**VEGETATION MANAGEMENT PLAN** 

FOR

# PELICAN BEACH REDEVELOPMENT LOTS 100 & 101 DP 629555 AND LOT 2 DP 800836

PACIFIC HWY, COFFS HARBOUR.

JUNE 2009

PREPARED BY BUSHFIRESAFE (AUST) P/L ENVIRONMENTAL SERVICES

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#### EXECUTIVE SUMMARY

The Sapphire Vegetation Management Plan (VMP) is the first stage in the development of a plan that will guide the future use, development and management of the foreshore and (a) Environmental Protection Zone. This VMP has been developed in accordance with the environmental, cultural heritage, recreational and visual values that have so far been identified for the foreshore area. These values are the qualities of the foreshore that are significant, special or important, and that the developer desires to protect or enhance.

The VMP proposes that Sapphire foreshore be rehabilitated at the same time as the commencement of the subdivision civil works. Consideration will be given to the social impact on adjoining residents when removing garden plantings from the area.

The foreshore will be replanted with native coastal vegetation to enhance wildlife habitat, stabilise the dune system and to provide a visual buffer between the beach and neighbouring residences. View corridors from neighbouring residents will be retained. The management of noxious and environmental weeds is an issue of concern to both Coffs Harbour City Council and the developer. A program of progressively removing weeds from the foreshore and 7(a) Environmental Protection Zone is proposed. Neighbouring residents will be encouraged to plant species that will not spread from private gardens into the foreshore area.

Ensuring the stability of the Sapphire foreshore dune system is recognized as being a high priority. This VMP does recognise that all works, plantings, landscaping and fencing of the dunes must be undertaken in accordance with management and rehabilitation techniques recommended by the *Coastal Dune Management Manual* (NSW Department of Land and Water Conservation 2001).

The Plan provides for improved access to the beach. Construction of beach access way, fencing and adjacent vegetation rehabilitation is recommended to: protect the dunal vegetation, particularly the identified areas of Silverbush (an endangered threatened species); and improve the visual amenity of the coastline. Public access to the beach is provided along the northern boundary from the Pacific Highway.

The VMP encourages the use of the foreshore for informal recreation by providing for tree planting for shade and space delineation. No fire mitigation works are proposed as the majority of land is mapped as minor bushfire risk and insignificant risk to community assets. The VMP proposes a future management regime for the foreshore that aims to protect the value of the environment for current and future generations.

## **1.0 INTRODUCTION- WHY A PLAN OF MANAGEMENT**

This Vegetation Management Plan (VMP) applies to the Beach foreshore and zone 7(a) Environmental Protection 'habitat and catchment' area located on the northern shores of Coffs Harbour; an area of approximately 4.15ha. All land included in this Vegetation Management Plan is located along the foreshore of Campbells Beach on the Pelican Beach Resort site. This VMP is being developed to ensure that the future development of the reserve is consistent with relevant legislation, policies, guidelines and community expectations.

This VMP will guide the future use and development of the Campbells Beach foreshore. It outlines how the developer, in consultation with Coffs Harbour City Council and government departments, intends to use, develop and manage the land, and determine the scale and intensity of the development. As a planning tool it provides goals to work towards in achieving agreed outcomes for the management of the land. Effective implementation of the VMP requires the involvement of community organisations such as Coffs Regional Landcare and Dunecare. Any relationship can be fostered through working groups, providing supporting documentation and assistance with funding applications. The VMP compliments the Landscape Master Plan developed for the proposed development.

## **1.1 Site Location**

Pelican Beach is located on the northern shores of Coffs Harbour, approximately 4 hours drive from Sydney and a 5 minute drive from Coffs Harbour. Pelican Beach resort is situated between Coffs Harbour and Korora and Sapphire, on the eastern side of the Pacific Highway and fronts Campbells Beach (Figure 1).

## **1.2 Previous studies**

This VMP has already been approved as part of the original 2007 Part 3A development application. It is updated and amended for inclusion for the Current Application.



