

Glamorgan Spring Bay Council  
Orford Area Reserves



**NATIVE FLORA AND FAUNA  
MANAGEMENT PLAN  
2014 - 2019**



## SUMMARY

Glamorgan Spring Bay Council has developed this five year Native Flora and Fauna Management Plan for the sections of Orford Coastal Reserves under their management. The intent of the Plan is to provide Council with a strategic approach to the sustainable management of the Reserves.

Remnant native vegetation in the Reserves includes the following communities:

- *Eucalyptus globulus* dry forest & woodland (DGL)
- *Eucalyptus viminalis* – *E. globulus* coastal forest & woodland (DVC)
- *Eucalyptus amygdalina* forest & woodland on sandstone (DAS)
- *Eucalyptus ovata* forest & woodland (DOV)
- *Allocasuarina verticillata* forest (NAV)
- *Callitris rhomboidea* forest (NCR)
- *Acacia longifolia* coastal scrub (SAC)
- Coastal scrub (SSC)
- Coastal grass and herbfield (GHC)
- Lowland grassy sedgeland (GSL)
- Freshwater aquatic sedgeland & rushland (ASF).

DGL, DVC, DAS, DOV, NCR and ASF are listed as threatened communities under the *Nature Conservation Act 2002*.

Other Tasveg non-native vegetation mapping units present are:

- Lichen lithosere (ORO) – the rocky foreshore
- Sand, mud (OSM) – sandy beaches
- Marram grassland (FMG)
- Urban areas (FUR).

One threatened plant species, *Cynoglossum australe*, listed under the *Tasmanian Threatened Species Protection Act 1995* (TSPA), is present in the Reserves.

The condition of the vegetation varies from excellent to very poor. However, it provides a diversity of habitat for native fauna. Four species of threatened fauna, variously listed under the TSPA and/or the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBCA), for which the Reserves provide nesting and/or foraging habitat are the fairy tern, swift parrot, white-bellied sea-eagle and forty-spotted pardalote.

Notable weeds are mapped and described. These include 6 species of ‘declared weeds’ under the *Weed Management Act 1999* and 51 other species considered as environmental weeds.

Management issues identified include:

- Natural values –vegetation, flora, fauna and significant trees
- Weeds
- Illegal clearing of vegetation
- Reserve boundaries
- Coastal erosion and beach access track
- Plantings and revegetation
- Fire

Recommendations and actions plans are provided to deal with these issues and guide management of the Reserves for all of their natural values whilst not compromising their associated cultural and social values.

## **ACKNOWLEDGMENTS**

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\*Maps in this publication have been reduced from their original A3 format. Hard copies of A3 maps are available upon request from:

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# 1. INTRODUCTION

## 1.1 BACKGROUND AND OBJECTIVES

Glamorgan Spring Bay Council has developed this five year Native Flora and Fauna Management Plan for the Orford Area Reserves in proximity to the coast that are under their management. The intent of the Plan is to provide Council with a strategic approach to the management of the Reserves' natural values whilst recognising and considering the Reserves' significant cultural and social values.

Therefore the main objectives of the Plan are to:

- Identify the natural, and associated cultural and social values of the Reserves,
- Identify threats to the natural values,
- Provide action plans to ensure that the Reserves are sustainably managed to preserve and enhance all of their natural values, in accordance with the Tasmanian Reserve Management Code of Practice 2003<sup>1</sup>, whilst not compromising their cultural and social values, and
- Raise community awareness of the values of the Reserves and thereby encourage participation in activities that minimise threats to these values.

## 1.2 GENERAL DESCRIPTION OF THE RESERVE

Orford is situated on the east coast, in the Glamorgan Spring Bay municipality and in the Tasmanian South East bioregion<sup>2</sup>. It occurs in the moist subhumid warm climatic zone where the annual average rainfall is in the region of 600 mm. The altitude across the Reserve ranges from near sea level to approximately 30 m above a.s.l.

The location of the Reserves is depicted in Figure 1. They include two main sections: from Raspins Beach to just west of the Prosser River bridge, and, from West Shelley Beach through to Spring Beach, excluding a section to the east of Jetty Road. A smaller section of reserve occurs to the south of Spring Beach.

The Raspins Beach to Prosser River section is dominated by parkland with patches of remnant native vegetation and a sandy foreshore. Similar characteristics are present at West and East Shelley Beaches with a rocky headland, at the end of Jetty Road, separating the two. Luther Point to Spring Beach is dominated by native vegetation that runs along the top of a steep sided sea cliff. A coastal footpath traverses most sections of the Reserves. Some recreational facilities are also present.

The main characteristics of the Reserves are provided in the table below. Section 2 provides a more detailed description of the natural values and other biological characteristics of the Reserves. Section 3 provides details of other values of the Reserves.

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<sup>1</sup> Parks and Wildlife Service, Forestry Tasmania and Department of Primary Industries, Water and Environment 2003.

<sup>2</sup> IBRA5 – Peters & Thackway 1998. A bioregion is an area of land with similar environmental, physical and climatic conditions and containing characteristic ecosystems.

**Reserve characteristics:**

<b>P.I.D.</b>	<b>General location</b>	<b>Extent (ha)</b>	<b>Land tenure</b>	<b>Management responsibility</b>
5974752	Raspins Beach	4.7	Raspins Beach Conservation Area Nature Conservation Act Parks and Wildlife Service	Crown Lease Glamorgan Spring Bay Council
1716457	Raspins Beach to Prosser Bridge	4.7	Coastal Reserve Crown Lands Act DPIPWE	Recreation – Esplanade, Orford Crown License Glamorgan Spring Bay Council
5973477	Riverside Drive	0.7	Recreation Reserve Public Reserve Crown Lands Act DPIPWE	Recreation – Riverside Drive, Orford Crown License Glamorgan Spring Bay Council
5981776	West Shelley Beach	3.5	The Warden Councillors And Electors Of The Municipality Of Spring Bay	Recreation
1957488	Foreshore at end of Jetty Road	0.2	Miller, Allan James	Private Parcel
5982816	East Shelley Beach	4.5	Glamorgan Spring Bay Council	Recreation
5982816	Luther Point to Spring Beach – northern section	2.5	Glamorgan Spring Bay Council	Recreation
Potential PID: 2151283	Luther Point to Spring Beach – mid section	3	Recreation Reserve Public Reserve Crown Lands Act DPIPWE	Recreation Reserve Crown License Glamorgan Spring Bay Council (pending)
5984280	Luther Point to Spring Beach – southern section	3.7	Coastal Reserve Public Reserve Crown Lands Act DPIPWE	Beautification – Spring Beach, Orford Crown License Glamorgan Spring Bay Council
1716983	Spring Beach	0.4	Public Reserve Crown Lands Act DPIPWE	Well, pipe etc. - Orford TS LONEY & GD COLLS
1716852	South of Spring Beach	0.4	Recreation Reserve Public Reserve Crown Lands Act DPIPWE	Recreation Reserve Crown Land Services

***Natural features:***

Coastal vegetation including dry sclerophyll forest, non-eucalypt forest, scrub, grassland and wetland communities, rocky and sandy shores, and remnant native trees within parkland.

***Parkland, recreation areas and infrastructure:***

Walking tracks, grassy parkland, BBQ and picnic areas, childrens' playground, public toilets, road access to the foreshore and public boat ramp.





## **2. BIOLOGICAL CHARACTERISTICS**

The following details the natural values (vegetation, flora and fauna habitat) and other biological characteristics (weeds and plant pathogens) of the Reserves.

The information provided below is based on the results of a recent survey. The methods adopted for the survey and for assessment of conservation significance are provided in Appendix 1.

A list of vascular plants that occur within the Reserves is provided in Appendix 2. A review of the potential of the Reserves to support threatened species known to occur in the vicinity is provided in Appendices 3A and 3B.

The Council's legislative obligations in relation to the management of threatened species and communities as well as weeds occurring in the Reserves are provided in Appendix 4A. Other legislation and policies relevant to reserve management are provided in Appendix 4B.

### **2.1 VEGETATION**

The vegetation has been classified according to the TASVEG<sup>3</sup>. The survey revealed a greater variation in the vegetation compared with current TASVEG coastal mapping of the Reserves, which is slightly more generalised.

Figures 2a and 2b depict the vegetation communities and other TASVEG mapping units, which were mapped during the survey. In summary, across the Reserves there are eleven native vegetation communities present. These include four dry eucalypt forest communities, two non-eucalypt forest communities, two scrub communities, two grassland communities and one wetland community.

The condition of the native vegetation is variable. The vegetation from Luther Point to Spring Beach is the least disturbed and generally in excellent condition with only a few weeds present. Elsewhere the vegetation is often highly modified and weeds are widespread. Given the proximity to urban areas, this is to some extent only to be expected. However, although there are a large number of weed species present, only a few occur in abundance. Detailed descriptions of the significant (declared and environmental) weeds present are provided in section 2.6.

Four other TASVEG non-native vegetation mapping units are also present in the Reserves. Two of them are 'other natural environments' and two are 'non-native vegetation'.

Table 1 provides a list of all mapping units within the Reserves together with the conservation status of the native vegetation. Detailed descriptions of each mapping unit are provided following table 1.

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<sup>3</sup> TASVEG is the abbreviation for the Tasmanian Vegetation Mapping Program (the vegetation map of the entire State)

**Table 1. Native vegetation communities and other TASVEG mapping units in the Reserves.**

Tasveg code	Tasveg community name	Listed under the Tasmanian Nature Conservation Act 2002
<b>NATIVE VEGETATION COMMUNITIES</b>		
DGL	<i>Eucalyptus globulus</i> (blue gum) dry forest & woodland	Yes
DVC	<i>Eucalyptus viminalis</i> (white gum) – <i>Eucalyptus globulus</i> (blue gum) coastal forest & woodland	Yes
DAS	<i>Eucalyptus amygdalina</i> (black peppermint) forest & woodland on sandstone	Yes
DOV	<i>Eucalyptus ovata</i> (black gum) forest & woodland	Yes
NAV	<i>Allocasuarina verticillata</i> (drooping sheoak) forest	
NCR	<i>Callitris rhomboidea</i> (oyster bay pine) forest	Yes
SAC	<i>Acacia longifolia</i> (coast wattle) coastal scrub	
SSC	Coastal scrub	
GHC	Coastal grass and herbfield	
GSL	Lowland grassy sedgeland	
ASF	Freshwater aquatic sedgeland & rushland	Yes
<b>OTHER NATURAL ENVIRONMENTS</b>		
ORO	Lichen lithosere (rocks)	
OSM	Sand, mud (beaches)	
<b>NON-NATIVE VEGETATION</b>		
FMG	Marram grassland	
FUR	Urban areas (parkland)	

***Eucalyptus globulus* (Tasmanian blue gum) dry forest & woodland (DGL)**

This threatened community is present at various locations. Patches between Luther Point and Spring Beach are generally in excellent condition. Under a canopy of blue gums, understorey trees and shrubs include oyster bay pine, drooping sheoak, silver wattle, common native-cherry, prickly box, broadleaf hopbush, coast wattle and coast beardheath. Native ground layer species include low shrubs, sagg, sedges, lilies, herbs, grasses and bracken.

Small remnant strips of DGL also occur on the northern side of the Prosser River and at West and East Shelley Beaches. These remnants are generally in poor condition. The understorey is often highly modified or has been completely cleared. Some native understorey trees, shrubs and ground layer species persist although there is little or no regeneration occurring. Numerous introduced shrubs, herbs and grasses are also present.

***Eucalyptus viminalis-Eucalyptus globulus* (white gum-blue gum) coastal forest & woodland (DVC)**

This threatened community is the most common community between Raspins Beach and the Prosser River and between East Shelley Beach and Luther Point. A small patch also occurs near Spring Beach. Although this is classified as white gum-blue gum community, white gum is often the only eucalypt present.

Similarly to the DVG community, the condition of DVC varies. The least disturbed sections, around Luther Point and near the spit at the southern end of Raspins Beach, are generally in excellent condition, although some introduced species are present. Common native understorey trees and shrub include oyster bay pine, silver banksia, black sheoak, drooping sheoak, common native-cherry, black wattle, prickly box, broadleaf hopbush, coast wattle and coast beardheath. The ground layer includes native grasses, sagg, sedges, herbs and bracken.

Elsewhere the community is highly disturbed and modified and although native understorey species persist in patches these disturbed remnants have a much lower diversity of plants than those in better condition, as described above.

#### ***Eucalyptus amygdalina* (black peppermint) forest & woodland on sandstone (DAS)**

Patches of this threatened community occur along the sea cliffs between Luther Point and Spring Beach. They are woodland formations (meaning a sparse canopy) of black peppermint over black sheoak, necklace sheoak and silver banksia. The heathy understorey includes medium shrubs such as golden pea, common teatree, common heath, sweet wattle and pink beardheath. The ground layer is dominated by low shrubs, sagg, sedges and bracken.

The condition of this community is excellent although a very few significant woody weeds are present on the periphery of one patch.

#### ***Eucalyptus ovata* (black gum) forest & woodland (DOV)**

This is another threatened community. It occurs as one small patch along a drainage line near Riverside Drive, north of the Prosser River.

Under the canopy of black gums and black peppermint the understorey trees include black wattle, common native-cherry, black sheoak and blackwood. The ground layer is dominated by sedges.

This condition of this community is moderate. Significant weeds present include gorse and sweet briar.

#### ***Allocasuarina verticillata* (drooping sheoak) forest (NAV)**

Patches of this community occur along the sea cliffs to the south-east of Luther Point. Apart from the dominant drooping sheoak, other occasional trees are white gum, common native-cherry and oyster bay pine. Occasional shrubs are coast beardheath and common boobialla. In dense leaf litter under the closed canopy of drooping sheoak the ground layer is often sparse but includes herbs, grasses, sedges and sagg.

The condition of this community is generally excellent. The only significant weed present is one small patch of mirrorbush.

#### ***Callitris rhomboidea* (oyster bay pine) forest (NCR)**

A small patch of this threatened community occurs to the north of Spring Beach. Oyster bay pine forms a relatively dense canopy together with occasional black sheoak and common native-cherry trees. Shrubs include coast beardheath, coast wattle and redstem wattle and pink beardheath. The ground layer is dominated by sedges.

The condition of this community is excellent. No significant weeds are present.

#### ***Acacia longifolia* (coast wattle) coastal scrub (SAC)**

This community dominates the dunes at Spring Beach. Coast wattle is dominant but other small trees and shrubs present include silver banksia, blackwood, oyster bay pine, common boobialla and coast beardheath. Creepers include coast saltbush and bower spinach. Sagg, sedges and grasses are common ground layer plants. The community is in moderate condition with common weeds including marram grass and trailing daisy.

A small patch of SAC also occurs on the spit at the mouth of the Prosser River, which is in good condition. Another small patch occurs at the western end of West Shelley Beach but this is in very poor condition.

### **Coastal scrub (SSC)**

A small patch of this community occurs at the northern end of Spring Beach where the coastal path ascends to the sea cliffs. Dominant shrubs are common boobialla, coast wattle and coast beardheath. Occasional small trees and tall shrubs include drooping sheoak, prickly box, silver banksia and common native-cherry. The creeper coastal saltbush is also very common. The ground layer is dominated by grasses and herbs.

The condition of this community is moderate. Significant weeds include blackberry and trailing daisy. Several introduced grasses and herbs are also present.

### **Coastal grass and herbfield (GHC)**

One small patch of this community occurs on the northern side of the spit at the mouth of the Prosser River. The dominant species is coast speargrass. Other common grasses and sedges are Australian saltgrass, knobby clubsedge and sea rush. Herbs include yellow pigface and shiny swampmat.

