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Draft Reserve Activity Plan 2019 – 2029

CREMORNE COASTAL RESERVE



ADVICE PREPARED BY

ENVIRO-DYNAMICS

FOR THE

CLARENCE CITY COUNCIL

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DRAFT Cremorne Coastal Reserve Activity Plan 2019-2029

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EXECUTIVE SUMMARY

The Cremorne Coastal Reserve Activity Plan (RAP) outlines the management requirements for the natural, recreational and cultural values of the Council Reserves and Council Managed Land from the Cremorne Foreshore Park at 16 Frederick Henry Parade, north along the beach and headlands to Forest Hill Road, south around Cremorne Spit and within the Cremorne Avenue road reserve (Figure 1).

The RAP has been developed following on ground site surveys, community and stakeholder consultation and reference to scientific and specialised consultant reports that relate to the area and surrounding environment. The RAP provides prioritised on-ground actions and focuses on achievable actions that can be maintained in the long-term. The plan provides a review of the actions recommended in the previous *Cremorne Foreshore Management Plan (2010)* but does not seek to replace the findings of this document. It also updates and builds on the recommended actions of the *Weed Management Plan for Cremorne and Pipe Clay Lagoon Foreshore (2008)*.

Eight key recommendations were provided in the Cremorne Coastal Reserve Report Card (Appendix 1) which was distributed to the local community to seek feedback on the draft Cremorne Coastal Reserve Activity Plan. Additional lower priority recommendations are made within the RAP.

The key recommendations in the Report Card and Feedback Sheet are provided below. The recommendations are provided in the order they appear in the RAP and do not reflect order of priority:

1. Rationalise trails across dunes and coastal vegetation and close informal trails;
2. Owners to remove dinghies and kayaks off the dunes and store on their property;
3. Consider barriers along Pipe Clay Esplanade to reduce vegetation impacts;
4. Request community support to monitor for suspected Chilean needle grass weed;
5. Install signs to prohibit dogs and horses on north end of Pipe Clay Lagoon;
6. Plan and construct a Cremorne Avenue Trail;
7. Plan and construct Cremorne Spit Trail;
8. Develop a Cremorne Village Landscape Plan.

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CONTENTS

Executive Summary i

Contents ii

1 Introduction 1

1.1 Background 1

1.2 Aims and Process of the Reserve Activity Plan 3

2 Community Consultation 4

2.1 Community Identified opportunities and issues 4

2.2 Review of 2010 Cremorne Foreshore Management Plan 5

3 Natural Values 6

3.1 Vegetation Communities 6

3.2 Flora Values 7

3.3 Fauna Values 11

4 Social & Cultural Values 12

4.1 Aboriginal Heritage 12

4.2 European Heritage 12

4.3 Recreational Values 13

5 Managament Issues and Recommendations 17

5.1 Vegetation Management 17

5.2 Weed Management 19

5.3 Domestic Animal Management 21

5.4 Coastal Erosion 24

5.5 Trails & Connectivity 28

5.6 Stormwater Management 31

5.7 Infrastructure 33

5.8 Community Coastcare Involvement 38

DRAFT

6 Review of Reserve Activity Plan 40

7 Implementation Plan 41

8 References 45

Appendix 1: Cremorne Coastal Reserve Report Card 46

Appendix 2: Results of Community Consultation 47

Appendix 3: Review of Cremorne Foreshore Management Plan 2010 56

Appendix 4: Plant List for Cremorne Coastal Reserve 58

Appendix 5: Calverts Hill Nature Reserve *E. morrisbyi* project summary – Threatened Plants Tasmania, 2018 64

Appendix 6: Bird List for Cremorne Reserve 65

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1 INTRODUCTION

1.1 BACKGROUND

The Cremorne Coastal Reserve network consists of multiple parcels of land along the coastline between Forest Hill Road and Cremorne (Figure 1). The reserves are managed by the Clarence City Council and include the following land;

- 10.34 ha reserve at 16 Frederick Henry Parade (park) which includes coastal reserves along Cremorne Beach and Spit, Frederick Henry Parade and the northern edge of Pipe Clay Esplanade adjacent to Cremorne Avenue and Cremorne Avenue road reserve to the junction with South Arm Highway;
- 5.5 ha known as 380A Forest Hill Road (Title 171330/101) recently acquired as part of an approved subdivision;
- 5-metre wide trail corridor (leased from State Government) between Cremorne Beach and 380A Forest Hill Road including 66A Wisteria Avenue (Title 46789/2 and 7), Title 24745/10 and 180A Woodlands Road (Title 136818/2) adjoining Calverts Nature Reserve; and
- 5-metre wide trail corridor on the north side of Cremorne Avenue road reserve linking Cremorne Village to the South Arm Highway.
- Various roads reserves and beach accesses within Cremorne Village

The reserves are generally linear in nature and occur along the coastline adjacent and to the north of Cremorne and around the north eastern end of Pipe Clay Lagoon. These reserves contain remnant native vegetation including coastal sheoak forest, grassland, coastal dune vegetation and saline herb land. Pipe Clay Lagoon's saltmarsh is the southernmost saltmarsh in Australia and provides important habitat for a range of shorebirds including migratory species. The reserves within the Cremorne village contain managed verges, footpaths, parkland areas and street trees.

The reserves provide opportunities for the community to access the beach and lagoon and provide connections to the coastline and reserves to the north. They are utilised for walking, bike riding and dog walking, and provide access to the water for bird watching, swimming and boating. The natural values of the reserves surrounding Cremorne and the recreational opportunities that they allow are highly valued by the local community and are identified as key reasons for living in the community.