**Figure 1 Site Location** 

## **1.3 Desired Outcomes**

The desired outcomes of this plan are:

- To conserve biodiversity and maintain ecosystem function of the reserve;
- To rehabilitate and maintain the land to its natural state and setting;
- To provide for appropriate linkages with vegetation & access corridors;
- To ensure that the use and management of the foreshore and environmental protection areas is in keeping with NSW Coastal Policy 1997, The Guiding Principles of Ecologically Sustainable Development and other relevant legislation and policies;
- To provide for use of and access to the land in such a manner that will facilitate the ecologically sustainable use of the foreshore and to minimise and mitigate any disturbance on the foreshore caused by community use;
- To maintain the foreshore as a transition area between the aquatic and the terrestrial environment, and to protect and enhance all functions associated with the foreshore's role as a transition area;
- To ensure the principal values of the foreshore are protected and enhanced: Environmental, Cultural, Heritage, Recreational Visual / Scenic Tourism

## 2.0 RELEVANT LEGISLATION AND POLICIES

It is essential in preparing this plan that the relevant legislation and Government policies are taken into consideration, of which the *NSW Coastal Policy 1997* is the most significant. These documents stress the conservation of natural resources and their management in an Prepared by: Bushfiresafe (Aust) P/L; Environmental Services (02 66451088) 2 Sapphire Management Plan for Lots 100 & 101 DP62955 and Lot 2 DP800836 Pacific Highway, Sapphire Beach.

ecologically sustainable manner, while at the same time providing appropriate opportunities for use of the land.

This VMP must also address the requirements of *the Environmental Planning and Assessment Act 1979* and *State Environment Planning Policy 71*. These establish the statutory planning framework that must be followed in the management of foreshore *area* in the planning area.

# 2.1 NSW Coastal Policy 1997

The NSW Coastal Policy was adopted in November 1997 and provides a policy framework through which effective, balanced and co-ordinated management of the N.S.W. Coastal Zone can occur. The central focus of the policy is the Ecologically Sustainable Development (ESD) of the Coastline. The Coastal Council of NSW is a body set up by the NSW Government which is responsible for ensuring all parties involved in the implementation of the Coastal Policy (State agencies, local councils, other public authorities and non-governmental organisations) perform their tasks effectively.

Objectives and key actions from the Policy of particular relevance to this plan are:

- To identify coastal lands with conservation values and implement management strategies and controls to ensure that those values are protected
- To identify and protect areas of high natural or built aesthetic quality
- To ensure that risks to human safety from the use of coastal resources is minimized
- To encourage towns to reinforce or establish their particular identities in a form which enhances the natural beauty of the coastal zone
- Beaches, frontal dunes and undeveloped headlands will be protected and only minor developments will be permitted for essential public purposes e.g. surf life saving facilities.
- To design and locate development to complement the surrounding environment and to recognise good aesthetic qualities
- Development proposals will have to conform to specified design and planning standards to control height, setback and scale to ensure public access and to ensure that beaches and foreshore open spaces are not overshadowed.
- State Government agencies, when preparing policies, programs and procedures for coastal zone planning and management, will be required to ensure they are consistent with the Coastal Policy and have regard for national and international strategies, policies and agreements.

# 2.2 Sea Level Rise Policy

The draft sea level rise policy proposes the benchmark for a 40cm rise in sea level by 2050 in response to predicted global climate change; incressing to 90cm by 2100. The implications for such a rise on the proposed development; stability of the foredune; the revegetation of the Campbells Beach foreshore must be considered. The concept plan delineates a Sea Rise Protection Zone within which measures may be placed to protect the property.

## 2.3 Other Legislation

The Environmental Planning and Assessment Act 1979 (EP&A Act) forms the framework within which planning occurs within NSW. Works proposed on the reserve may require development consent under Part 4 of the EP&A Act. The EP&A Act sets up environmental planning instruments which provide a basis for development control at state-wide (State Environmental Planning Policy- SEPP), regional (Regional Environmental Plans-REP) and local levels (Local Environmental Plans-LEP and Development Control Plans-DCP). Consent granted by Council must be in accordance with the planning instruments gazetted for the area.