The condition of this community is good although one significant weed, gazania, is present together with some introduced herbs.

### **Lowland grassy sedgeland (GSL)**

One small patch of this community occurs near the banks of the Prosser River to the east of Riverside Drive. Common species include bogsedge, kangaroo grass, wallabygrass and twinflower knawel.

This community is regularly mown and its condition is moderate. Significant weeds are Spanish heath and gazania. Weedy herbs are also present.

### **Freshwater aquatic sedgeland & rushland (ASF)**

This small wetland occurs along a narrow drainage line at the southern end of Raspins Beach adjacent to the Tasman Highway. Southern reed is the dominant species and sea rush is present to a lesser extent.

The community is in excellent condition but given its size and location it may be susceptible to degradation.

### **Lichen lithosere (rocks) (ORO) and Sand, mud (beaches) (OSM)**

The Reserves are bounded by rocky headlands and cliffs (ORO) and sandy beaches (OSM). These form the interface between the terrestrial and marine environments. Obligate coastal or saltmarsh plants can thrive in these harsh environments, notably in rock crevices and just above the high tide mark. These include both native species, such as coast speargrass and knobby clubsedge, and introduced species such as marram grass and American searocket.

### **Marram grassland (FMG)**

This non-native vegetation community occurs on the foredunes at the southern end of Raspins Beach including the adjacent spit at the mouth of the Prosser River, at West Shelley Beach and at Spring Beach.

At all sites the introduced marram grass is dominant and introduced herbs are also present. At Raspins Beach occasional native species are coast wattle and coast speargrass. At West Shelley natives include silver wattle and a few grasses, sedges and herbs. At Spring Beach natives herbs include common buzzy, native pigface and fireweed groundsel.

### **Urban areas (parkland) (FUR)**

All areas that are largely devoid of native vegetation have been mapped as FUR. Most areas of FUR are comprised of grassy parkland, which is traversed by the walking track. It also includes the childrens' playground along Riverside Drive, barbeque and picnic facilities and public toilets at Spring Beach and beach access tracks and boat ramps at West and East Shelly Beaches.

FUR also includes areas where at some stage in the past the native vegetation has been cleared adjacent to private property. Often these areas are infested with a wide array of weedy grasses and herbs as well as a number of significant weeds, some of which have obviously been deliberately planted.

## **2.2 FLORA OF CONSERVATION SIGNIFICANCE**

A total of 213 vascular plant species were recorded during the survey including 1 threatened species and 90 introduced species. A full species list is given in Appendix 2.

The threatened species, coast houndstongue, is listed as 'rare' under the Tasmanian *Threatened Species Protection Act 1995* (TSPA). Further details are provided below.

Appendix 3A lists a total of 31 species of conservation significance previously recorded within the vicinity together with a description of their preferred habitat and an assessment of their likely occurrence within the Reserves.

In summary, apart from the one species recorded, there are 2 other species that are considered as having a moderate potential to occur in the Reserves. These are shade peppercress and forest germander. Further targeted surveys may reveal their presence. Habitat in the Reserves is generally unsuitable or only marginal for the other 28 species.

### **Threatened flora recorded in the Reserves**

#### **Coast houndstongue (*Cynoglossum australe*) (TSPA: Rare)**

Coast houndstongue commonly occurs near the coast and in dry places such as the landward margins of sand dunes, grassland and open forest. It is a perennial herb with a cluster of basal leaves as well as stem leaves. The stems are erect, spreading, rough and hairy up to 1m tall. The tiny flowers, commonly blue or pink, are produced in spring and summer.

Several plants were recorded close to the walking track to the east of Luther Point (Plate 1 and Figure 2b).



Plate 1: Coast houndstongue.

## **2.3 FAUNA HABITAT**

The diverse nature of the vegetation across all the Reserves, together with the interface with the marine environment, equates to a diverse range of habitat opportunities for native fauna, most notably for terrestrial and coastal birds, as well as mammals, reptiles and a variety of invertebrates.

## **2.4 FAUNA OF CONSERVATION SIGNIFICANCE**

Appendix 3B lists threatened fauna species that have been recorded within the vicinity of the Reserves or that are considered to have the potential to occur. A brief discussion is given to indicate the reasons why habitat is suitable or unsuitable.

In summary, habitat present in the Reserves provides breeding habitat for the fairy tern and has a moderate to high potential to provide breeding habitat for the swift parrot. Additionally, the Reserves provide potential foraging habitat for the swift parrot, white-bellied sea-eagle and forty-spotted pardalote. Further details are provided below

Four other threatened fauna species that may potentially forage in the vicinity are the spotted-tailed quoll, eastern-barred bandicoot, wedge-tailed eagle and masked owl.

The Reserves also provides high quality habitat for a number of shorebirds that, whilst not listed as threatened, are of high conservation significance. Further details are provided below.

### **Fairy tern (*Sterna nereis nereis*) (TSPA & EPBCA: Vulnerable)**

Breeding habitat includes sand or shingle beaches, dunes, estuaries, lakes and near coastal islands especially sites with driftline debris. Beach nests are exposed scrapes in the sand, shingle or on rock between the high water mark and coastal vegetation.

Some of the threats to these species include disturbance and destruction of nests through trampling by humans, domestic animals and stock; predation by rats, dogs and cats; habitat destruction through inappropriate coastal development, clearing, grazing and

frequent fire; and the introduction of exotic plants such as marram grass, gorse, boneseed and African boxthorn.

For a number of years fairy terns have nested and successfully raised young on the sand spit at the mouth of the Prosser River.

**Swift parrot (*Lathamus discolor*) (TSPA & EPBCA: Endangered)**

Swift parrots are annual migrants to the east coast of Tasmania, from August to March, where they breed, nesting in tree hollows. They feed on the nectar of Tasmanian blue gum (*Eucalyptus globulus*) and black gum (*E. ovata*), in forests, single trees in paddocks, and urban parks and gardens.

Although there are no known nest sites within the Reserves there is one within 500m of Spring Beach and a further 12 within 5 km. The section of blue gum forest (DGL) to the north of Spring Beach probably provides the most suitable potential nesting habitat within the Reserves and is highly likely to provide foraging habitat.

**White-bellied sea-eagle (*Haliaeetus leucogaster*) (TSPA: Vulnerable)**

White-bellied sea-eagles nest and forage near the coast as well as near inland rivers and lakes. They generally nest within 5 km of open water and breed between August and January. Their nests are usually in large sheltered eucalypts, although they can be fairly tolerant of disturbance. They perch in a prominent place and glide down snatching fish, eels or birds from the surface of the water, or small vertebrates or carrion on land. Their home range may be up to 150 km.

A known nest in the vicinity is beyond the range of any disturbance from activities within the Reserves. However, the eagle is known to forage along the coast in the Orford area. There are many large eucalypts in the Reserves may provide perching habitat for this species.

**Forty-spotted pardalote (*Pardalotus quadragintus*) (TSPA & EPBCA: Endangered)**

This Tasmanian endemic bird is restricted largely to headlands, peninsulas and nearby islands in the eastern part of the State. It occurs only dry grassy forest and woodland containing mature white gum (*Eucalyptus viminalis*). Breeding colonies form around white gums where they feed in the foliage and nest in tree hollows, branch cavities, dead stumps, fence posts or other fallen wood.

Threats include loss of mature white gums throughout the species range, particularly in areas close to known colonies.

A known colony of forty-spotted pardalote is present on nearby Maria Island and dispersing fledgling may feed on mature white gums within the Reserves. White gums are one of the most common trees within the Reserves, occurring in the DVC community at Raspins Beach, along the edge of the Prosser River, East and West Shelley Beaches and Spring Beach.

**Shore birds**

Shorebirds of conservation significance that are known to utilise beaches in the Reserves as foraging habitat include:

- **Hooded plover (*Thinornis rubricollis*)**
- **Pied oystercatcher (*Haematopus longirostris*)**
- **Red-capped plover (*Charadrius ruficapillus*)**

These birds breed in scrapes in the sand or in seaweed above the high water mark. Their numbers around Tasmania has declined over recent years mainly due to increased beach use by people. Activities which threatened their breeding success include trampling by people, predation of eggs, chicks and adults by dogs and feral cats, invasive

weeds, removal of seaweed and other beach debris and ingestion or entanglement in litter, especially fishing line.

## 2.5 SIGNIFICANT TREES

In addition to the many trees within the native vegetation communities there are two large mature eucalypts (one white gum (*Eucalyptus viminalis*) and one black gum (*E. ovata*)) within areas mapped as 'FUR – parkland'. The location of these is depicted in Figure 2.

Apart from the aesthetic, visual and cultural value of these trees, they provide valuable foraging and nesting habitat for a range of native birds. They are particularly important as foraging habitat for the forty-spotted pardalote and swift parrot as well as potential perching habitat for the white-bellied sea-eagle (see section 2.4 above).

## 2.6 WEEDS

Introduced species recorded during the survey numbered 90. This is over forty percent of all species recorded.

Six of these are 'declared weeds' under the Tasmanian *Weed Management Act 1999*, four of which are also Weeds of National Significance. Another 51 species are considered to be significant environmental weeds. All of these species are listed in Tables 2A and 2B, a photograph of each is provided in Appendices 5A and 5B, and their distribution is depicted in Figures 3a, 3b, 4a and 4b.

Table 2A indicates that the most widespread declared weeds are blackberry and boneseed. Table 2B indicates that by far the most widespread environmental weed is trailing daisy. Other weeds that are relatively widespread are gazania, agapanthus, cotoneaster and mirrorbush.

It should be noted that the number of observations provided in Tables 2A and 2B are intended to give a general indication of relative abundance and does not always reflect actual abundance. For example, there is likely to be more than 65 trailing daisy plants or 32 gazania plants but it would have been impractical to map each one.

**Table 2A. Declared weeds\* recorded in the Reserves.**

\* 'Declared weeds' under the *Weed Management Act 1999*. \*\* WONS = Weed of National Significance.  
\*\*\* Observations = the number of general locations across the Reserves where it was observed.

Common name	Scientific name	WONS**	Observations***
blackberry	<i>Rubus fruticosus</i> aggregate	WONS	19
boneseed	<i>Chrysanthemoides monilifera</i> subsp. <i>monilifera</i>	WONS	16
fennel	<i>Foeniculum vulgare</i>		1
gorse	<i>Ulex europaeus</i>	WONS	4
montpellier broom	<i>Genista monspessulana</i>	WONS	7
spanish heath	<i>Erica lusitanica</i>		4

**Table 2B. Other environmental weeds recorded in the Reserves.**

\* Observations = the number of general locations across the Reserves where it was observed.

Common name	Scientific name	Observations*
aeonium	<i>Aeonium arboreum</i>	3
african daisy	<i>Arctotis stoechadifolia</i>	2
agapanthus	<i>Agapanthus praecox</i>	19
aloe	<i>Aloe</i> sp.	1
banana passion fruit	<i>Passiflora tarminiana</i>	1
berryflower heath	<i>Erica baccans</i>	2
blue butterflybush	<i>Psoralea pinnata</i>	1
blue periwinkle	<i>Vinca major</i>	3
bluebell creeper	<i>Billardiera heterophylla</i>	1
bottlebrush	<i>Melaleuca</i> sp.	1
cape ivy	<i>Delairea odorata</i>	2
century plant	<i>Agave americana</i>	1
coast teatree	<i>Leptospermum laevigatum</i>	2
cootamundra wattle	<i>Acacia baileyana</i>	3
cotoneaster	<i>Cotoneaster</i> sp.	14
dolichos pea	<i>Dipogon lignosus</i>	2
freesia	<i>Freesia</i> hybrid	1
gazania	<i>Gazania</i> sp.	32
geranium	<i>Pelargonium</i> sp.	4
giant honeymyrtle	<i>Melaleuca armillaris</i> subsp. <i>armillaris</i>	2
grevillea hybrid	<i>Grevillea</i> sp.	6
gum	<i>Eucalyptus</i> sp.	6
hawthorn	<i>Crataegus monogyna</i>	2
howitt's wattle	<i>Acacia howittii</i>	1
ivy	<i>Hedera helix</i>	3
large mediterranean spurge	<i>Euphorbia characias</i>	1
madeira broom	<i>Genista stenopetala</i>	3
marguerite	<i>Argyranthemum frutescens</i>	2
milkwort	<i>Polygala myrtifolia</i>	1
mirrorbush	<i>Coprosma repens</i>	13
montbretia	<i>Crocasmia Xcrocsmiiflora</i>	1
monterey cypress	<i>Cupressus macrocarpa</i>	1
nasturtium	<i>Tropaeolum majus</i>	1
new zealand flax	<i>Phormium tenax</i>	1
noonflower	<i>Lampranthus glaucus</i>	7
pigs ear	<i>Cotyledon orbiculata</i>	4
pride-of-madeira	<i>Echium candicans</i>	1
prunus	<i>Prunus</i> sp.	3

Common name	Scientific name	Observations*
radiata pine	<i>Pinus radiata</i>	3
red hot poker	<i>Kniphofia uvaria</i>	1
red valerian	<i>Centranthus ruber</i>	1
redondo creeper	<i>Drosanthemum candens</i>	1
soap aloe	<i>Aloe maculata</i>	1
spanish broom	<i>Spartium junceum</i>	2
strawberry tree	<i>Arbutus unedo</i>	1
sweet briar	<i>Rosa rubiginosa</i>	9
sweet pittosporum	<i>Pittosporum undulatum</i>	8
trailing daisy	<i>Osteospermum fruticosum</i>	65
watsonia	<i>Watsonia meriana</i>	2
winter euryops	<i>Euryops abrotanifolius</i>	3
wirilda	<i>Acacia retinodes</i>	5

