC staff. Consider participating in Clean Up Australia Day	Ongoing
STAGE 2 & 3 – ORION BEACH RESERVE			
Map locations of weed species and densities using GPS and produce a weed species map (as per appendices 2, 3, 4,)	H	Shoalhaven Council to undertake weed mapping	Dec 2012(complete?)
Prepare a Bushcare Group Action Plan for Orion Beach crown reserve	H	Shoalhaven Council and Vincentia Bushcare Group prepare draft Bushcare Group Action Plan for final approval by Council	March 2013
All bush regeneration work in the reserve should follow the following principles:			
<ol style="list-style-type: none"> 1. Allow the rate of recruitment/regeneration of native understory vegetation to dictate the rate of control/removal of weeds. 2. Do not over clear slopes, especially around stormwater outlets and sandy soils to avoid erosion. 			

GROUP ACTION	PRIORITY	METHOD	TIME
<p>3. Ensure all contractors, Council staff and volunteers are trained in bush regeneration/weed control on the reserve and are able to identify weed species from native plants before they commence work.</p> <p>4. In areas where weed density is over 50% of the ground cover ensure that revegetation and soil stabilisation is planned before primary weed control takes place. Bushcare volunteers NOT to work on steep slopes.</p> <p>Note: Refer to Appendices 2,3, & 4 for weed species maps</p>			
<p><i>Asparagus athiopicus</i> (Ground Asparagus Fern)</p> <p>1. Council Bushcare Coordinator and Bushcare Group to undertake assessment of the erosion potential of areas targeted for weed control and implement erosion control measures such as brush matting/geo fabric before undertaking weed control</p> <p>2. Following weed density mapping, bush regenerators be employed to work at areas of <i>Asparagus aethiopicus</i> from the western and eastern ends of the linear reserve towards the mid section where there are medium density infestations at the rear of 306 to 322B Elizabeth Drive</p> <p>3. Bushcare Group to follow up areas of medium and light density areas and undertake follow up control – Bushcare volunteers are NOT to work on steep slopes</p> <p>4. Bushcare Group to monitor regeneration following initial control and, if required, collect seed and cuttings of <i>Rhagodia candolleana</i> (Seablite) and <i>Lomandra longifolia</i> (Spiny Matt</p>	<p>H</p> <p>H</p> <p>H</p> <p>H</p>	<p>1. Staff and volunteers undertake on site assessment</p> <p>2. Chemical control of <i>Asparagus aethiopicus</i> using Metsulfuron-methyl at recommended rate as per label. Isolated plants can be crowned out and the crown bagged and removed from site</p> <p>3. Allow seedlings to germinate to a height of 10-15cm before spot spraying (with Metsulfuron-methyl at recommended rate as per label) or use manual crowning, (ensuring that crown is bagged and removed from site)</p> <p>4. Bushcare Group and Council to establish photo points to monitor regeneration and, if need be, seek assistance from Council to collect seeds and cuttings</p>	<p>2013</p> <p>2013</p> <p>2013 on going</p> <p>2014 on going</p>

GROUP ACTION	PRIORITY	METHOD	TIME
Rush) to propagate at the community nursery for re-vegetation in these areas			
<p><i>Senna pendula spp glabrata</i> (Cassia), <i>Lonicera japonica</i> (Japanese Honeysuckle), <i>Ipomea indica</i> (Morning Glory) and <i>Lilium formosanum</i> (Formosa Lily) – For weed locations see appendix 2</p> <p>1. Contract bush regenerators to undertake primary weed control using a combination of manual and chemical control of these weed species in the following priority order:</p> <p>a) <i>Senna pendula spp glabrata</i> (Cassia) b) <i>Acetosa sagittata</i> (Turkey Rhubarb) c) <i>Lonicera japonica</i> (Japanese Honeysuckle) d) <i>Ipomea indica</i> (Morning Glory)</p> <p>2. Bushcare Group to undertake follow up control of all four weed species and if necessary undertake revegetation with native vines and scramblers such as per suggested species planting/revegetation list in plan – Bushcare volunteers must NOT to work on steep slopes</p>	<p>a) H b) H c) H d) M</p> <p>H</p>	<p>a) Cut and paint with 1/3 Glyphosate (360g/L) and water (see attached Bush Regeneration Fact Sheets – appendix 7) b) Spot spray with glyphosate 360g/L at rate of 1:100 c) All climbing over a 1 metre in height stemmed scraped and painted with Glyphosate (360g/L) Spray dense infestations with Gyphosate (360g/L) with 1:100 ratio (see appendix 5) d) All weed vines climbing over a 1 metre in height to be stem scraped and painted with Glyphosate (360g/L) Spray dense infestations with Gyphosate (360g/L) with 1:100 ratio (see appendix 5)</p>	<p>2013 on going</p>
<p><i>Nephrolpsis cordifolia</i> (Fishbone Fern), <i>Acestosa sagittata</i> (Turkey Rhubarb) and other Garden Escape weeds</p> <p>Bush regenerators should undertake a staged weed</p>			