The *State Environmental Planning Policy No 71- Coastal Protection* (SEPP 71) commenced in November 2002. SEPP 71 has been made under the Environmental Planning and Assessment Act 1979 and aims to ensure that the coastal zone is protected in accordance with the principles of ecologically sustainable development. SEPP 71 provides for the Minister for Natural Resources to have over-riding consent authority for developments up to 100m above the mean high water mark of the sea, a bay or an estuary.

Threatened species impact assessment required by the *Threatened Species Conservation Amendment Act 2002* and *Threatened Species Conservation Act 1995* is an integral component of environmental impact assessment. The ultimate objective of the application of section 5A of the *Environmental Planning and Assessment Act 1979* (EP&A Act), the Assessment of Significance, is to improve the standard of consideration afforded to threatened species, populations and ecological communities, and their habitats through the planning and assessment process, and to ensure this consideration is transparent.

## 3.0 LAND DESCRIPTION AND ANALYSIS

The Pelican Beach Resort site comprises of 3 lots (Lots 100 & 101 DP629555 and lot 2 DP800836). The Land is zoned 2(e) Residential Tourist and zone 7(a) Environmental Protection 'Habitat and Catchment' in the Coffs Harbour City Council Local Environmental Plan (Coffs Harbour City Council, 2000). The site is currently occupied by a tourist resort

(Figure 2). This resort was constructed in 1986 and is in need of upgrading and refurbishment. It comprises of 114 suites in a part 3 storey and part 5 storey building. There are facilities including dining room, bar, and conference rooms on the ground floor. Outside the main building there is a swimming pool and associated outbuildings, tennis courts and car parking areas. Approximately half the site area is currently vacant and is grassed and maintained by the resort. There is a former restaurant building fronting the Pacific Highway at the western end of the site.



Figure 2: The Pelican Beach Resort Complex

The existing resort represents a small part of the almost continuous development that currently exists between Coffs Harbour and Sapphire, this development includes pockets of residential development, tourist facilities, public open space and reserve.

## 3.1 Existing Facilities and Use

Principal recreational uses of the resort facility and foreshore areas are:

- Swimming (although the beach is strictly not in the scope of lands covered by this Plan);
- Walking;
- Picnicking;
- Fishing

The beach is popular with families and young children as the beach is generally clean and protected from south-easterly winds and ocean swells. The foreshore enhances adjoining

Prepared by: Bushfiresafe (Aust) P/L; Environmental Services (02 66451088) Sapphire Management Plan for Lots 100 & 101 DP62955 and Lot 2 DP800836 Pacific Highway, Sapphire Beach. surf side residents' properties; many of which have developed gardens extending onto the foreshore. This provides a unique recreational area for the public, although its perception is limited to neighbouring residents. The site is typically open providing little shade or space definition either within the reserve or with adjacent land uses.

## 3.2 Access

There are proposed to be 2 access points to the foreshore:

- One designated for residential use as shown on the Landscape Master Plan.
- Public assess to Campbells Beach is provided along the northern boundary of the subject land. There is an existing service road connecting Coffs Harbour City Council sewage plant with the Pacific Highway. Whilst this access road is not a legal access road, It is utilised by the public and includes a temporary car parking area and beach access near the sewage plant. It is proposed that but this access road be upgarded to allow public access to the beach and foreshore areas.

There are a number of informal tracks along the dunal area. It is recommended that installation of post and wire fences to define the intended access way across the dune system and prevent pedestrian access to the dune and preventing damage to its vegetation.

# 3.3 Visual Amenity

The landscape of the Sapphire development consists of 4 main landscape types; the beach, the vegetated sand dune, vegetated slope (zone 7(a)), and the neighbouring houses. The dune vegetation provides an important visual buffer between the beach, the development and the neighbouring houses to the north. The dune largely determines the visual character of the beach by providing a vegetated natural backdrop to the beach. This allows the beach to integrate into the neighbouring natural landscape and provides a sense of privacy for users of the beach and the adjoining residents.