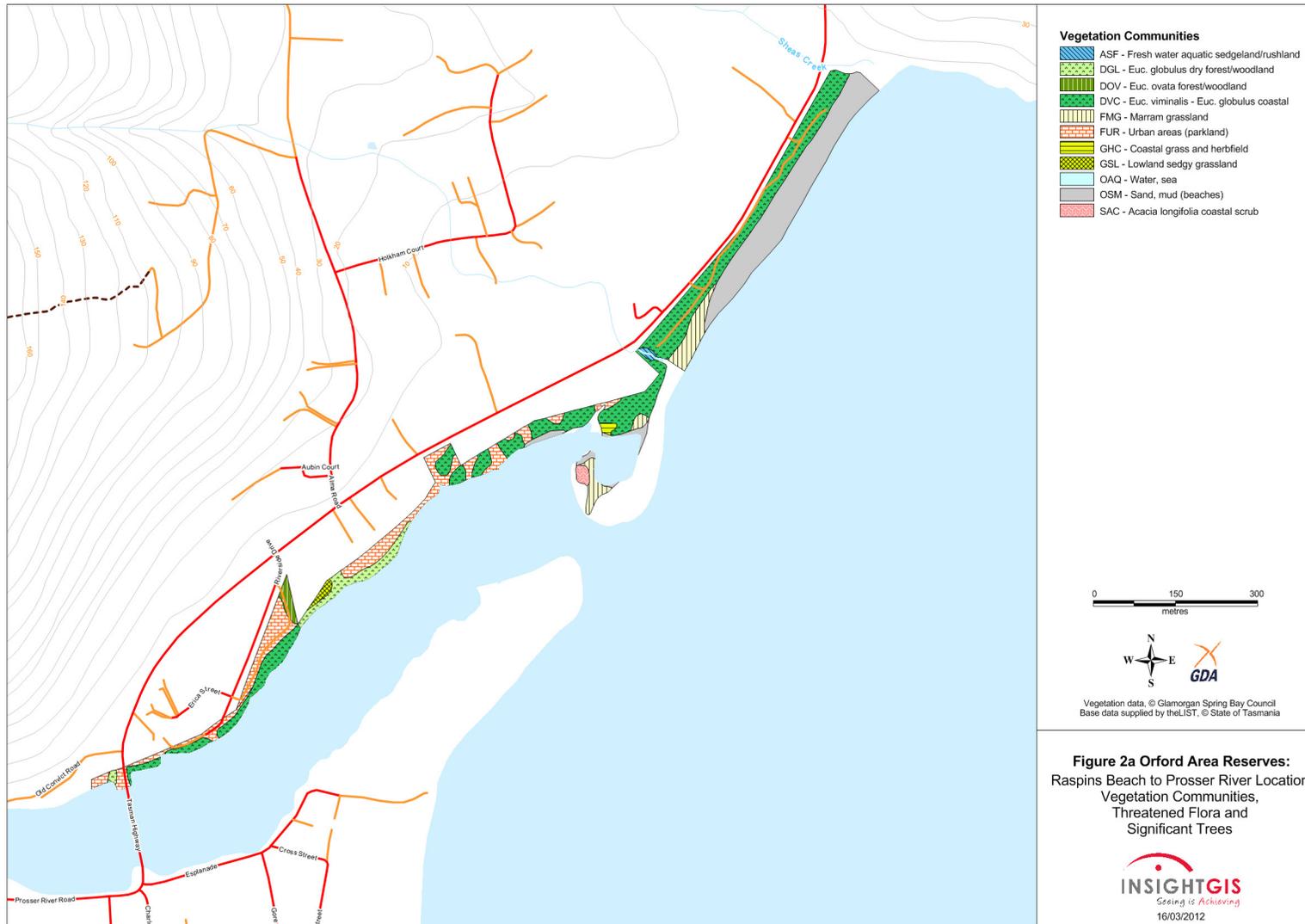
## **2.7 PHYTOPHTHORA CINNAMOMI**

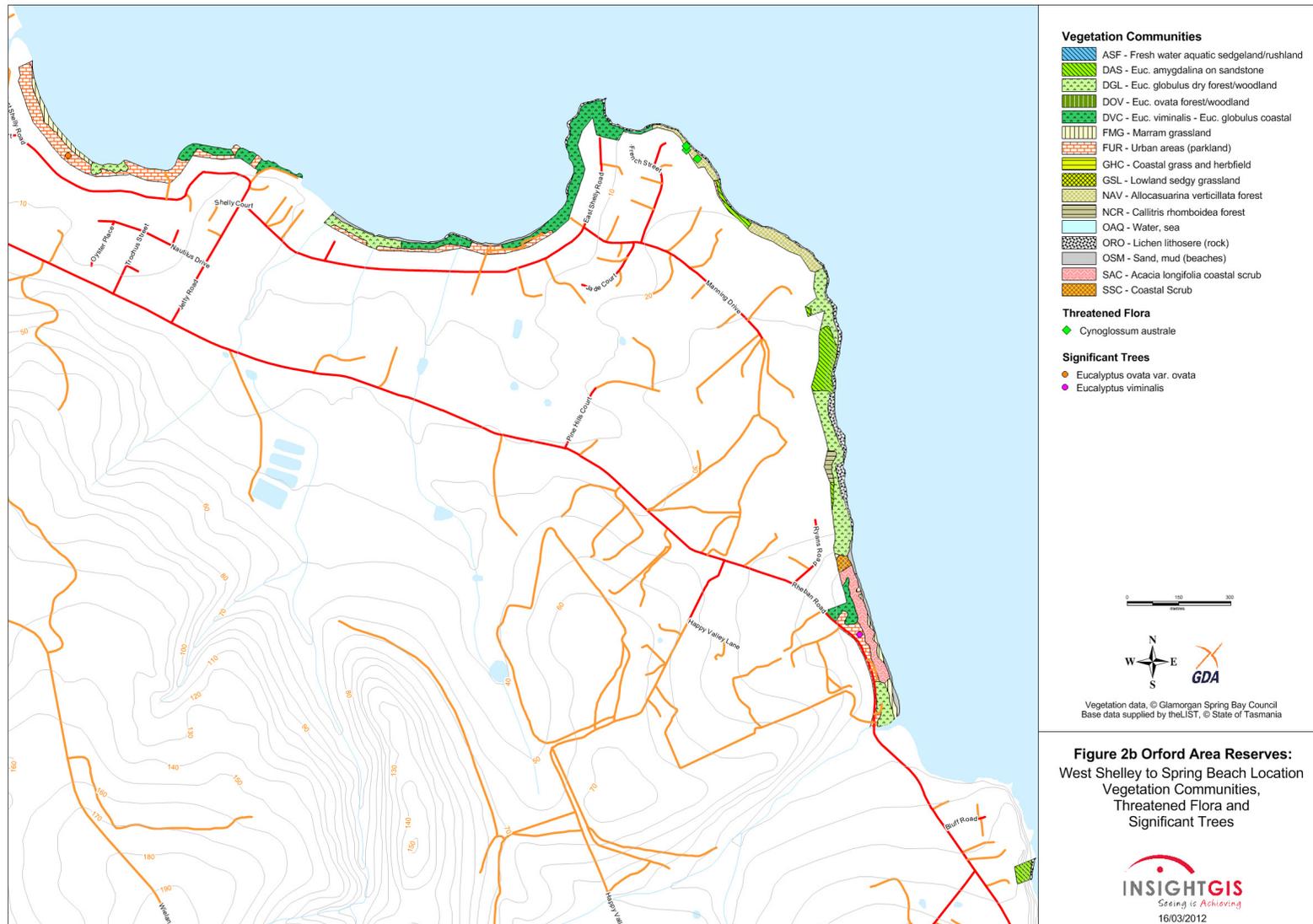
Commonly known as dieback or root rot fungus, *P. cinnamomi* is a soil borne fungal pathogen that invades the roots of plants and starves them of nutrients and water. Heath communities are the most susceptible to infection with a consequent serious loss of species diversity. It is generally spread by the transportation of soil on vehicles, construction machinery and walking boots. The establishment and spread of *P. cinnamomi* is favoured in areas that receive above 600 mm of rainfall per annum, are below 800 m altitude and have a predominantly heathy shrub layer<sup>4</sup>.

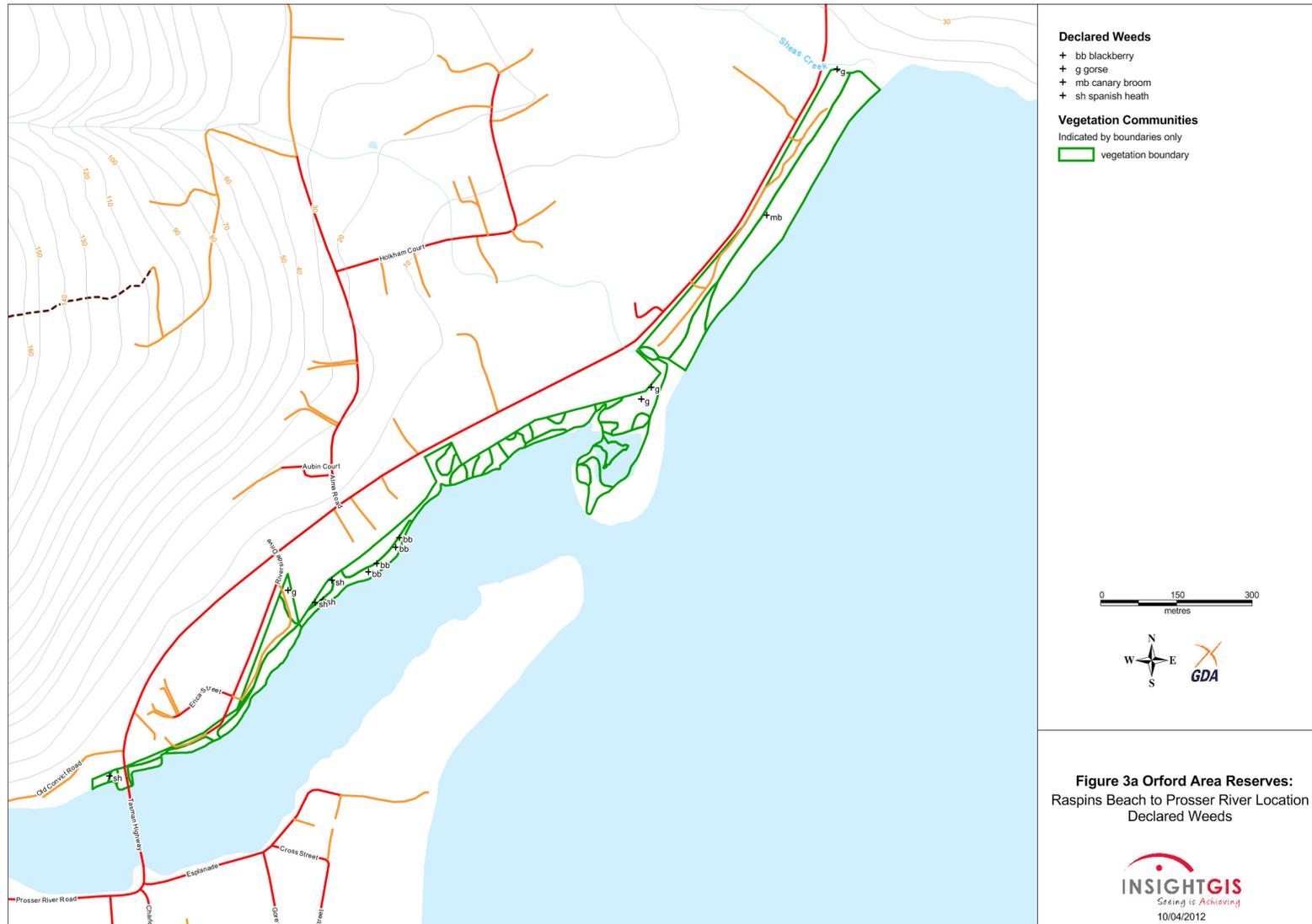
Orford is situated within the favoured climatic zone of *P. cinnamomi* and there are known infestations in the area. The DAS community within the Reserves is variably or moderately susceptible to the fungus. Although *P. cinnamomi* is often difficult to detect in the field, no obvious evidence of its presence was observed during the survey. Furthermore, several species that are susceptible to the fungus were present in the DAS community.

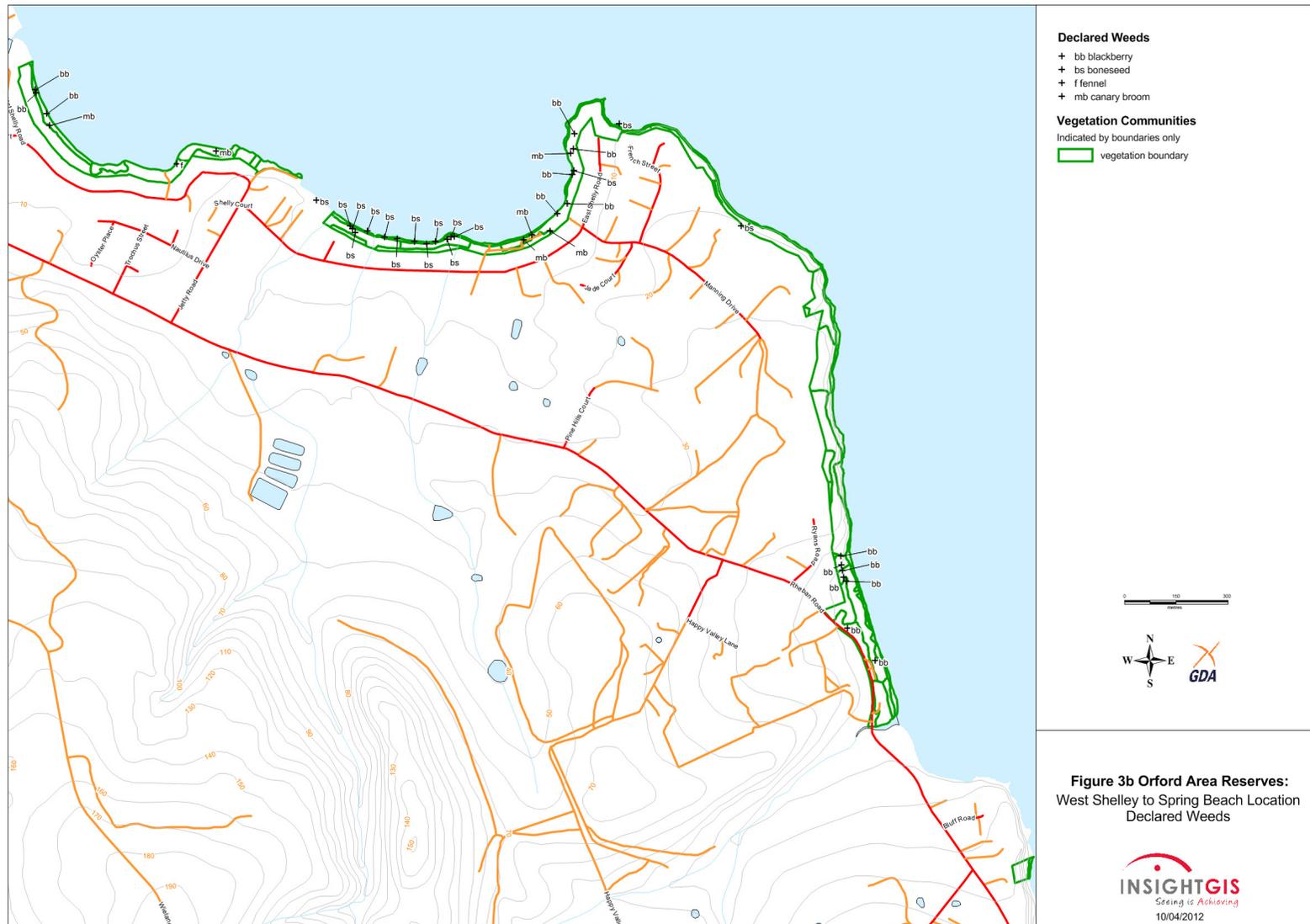
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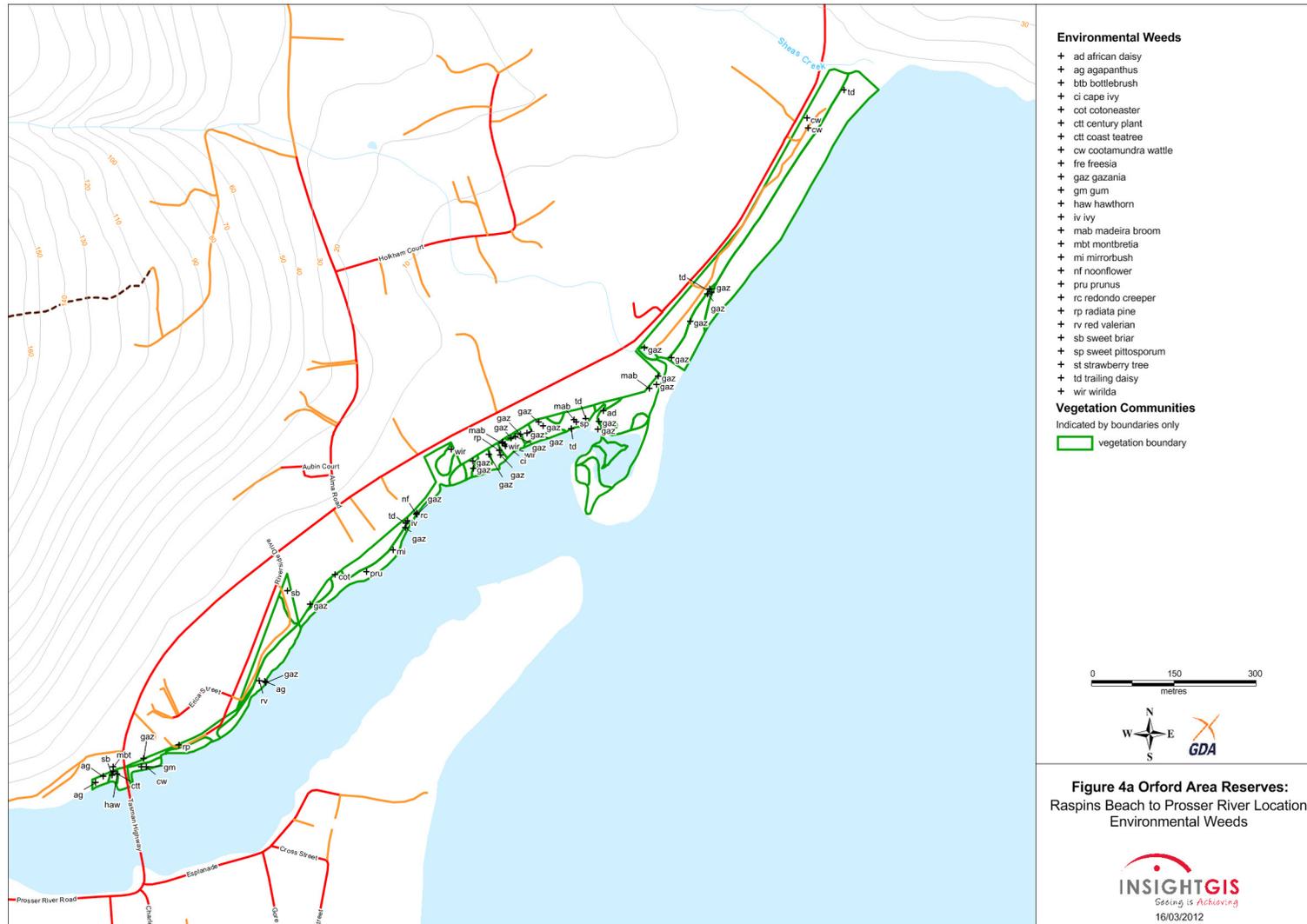
<sup>4</sup> Rudman 2005