GROUP ACTION	PRIORITY	METHOD	TIME
<p>control program of the above species with the following priority:</p> <p>a) There are only small isolated infestations of <i>Acestosa sagittata</i> (Turkey Rhubarb). These should be fully controlled and suppressed as the number one priority as this weed is spread by wind borne seed</p> <p>b) Bushcare Group and Council need to undertake a risk versus benefit assessment of the control/removal of the large infestation of <i>Nephrolepis cordifolia</i> (Fishbone Fern) on the reserve at the rear of 352/354 Elizabeth Drive as this plants contains large rhizomes and tubers which will be providing soil stability. Any removal/control of these rhizomes and tubers could reduce soil stability and lead to erosion</p> <p>c) The garden escape weeds are to be removed/controlled on a needs be opportunistic time frame in direct consultation with adjoining residents</p>	<p>H</p> <p>L</p> <p>L</p>	<p>a) Spot spray with Glyphosate (360g/L) at recommended rates as per label, ensure that follow-up treatment is undertaken when the rhizomes germinate</p> <p>b) Undertake risk assessment following results of other weed species control efforts</p> <p>c) Consult directly with adjoining residents before controlling garden escape weeds to raise awareness of potential of some garden plants to be invasive through distribution of "Grow Me Instead" booklet and native plant giveaways</p>	<p>2013</p> <p>2015</p> <p>On going</p>
<p>Beach access tracks – There are currently 12 beach access tracks on the reserve, covering a stretch of beach 810 metres in length. Three access tracks are formalised and maintained by Council. The</p>			

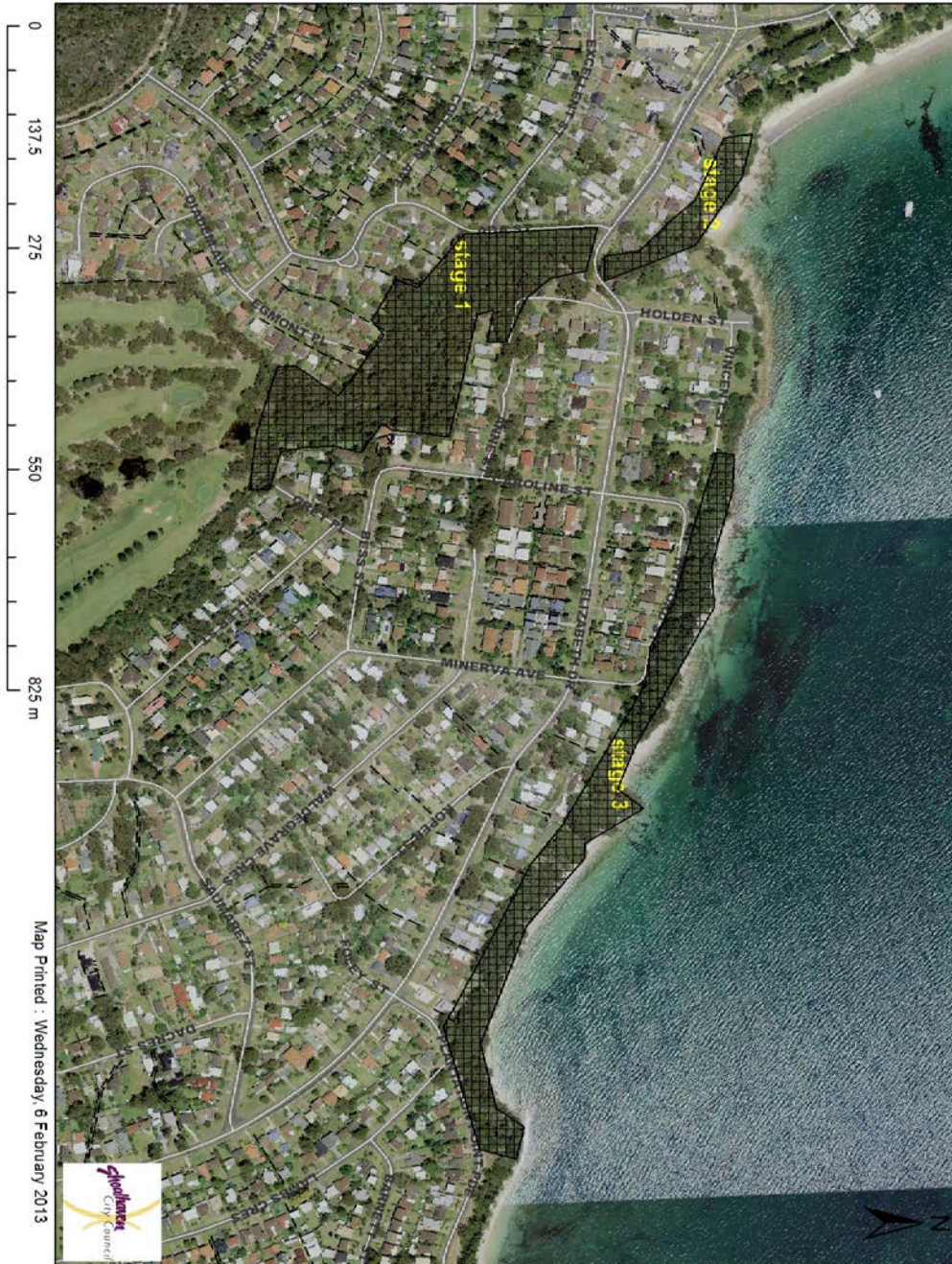
GROUP ACTION	PRIORITY	METHOD	TIME
<p>remainder are informal beach access tracks</p> <ol style="list-style-type: none"> 1. Council to directly consult with adjoining property owners to consolidate the number of beach access tracks and developed some shared paths so as to reduce fragmentation of remaining bushland and the on-going spread of weeds 2. Bushcare Group to revegetate access tracks that are closed. 	<p>M</p> <p>M</p>	<ol style="list-style-type: none"> 1. Identify erosive access tracks for possible closure and those to be used as shared paths and meet with residents on site to discuss closures 2. Rehabilitation might be a combination re-vegetation/direct seeding/brush matting/coir® or jute® matting 	<p>2014</p> <p>2015 - 2016</p>

Violet Clarke and Orion Beach access/weed species details

The site should be viewed as a series of small catchments along the existing drainage lines.