## 3.4 The Beachfront and Dune System

The foreshore generally consists of two distinct landform units – firstly the beach and secondly the vegetated sand dunes and sandplain separating the residential properties from Campbells Beach. The beach is constantly adjusting to rates of sand accumulation and removal during storm events; each of which can affect the width and condition of the beachfront, foredune and sandplain. Sand supply is influenced by the general longshore drift of sand along the East Australian coastline and specifically by the rocky headland at the south of the beach (Figure 3). The extent of the sand dune is generally defined by the high

water mark. The width of the sand dune varies between 16 and 32 metres along the length of the foreshore.



Figure 3: Campbell Beach looking north (Left image) and south towards the rocky headland (Right image).

The foredunes and sandplain comprise undulating vegetated ridges and level ground between high water mark and approximately 5m above mean sea level. The vegetation on the dunes is very important in stabilizing the sand dune and providing a visual buffer between the beach and the proposed adjacent residential area. The resort initiated the establishment of the dune vegetation when it was first developed. Since then there has been regeneration of native indigenous trees, shrubs and groundcover species and some spread of exotic plants typically those that are garden escapees.

The vegetation structure is generally open coastal scrub with a grassy and scattered understorey and is typical of natural hind dune vegetation (Figure 4). The dominant species includes: Coastal Banksia (*Banksias integrifolia*), Coastal She-Oak (*Casuarina equisetifolia ssp incana*) and Coastal Wattle (*Acacia longifolia* subsp. *Sophorae*) with an understorey comprising Sword or Mat grass (*Lomandra longifolia*), Spinfex (*Spinifex sericeus*), Kangaroo Grass (*Themeda australis*) and Coastal Pigface (*Carpobrotus glaucescens*).

The vegetation on the dune in some cases has been modified by activity such as pruning or removing of trees to open views to the beach and bay. The understorey is also largely dominated by exotic 'weed' species and includes: Agapantha (*Agapanthus* sp.), Yakka (*Agave americana*), Bridle Creeper (*Asparagus asparagoides*), Climbing Asparagus Fern Weed (*Asparagus plumosus*), Pampas Grass (*Cortaderia selloana*), Penny wort (*Hydrocotyle conariensis*) and Kikuya.



Figure 4: Left: Foredune vegetation showing effects of windshear; Right: weed and garden escapes dominate the vegetation in parts).

At three locations along the foredune, either single plants or clumps of several individuals of Silverbush (*Sophora tomentosa* subsp. *australis*) were recorded (Figure 5). Silverbush is an endangered species listed in Schedule 2 of the Threatened Species Conservation Act as an endangered plant. The following Priority actions have been determined for the recovery of this species; this Vegetation Management Plan is consistent with these actions.



Figure 5: Silverbush growing as clumps of several plants within weed species on the foredune to Campbell Beach.

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Recovery strategy	Description of priority action	Priority
Captive Husbandry or ex-situ collection/propagation	Maintain populations ex situ at suitable botanic gardens, regional gardens or nurseries.	Medium
Community and land-holder liaison/ awareness and/or education	Liaise with Landcare/ Coastcare and Dunecare groups regarding strategies to protect and rehabilitate Silverbush populations.	Medium
Habitat management: Ongoing EIA - Advice to consent and planning authorities	Consider known populations of Silverbush on land controlled by local government during environmental and operational planning as well as during biodiversity certification of environmental planning instruments.	High
Habitat management: Site Protection (eg Fencing/Signage)	Control recreational impact on known populations by fencing/signage/community education etc.	High
Habitat management: Weed Control	Control Bitou Bush in known habitat, avoiding spraying individuals of Silverbush. Implement Bitou bush control as described in the approved TAP.	High
Monitoring	Monitor population size, habitat condition and threats at known sites.	Medium
Survey/Mapping and Habitat assessment	Determine current population size and demography.	Medium

Table 1. Recovery Actions for Sophora tomentosa subsp. australis

Source: http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/pas\_profile.aspx?id=10765