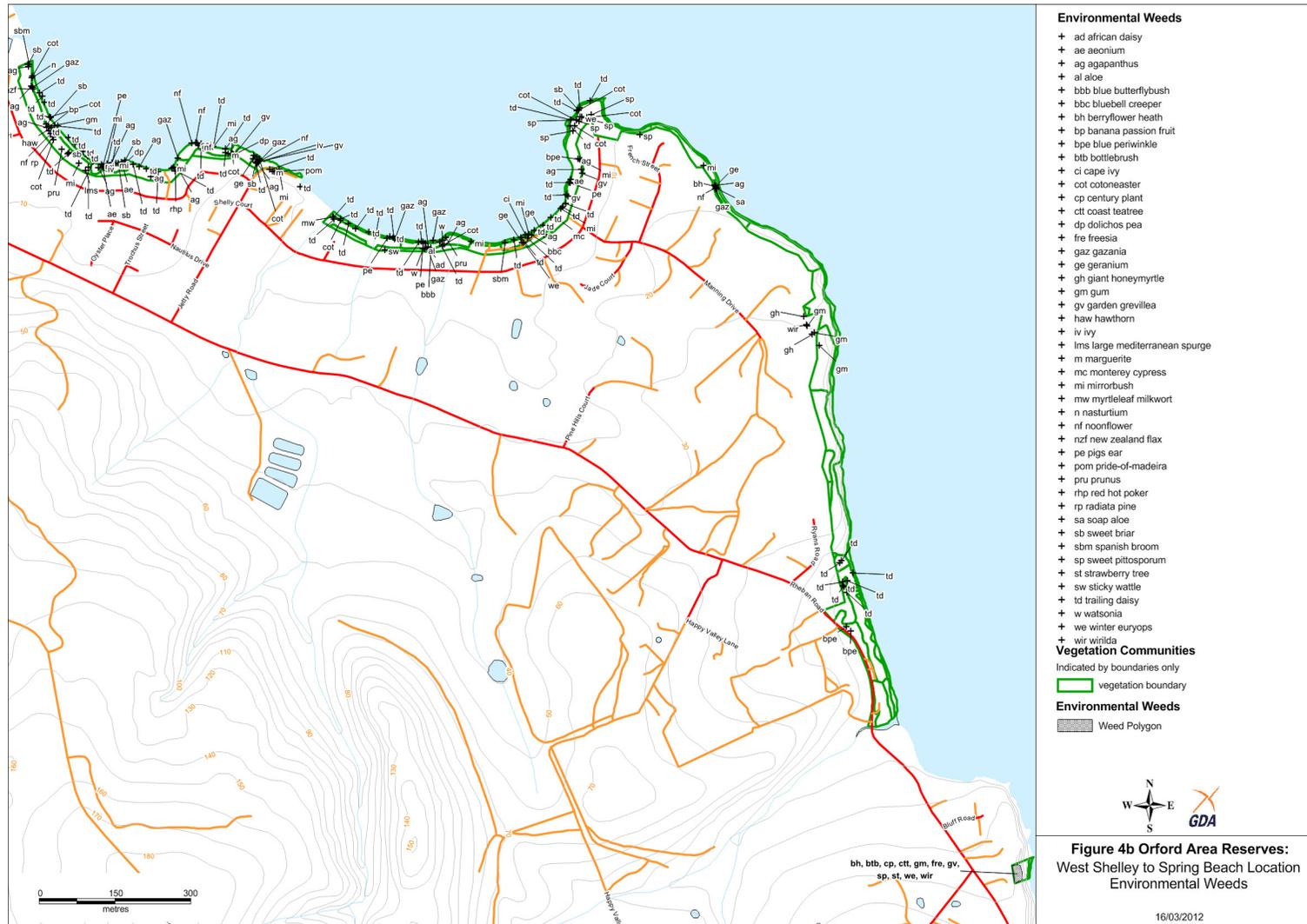












### **3. OTHER RESERVE VALUES**

#### **3.1 CULTURAL HERITAGE**

- **Aboriginal heritage**

The Reserves hold cultural significance for the contemporary Aboriginal community. Cultural heritage values connect contemporary Aboriginal Tasmania with the people and events of the past. The Portmairremener band from the Oyster Bay nation occupied the area at the time of European arrival.

- **Post European settlement heritage**

The Post European settlement heritage values of the Reserves are closely linked with the histories of the town and the municipality. These have been documented in various publications, including Lester (1994), Tall (1994) and Guiler (1998).

Many other publications and historical documents and photographs on both Aboriginal and Post European Settlement heritage are housed at the Glamorgan Spring Bay Historical Society Inc, which is located at 22 Franklin Street, Swansea.

#### **3.2 RECREATIONAL VALUES**

Both residents and visitors use the Reserves for a wide range of passive and active recreational activities. These include beach use, walking, jogging, dog exercise, wildlife viewing and fishing. The popular coastal walking track facilitates many of these activities. Other facilities also provide additional recreational opportunities. These include barbeque and picnic areas, childrens' playground and access to boat ramps.

#### **3.3 EDUCATIONAL VALUES**

All the reserves in the Glamorgan Spring Bay area have educational value, whether it be as an outdoor classroom for our local schoolchildren or for visitors to the area interested in our natural and cultural history. There are many opportunities to communicate the many values of our reserves to the locals and visitors alike, whether that be through interpretation signage, walk and talks over the summer months or information brochures and articles in the local newsletters. In the future other technology could be utilised such as smart phones to provide interaction educational experiences.

#### **3.4 SUMMARY OF OTHER VALUES**

Although there are many other values in our reserves this plan focuses on the management of the native vegetation and associated biodiversity values. Other values particularly recreational values are addressed through other processes and resourcing avenues such as Council's capital works and renewal programs for walking tracks, recreational facilities, parks and gardens.

## **4. MANAGEMENT ISSUES**

### **4.1 NATIVE VEGETATION, FLORA, FAUNA AND SIGNIFICANT TREES**

Maintaining the natural values of the Reserves is a primary objective of management. Protecting native vegetation communities is the most effective way of conserving flora and fauna values. A high priority should be given to managing threatening processes or activities that are likely to have an impact on species and communities of high conservation significance.

Within the Reserves these include one species of threatened flora and nesting and/or foraging habitat for four threatened bird species, which are variously listed under the TSPA and/or EPBCA. Six vegetation communities listed as threatened under the NCA are also present in the Reserve. Legislative obligations in relation to threatened species and communities are provided in Appendix 4.

With regard to shorebirds, beaches in the Reserves are important foraging habitat for the hooded plover, pied oystercatcher and red-capped plover. There are information signs at several beaches in the area requesting beach users to remain below the high water mark during the breeding season and keeping dogs and cats under control. This issue has gained prominence with the recent GSBC/NRM South Shorebird Project, the GSBC Dog Management Policy and the introduction of the Cat Management Act.

In addition to the many trees within the native vegetation communities there at least two large mature eucalypts present within areas mapped as 'FUR – parkland'. As these trees senesce they often form tree hollows which are important nesting habitat for many native birds and small mammals. Regeneration of trees within forest communities is vital to ensure the persistence of each community.

All mature trees are significant from a conservation perspective as well as from an aesthetic and visual perspective. Management should aim to retain as many trees as possible. Whilst some trees may be perceived as 'dangerous', it does not necessarily follow that they should be felled. Removing potentially dangerous limbs may be all that is required.

**Recommendation 1 – Train Council staff who are involved with day-to-day management of the Reserves to recognise the natural values present and provide them with strategies to protect these values during management activities.**

### **4.2 WEEDS**

The Glamorgan Spring Bay Weed Management Plan (GSBWMP)<sup>5</sup> recognise that weeds are one of the most serious threats to the natural environment. Any plant growing outside its natural range is a potential weed that may have a detrimental effect on the natural values of reserves. Management objectives include eradicating weeds or preventing or minimising their spread to native vegetation communities.

It is recognised that weed control in the Reserves is currently an ongoing day-to-day management activity and that substantial progress has been made in reducing the levels of weed infestation. Declared weeds are to a large extent under control although some are still present. Environmental weeds are more widespread but are patchily distributed. The

<sup>5</sup> Glamorgan Spring Bay Natural Resource Management Committee 2008

survey conducted for this Plan provides a detailed inventory of weeds and the basis for a more strategic approach to their management.

It is important in weed management planning in an urban context to recognise the futility of eliminating all non-native species. Hence, in areas of parkland with a ground cover of introduced grasses and herbs the focus of weed management should be on containment.

Priorities for weed control should focus on declared and other environmental weeds that are having, or have the potential to have, a negative impact upon the native flora and which are also manageable. Therefore a hierarchy of priorities has been developed for weeds in the Reserve, which are applied to each species in Tables 3A and 3B. The priority system is as follows, where 1 is the highest priority and 3 is the lowest:

Priority	Reasons for priority rating
<b>1</b>	Declared weeds, and/or
	Easily controlled or eradicated, and/or
	Only small infestations or small numbers of infestations are present, and/or
	Likely to spread quickly.
<b>2</b>	Requires a substantial time allocation due to the size of infestations, and/or
	Creepers that require all plant parts to be remove, and/or
	Unlikely to spread quickly.
<b>3</b>	Plantings that require monitoring only to ensure that they do not spread.
	Large infestations of gazania that would require substantial investment in rehabilitation of the site.
<b>NB: -Plants with more than one priority rating in Tables 3A &amp; 3B indicate that infestations in different locations vary in size and/or manageability.</b> <b>-Most plants will require monitoring for re-emergence and follow-up control.</b>	

**Table 3A. Priorities for declared weeds in the Reserves.**

\* Observations = the number of general locations across the Reserves where it was observed.

common name	<i>Scientific name</i>	Observations*	Priority
blackberry	<i>Rubus fruticosus</i> aggregate	19	1
boneseed	<i>Chrysanthemoides monilifera</i> subsp.	16	1
montpellier broom	<i>Genista monspessulana</i>	7	1
gorse	<i>Ulex europaeus</i>	4	1
spanish heath	<i>Erica lusitanica</i>	4	1
fennel	<i>Foeniculum vulgare</i>	1	1

**Table 3B. Priorities for other environmental weeds in the Reserves.**

\* Observations = the number of general locations across the Reserves where it was observed.

\*\* Priority 1 = outlying, small infestations.

common name	Scientific name	Observations*	Priority
trailing daisy	<i>Osteospermum fruticosum</i>	65	1 & 2 **
gazania	<i>Gazania</i> sp.	32	1 & 3 **
agapanthus	<i>Agapanthus praecox</i>	19	1 & 2 **
cotoneaster	<i>Cotoneaster</i> sp.	14	1
mirrorbush	<i>Coprosma repens</i>	13	1
sweet briar	<i>Rosa rubiginosa</i>	9	1
sweet pittosporum	<i>Pittosporum undulatum</i>	8	1
noonflower	<i>Lampranthus glaucus</i>	7	1
grevillea hybrid	<i>Grevillea</i> sp.	6	2
gum	<i>Eucalyptus</i> sp.	6	3
wirilda	<i>Acacia retinodes</i>	5	2
geranium	<i>Pelargonium</i> sp.	4	1
pigs ear	<i>Cotyledon orbiculata</i>	4	1
aeonium	<i>Aeonium arboreum</i>	3	1
blue periwinkle	<i>Vinca major</i>	3	2
cootamundra wattle	<i>Acacia baileyana</i>	3	3
ivy	<i>Hedera helix</i>	3	2
madeira broom	<i>Genista stenopetala</i>	3	1
prunus	<i>Prunus</i> sp.	3	1
radiata pine	<i>Pinus radiata</i>	3	3
winter euryops	<i>Euryops abrotanifolius</i>	3	1
african daisy	<i>Arctotis stoechadifolia</i>	2	2
berryflower heath	<i>Erica baccans</i>	2	1
cape ivy	<i>Delairea odorata</i>	2	2
coast teatree	<i>Leptospermum laevigatum</i>	2	3
dolichos pea	<i>Dipogon lignosus</i>	2	2
giant honeymyrtle	<i>Melaleuca armillaris</i> subsp. <i>armillaris</i>	2	2
hawthorn	<i>Crataegus monogyna</i>	2	1
marguerite	<i>Argyranthemum frutescens</i>	2	1
spanish broom	<i>Spartium junceum</i>	2	1
watsonia	<i>Watsonia meriana</i>	2	1
aloe	<i>Aloe</i> sp.	1	1
banana passion fruit	<i>Passiflora tarminiana</i>	1	1
blue butterflybush	<i>Psoralea pinnata</i>	1	1
bluebell creeper	<i>Billardiera heterophylla</i>	1	1
bottlebrush	<i>Melaleuca</i> sp.	1	2
century plant	<i>Agave americana</i>	1	2
freesia	<i>Freesia</i> hybrid	1	1
howitt's wattle	<i>Acacia howittii</i>	1	3
large mediterranean	<i>Euphorbia characias</i>	1	1
milkwort	<i>Polygala myrtifolia</i>	1	1
montbretia	<i>Crococsmia Xrococsmiiflora</i>	1	1
monterey cypress	<i>Cupressus macrocarpa</i>	1	3

<b>common name</b>	<b>Scientific name</b>	<b>Observations*</b>	<b>Priority</b>
nasturtium	<i>Tropaeolum majus</i>	1	1
new zealand flax	<i>Phormium tenax</i>	1	2
pride-of-madeira	<i>Echium candicans</i>	1	1
red hot poker	<i>Kniphofia uvaria</i>	1	1
red valerian	<i>Centranthus ruber</i>	1	1
redondo creeper	<i>Drosanthemum candens</i>	1	3
soap aloe	<i>Aloe maculata</i>	1	1
strawberry tree	<i>Arbutus unedo</i>	1	2

**Recommendation 2 – Control Priority 1 weeds (see Tables 3A and 3B).**

**Recommendation 3 – Control Priority 2 weeds (see Tables 3A and 3B).**

**Recommendation 4 – Regularly monitor for re-growth of Priority 1 and 2 weeds, as well as the spread of Priority 3 weeds, and take follow-up control action as necessary.**

It is also important to acknowledge that the presence of most weeds recorded is probably a consequence of the proximity of the reserves to urban areas and associated gardens, which provide a source of ongoing infestation. Therefore, in conjunction with direct on-ground weed control actions, a campaign to educate residents about the consequences associated with garden escapes and garden waste dumping on the Reserves should be ongoing.