1. **Anne St** – access is easy and volunteers should work in this area. Honeysuckle, asparagus and crassula should be the target weeds with other weeds opportunistically remove as the group works through the area. Volunteers should move in a northerly direction. Priority – high for volunteers, low for contractors
2. **Anne to Bess Street** – access becomes more difficult and the boundary between the private property and the Reserve is not clear. There are numerous garden escapes in the area and resident education will be a crucial component of success in this sector. Contractors should be used in this area to control fishbone, honeysuckle, ivy, senna and ginger. Volunteers could consider secondary weeding here once access is more secure and boundary lines are in place. Priority – medium for contractors and low for volunteers.
3. **Bess St to Golf Course** – access is difficult. Ginger, honeysuckle, senna, bitou, lantana, fishbone and paspalum should be treated by contractors. Golf course needs to be included in education programs. Dumping and clearing are both issues. Priority – high for contractors and low for volunteers. Education high.
4. **Egmont Place** – access varies and is easy in some parts and difficult in others. Adjoining residents need to be included in education programs and encouraged to join the volunteer group. Dumping and encroachment are both issues. Residents may see this area as a priority because it is part of their immediate vicinity. Ginger, honeysuckle, fishbone are issues that contractors should treat as well as bamboo, pampas grass and ivy.. Priority – high for contractors and medium for volunteers depending on local interest. Education high.
5. **Ada St** – access is fairly easy. Volunteers could work very effectively here on Senna using cut and paint techniques. Montbretia and honeysuckle are also issues. Contractors should be used to remove the ginger in this area. Priority – high for volunteers and low for contractors.
6. **Below Elizabeth St** – access from the beach is easy but below Elizabeth Drive access is possible via small track but private property boundaries need to confirmed and access should done in direct consultation with neighbouring property owners.
7. **Orion East** – access mostly difficult. Contractors to work on keystone weed species, volunteers to do follow up where they can access the site safely. This is generally at the bottom of the slope and at the top. The grade is generally too steep in the mid sections for access and contractors should be used for these areas. Priority – high for contractors in difficult areas on keystone species and medium for volunteers. Resident education high.
8. **Orion West** – access varies and is easiest at the most western edge. Strategy as above.

**3. BUSHCARE GROUP ACTION PLAN MAP
VIOLET CLARKE AND ORION BEACH RESERVES – BUSH
REGENERATION MASTER MAP**



N →

4. BUSHCARE GROUP WHS & EQUIPMENT REQUIREMENTS

Type of Activity	Yes	SWMS name included
Manual weed control (cut & paint, scrape and paint etc)	x	SWMS NR060
Chemical control (spraying of herbicides)	x	SWMS NR040
Planting	x	SWMS NR030
Propagation & seed collection	x	SWMS NR030

5. COUNCIL SUPPORT

- a) Community education – assistance with flyer design and printing
- b) Project and contractor management
- c) GPS mapping of weeds (training)
- d) Grant administration and contractor management
- e) Supply tools and PPE within budgetary constraints
- f) Provision of Bushcare Field Officer to work three hours per month to provide on-site training in bush regeneration skills and techniques

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

Yes

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

PPE Equipment Required	Date issued
First Aid Kit	2012
Gloves	2012
Sunscreen	2012
Insect repellent	2012

8. POSSIBLE FUTURE FUNDING

Project	Funding source
On-going restoration works	Various State and Federal grants

9. PLAN WILL BE REVIEWED EVERY THREE YEARS

10. 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 Plan of Management Community Land Natural Areas Reserves	2001	SCC – Natural Resources and Floodplain Unit
Noxious and Environmental Weed Control Handbook	5 th Edition	NSW Department Primary Industries
Foreshore Reserve Policy	2012	SCC
Weed Management Plan for Orions Beach	2012	Proust Bushland Services
Asset Management Plan- Coastal and Estuary Assets (POL12/58)	2012	SCC
Round the Bay Walk	2013	SCC
Draft Coastal Zone Management Plan for the Sholahaven Coastline	2012	SCC (Umwelt)