## 3.5 Zone 7(a) Environmental Protection 'Habitat and Catchment' area

This area represents the steepest part of the resort site with an approximate slope of 1:2. The area is east of the grassed spur and extends to just above the recreational facilities associated with the resort. The vegetation is described as Dry Sclerophyll Forest and is mostly regrowth vegetation with a number of mature trees (Figure 6). This pocket of vegetation is approximately 4000m<sup>2</sup> in size. There is evidence of past logging activities (removal of Red Bean) and substantial weed infestations, particularly at the edges. The area represents one of only two areas of remnant vegetation on the site. The following native flora was identified: Brush Box (*Lophostemon confertus*), Black Wattle (*Acacia melanoxylon*), Beach Acronychia (*Acronychia imperforata*), Red Bean (*Dysoxylum muelleri*), Pittosporum (*Pittosporum undulatum*), Hairy-leaved Bolly Gum (*Neolitsea dealbata*) and Hard Quandong (*Elaeocarpus obovatus*), Blueberry Ash (*Elaeocarpus reticulatus*), Bangalow Palm (*Archontophoenix cunninghamiana*) with an understorey of: three veined cryptocaria (*Cryptocarya triplinervis*), native ginger (*Alpinia caerulea*), ferns and non-natives.

#### 3.6 Weeds

The vegetation present of the foredune contributes to stabilizing the dune system, it is only a small area, isolated and dominated by weeds. Similarly, the 7(a) Environmental Protection Zone is also subject to significant non-native infestation, particularly along the margins. A large number of garden / nursery escape plants were noted during the flora survey, all non-natives are listed below (Appendix 1).

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Figure 6: Zone 7(A) area of regenerating forest showing considerable weed infestation; evidence of the steep slope is apparent in the right image.

#### 3.7 Native Animals

A Flora and Fauna study has been carried out on the area (Bushfiresafe,2006) that identified the following animals and birds as occurring on the subject property, none of which are listed as threatened species: Possums, Yellow Tailed Black Cockatoo, Sulphur Crested Cockatoo, Corella, Galah, Rainbow Lorikeet, Australian King Parrot, Crimson Rosella, Laughing Kookaburra, Superb Fairy Wren, Red Browed Finch (Firetail), Satin Bowerbird, Black Faced Cuckoo Shrike, Australian Magpie, Pied Currawong, Hardhead Duck, Regent Honeyeater, White Breasted Pigeon. In addition to the above the area is likely to attract waders and water birds. The proposed strategies outlined in this VMP will enhance the habitat opportunities for these species through weed management and revegetation of the foredune area.

#### 3.8 Fire Management

A bushfire risk management report prepare by Bushfiresafe (Aust) P/L recommended that the Hind Dune area along the eastern property boundary, the 7(a) Environmental Protection Zone located approximately centre of the property (which are to be rehabilitated/revegetated) and the landscaped portions of the facility be revegetated to the standard of an asset protection zone as outlined in Planning for Bushfire Protection (2001). This will ensure the current non-bushfire hazard classification of the site will be maintained.

#### 3.9 Sea Rise Protection Zone

To accommodate the potential sea level rise in response in global climate change over the next 90 years as outlined in the NSW Draft Sea Level Rise Policy Statement, a delineated Sea Rise Protection Zone is identified in the concept plan. This Zone is seaward of the proposed dwelling locations and Asset Protection Zone. It is proposed to construct appropriate measures necessary to address the potential impact of a rising sea level within this Sea Rise Protection Zone. The Vegetation Management Plan applies to the Sea Rise

Protection Zone as well as all areas seaward of it as illustrated on the attached site layout plan.

# 4.0 RESTORATION METHODOLOGY

The Coastal Dune Management: A Manual of Coastal Dune Management and Rehabilitation *Techniques,* (Department of Land and Water Conservation, 2001) is the primary reference material for creation of suitable pedestrian access ways and ecological restoration of degraded dunal systems. This report is recognised by relevant State Agencies as providing "best practice" guidance in management and rehabilitation of dunal complexes.