**Recommendation 5 – Continue to raise community awareness of the values present in their local environment focusing on the threats posed to these values most notably by garden escape plants and dumping of garden cuttings. Such a campaign could include:**

- **making this Plan publicly available through the GSBC website,**
- **a public presentation/workshop,**
- **brochures/posters/articles in local news letter, and**
- **field days and working bees.**

#### **4.3 ILLEGAL CLEARING OF VEGETATION**

As noted in section 2.1 (at the end of the ‘Urban areas’ section), there are areas of the Reserves where, at some stage in the past, the native vegetation has been cleared adjacent to private property. Often these areas are infested with a wide array of weedy grasses and herbs as well as a number of significant weeds, some of which have obviously been deliberately planted.

Intermittently Council receives reports of illegal clearing of trees and other foreshore vegetation. Usually it is difficult for Council to apprehend or prosecute offenders. One strategy adopted in recent times has been to erect signs indicating that vegetation has been cleared from public land without authorisation and that the sign will remain in place until the vegetation has regrown.

Future alternative strategies could include the erection of Bush Watch signs. Bush Watch is a Tasmania Police initiative that encourages the public to report unusual, suspicious or criminal activity and vandalism to the Police. The signs provide a phone number (131 444), which is a direct link to the police. The GSBC Natural Resource Management (NRM) Committee is a member of Bush Watch.

**Recommendation 6 – Raise community awareness of the problem illegal clearing, outlining the legislative implications and encouraging people to report offender to the police. This should be in conjunction with Recommendation 5, but also may involve the erection of signage, such as ‘Bushwatch’ signs. Investigate the development of a ‘by-law’ that addresses the illegal clearing of vegetation on Council managed public land.**

#### **4.4 RESERVE BOUNDARIES**

In managing any reserve it is obviously important that reserve boundaries are known to both reserve managers and adjacent landowners. There are issues of undefined boundaries in some sections of the Reserve. Perhaps as a consequence, some gardens have encroached onto the reserves to varying degrees. This issue is linked to some extent with the issue of illegal clearing.

On-ground marking of undefined boundaries may be necessary in some instances in order to clarify the council’s authority in implementing some of the actions required to protect the reserve values. Such on-ground markers could include fencing or a row of large boulders. Alternatively it may merely require a verbal recognition by other land owners.

**Recommendation 7 - Clarify Reserve boundaries. Liaise with landowners regarding the most appropriate way to more clearly define these boundaries and, where deemed necessary, install on-ground boundary markers.**

#### **4.5 COASTAL EROSION AND BEACH ACCESS TRACKS**

Coastal erosion is often a natural process. For example, long shore drift results in the alternating process of seasonal erosion and accretion of sandy beaches. In the longer term coastal erosion is likely to be exacerbated by climate change and associated rises in sea level and increases in the size of storm surge.

Beaches are the most susceptible to coastal erosion. Erosion can also be exacerbated by uncontrolled beach access through dunes. Due to concerns about erosion at Raspins Beach a TASMARC (Tasmanian Shoreline Monitoring and Archiving Project) site has been established at Raspins Beach incorporating a baseline shoreline profile. Annual monitoring is being undertaken by the Orford Community Group with data being submitted to the TASMARC database managed by the University of Tasmania.

**Recommendation 8 – Establish long-term photo-point monitoring sites at all the beaches in the Reserves in order to plan for future rehabilitation or other amelioration measures.**

## 4.6 PLANTINGS AND REVEGETATION

Plantings of introduced or non-local native species within the Reserves are present in a few locations. However, the use of introduced or non-local native species should be considered carefully. Many have the potential to ‘escape’ into native vegetation and exacerbate the problem of environment weeds, which in turn leads to the degradation of Reserves’ natural values.

In consultation with the local community, any future plantings should preferably use local native species, which have a number of benefits. They are adapted to the local climate and soil and consequently require less maintenance, including watering, and the risk of escape resulting in degradation of the natural values is nullified. Furthermore, local native plants also attract and provide habitat for native birds, which in turn are natural pest control agents as well as providing pleasure to a great number of people.

Following weed control, it is preferable to allow areas to naturally regenerate with native species. However, if there is little or no nearby source of native species seed or other regenerative parts then weed invasion may be ongoing. In such cases revegetation is likely to be required. Any of the native species listed in Appendix 2 are appropriate for revegetation work, as well as other plantings, in the Reserves.

**Recommendation 9 – In consultation with the local community, any plantings and revegetation work should preferably use local native species.**

## 4.7 FIRE

The primary objective of fire management in reserves is to protect human life and property from fire. Other objectives include the maintenance of biodiversity through appropriate fire regimes and the of protection conservation values from the adverse impacts of fire in so far as these are consistent with the primary objective.

Developing a fire management plan is complex. Many native vegetation communities and plant species require fire to trigger regeneration. Conversely, some communities and species are killed by fire depending on factors such as their growth stage, fire frequency and fire intensity. Therefore the maintenance of a mosaic of fire age classes is preferable. Total exclusion of fire may result in periodic and devastating hot summer wildfires. Conversely, over frequent and comprehensive fuel reduction burning will also modify the structure and composition of vegetation.

However, in a coastal setting it is generally recommended to exclude fire as fire can lead to the destabilisation of coastal landforms and soil. The use of fire as a tool to reduce fuel loads in urban reserves can also be controversial as well as hazardous to people and property. Furthermore, maintaining biodiversity values whilst minimising wildfire hazard may not always necessarily require the use of fire. Therefore alternative approaches, such as raking litter and removing dead wood by hand is preferable<sup>6</sup>.

**Recommendation 10 – Conduct regular assessments of fuel loads and remove litter and dead wood as necessary but retain at least some large habitat logs if they are present.**

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<sup>6</sup> Wood & Knee 1999

Notwithstanding the above, small patch burns may be periodically necessary if, for example, localised fuel loads become unmanageable by other removal methods, or, as a management tool for particular weed infestations. In such cases a fire management plan should be developed with the advice of the Tasmania Fire Service.

**Recommendation 11 – Patch burn as the need arises in accordance with a fire management plan developed in consultation with the Tasmania Fire Service.**

#### **4.8 PLAN REVIEW**

This Native Flora and Fauna Management Plan covers the 5 year period from 2014 to 2019. A review of the Plan, including the success in achieving its objectives, is due to be conducted in 2019 and an updated Plan will be developed. This process will be ongoing for each consecutive 5 year period.

**Recommendation 12 – Review the current Native Flora and Fauna Management Plan near the end of the current 5 year period, including the success in achieving its objectives, and develop a Plan for the period 2020 to 2024.**

## **5. ACTION PLANS**

The following tables provide action plans that are based on the above recommendations. Table 5.1 is a weed management action plan and Table 5.2 includes all other actions. Each action has been assigned a time frame and a performance measure.

With regard to weeds, the distribution of the declared and other environmental weeds recorded during the survey is provided in Figures 3 and 4 and a photo of each weed is provided in Appendices 5A and 5B. The maps and photos should be used as a resource to guide and direct weed control actions. However, the maps should be used with caution as the point locations of weeds were recorded with a hand-held gps with a potential error of several metres. Furthermore, the maps should not be considered as a comprehensive guide as some weeds may have emerged since surveys were undertaken and others may have been missed. Additionally, as weed control is an ongoing task performed by Council Officers, some weeds may have already been treated.

## 5.1 WEED ACTION PLAN

Recommendation No.	Recommendation / Specific Action	Timing	Performance Measure
2	Control Priority 1 weeds. (See Tables 3A & 3B and Appendices 5A and 5B).	Ongoing	Eradication of weeds, or at least, a reduction in weed abundance each year.
3	Control Priority 2 weeds. (See Tables 3A & 3B and Appendices 5A and 5B).	Ongoing following initial control of Priority 1 weeds	Eradication of weeds, or at least, a reduction in weed abundance each year.
4	Monitor for re-growth of Priority 1 and 2 weeds, Monitor for the spread of Priority 3 weeds, and Take follow-up control action as necessary.	At least once a year in Spring and opportunistically	Minimise new weed infestations.
12	Review the success of weed control actions through further weed mapping and develop a new weed action plan.	July-December 2019	New weed action plan in place for 2020-2024.

## 5.2 GENERAL ACTION PLAN

Recommendation No.	Recommendation / Action	Timing	Performance Measure
1	Train Council staff who are involved with day-to-day management of the Reserve to recognise the natural values present and provide them with strategies to protect these values during management activities.	2015	Education of Council staff and added protection of Reserve natural values.
5	Continue to raise community awareness of the values present in their local environment focusing on the threats posed to these values most notably by garden escape plants and dumping of garden cuttings. Such a campaign should include: - making this Plan publicly available through the GSBC website, - a public presentation/workshop, - brochures/posters/articles in local news letter, and - field days and working bees.	Ongoing	Education of community and reduction of risk of new weed infestations.
6	Raise community awareness of the problem illegal clearing, outlining the legislative implications and encouraging people to report offenders to the police. This should be combined with Recommendation 5, but also involve the erection of signage, such as 'Bushwatch' signs. These signs provide a phone number (131 444) which is a direct link to the police.	Ongoing	Education of community and reduction of risk and reports of illegal clearing.
	Investigate the development of a 'by-law' that addresses the illegal clearing of vegetation on Council managed public land.	2015	Investigation complete.
7	Clarify Reserve boundaries. Liaise with landowners regarding the most appropriate way to more clearly define these boundaries and, where deemed necessary, install on-ground boundary markers.		Clarification of reserve boundary locations.
	Survey boundary line and liaise with landowners	2015	
	Install boundary markers as necessary	2016	

Recommendation No.	Recommendation / Action	Timing	Performance Measure
8	Establish long-term photo-point monitoring sites at all the beaches in the Reserves in order to plan for future rehabilitation or other amelioration measures.  Establish monitoring sites  Monitor	2014  Twice each year	Record of coastal erosion.
9	In consultation with the local community, any plantings and revegetation work should preferably use local native species.	As required	Natural values of Reserve enhanced.
10	Conduct regular assessments of fuel loads and remove litter and dead wood as necessary but retain at least some large habitat logs if they are present.	Late winter each year	Assessment of and reduction in wild fire hazard.
11	Patch burn as the need arises in accordance with a fire management plan developed in consultation with the Tasmania Fire Service.	As required	Reduced hazard (depending on reason for burn).
12	Review the current Native Flora and Fauna Management Plan near the end of the current 5 year period, including the success in achieving its objectives, and develop a Plan for the period 2020 to 2024.	2019	Publication of Plan for 2020-2024.

## REFERENCES

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## **APPENDIX 1 – SURVEY METHODS**

### **Background Research**

The following source was used for biological records from the region:

- Natural Values Atlas<sup>7</sup> - all threatened plant and animal records within 5 km of the study area plus potential suitability for other threatened fauna.

### **Botanical and Vegetation Survey**

The reserve was surveyed during mid spring 2011. The vegetation was mapped and all vascular plant species were recorded. The location of significant features, including threatened plants and weeds, were recorded by a hand-held GPS. Botanical nomenclature follows the current census of Tasmanian plants<sup>8</sup>.

### **Fauna Habitat Assessment**

The study area was assessed for fauna habitat with respect to threatened fauna species known from the area, or considered to potentially occur there. This assessment was based on the overall structure of the vegetation including identification of factors such as the presence of old growth trees with hollows and logs. Evidence of native animal presence, such as scats and burrows, were also noted.

### **Assessment of Conservation Significance**

Vegetation types have been classified according to TASVEG<sup>9</sup>. The conservation status of a vegetation type relates to its current extent compared with the modelled extent prior to European settlement. This has allowed an estimate of the extent of loss to land clearing to be calculated. A 2007 amendment to the *Nature Conservation Act 2002* included the listing of threatened native vegetation communities in accordance with their conservation status.

The conservation significance of species is determined at a state and federal level by legislation (*Tasmanian Threatened Species Protection Act 1995* and *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*), the implications of which are considered in the light of relevant legislation (Appendix 4).

### **Limitations/Disclaimer**

While the survey was undertaken in mid spring, no botanical survey can guarantee that all vascular plants will be recorded due to the limitations of the sampling technique, seasonal and annual variation in abundance and the possible absence of fertile material for identification. Additional species are likely to occur that may be recorded by repeated visits over several years and at different seasons.

Fauna assessment is limited to the identification of habitat of significant fauna species known from the area.