11. RECOMMENDED PLANTING/REVEGETATION SPECIES LIST

OVERSTOREY TREES	
Botanical	Common
<i>Callicoma serrata</i>	Black Wattle
<i>Casuarina glauca</i>	She Oak
<i>Elaeocarpus reticulatus</i>	Blueberry Ash
SHRUBS	
Botanical	Common
<i>Baekea imbricata</i>	Winged Heath Myrtle
<i>Hakea sericea</i>	Willow Hakea
<i>Kunzea ambigua</i>	Tick Bush
<i>Melaleuca squarrosa</i>	Scented Paperbark
<i>Myoporum boninense</i>	Coastal Boobialla
<i>Pultenaea daphnoides</i>	Large Leaf Bush-pea
UNDERSTOREY (grasses, herbs, climbers)	
Botanical	Common
<i>Dianella caerulea</i>	Native Flax
<i>Hibbertia scandens</i>	Guinea Flower
<i>Lomandra longifolia</i>	Mat Rush
<i>Patersonia sericea</i>	Purple Flag
<i>Themeda australis</i>	Kangaroo Grass
<i>Rhagodia condolleana</i>	Seablite

Violet Clarke

As the weeds are removed, natural regeneration should be encouraged. Most of the weeds are on the edge and the inner areas are in good shape. If planting is required and or the residents and volunteers want to plant, only species found on site should be used. Seed should be collected from the site and propagated in the Bushcare nursery facility by the volunteers. Plant giveaways should be considered where weeds are removed from private gardens.

Orion Beach

This site is more likely to need revegetating particularly along the access points and the resident boundaries. Planting should be undertaken as weeds are removed from the boundaries. Direct consultation with the residents.

12. SITE WEED LIST - See detail attached and Proust Report

Species	Infestation	Action	Priority
Kahilia Ginger <i>Hedychium gardnerianum</i>	High – throughout the site	Use contractors, commence at the southern end and work northward down drainage	High

		lines. Volunteers to remove small plants where safe in areas they are working.	
Fishbone Fern <i>Nephrolepis cordifolia</i>	High – throughout site	Spray using contractors, working south to north and east to west. Volunteers to do follow up hand removal where access is safe.	High
Honeysuckle <i>Lonicera japonica</i>	High – throughout the site	Spray using contractors, target opportunistically when treating the above weeds. Volunteer to target where access is possible.	High
Senna	Medium – throughout site	Cut and Paint. Contractors in southern sector and where access is limited. Volunteers work in the Ada St sector (cut and paint) and remove seed in Autumn where plants can be easily accessed.	High
Ivy <i>Hedera sp</i>	Medium-sporadic around Bess St, Excellent St and Egmont Place.	Use contractors to control all.	High
Formosan Lily <i>Lilium formosanum</i>	Medium – sporadic around edges	Mostly can be controlled by volunteers using hand removal and cut and paint.	Med
Mother of Millions <i>Bryophyllum sp.</i>	Low – Bess St	Hand removal by volunteers.	High
Asparagus Fern <i>Asparagus aethiopicus</i>	Medium – sporadic throughout site	Opportunistically by contractors and volunteers.	Med
Montbretia <i>Crocsmia x crocosmiiflora</i>	Medium – along drainage lines	Opportunistically by volunteers.	Low
Pampas Grass <i>Cortaderia sp.</i>	Low 3 clumps around Egmont Place	Contractors.	High
Spider Plant <i>Chlorophytum comosum</i>	Low – one patch south of Egmont	Hand removal by volunteers.	Med
Bamboo <i>Phyllostachys</i>	Low – one patch north	Contractors.	Med

<i>aurea</i>	of Egmont		
Wandering Creeper <i>Tradescantia fluminensis</i>	Medium – generally below Egmont	Opportunistically by contractors and volunteers.	Med
Cape Ivy <i>Delairea odorata</i>	Low – far northern sector, below Bess St	Opportunistically by contractors and volunteers.	Med
Daisy <i>Osteospermum fruticosum</i>	Low – east side Bess St	Hand removal by volunteers.	Low
Bluebell Creeper <i>Sollya heterophylla</i>	Low – occasional in northern sector	Opportunistically by contractors and volunteers.	Low
Passionfruit <i>Passiflora sp.</i>	Low – northern end	Opportunistically by contractors and volunteers.	Low
Paspalum <i>Paspalum sp.</i>	Low – northern end	Opportunistically by contractors and volunteers.	Low
Seaside Daisy <i>Erigeron karvinskianus</i>	Low – Anne St	Hand removal by volunteers.	Low
Agave <i>Agave sp.</i>	Low – below Egmont Place	Poison or hand removal by volunteers.	Low
Crassula <i>Crassula multicava</i>	Low – Anne St, Bess St	Hand removal by volunteers	Low
Mickey Mouse plant <i>Ochna serrulata</i>	Low	Cut and paint opportunistically by contractors and volunteers.	Low
Salvinia <i>Salvinia molesta</i>	Low	Occasionally washing through the site from the golf course – alert Golf Course management.	Low

13. BUSHCARE SITE SPECIES LIST – see detail attached

Family	Genus/Species	Common Name
PSILOPSIDA		
Selaginellaceae	<i>Selaginella uliginosa</i>	Swamp Selaginella
FILICOPSIDA		
Aspleniaceae	<i>Asplenium australasicum</i>	Bird's Nest Fern
Blechnaceae	<i>Blechnum sp</i>	
Cyatheaceae	<i>Cyathea australis</i>	Rough Tree Fern