A number of publications of the North Coast Weeds Advisory Committee were also reviewed to provide for consistency with regional weed management programmes. Specifically the "Draft Coastal Weeds Regional Weed Management Plan, 2004"

## 4.1 Dune Rehabilitation

Ecological restoration works will be undertaken in accordance with the following parameters to ensure efficient and ecologically sustainable outcomes:

- 1. Strategic and targeted control of environmental weeds 20 metres either side of the dunal area.
- Revegetation of the foredune with an appropriate selection of local provenance, fire retardant species. The establishment of mixed plantings of small to medium height, local provenance species will retard any potential bushfires and enhance habitat values of the area in and around landscaped areas close to the rehabilitation area.
- 3. Protect and rehabilitate the identified Silverbush populations occurring on the foredune through fencing; signage; collection of local seed; propogation and replanting.

## 4.2 Removal of Pines

Several of the mature Hoop Pine trees display evidence of dieback associated with Mundulla Yellows (MY) Syndrome. An investigation of these trees by the Plant Pathology Department of Southern Cross University on behalf of Active Tree Services confirmed the presence of Mundulla Yellows syndrome in the trees and in fungi, nematodes, bacteria, phytoplasm, viruses and virus-like organisms present in the topsoil up to 15m from the Pine trees; their report is included in Appendix 2. It is recommended that:

- i. the Hop Pine trees be removed;
- ii. all vegetation within an 18m radius of the Pine trees be removed;

- iii. the soil be treated to prevent spread towards the zone 7(a) Environmental Protection Zone; and
- iv. any revegetation of the affected area must only include those plants known to be resistant to Mundulla Yellows Syndrome.

105 trees were recorded during the flora survey of the subject land, of these 45 trees will be removed with a further 9 being relocated (see below). The removal of trees is necessary to accommodate the dwellings and provide access; or to limit the spread of Mundulla Yellows syndrome; additional planting of trees is proposed in the Landscape Plan, including the planting of 11 Hoop Pine trees within an 8m wide area adjacent to the Pacific Highway in compensation for the loss of Mundulla Yellows affected trees.. A list of existing trees is included as Appendix 3 and illustrated on the attached site layout (Attachment 1).

## 4.3 Relocation of Pandanus trees

A number of Pandanus trees are identified for removal to accommodate the proposed building envelopes, access roads and landscaping. All removed trees will be relocated and incorporated into the landscape planting on the site as outlined in the Landscape Master Plan. Active Tree Services have advised that relocation of this plant is relatively straight forward process given the tight root-ball that is developed. Furthermore, Pandanus trees can be successfully farmed in a temporary location, prior to relocation to their final position.

## 5.0 PROPOSED MANAGEMENT STRATEGIES AND ACTIONS

The Vegetation Management Plan identifies the principal land management issues. A set of management strategies and actions accompany each issue providing an ongoing framework for the management of the foreshore and environmental protection area. These management issues relate to the values of the above and are reflected in the Landscape Master plan. Each action is given a priority for implementation as listed in the table below.

Table 5. Management actions			
Values	Features and characteristics that the developer finds important and special		
Management Issue	The issue that requires a detailed approach to future management Strategy		
Strategy	The broad management strategies required to address management issues of concern.		
Action	Specific actions that address the strategies		
Priority	The relative implementation priority of each proposed action. High (H) Medium (M) Low (L)		

## **Table 3: Management actions**



Figure 7-Drawings typical rehabilitated sections and cross sections



Figure 8-Landscape impression of hind dune area in relation to beach and development



Typical Rehabilitated Cross Section



#### Figure 9 Typical rehabilitated area

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Figure 10- Typical Cross-section of 7(a) Zone and proposed revegetation area