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<sup>7</sup> Natural Values Report # 43028 (29 August 2011), Threatened Species Section, DPIPW

<sup>8</sup> Buchanan 2009

<sup>9</sup> Harris & Kitchener 2005

## APPENDIX 2 – VASCULAR PLANT SPECIES LIST

### Status codes:

STATE SCHEDULE – TSP Act 1995  
e – endangered  
v – vulnerable  
r – rare

NATIONAL SCHEDULE – EPBC Act 1999  
CR – critically endangered  
EN – endangered  
VU – vulnerable

ORIGIN  
i - introduced  
d - declared weed WM Act 1999  
en - endemic to Tasmania

TSPA/ EPBCA	origin	Group	FAMILY	Scientific name	common name	DGL	DOV	DVC	DAS	NAV	NCR	SSC	SAC	GHC	GSL	ASF	FMG	FUR parkland
		<b>Dicotyledonae</b>																
		<b>AIZOACEAE</b>																
	i			<i>Carpobrotus edulis</i>	yellow pigface	+		+						+				
				<i>Carpobrotus rossii</i>	native pigface	+		+	+	+	+	+	+				+	
				<i>Disphyma crassifolium</i> subsp. <i>clavellatum</i>	roundleaf pigface			+										
	i			<i>Drosanthemum candens</i>	redondo creeper													+
	i			<i>Lampranthus glaucus</i>	noonflower			+	+									+
				<i>Tetragonia implexicoma</i>	bower spinach			+		+		+	+					
		<b>APIACEAE</b>																
				<i>Apium prostratum</i>	sea-celery			+									+	
	d			<i>Foeniculum vulgare</i>	fennel													+
		<b>APOCYNACEAE</b>																
	i			<i>Vinca major</i>	blue periwinkle	+		+										
		<b>ARALIACEAE</b>																
	i			<i>Hedera helix</i>	ivy													+
		<b>ASTERACEAE</b>																
	i			<i>Arctotheca calendula</i>	capeweed	+		+										
	i			<i>Arctotis stoehadifolia</i>	africa daisy			+										
	i			<i>Argyranthemum frutescens</i>	marguerite													+
	en			<i>Bedfordia linearis</i>	blanketleaf			+										
				<i>Brachyscome aculeata</i>	hill daisy			+										

TSPA/ EPBCA	origin	Group FAMILY Scientific name	common name	DGL	DOV	DVC	DAS	NAV	NCR	SSC	SAC	GHC	GSL	ASF	FMG	FUR parkland
		<i>Brachyscome spathulata</i>	daisy				+									
		<i>Cassinia aculeata</i>	dollybush			+				+						
	d	<i>Chrysanthemoides monilifera</i> subsp. <i>monilifera</i>	boneseed	+		+	+									
	i	<i>Cirsium vulgare</i>	spear thistle					+								
		<i>Coronidium scorpioides</i>	curling everlasting				+									
	i	<i>Delairea odorata</i>	cape ivy			+										
		<i>Euchiton collinus</i>	common cottonleaf	+			+									
	i	<i>Euryops abrontanifolius</i>	winter euryops			+	+									
	i	<i>Gazania</i> sp.	gazania	+		+	+				+	+	+		+	+
	i	<i>Hypochoeris radicata</i>	rough catsear	+		+		+		+		+	+		+	
		<i>Leptorhynchos</i> sp.	buttons										+			
		<i>Olearia phlogopappa</i> (planted)	dusty daisybush			+										
	i	<i>Osteospermum fruticosum</i>	trailing daisy	+		+				+	+				+	+
		<i>Senecio linearifolius</i>	fireweed groundsel			+					+				+	
		<i>Senecio quadridentatus</i>	cotton fireweed	+	+	+										
		<i>Senecio</i> sp.	fireweed	+		+	+	+	+		+					
	i	<i>Sonchus oleraceus</i>	common sowthistle	+		+		+		+					+	
	i	<i>Taraxacum</i> sp.	dandelion								+				+	
	i	<i>Vellereophyton dealbatum</i>	white cudweed			+										
		<b>BORAGINACEAE</b>														
r / -		<i>Cynoglossum australe</i>	coast houndstongue					+								
	i	<i>Echium candicans</i>	pride of madeira													+
		<b>BRASSICACEAE</b>														
	i	<i>Cakile edentula</i>	american searocket			+					+				+	
		<b>CAMPANULACEAE</b>														
		<i>Wahlenbergia</i> sp.	bluebell	+			+									

TSPA/ EPBCA	origin	Group FAMILY Scientific name	common name	DGL	DOV	DVC	DAS	NAV	NCR	SSC	SAC	GHC	GSL	ASF	FMG	FUR parkland
		<b>CARYOPHYLLACEAE</b>														
	i	<i>Cerastium glomeratum</i>	sticky mouse-ear	+		+				+						
		<i>Scleranthus biflorus</i>	twinflower knawel			+							+			
		<b>CASUARINACEAE</b>														
		<i>Allocasuarina littoralis</i>	black sheoak	+	+	+	+		+							
	en	<i>Allocasuarina monilifera</i>	necklace sheoak				+									
		<i>Allocasuarina verticillata</i>	drooping sheoak	+		+	+	+		+						
		<b>CHENOPODIACEAE</b>														
	i	<i>Atriplex prostrata</i>	creeping orache			+									+	
		<i>Einadia nutans</i> subsp. <i>nutans</i>	climbing saltbush	+		+										
		<i>Rhagodia candolleana</i> subsp. <i>candolleana</i>	coastal saltbush	+		+		+		+	+					
		<b>CONVOLVULACEAE</b>														
		<i>Dichondra repens</i>	kidneyweed	+		+		+	+							
		<b>CRASSULACEAE</b>														
	i	<i>Aeonium arboreum</i>	tree aeonium	+		+										+
	i	<i>Cotyledon orbiculata</i>	pigs ear	+		+										
		<i>Crassula sieberiana</i>	rock stonecrop	+												
		<b>DILLENIACEAE</b>														
		<i>Hibbertia prostrata</i>	prostrate guineaflower				+									
		<i>Hibbertia riparia</i>	erect guineaflower				+									
		<b>EPACRIDACEAE</b>														
		<i>Astroloma humifusum</i>	native cranberry			+										
		<i>Epacris impressa</i>	common heath				+									
		<i>Leucopogon ericoides</i>	pink beardheath				+		+							
		<i>Leucopogon parviflorus</i>	coast beardheath	+		+	+	+	+	+	+					
		<i>Leucopogon virgatus</i>	beardheath			+	+									
		<i>Lissanthe strigosa</i> subsp. <i>subulata</i>	peachberry heath	+		+			+							

TSPA/ EPBCA	origin	Group FAMILY Scientific name	common name	DGL	DOV	DVC	DAS	NAV	NCR	SSC	SAC	GHC	GSL	ASF	FMG	FUR parkland
		<b>ERICACEAE</b>														
	i	<i>Arbutus unedo</i>	strawberry tree				+									
	i	<i>Erica baccans</i>	berryflower heath				+									
	d	<i>Erica lusitanica</i>	spanish heath	+									+			
		<b>EUPHORBIACEAE</b>														
		<i>Amperea xiphioclada</i> var. <i>xiphioclada</i>	broom spurge				+									
		<i>Beyeria viscosa</i>	pinkwood	+												
	i	<i>Euphorbia characias</i>	large mediterranean spurge													+
	i	<i>Euphorbia peplus</i>	petty spurge			+										
		<i>Poranthera microphylla</i>	small poranthera				+									
		<b>FABACEAE</b>														
		<i>Aotus ericoides</i>	golden pea	+			+									
		<i>Aotus ericoides</i> (planted)	golden pea	+		+	+									
		<i>Bossiaea cinerea</i>	showy bossia	+		+	+									
		<i>Bossiaea prostrata</i>	creeping bossia	+		+	+		+				+			
	i	<i>Dipogon lignosus</i>	dolichos pea	+												+
	d	<i>Genista monspessulana</i>	montpellier broom			+										+
	i	<i>Genista stenopetala</i>	madeira broom			+										
		<i>Glycine clandestina</i>	twining glycine	+												
		<i>Indigofera australis</i>	native indigo	+												
		<i>Indigofera australis</i> (planted)	native indigo	+		+										
		<i>Kennedia prostrata</i>	running postman			+	+	+								
	i	<i>Medicago</i> sp.	medick	+												
	i	<i>Psoralea pinnata</i>	blue butterflybush			+										
	i	<i>Spartium junceum</i>	spanish broom			+					+					
	i	<i>Trifolium</i> sp.	clover	+		+							+			
	d	<i>Ulex europaeus</i>	gorse		+	+										

TSPA/ EPBCA	origin	Group FAMILY	Scientific name	common name	DGL	DOV	DVC	DAS	NAV	NCR	SSC	SAC	GHC	GSL	ASF	FMG	FUR parkland
	i		<i>Vicia</i> sp.	vetch	+		+				+					+	
		<b>FUMARIACEAE</b>															
	i		<i>Fumaria muralis</i> subsp. <i>muralis</i>	wall fumitory	+												
		<b>GENTIANACEAE</b>															
	i		<i>Centaurium erythraea</i>	common centaury						+							
		<b>GERANIACEAE</b>															
			<i>Geranium</i> sp.	cranesbill	+		+				+					+	
			<i>Pelargonium australe</i>	southern storksbill							+						
	i		<i>Pelargonium</i> sp.	geranium			+	+									+
		<b>GOODENIACEAE</b>															
			<i>Goodenia lanata</i>	trailing native-primrose			+	+									
			<i>Goodenia ovata</i>	hop native-primrose	+												
			<i>Selliera radicans</i>	shiny swampmat									+				
		<b>HALORAGACEAE</b>															
			<i>Gonocarpus tetragynus</i>	common raspwort			+	+									
		<b>MIMOSACEAE</b>															
	i		<i>Acacia baileyana</i>	cootamundra wattle			+										
			<i>Acacia dealbata</i> subsp. <i>dealbata</i>	silver wattle	+		+	+								+	
			<i>Acacia genistifolia</i>	spreading wattle				+									
	i		<i>Acacia howittii</i>	howitt's wattle	+												
			<i>Acacia longifolia</i> subsp. <i>sophorae</i>	coast wattle	+		+	+		+	+	+				+	
			<i>Acacia mearnsii</i>	black wattle	+	+	+										
			<i>Acacia melanoxylon</i>	blackwood	+	+	+					+					
	en		<i>Acacia mucronata</i> subsp. <i>mucronata</i>	erect caterpillar wattle			+										
			<i>Acacia myrtifolia</i>	redstem wattle						+							
	i		<i>Acacia retinodes</i>	wirilda			+	+									
			<i>Acacia suaveolens</i>	sweet wattle				+									

TSPA/ EPBCA	origin	Group	FAMILY	Scientific name	common name	DGL	DOV	DVC	DAS	NAV	NCR	SSC	SAC	GHC	GSL	ASF	FMG	FUR parkland
				<i>Acacia suaveolens</i> (planted)	sweet wattle			+	+									
				<b>MYOPORACEAE</b>														
				<i>Myoporum insulare</i>	common boobialla	+		+		+		+	+					
				<b>MYRTACEAE</b>														
	en			<i>Eucalyptus amygdalina</i>	black peppermint		+	+	+									
				<i>Eucalyptus globulus</i> subsp. <i>globulus</i>	tasmanian blue gum	+		+										
				<i>Eucalyptus ovata</i> var. <i>ovata</i>	black gum		+	+										+
	i			<i>Eucalyptus</i> sp.	gum			+	+									+
				<i>Eucalyptus viminalis</i> subsp. <i>viminalis</i>	white gum			+	+	+								
				<i>Kunzea ambigua</i>	white kunzea				+									
	i			<i>Leptospermum laevigatum</i>	coast teatree	+			+									
				<i>Leptospermum lanigerum</i> (planted)	woolly teatree			+										
				<i>Leptospermum scoparium</i>	common teatree				+									
				<i>Leptospermum scoparium</i> (planted)	common teatree			+	+									
	i			<i>Melaleuca armillaris</i> subsp. <i>armillaris</i>	giant honeymyrtle				+									
	i			<i>Melaleuca</i> sp.	bottlebrush				+									
				<b>OXALIDACEAE</b>														
				<i>Oxalis perennans</i>	grassland woodsorrel			+	+	+		+	+					
				<b>PASSIFLORACEAE</b>														
	i			<i>Passiflora tarminiana</i>	banana passionfruit													+
				<b>PITTOSPORACEAE</b>														
	i			<i>Billardiera heterophylla</i>	bluebell creeper			+										
				<i>Bursaria spinosa</i> subsp. <i>spinosa</i>	prickly box	+		+		+		+						
				<i>Pittosporum bicolor</i>	cheesewood			+										
	i			<i>Pittosporum undulatum</i>	sweet pittosporum			+	+									
				<i>Rhytidosporum procumbens</i>	starry appleberry				+									

TSPA/ EPBCA	origin	Group	FAMILY	Scientific name	common name	DGL	DOV	DVC	DAS	NAV	NCR	SSC	SAC	GHC	GSL	ASF	FMG	FUR parkland
			<b>PLANTAGINACEAE</b>															
	i			<i>Plantago coronopus</i>	buckshorn plantain			+						+				
	i			<i>Plantago lanceolata</i>	ribwort plantain	+	+	+							+		+	
			<b>POLYGALACEAE</b>															
				<i>Comesperma volubile</i>	blue lovecreeper	+		+										
	i			<i>Polygala myrtifolia</i>	milkwort	+												
			<b>POLYGONACEAE</b>															
	i			<i>Acetosella vulgaris</i>	sheep sorrel	+		+					+				+	
	i			<i>Rumex crispus</i>	curled dock			+										
			<b>PRIMULACEAE</b>															
	i			<i>Anagallis arvensis</i> var. <i>arvensis</i>	scarlet pimpernel			+										
			<b>PROTEACEAE</b>															
				<i>Banksia marginata</i>	silver banksia	+		+	+			+	+					
				<i>Banksia marginata</i> (planted)	silver banksia			+										
	i			<i>Grevillea</i> sp.	grevillea hybrid			+	+									+
	i			<i>Hakea</i> sp. (planted)	needlebush				+									
			<b>RANUNCULACEAE</b>															
				<i>Clematis aristata</i>	mountain clematis			+										
			<b>RHAMNACEAE</b>															
				<i>Pomaderris apetala</i>	dogwood	+		+										
			<b>ROSACEAE</b>															
				<i>Acaena echinata</i>	spiny sheepsburr				+	+								
				<i>Acaena novae-zelandiae</i>	common buzzy			+				+	+				+	
	i			<i>Cotoneaster</i> sp.	cotoneaster	+		+					+				+	+
	i			<i>Crataegus monogyna</i>	hawthorn	+												+
	i			<i>Prunus</i> sp.	prunus	+		+										+
	i			<i>Rosa rubiginosa</i>	sweet briar	+	+	+					+					+
	d			<i>Rubus fruticosus</i> aggregate	blackberry	+		+				+					+	

TSPA/ EPBCA	origin	Group	FAMILY	Scientific name	common name	DGL	DOV	DVC	DAS	NAV	NCR	SSC	SAC	GHC	GSL	ASF	FMG	FUR parkland
				<i>Rubus parvifolius</i>	native raspberry			+										
				<b>RUBIACEAE</b>														
	i			<i>Coprosma repens</i>	mirrorbush	+		+		+								+
	i			<i>Galium aparine</i>	cleavers			+										
				<i>Opercularia varia</i>	variable stinkweed				+									
				<b>RUTACEAE</b>														
				<i>Correa backhouseana</i> (planted)	velvet correa			+										
				<b>SANTALACEAE</b>														
				<i>Exocarpos cupressiformis</i>	common native-cherry	+	+	+	+	+	+	+						
				<i>Leptomeria drupacea</i>	erect currantbush				+									
				<b>SAPINDACEAE</b>														
				<i>Dodonaea viscosa</i> subsp. <i>spatulata</i>	broadleaf hopbush	+		+										
				<b>STACKHOUSIACEAE</b>														
				<i>Stackhousia monogyna</i>	forest candles	+												
				<b>STYLIDIACEAE</b>														
				<i>Stylidium graminifolium</i>	narrowleaf triggerplant				+									
				<b>THYMELAEACEAE</b>														
				<i>Pimelea humilis</i>	dwarf riceflower	+		+	+									
				<i>Pimelea linifolia</i>	slender riceflower				+									
				<b>TREMANDRACEAE</b>														
				<i>Tetratheca labillardierei</i>	glandular pinkbells				+									
				<b>TROPAEOLACEAE</b>														
	i			<i>Tropaeolum majus</i>	nasturtium								+					
				<b>VALERIANACEAE</b>														
	i			<i>Centranthus ruber</i>	red valerian			+										