Dennstaedtiaceae	<i>Pteridium esculentum</i>	Bracken
Gleicheniaceae	<i>Gleichenia dicarpa</i>	Coral Fern
MAGNOLIOPSIDA	DICOTYLEDONS	
Apaiaceae	<i>Actinotus helianthi</i>	Flannel Flower
	<i>Xanthosia pilosa</i>	Woolly Xanthosia
Convolvulaceae	<i>Dichondra repens</i>	Kidney Weed
Casuarinaceae	<i>Casuarina glauca</i>	She Oak
	<i>Allocasuarina littoralis</i>	Black She Oak
Cunoniaceae	<i>Callicoma serratifolia</i>	Black Wattle
Dilleniaceae	<i>Hibbertia aspera</i>	
	<i>Hibbertia scandens</i>	Golden Guinea Flower
Droseraceae	<i>Drosera spathulata</i>	Sundew
Epacridaceae	<i>Epacris microphylla</i>	Coral Heath
	<i>Leucopogon ericoides</i>	Bearded Heath
	<i>Monotoca elliptica</i>	Pigeon Berry
Elaeocarpaceae	<i>Elaeocarpus reticulatus</i>	Blueberry Ash
Euphorbiaceae	<i>Glochidion fernandi</i>	Cheese Tree
	<i>Omalanthus populifolius</i>	Bleeding Heart
Fabaceae: Mimosoideae	<i>Acacia binervata</i>	Two-veined Hickory
	<i>Acacia fimbriata</i>	Fringed Wattle
	<i>Acacia longifolia</i>	Sydney Golden Wattle
	<i>Acacia mearnsii</i>	Black Wattle
	<i>Acacia ulicifolia</i>	Prickly Moses
Fabaceae Papilionaceae	<i>Aotus ericoides</i>	Aotus
	<i>Glycine clandestina</i>	Love Creeper
	<i>Gompholobium latifolium</i>	Broad-leaf Wedge Pea
	<i>Hardenbergia violacea</i>	Hardenbergia
	<i>Pultenaea daphnoides</i>	Large leaf Bush-pea
Goodeniaceae	<i>Dampiera stricta</i>	N/A
Haloragaceae	<i>Gonocarpus teucrioides</i>	Raspwort
Menispermaceae	<i>Stephania japonica</i>	Snake Vine
Myoporaceae	<i>Myoporum boninense</i>	Boobialla
Myrtaceae	<i>Babingtonia pluriflora</i>	N/A
	<i>Baekkea imbricata</i>	Heath Myrtle

	<i>Corymbia gummifera</i>	Bloodwood
	<i>Eucalyptus botryoides</i>	Bangalay
	<i>Eucalyptus pilularis</i>	Blackbutt
	<i>Eucalyptus sclerophylla</i>	Scribbly Gum
	<i>Eucalyptus sieberi</i>	Silver-top Ash
	<i>Eucalyptus sieberi</i>	Silver Top Ash
	<i>Kunzea ambigua</i>	Tick Bush
	<i>Leptospermum polygalifolium</i>	Lemon-scented Tea-tree
	<i>Melaleuca hypericifolia</i>	Hillock Bush
	<i>Melaleuca squarrosa</i>	Scented Paperbark
Oleaceae	<i>Notelaea longifolia</i>	Mock Olive
Pittosporaceae	<i>Billardiera scandens</i>	Apple Berry
	<i>Pittosporum undulatum</i>	Sweet pittosporum
Proteaceae	<i>Banksia ericifolia</i>	Heath-leaved Banksia
	<i>Banksia serrata</i>	Old Man Banksia
	<i>Banksia spinulosa</i>	Hair-pin Banksia
	<i>Hakea sericea</i>	Bushy Needlebush
	<i>Hakea teretifolia</i>	Dagger Hakea
	<i>Lomatia ilicifolia</i>	Holly-leaved Lomatia
	<i>Persoonia levis</i>	Broad-leaved Geebung
Ranunculaceae	<i>Clematis aristata</i>	Old Man's Beard
Rubiaceae	<i>Pomax umbellata</i>	Pomax
Stylidiaceae	<i>Stylidium graminifolium</i>	Trigger Plant
Thymelaeaceae	<i>Pimelea linifolia</i>	Rice Flower
MAGNOLIOPSIDA	DICOTYLEDONS	
Cyperaceae	<i>Gahnia sp</i>	
Iridaceae	<i>Patersonia sericea</i>	Silky Purple Flag
Lomandraceae	<i>Lomandra longifolia</i>	Mat Rush
	<i>Lomandra glauca</i>	Pale Mat Rush
	<i>Lomandra multiflora</i>	May-flowered Mat Rush
Philesiaceae	<i>Eustrephus latifolius</i>	Wombat Berry
Phormiaceae	<i>Dianella caerulea</i>	Blue Flax Lily
Poaceae	<i>Andropogon virginicus*</i>	Whiskey Grass
	<i>Anisopogon avenaceus</i>	Oat Speargrass
	<i>Entolasia stricta</i>	Wiry Panic

	<i>Imperata cylindrica</i>	Blady grass
	<i>Oplismenus aemulus</i>	Basket Grass
	<i>Panicum simile</i>	Two Colour Panic
	<i>Themeda australis</i>	Kangaroo Grass
Restionaceae	<i>Baloskion tetraphyllum</i>	Restio
Smilacaceae	<i>Smilax glycyphylla</i>	Sarsaparilla
Typhaceae	<i>Typha sp.</i>	Bull-rush
Xanthorrhoeaceae	<i>Xanthorrhoea sp.</i>	Grass Tree

2. Refer to Proust Report July 2012 – Bushland Management Plan for Orions Beach for detailed weed list on this site.

Please note: The above lists do not contain everything on site. These lists are dynamic and should be built on by the volunteers as their knowledge of native species grows.