Management Issue	Strategy	Action	Priority
10.1) Access to	Improve public access to beach	1. Install access post and wire fences where necessary.	Н
Campbells Beach		2. Rehabilitate vegetation adjacent to access ways as required.	Н
		3. Informal access tracks will not be permitted.	Н
		4. Beach access ways and beach steps from the development will be	
		monitored for erosion and stability and rehabilitated if required.	М
		5. Beach steps form development adjoining the foreshore must be	
		stable and present no risk to users. They must comply with the	
		standard as per Section 4.7.6 of the Coastal Dune Management	Н
		Manual (NSW Department of Land and Water Conservation 2001)	
		Non-compliant steps will be removed.	
10.2) Access to	Inform users of private property	1. Remove all garden beds and structures built into the reserve and	
Campbells Beach Dunal	boundary.	reduce the mown area to within 4-6 metres of residential boundaries.	
Area		2. In deciding the timing of the removal of garden plantings and	Н
		garden edging during demolition of the present resort, consideration	
		will be given to the social impact on adjoining residents.	
		3. Install markers to identify boundaries between public and private	Н
		land. The developer will undertake a survey of property boundaries	
		to ensure accurate location of each marker. References to the	
		boundary markers will be included in signage at each beach access	
		point.	М
10.3)Visual Amenity	a. Protect and enhance the	1. Construct fences and timber walking surfaces.	Н
,	visual qualities of Campbells	2. Rehabilitate adjacent vegetation where necessary.	
	Beach Foreshore Area	3. Undertake the vegetation management recommendation	Н
	b. The dune revegetation	4. Tree planting will be implemented so as to retain view corridors	
	program will give	from within the development adjoining houses and provide a	М
	consideration to views from	continuous natural landscape appearance.	
	residential buildings.		
	c. The 7(a) revegetation		
	program will give		
	consideration to views from		М
	residential buildings and		
	protect landscape character		
	of the site		
Management Issue	Strategy	Action	Priority

# Table 4: Rehabilitation Actions for Sapphire foreshore area

Prepared by: Bushfiresafe (Aust) P/L; Environmental Services (02 66451088)

Sapphire Management Plan for Lots 100 & 101 DP62955 and Lot 2 DP800836 Pacific Highway, Sapphire Beach.

10.4) Vegetation		1. Encourage the planting and regeneration of native indigenous	Н
Management	vegetation of the foreshore to enhance wildlife habitat, provide	species 2. Remove all garden beds built into the areas and reduce the mown	
	a visual buffer between the	area to within 4-6 metres of the residential boundaries. In deciding	
	beach and residences, enhance	the timing of the removal of garden plantings and garden edging	Μ
	dune stability and maintain view	from the resort, consideration will be given to the social impact on	Н
	corridors from residences	adjoining residents.	
	b. Restore the native vegetation	3. Permit no further planting of exotic species within the 7(a), beach	
	of the 7(A) to enhance wildlife	and dunal area.	Μ
	habitat, provide a visual buffer	4. Where there is a substantial gap in tree cover or where trees are	
	between the development and	senescing, plant trees to enhance the landscape character of the	
	neighboring residences, and	area while maintaining view corridors from within the development	
	return vegetation to natural	and neighbouring houses	
	state.		
10.5) Weed	Restore the native vegetation of	1. Encourage the planting and regeneration of native indigenous	Н
Management	the 7(A) to enhance wildlife	species	Н
Ũ	habitat, provide a visual buffer	2. Remove exotic and weed species without disturbance (manual	Н
	between the development and	removal)	
	neighboring residences, and	3. Permit no further planting of exotic species within the 7(A) area.	
	return vegetation to natural	4. Where there is a substantial gap in tree cover or where trees are	Н
	state.	senescing, plant trees to enhance the landscape character of the	
		area while maintaining view corridors from within the development	
		and neighbouring houses	
10.6) Fire Management	Manage the risk of fire within	1. Canopy species used within the revegetation areas shall be	
	Campbells Beach Foreshore in	spaced to accommodate a 2m canopy separation to avoid a	
	accordance with the Rural Fires	continuous fire path.	Н
	Act 1997.	2. Local endemic fire-resistant and/or rainforest species should be	
		used wherever possible.	Н
10.7) Fencing	a. Protect rehabilitated areas	Install post and wire fencing along the access ways to constrain	
	b. Protect known occurrences of	public access to designated paths	
	Silverbush.	Install temporary barriers around areas of Silverbush for protection	
10.8) Signage	Improve on-site information	1. Install directional signage to the beach at entry to access ways at	
	about beach access.	development beach entry point.	L
	Inform public of dune	2. At access points install signage to include map of area showing	
	rehabilitation	extent of foreshore and rehabilitation areas.	Μ