TSPA/ EPBCA	origin	Group	FAMILY	Scientific name	common name	DGL	DOV	DVC	DAS	NAV	NCR	SSC	SAC	GHC	GSL	ASF	FMG	FUR parkland
		<b>Gymnospermae</b>																
		<b>CUPRESSACEAE</b>																
				<i>Callitris rhomboidea</i>	oyster bay pine	+		+	+	+	+		+	+				
				<i>Callitris rhomboidea</i> (planted)	oyster bay pine	+		+	+	+	+		+					
	i			<i>Cupressus macrocarpa</i>	monterey cypress			+										
		<b>PINACEAE</b>																
	i			<i>Pinus radiata</i>	radiata pine			+										+
		<b>Monocotyledonae</b>																
		<b>AGAVACEAE</b>																
	i			<i>Agave americana</i>	century plant				+									
	i			<i>Phormium tenax</i>	new zealand flax													+
		<b>ALOEACEAE</b>																
	i			<i>Aloe maculata</i>	soap aloe				+									
	i			<i>Aloe</i> sp.	aloe			+										
	i			<i>Kniphofia uvaria</i>	red hot poker													+
		<b>CYPERACEAE</b>																
				<i>Ficinia nodosa</i>	knobby clubsedge			+					+	+			+	
				<i>Gahnia</i> sp.	sawsedge	+			+		+							
				<i>Isolepis cernua</i>	nodding clubsedge									+				
				<i>Lepidosperma concavum</i>	sand sword-sedge	+		+	+	+	+							
				<i>Lepidosperma laterale</i>	variable sword-sedge	+	+	+										
				<i>Schoenus apogon</i>	common bogsedge			+	+		+				+			
		<b>IRIDACEAE</b>																
	i			<i>Crococsmia Xrococsmiiflora</i>	montbretia	+												
	i			<i>Freesia</i> hybrid	freesia				+									
	i			<i>Romulea rosea</i> var. <i>australis</i>	lilac oniongrass										+			
	i			<i>Watsonia</i> sp.	watsonia			+										

TSPA/ EPBCA	origin	Group	FAMILY	Scientific name	common name	DGL	DOV	DVC	DAS	NAV	NCR	SSC	SAC	GHC	GSL	ASF	FMG	FUR parkland
		<b>JUNCACEAE</b>																
				<i>Juncus kraussii</i> subsp. <i>australiensis</i>	sea rush	+								+		+		
				<i>Juncus pallidus</i>	pale rush			+										
				<i>Juncus</i> sp.	rush							+						
				<i>Luzula meridionalis</i>	southern woodrush	+												
		<b>LILIACEAE</b>																
	i			<i>Agapanthus praecox</i> subsp. <i>orientalis</i>	agapanthus	+		+	+				+					+
				<i>Bulbine glauca</i>	bluish bulbine-lily			+										
				<i>Dianella brevicaulis</i>	shortstem flaxlily	+		+	+				+					
				<i>Dianella revoluta</i> var. <i>revoluta</i>	spreading flaxlily					+								
				<i>Dianella tasmanica</i>	forest flaxlily	+		+										
				<i>Laxmannia orientalis</i>	dwarf wire-lily				+									
		<b>ORCHIDACEAE</b>																
				<i>Corybas</i> sp.	helmet-orchid	+												
				<i>Glossodia major</i>	waxlip orchid				+		+							
				<i>Thelymitra pauciflora</i>	slender sun-orchid			+										
		<b>POACEAE</b>																
	i			<i>Aira</i> sp.	hairgrass			+										
	i			<i>Ammophila arenaria</i>	marram grass								+				+	
	i			<i>Anthoxanthum odoratum</i>	sweet vernalgrass										+		+	
				<i>Austrodanthonia</i> sp.	wallabygrass			+			+				+			
				<i>Austrostipa</i> sp.	speargrass	+		+	+	+	+							
				<i>Austrostipa stipoides</i>	coast speargrass	+		+						+			+	
	i			<i>Briza minor</i>	lesser quaking-grass	+		+	+	+		+						
	i			<i>Bromus</i> sp.	brome	+	+	+					+					
	i			<i>Dactylis glomerata</i>	cocksfoot	+		+	+			+					+	
				<i>Distichlis distichophylla</i>	australian saltgrass			+	+					+			+	

TSPA/ EPBCA	origin	Group	FAMILY	Scientific name	common name	DGL	DOV	DVC	DAS	NAV	NCR	SSC	SAC	GHC	GSL	ASF	FMG	FUR parkland
	i			<i>Ehrharta erecta</i>	panic veldtgrass	+		+										
	i			<i>Lagurus ovatus</i>	haretail grass	+		+									+	
				<i>Phragmites australis</i>	southern reed			+				+				+		
				<i>Poa labillardierei</i>	tussockgrass	+		+	+	+	+		+	+				
				<i>Poa</i> sp.	tussockgrass	+						+						
	i			<i>Stenotaphrum secundatum</i>	buffalo grass			+										
				<i>Tetrarrhena distichophylla</i>	hairy ricegrass	+			+			+						
				<i>Themeda triandra</i>	kangaroo grass	+		+	+						+			
				<b>RESTIONACEAE</b>														
				<i>Leptocarpus tenax</i>	slender twinerush	+			+									
				<b>XANTHORRHOACEAE</b>														
				<i>Lomandra longifolia</i>	sagg	+		+	+	+		+	+				+	
				<i>Xanthorrhoea australis</i>	southern grasstree				+									
				<b>Pteridophyta</b>														
				<b>DENNSTAEDTIACEAE</b>														
				<i>Pteridium esculentum</i>	bracken	+		+	+			+	+				+	

### APPENDIX 3A – REVIEW OF THREATENED FLORA

The following details threatened flora species, from the Natural Values Report, that have previously been recorded with a 5 km radius. It also provides an assessment of the likely occurrence of each within the study area.

Species	Status <sup>10</sup> TSPA/EPBCA	Potential to occur	Observations and Preferred Habitat <sup>11</sup>
<b>Known from within 500 m</b>			
<i>Caladenia filamentosa</i> daddy-long legs	Rare / -	LOW to MODERATE	Previous records, from the 1960s and 1990s, include only one within 500m and 4 within 5km. Uncommon and very localised in distribution. It is known from heathy and sedgy open eucalypt forest and woodland on sandy soils. It can be abundant following fire but then numbers fall as the undergrowth thickens. This species would not have been in flower at the time of the survey and there was no evidence of a recent fire in potential habitat, which is present between Luther Point and Spring Beach and possibly in the DVC community south of Raspins Beach.
<i>Cynoglossum austale</i> coast houndstongue	Rare / -	<b>present</b>	Previous records are all recent. One is within 500m and 2 within 5km Occurs in grasslands, open forest, coastal dunes and other dry places. Observed during the survey. More details provided in the Flora section.
<i>Lepidium pseudotasmanicum</i> shade peppercress	Rare / -	MODERATE	Previous records are mostly recent. Two are within 500m and 3 within 5km. Found on bare ground in grassland and grassy woodland. It relies on gap-forming disturbance and is often associated with roads and tracks although road maintenance may have an adverse impact upon it. Potential habitat is present and this herb may have been overlooked during the survey.
<i>Ozothamnus lycopodioides</i> clubmoss everlastingbush	Rare / -	VERY LOW	Many previous records, both within 500m and 5km, are from between 1949 and 2011. Occurs in dry sclerophyll forest and rocky slopes, commonly on a dolerite substrate. Habitat is very marginal for this species and unlikely to have been overlooked. Previous records are from areas to the south and west of the coastal reserve.
<i>Pimelea flava</i> subsp. <i>flava</i> yellow riceflower	Rare / -	VERY LOW	One previous record is from 1931. Prefers moderately fertile sites including shrubby <i>E. amygdalina</i> damp forest with co-dominants of <i>E. obliqua</i> , <i>E. ovata</i> and <i>E. pulchella</i> , or scrubby <i>E. amygdalina</i> forest on dolerite in sub-coastal area. No suitable habitat present.
<i>Senecio squarrosus</i> leafy fireweed	Rare / -	LOW	One previous record is from 2005. Associated with dry sclerophyll forest and recruitment probably occurs following fire. While potential habitat may be present there is no evidence of recent fire.
<i>Stenanthemum pimeleoides</i> propeller plant	Vulnerable / VULNERABLE	VERY LOW	Previous records, from between 1848 and 1999, include 3 within 500m and 5 within 5km. Occurs on dry, stony soils on siliceous, sandy gravels usually in heathy <i>E. amygdalina</i> or <i>E. pulchella</i> forest and usually where grasses and herbs are absent. No suitable habitat is present.

<sup>10</sup> TSPA - Tasmanian Threatened Species Protection Act 1995; EPBCA - Commonwealth Environment Protection and Biodiversity Conservation Act 1999

<sup>11</sup> Natural Values Report; Notesheets and Listing Statements, Threatened Species Unit, DPIPW

Species	Status <sup>10</sup> TSPA/EPBCA	Potential to occur	Observations and Preferred Habitat <sup>11</sup>
<b>Known from within 5 km</b>			
<i>Acacia ulicifolia</i> juniper wattle	Rare / -	LOW to MODERATE	One previous record is from 2011. Occurs in sandy coastal heaths and open forests and woodlands. Some suitable habitat present in the DAS community but unlikely to have been overlooked during the survey unless it occurs in low numbers.
<i>Asplenium hookerianum</i> maidenhair spleenwort	Endangered / VULNERABLE	VERY LOW	Known only from a few sites in Tasmania. Habitat is heavily shaded gullies. The small population recorded from near Orford in 1993 occurs on dolerite although this is now presumed to be extinct.
<i>Carex longebrachiata</i> drooping sedge	Rare / -	VERY LOW	Three previous records are from 1992. Grows along riverbanks and in rough grassland and pastures. Marginal habitat is present along the banks of the Prosser River but unlikely to have been overlooked.
<i>Deyeuxia apsleyensis</i> apsley bentgrass	Rare / -	VERY LOW	One previous record is from 1993. Known from a few sites near the east coast. Habitat includes low hills in black peppermint-white gum forest. Unlikely to be present.
<i>Diuris palustris</i> swamp doubletail	Endangered / -	VERY LOW	One previous record is from 2002. Rare and localised in coastal areas in grassy open eucalypt forest, sedgy grassland and heath with tea-tree and paperbark on poorly to moderately sandy peat and loams and sites that are usually wet in winter. No suitable habitat is present.
<i>Epacris virgata</i> (autumnalis) pretty heath	Pending Vulnerable / PENDING ENDANGERED	VERY LOW	Sixteen previous records are from 1996 and 2000. Occurs in dry sclerophyll forest mainly on dolerite but sometimes on the boundary of dolerite and mudstone. No suitable habitat is present.
<i>Eucalyptus barberi</i> barbers gum	Rare / -	VERY LOW	Several previous records are from 1945, 1971 and 2003. Occurs on the edges of dolerite rock plates in dry sclerophyll forest and scrub. No suitable habitat is present.
<i>Glossostigma elatinooides</i> small mudmat	Rare / -	VERY LOW	Two previous records are from 1998 and 1999. A small herb that occurs submerged in shallow water and on stream banks. Known on the east coast from the Prosser River. Marginal habitat present in the small swamp at the southern end of Raspins Beach.
<i>Gyrostemon thesioides</i> broom wheelfruit	Rare / -	LOW	Six previous records are from between 1964 and 1997. Occurs predominantly in <i>Allocasuarina</i> forest. Often grows following fire. No recent evidence of fire but some suitable habitat is present in the vicinity of Luther Point. Unlikely to have been overlooked during the survey unless present in low numbers.
<i>Isoetes elatior</i> tall quillwort	Rare / -	NONE	One previous record is from 1992. Grows fully submerged rooted in the substrate of calm to swift flowing water. No suitable habitat is present.
<i>Lepidium hyssopifolium</i> soft peppercress	Endangered / ENDANGERED	VERY LOW	One previous record is from 1992. Habitat is the growth suppression zone beneath large native and exotic trees in grassy woodland, grassland, roadsides and farms. It occurs in dry warm areas, on flat ground, within an altitude range of 40 to 500 m, in fertile soils and weakly acid to alkaline soils derived from a range of rock types. Unlikely to be present.

Species	Status <sup>10</sup> TSPA/EPBCA	Potential to occur	Observations and Preferred Habitat <sup>11</sup>
<i>Limonium baudinii</i> tasmanian sealavender	Vulnerable / VULNERABLE	NONE	The many previous records are from Triabunna. A Tasmanian endemic, only known from the saltmarshes in the Triabunna area close to the high water mark.
<i>Melaleuca pustulata</i> warted paperbark	Rare / -	LOW	Two previous records are from 1985. Occurs in dry open woodland, grassland and scrub, riparian zones and stable dunes in sparse coastal shrubbery. Unlikely to have been overlooked during the survey unless present in low numbers.
<i>Phyllangium divergens</i> wiry mitrewort	Vulnerable / -	VERY LOW	One previous record is from 1995. Occurs in open areas on periodically wet, sandy and clayey soils often overlying rock. No suitable habitat is present.
<i>Pomaderris intermedia</i> lemon dogwood	Rare / -	VERY LOW	One previous record is from 1931. Occurs in wet sclerophyll forests to wet shrubby woodlands on flat to gently sloping land often over granite or dolerite bedrock at elevations of 100 m to 800 m. No suitable habitat is present.
<i>Pomaderris phyllicifolia</i> subsp. <i>phyllicifolia</i> narrowleaf dogwood	Pending Rare / -	VERY LOW	Three previous records include 2 from 2010 and one dated unknown. Occurs in dry sclerophyll forest and often on riverbanks, including the Prosser River. Unlikely to be present.
<i>Pterostylis squamata</i> ruddy greenhood	Rare / -	LOW to MODERATE	Three previous records are from 1969 and 1993. Uncommon and localised in lowland heathy and grassy open eucalypt forest and heathland on well-drained sandy and loamy soils. Unlikely to have been in flower at the time of the survey but some suitable habitat in the DAS community.
<i>Scaevola aemula</i> fairy fanflower	Endangered / -	VERY LOW	One previous record from 1979 has a large error. Associated with dolerite soils within dry sclerophyll forest. No suitable habitat is present.
<i>Scleranthus fasciculatus</i> spreading knawel	Vulnerable / -	VERY LOW	One previous record is from 2000. Usually occurs in silver tussock grassland/grassy woodland in gaps between tussocks. Requires openness which is maintained by fire and stock grazing. No suitable habitat is present.
<i>Spyridium lawrencei</i> small-leaf dustymiller	Vulnerable / ENDANGERED	VERY LOW	Seven previous observations are from between 1991 and 2005. Most populations occur on dolerite rock plates or generally open ground. It is most abundant in disturbed woodland and open forest. Unlikely to be present or to have been overlooked during the survey.
<i>Stellaria multiflora</i> rayless starwort	Rare / -	VERY LOW	One previous record is from 2005. Occurs on rocky sites. No suitable habitat is present.
<i>Teucrium corymbosum</i> forest germander	Rare / -	MODERATE	Eight previous records are from between 1931 and 2003. Occurs predominantly in <i>Allocasuarina verticillata</i> coastal and inland woodland, <i>Eucalyptus viminalis</i> woodland and native grasslands. Some suitable habitat present in the vicinity of Luther Point. Possibly overlooked during the survey.
<i>Viola cunninghamii</i> alpine violet	Rare / -	VERY LOW	One previous records is from 1984. Most commonly occurs to moist, sub-alpine areas. Records of this species in other environments may be erroneous.
<i>Vittadinia gracilis</i> woolly new-holland daisy	Rare / -	VERY LOW	One previous record is from 1929. Known from dry sites on dolerite and basalt, predominantly in dry sclerophyll forest. No suitable habitat is present.

### APPENDIX 3B – REVIEW OF THREATENED FAUNA

The following details threatened fauna species, from the Natural Values Report, that have previously been recorded, or could potentially occur, with a 5 km radius. It also provides an assessment of the likely occurrence of each within the study area.