Bushcare Group Name:

Coordinator Name:

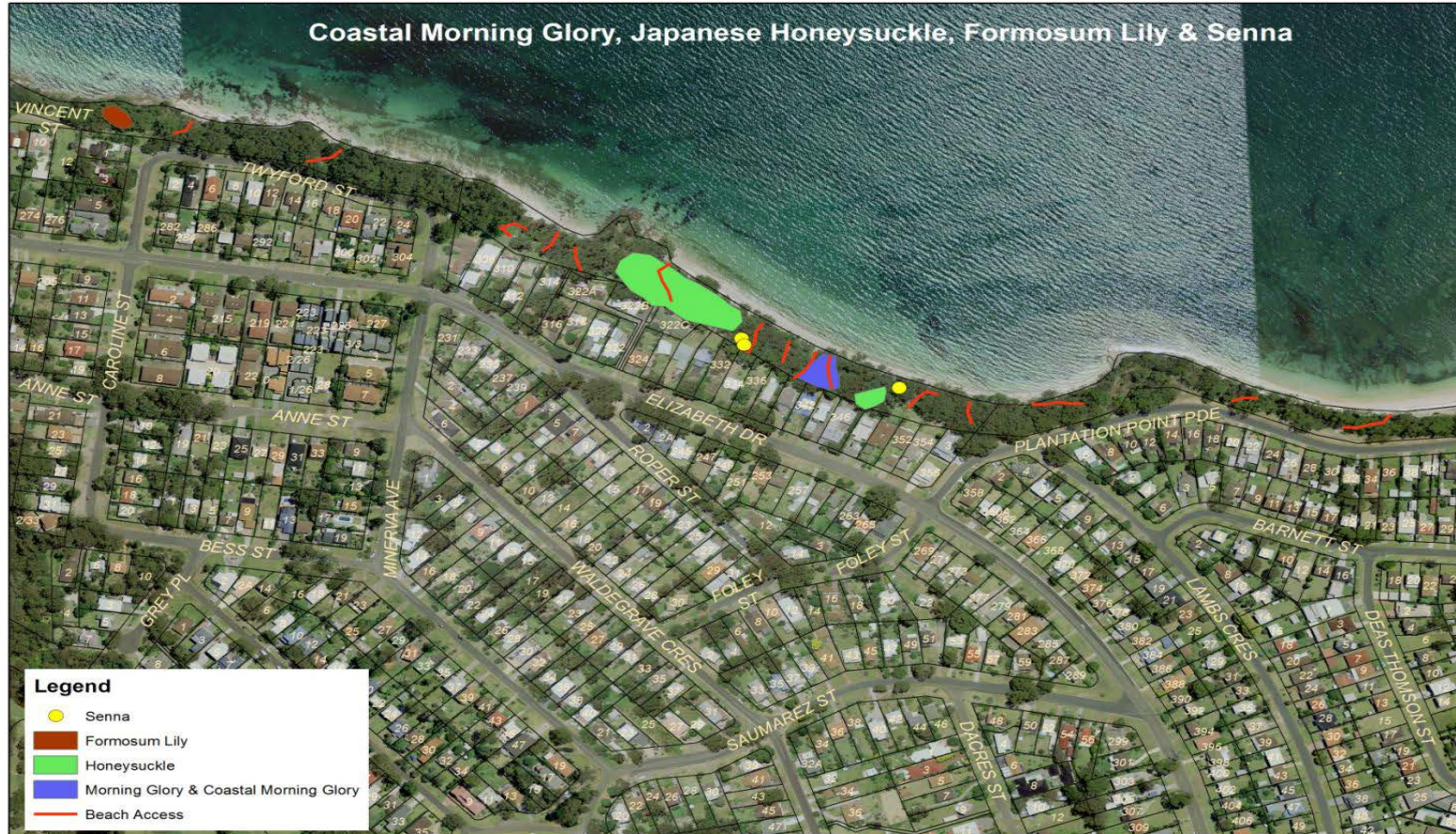
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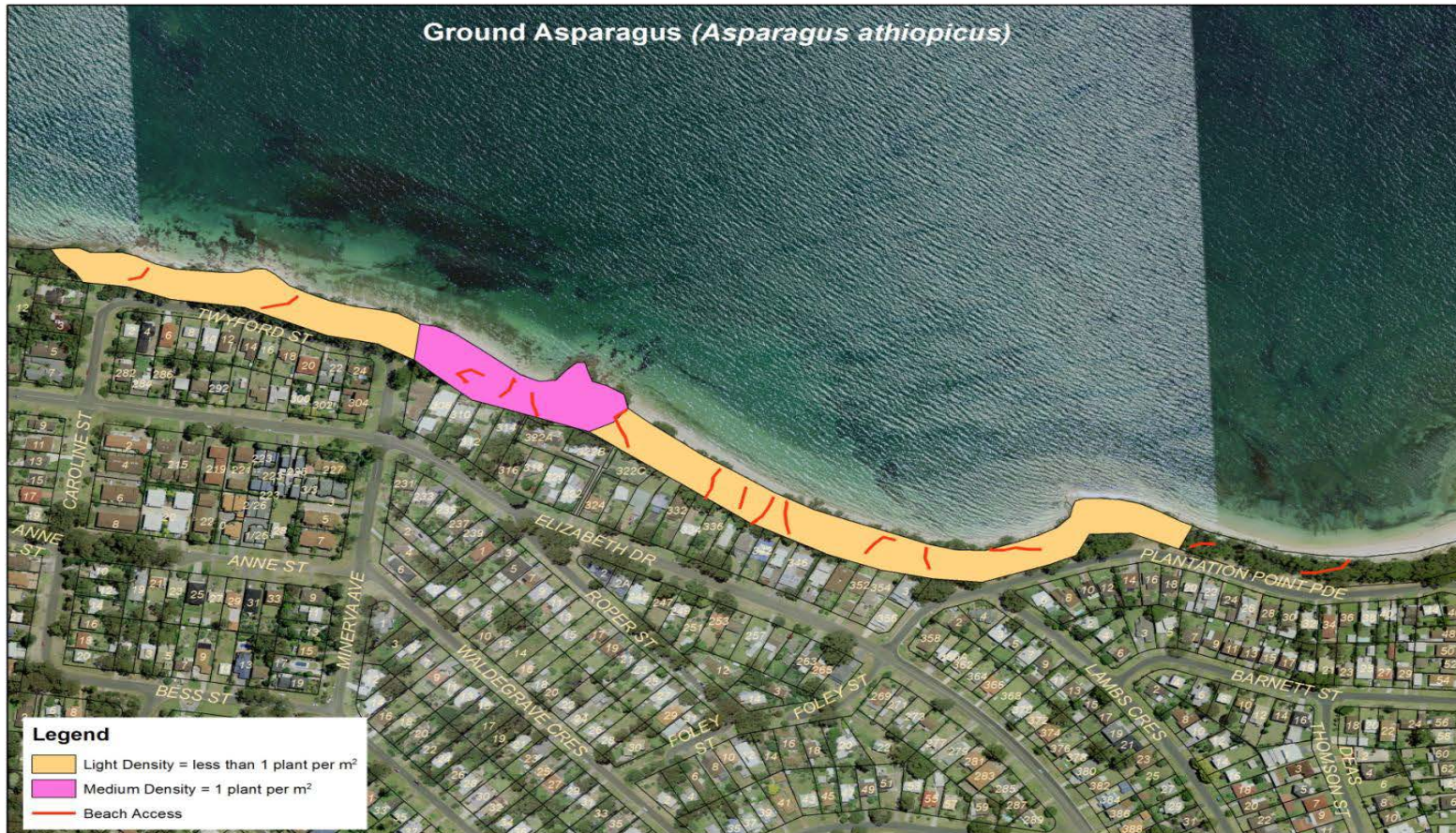
Appendix 1
Violet Clarke Reserve Weed Species Map