Species	Status TSPA/ EPBCA <sup>12</sup>	Potential to occur	Observations and preferred habitat <sup>13</sup>
<b>MAMMALS</b>			
Spotted-tailed quoll <i>Dasyurus maculatus maculatus</i>	Rare / VULNERABLE	Foraging: MODERATE  Nesting: LOW	One previous sighting is from 1996. This naturally rare forest-dweller most commonly inhabits wet forest but also occurs in dry forest. It forages and hunts on farmland and pasture, travelling up to 20 km at night, and shelters in logs, amongst rocks or thick vegetation. Maternal dens are underground burrows, hollow logs or under rocks. No active dens were observed in the reserve but suitable nesting, shelter and foraging habitat is present.
Eastern-barred bandicoot <i>Perameles gunnii gunnii</i>	- / VULNERABLE	Foraging: MODERATE  Nesting: LOW	Seven previous sightings are from between 1974 & 1992. Favours a mosaic of open grassy areas for foraging with thick vegetation cover for shelter and nesting. This habitat mosaic is present although most sightings are from more than 500m from the coastal reserve. However, it may periodically forage in the area.
Tasmanian devil <i>Sarcophilus harrisi</i>	Endangered / ENDANGERED	Foraging: LOW  Nesting: VERY LOW	Five previous sightings are from between 1975 & 1994. Inhabits forest, woodland and agricultural areas, sheltering during the day in caves, old burrows and thick scrub. Although devil facial tumour disease is the main threat to this species the protection of maternal dens to ensure successful breeding is important to assist recovery. Unlikely to currently occur in the coastal reserve although foraging habitat is present.
Thylacine <i>Thylacinus cynocephalus</i>	Extinct / EXTINCT	NONE	Two previous sightings are from 1950 & 1975. Now presumed extinct, the preferred hunting habitat of the thylacine was open grassland, scrub and dry sclerophyll woodland and it slept in well concealed dens and lairs.
<b>BIRDS</b>			
Wedge-tailed eagle <i>Aquila audax fleayi</i>	Endangered / ENDANGERED	Foraging: MODERATE  Nesting: NONE	Sixteen previous sightings in the vicinity are from between 1977 & 2008. Requires large sheltered trees for nesting and is highly sensitive to disturbance during the breeding season. There is no suitable nesting habitat within the coastal reserve and known nests in the vicinity is beyond the range of potential disturbance. However, it may forage in the general vicinity.

<sup>12</sup> TSPA – Tasmanian Threatened Species Protection Act 1995; EPBCA – Commonwealth Environment Protection & Biodiversity Conservation Act 1999

<sup>13</sup> Natural Values Report; Bryant & Jackson 1999.

Species	Status TSPA/ EPBCA <sup>12</sup>	Potential to occur	Observations and preferred habitat <sup>13</sup>
White-bellied sea-eagle <i>Haliaeetus leucogaster</i>	Vulnerable / -	Foraging: HIGH  Nesting: VERY LOW	Twenty-three previous sightings in the vicinity are from between 1977 and 1995. Similar habitat requirements to the wedge-tailed eagle but it is generally more tolerant of disturbance. Large trees between Luther Point and Spring Beach provide only very marginal nesting habitat and a known nest in the vicinity is beyond the range of potential disturbance. However, it may utilise some of the eucalypts in the reserve as perching trees whilst foraging in adjacent waters.
Grey goshawk <i>Accipiter novaehollandiae</i>	Endangered / -	Foraging: VERY LOW  Nesting: NONE	Inhabits large tracts of wet forest. No suitable habitat is present. However, juveniles or non-breeding adults may visit the area on occasion.
Masked owl <i>Tyto novaehollandiae castanops</i>	Endangered / VULNERABLE	Foraging: MODERATE  Nesting: NONE	Fourteen previous sightings in the vicinity are from between 1977 & 1994. Preferred habitat is coastal and sub-coastal dry forest and woodland of the north, north east, east and south east. Requires a mosaic of forest and open areas for foraging and large old-growth hollow-bearing trees for nesting. There are no suitable nesting trees in the reserve and there are no known nests within 5km. However, it may forage in the general vicinity.
Swift parrot <i>Lathamus discolor</i>	Endangered / ENDANGERED	Foraging: VERY HIGH  Nesting: MODERATE to HIGH	Eighty-three previous sightings in the vicinity are from between 1977 & 2010. Thirteen of the sightings are nest sites although only one of these is within 500m of the reserve. This occurs to the south of Spring Beach. It migrates from the mainland each year to breed mainly near the Tasmanian east coast. Requires tree hollows for nesting and feeds on nectar of blue gum and black gum flowers. There are many blue gums in the coastal reserve and some with hollows.
Forty-spotted pardalote <i>Pardalotus quadragintus</i>	Endangered / ENDANGERED	Foraging: HIGH  Nesting: LOW	Restricted to dry grassy forest and woodland along the east coast containing mature white gum. There is a known breeding colony on nearby Maria Island. Dispersing fledglings may forage on the many mature white gums in the coastal reserve.
Fairy tern <i>Sterna nereis nereis</i>	Vulnerable / VULNERABLE	Nesting: <b>NESTS IN THE RESERVE</b>	Eleven previous sightings are from between 1977 to 2003. Preferred breeding habitat includes sand or shingle beaches, dunes and estuaries. It is known to nest regularly on the sand spit at the southern end of Raspins Beach.
Little tern <i>Sterna albigrons sinensis</i>	Endangered / -	Nesting: MODERATE	One previous sighting is from 1978 although it has an 18km error. Preferred breeding habitat includes sand or shingle beaches, dunes and estuaries. Beach nests are exposed scrapes on the ground. Potential nesting habitat is present on the sand spit at the southern end of Raspins Beach.
Eastern curlew <i>Numenius madagascariensis</i>	Endangered / -	Foraging: MODERATE	One previous sighting is from 1978 although it has an 18km error. An uncommon summer migrant to Tasmania inhabiting coastal estuaries, mudflats and islands but it breeds in the northern hemisphere.
Shy albatross <i>Diomedea cauta cauta</i>	Pending Vulnerable / PENDING VULNERABLE	NONE	Five previous sightings are from around 1980 although all have an 18km error. An oceanic bird that breeds on offshore islands and rock stacks. In Tasmania known breeding sites are Mewstone, Pedra Branca Island and Albatross Island.

Species	Status TSPA/ EPBCA <sup>12</sup>	Potential to occur	Observations and preferred habitat <sup>13</sup>
Fairy prion (southern subspecies) <i>Pachyptila turtur subantarctica</i>	Endangered / VULNERABLE	NONE	Two previous sightings are from around 1980 although they have an 18km error. An oceanic bird that breeds on offshore islands mainly in Bass Strait. It may occasionally visit Great Oyster Bay.
Australasian bittern <i>Botaurus poiciloptilus</i>	- / ENDANGERED	NONE	One previous sighting is from 1977 although it has an 18km error. Inhabits wetlands, usually freshwater, with dense reed beds and rushes. No suitable habitat is present.
<b>FROGS</b>			
Green and gold frog <i>Litoria raniformis</i>	Vulnerable / VULNERABLE	NONE	Requires permanent fresh water for breeding preferably shallow water with diverse emergent vegetation. No suitable habitat is present.
<b>FISH</b>			
Australian grayling <i>Prototroctes maraena</i>	Vulnerable / VULNERABLE	NONE	Five previous sightings are from between 1985 & 2004. Inhabits permanent rivers and streams. It is known from the Prosser River.
<b>INVERTEBRATES</b>			
Broad-toothed stag beetle <i>Lissotes latidens</i>	Endangered / ENDANGERED	LOW	One previous sighting is from 2007. This species has a restricted range in the south east. It is known only from between Orford and Copping as well as on Maria Island. Preferred habitat is wet eucalypt forest, either in extensive stands or along drainage lines and wet gullies. Both adults and larvae live in the soil but decaying logs are important in providing shelter from desiccation, predation and habitat disturbance such as wildfire. The small gully that drains into the sea on West Shelley beach may provide some very marginal habitat.

## **APPENDIX 4A – LEGISLATIVE OBLIGATIONS RELEVANT TO NATURAL VALUES OF RESERVES**

### **Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBCA)**

No species of flora that are listed under the EPBCA occur in the Reserves.

One species of fauna listed under the EPBCA that is known to nest in the Reserves is the fairy tern. Other fauna species listed under this Act that potentially nest and/or forage in the Reserves are the swift parrot and forty-spotted pardalote.

Referral under the EPBC Act is necessary if any management activity within the reserves are likely to have a significant impact on listed threatened species. In this regard the Act states:

‘An action has, will have, or is likely to have a significant impact on a critically endangered, endangered or vulnerable species if it does, will or is likely to (amongst other things):

- modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline, or
- adversely affect habitat critical to the survival of a species.’

### **Tasmanian Threatened Species Protection Act 1995 (TSPA)**

One flora species listed under the TSPA that occurs in the Reserves is *Cynoglossum australe*.

One species of fauna listed under the TSPA that is known to nest in the Reserves is the fairy tern. Other fauna species listed under this Act that potentially nest and/or forage in the Reserves are the swift parrot, white-bellied sea-eagle and forty-spotted pardalote.

Any management activities in the Reserves that will impact on these species would require a permit application to be submitted to the Development and Conservation Assessment Branch (DCAB) of DPIPWE with regard to the populations affected.

### **Tasmanian Forest Practices Regulations 2005**

The Forest Practices Regulations<sup>14</sup> require a Forest Practices Plan (FPP) where clearing of forest is in excess of 1 hectare or 100 tonnes of timber or involves ‘vulnerable land’ where the thresholds become less.

Under the terms of the Forest Practices Regulations, any native vegetation which has the potential to develop to a height exceeding 5 m is considered ‘forest’. ‘Vulnerable’ land includes land supporting threatened vegetation communities or species listed as threatened under the TSPA and/or the EPBCA. Six threatened communities that occur in the Reserves are DGL, DVC, DAS, DOV, NCR and ASF. Threatened species are listed above under the EPBCA and TSPA headings.

Any clearing activities on ‘vulnerable land’ will require an FPP, irrespective of the volume of timber or area of vegetation involved (unless the clearing or harvesting is necessary to protect public safety or to maintain existing infrastructure and it involves less than 1 ha or 5 tonnes of timber).

### **Tasmanian Weed Management Act 1999 (WMA)**

The following table summarises the status within the Glamorgan Spring Bay municipality of ‘declared weeds’ present in the reserves according to relevant Weed Management Plans prepared under the Act.

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<sup>14</sup> Tasmanian State Government 2005.

Common name	Scientific name	Status in the GSB municipality	Municipal classification
blackberry	<i>Rubus fruticosus</i> aggregate	Widespread	B
boneseed	<i>Chrysanthemoides monilifera</i> subsp. <i>monilifera</i>	Localised infestation	A
fennel	<i>Foeniculum vulgare</i>	Isolated occurrences	A
gorse	<i>Ulex europaeus</i>	Widespread	B
montpellier broom	<i>Genista monspessulana</i>	Localised infestation	A
spanish heath	<i>Erica lusitanica</i>	Isolated occurrences	A

According to the provisions of the WMA Zone A municipalities are those that host infestations of a ‘declared weed’ that are currently deemed eradicable. Achieving and maintaining a total absence of the weed from within the municipal boundaries is the ultimate management outcome.

Zone B municipalities are those that host infestations of the ‘declared weed’ that are not deemed eradicable because the feasibility of effective management is low at this time. Therefore, the objective is containment of infestations. The objective includes preventing spread of the ‘declared weed’ from the municipality and preventing spread to properties currently free of them. There is a requirement to prevent spread of the ‘declared weeds’ to properties containing sites for significant flora, fauna and vegetation communities such as those present here.

## **APPENDIX 4B – OTHER LEGISLATION AND POLICIES RELEVANT TO RESERVE MANAGEMENT**

### Strategic policies

Glamorgan Spring Bay Planning Scheme

State Coastal Policy

Tasmanian Reserve Management Code of Practice 2003

### Legislation

*Aboriginal Relics Act 1975*

*Cat Management Act 2009*

*Crown Lands Acts 1976*

*Environmental Management and Pollution Control Act 1994*

*Historical Cultural Heritage Act 1995*

*Land Use Planning and Approvals Act 1993*

*Local Government Act 1993*

*National Parks and Reserves Management Act 2002*

*Nature Conservation Act 2002*

**APPENDIX 5A – DECLARED WEED PHOTOS**



blackberry *Rubus fruticosus* aggregate



boneseed *Chrysanthemoides monilifera*  
subsp. *monilifera*



fennel *Foeniculum vulgare*



fennel *Foeniculum vulgare*  
(close-up of leaves)



gorse *Ulex europaeus*



montpellier broom *Genista monspessulana*



spanish heath *Erica lusitanica*

**APPENDIX 5B – ENVIRONMENTAL WEED PHOTOS**



aeonium *Aeonium arboreum*



african daisy *Arctotis stoechadifolia*



agapanthus *Agapanthus praecox*



aloe *Aloe* sp.



banana passion fruit *Passiflora tarminiana*  
(leaves)



banana passion fruit *Passiflora tarminiana*  
(with fruit)



berryflower heath *Erica baccans*



blue butterflybush *Psoralea pinnata*



blue periwinkle *Vinca major*



bluebell creeper *Billardiera heterophylla*



bottlebrush *Melaleuca* sp.



cape ivy *Delairea odorata*



century plant *Agave americana*



coast teatree *Leptospermum laevigatum*



cootamundra wattle *Acacia baileyana*



cotoneaster *Cotoneaster* sp.



dolichos pea *Dipogon lignosus*



freesia *Freesia* hybrid



gazania *Gazania* sp.



geranium *Pelargonium* sp.



giant honey myrtle *Melaleuca armillaris*  
subsp. *armillaris*



grevillea hybrid *Grevillea* sp.



gum *Eucalyptus* sp.



hawthorn *Crataegus monogyna*



howitt's wattle *Acacia howittii*



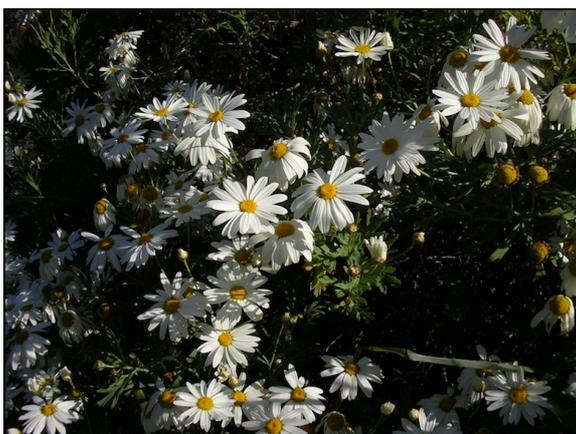
ivy *Hedera helix*



large mediterranean spurge *Euphorbia characias*



madeira broom *Genista stenopetala*



marguerite *Argyranthemum frutescens*



milkwort *Polygala myrtifolia*



mirrorbush *Coprosma repens*



montbretia *Crocsmia Xcrocsmiiflora*



monterey cypress *Cupressus macrocarpa*



nasturtium *Tropaeolum majus*



new zealand flax *Phormium tenax*



noonflower *Lampranthus glaucus*  
(red variant)



noonflower *Lampranthus glaucus*  
(yellow variant)



pigs ear *Cotyledon orbiculata*



pride-of-madeira *Echium candicans*



prunus *Prunus* sp.



radiata pine *Pinus radiata*



red hot poker *Kniphofia uvaria*



red valerian *Centranthus ruber*



redondo creeper *Drosanthemum candens*



soap aloe *Aloe maculata*



spanish broom *Spartium junceum*



strawberry tree *Arbutus unedo*



sweet briar *Rosa rubiginosa*



sweet pittosporum *Pittosporum undulatum*



trailing daisy *Osteospermum fruticosum*



watsonia *Watsonia meriana*



winter euryops *Euryops abrotanifolius*



wirilda *Acacia retinodes*