Appendix 2:
Orion Beach Reserve *Ipomea Indica*, *Senna pendula* spp *glabrata*, *Lonicera japonica* & *Lillium formosanum* Mapping



Appendix 3:
Orion Beach Reserve *Asparagus athiopicus* (Ground Asparagus Fern) Mapping




Appendix 4:
Orion Beach Reserve *Nepholopsis cordifolia* (Fishbone Fern) and Garden Escapee Weeds Mapping




Appendix 5: Walking Track at Orion Beach Reserve – Closure and Rehabilitation




Appendix 6:
 Bush Regeneration Information Sheet – Control of Vines and Scramblers



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Australian Association of Bush Regenerators

BUSH REGENERATION INFORMATION SHEET

Control of Vines and Scramblers

Examples of vines include: ● balloon vine, morning glory, honeysuckle, cape ivy, jasmine, maderira vine, blackberry

METHODS OF REMOVAL

1 HAND REMOVAL

STEP 1 Take hold of one runner and gently pull it along the ground towards you.

STEP 2 Check points of resistance where fibrous roots grow from the nodes. Cut roots with a knife or dig out with a trowel and continue to follow the runner.

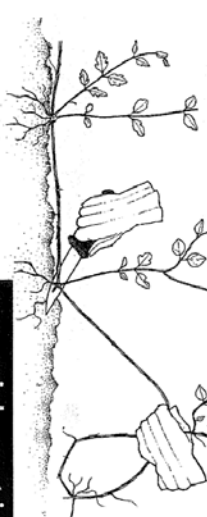
STEP 3 The major root systems need to be removed manually or scrape/cut and painted with herbicide.

STEP 4 Bag any reproductive parts.

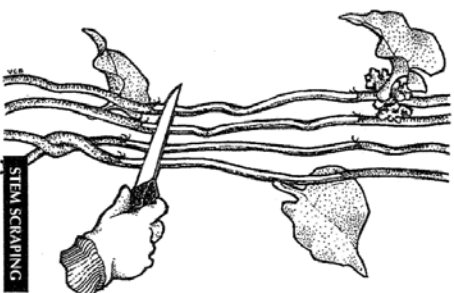
2 STEM SCRAPING

STEP 1 With a knife, scrape 15 to 30 cm of the stem to reach the layer below the bark/outer layer.

STEP 2 Immediately apply herbicide along the length of the scrape.



HAND REMOVAL



STEM SCRAPING

considerations

- A maximum of half the stem diameter should be scraped. Do not ring bark.
- Larger stems (>1cm) should have two scrapes opposite each other.
- Aerial tubers on maderira vine should die with the plant when stem scraping is used. Those that fall from the plant in the scraping process need to be bagged.
- Vines can be left hanging in trees after treatment.

Appendix 7:
 Bush Regeneration Information Sheet – Control of Weeds with Underground Reproductive Structures

BUSH REGENERATION INFORMATION SHEET

Control of Weeds with Underground Reproductive Structures cont..



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METHODS OF REMOVAL

3 REMOVAL OF PLANTS WITH BULBS, CORNS OR TUBERS

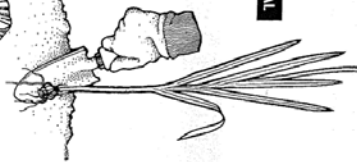
Examples: onion weed, watsonia, arrowhead vine, monthretia

- STEP 1** Move leaf litter away from base of plant.
- STEP 2** Dig down next to the stem until the bulb or tuber is reached.
- STEP 3** Remove plant and carefully bag the bulb or tuber.

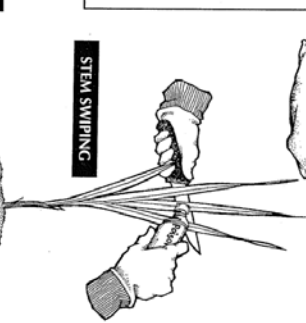
4 HERBICIDE TREATMENT - STEM SWIPPING

- STEP 1** Gently remove any seed or fruit and carefully place into a bag.
- STEP 2** Using a herbicide applicator, swipe the stems/leaves.

HAND REMOVAL




STEM SWIPPING




considerations

- Further digging may be required for plants with more than one tuber (e.g. arrow head vine).
- Some bulbs (e.g. oxalis, onion weed) may have small bulbils attached or present in the soil around it. These need to be removed.
- It may be quicker and more effective to dig out the weed.
- Make sure native plants and seedlings will not be affected.
- Learn and understand how the herbicide works - for bulb and corn species the most effective time is after flowering and before fruit is set.
- Have you addressed all safety issues ?


Appendix 8:
Bush Regeneration Information Sheet – Control of Woody Weeds



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Control of Woody Weeds

Examples of woody weeds include:

- lantana, bitou bush, cotoneaster, privet (cut and paint)
- canphor laurel, Mickey Mouse bush (ochina) and cassia/senna (stem scrape)

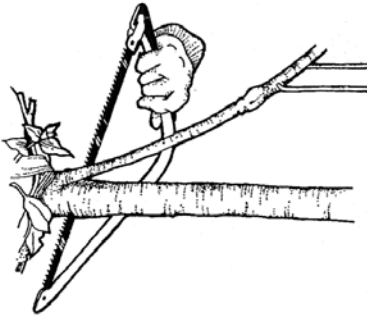

BUSH REGENERATION INFORMATION SHEET

METHODS OF REMOVAL

1 CUT AND PAINT—Useful for small to medium sized woody weeds up to 10cm basal diameter

STEP 1
Make a horizontal cut as close to the ground as possible with secateurs, loppers or a bush saw.

STEP 2
Immediately apply herbicide to the exposed flat stump surface.

SAFETY CONSIDERATIONS


The following general precautions should be made when using herbicides:

- Read the label before opening the container and follow the instructions.
- Wear protective clothing as directed on the label.
- Wash hands after use and before eating or smoking.


considerations

- Cuts should be horizontal to prevent herbicide from running off the stump. Sharp angle cuts are hazardous.
- Herbicide must be applied immediately before the plant cells close and translocation of herbicide ceases.
- If plants resprout, cut and paint the shoots after sufficient regrowth has occurred.
- Stem scraping can be more effective on some woody weeds.


Appendix 9:
 Bush Regeneration Information Sheet – Control of Small Hand-pullable Plants



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 Regenerators

Control of Small Hand-pullable Plants

BUSH REGENERATION INFORMATION SHEET

To Control:

- Small soft weeds eg. fleabane, crofton weed, small grasses
- Seedlings of any weeds including privet, lantana, moth vine

METHODS OF REMOVAL

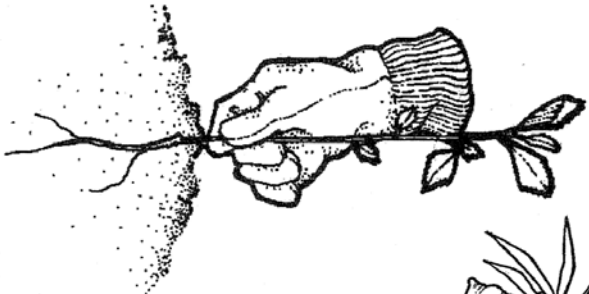

1 HAND REMOVAL (Minimal Disturbance)

STEP 1 Gently remove any seeds or fruits and carefully place into a bag.

STEP 2 Grasp stem at ground level.

STEP 3 Rock plant backwards and forwards to loosen roots, and pull out gently.

STEP 4 Carefully tap the roots to dislodge any soil. Replace disturbed soil and pat down.

considerations

- Leave weeds so that roots do not make contact with soil eg. on a rock - a small amount of debris can be hung in a tree or removed from the site.
- Vary your body position to avoid fatigue when using hand removal continuously.