The format of this RAP follows a template used by the Clarence City Council for other reserves within the municipality. It includes an outline of the natural, recreational and cultural values of the reserved land and outlines the management activities to maintain and enhance these values. The management objective and priorities are based strongly on the outcomes of community consultation.



Figure 1: Location Plan - Cremorne Coastal Reserve and areas covered by the RAP

1.2 Aims and Process of the Reserve Activity Plan

The aims of the Cremorne Coastal Reserve Activity Plan (RAP) 2018-2022 are to:

- Ensure the Reserve is sustainably managed to preserve and enhance its natural, cultural and social values;
- Identify priority management activities to be undertaken within the Reserve by the Council and/or volunteers and contactors as resources become available during 2018-2022; and
- Encourage community engagement through raising awareness of the Reserve's values and encourage activities that will minimise threats to these values.

The aims of the RAP will be achieved through the following means:

- Undertake an initial assessment of the natural, recreational and cultural values and the existing or potential management issues;
- Undertake a two-stage community consultation process to capture local knowledge and interests; and provide opportunities to raise and prioritise issues. This process builds knowledge of the reserve and management concerns whilst actively involving the community in management planning; and
- Review all existing documents and specialised reports regarding issues such as coastal erosion, sea level rise, and climate change impacts that relate to the Cremorne area.
- Review the implementation of the *Cremorne Foreshore Management Plan* (Inspiring Place 2010) and *Weed Management Plan for Cremorne and Pipe Clay Lagoon Foreshore* (Tasflora 2008) to determine works undertaken and those still to be carried out; and
- Provide priority management actions for the 2019-2029 RAP based on the community consultation, review of existing plans and the current understanding of the natural and social values and any threats to those values.

2 COMMUNITY CONSULTATION

Community consultation plays an integral role in the development of all RAP's. The following consultation has been undertaken as part of the planning process:

- A community 'walk and talk' was held in the Reserve on the 5th August 2018 with 35 residents attending. This event was advertised in local newspapers, online and letters were posted to Cremorne residents.
- Feedback forms were posted to residents – 14 submissions were received.
- Key stakeholders were consulted about the history of the area and concerns and previous works carried out in the area.

Following the initial community consultation process, further consultation will be sought after the release of the 'Reserve Report Card' (see Appendix 1: Cremorne Coastal Reserve Report Card) and the Draft RAP. The results of this consultation will be incorporated into the Final RAP for approval by the Council.

2.1 COMMUNITY IDENTIFIED OPPORTUNITIES AND ISSUES

The following is a summary of the main points from both the community 'walk and talk' and written community feedback received by the end of the advertised consultation period. They also include results consultation with stakeholders such as the Pipe Clay Coastcare Group. A more detailed summary of feedback gathered during the community consultation phase is provided in Appendix 2: Result of Community Consultation.

The opportunities and management issues identified include but are not limited to:

- Developing new trails to improve access, connectivity and recreational opportunities;
- Improve the quality of the existing walking and biking trails (multi-use);
- Protection of the natural values of the area;
- Coastal erosion and mitigation;
- Maintenance of existing infrastructure - needs to have a budget and be implemented;
- Reduction of speed limits on Cremorne Avenue and along the spit to improve safety;
- Use and access to boat ramp and pontoon including parking;
- Management of stormwater along roads and footpaths;
- Management of weeds.

Additional management issues raised included:

- Cost of creating new trails and ongoing management effort;

- Improve parking & road signs;
- Issues with the trail routes and privacy;
- Need for quantitative survey the use of the area by cyclists and pedestrians to inform trail expansion;
- Survey changes in the volume of sand.

2.2 Review of 2010 Cremorne Foreshore Management Plan

A review of the Cremorne Foreshore Management Plan 2010 (CFMP) was undertaken in consultation with Clarence City Council and the Pipe Clay Coastcare Group to determine actions that have been successfully completed and those that are still relevant to be carried forward in this RAP. A summary of the actions and the status of each action is provided in Appendix 3. Section 5 of the RAP summarises the updated implementation plan for the next 5-year period.

3 NATURAL VALUES

An assessment of the natural values of the various reserves that form the RAP was undertaken in August 2018. The assessment of the native vegetation communities and flora and fauna values was concentrated along the coastal reserve and around Pipe Clay Lagoon where remnant vegetation occurs. A significant portion of the reserve within and around Cremorne is cleared or managed land such as road reserves, parkland and former grazing land. There is a narrow strip of remnant coastal vegetation along sections of the foreshore, including some areas which have been restored by the Coastcare group. The assessment also included mapping the occurrence of declared and environmental weeds which pose a threat to the area's natural values.

A description of the natural values of the reserve is provided in the following sections. Threats to the natural values and management recommendations to conserve and maintain these values are provided in Section 3.2.

3.1 VEGETATION COMMUNITIES

The coastal reserve supports a range of different native vegetation types, including sheoak woodland, eucalypt woodland, grassland, coastal scrub and coastal saltmarsh. There are also areas of cleared land and former agricultural land which are dominated by non-native vegetation types (Figure 2).

In the north, at Forest Hill Road, the trail passes through an area of *Eucalyptus amygdalina* coastal forest and woodland (DAC) and into *E. amygdalina* coastal forest on mudstone (DAM).

The main native vegetation community within the coastal reserve is *Allocasuarina verticillata* forest (NAV) which occurs as a semi-continuous strip along the coastal cliffs north of Cremorne. This vegetation type is characterised by a canopy of drooping sheoak (*Allocasuarina verticillata*), interspersed with prickly box (*Bursaria spinosa*), broadleaf hopbush (*Dodonaea viscosa*), and the occasional white gum (*Eucalyptus viminalis*). The understorey includes a mixture of native and exotic grasses and herbs.

There are patches of Lowland grassland complex (GCL) and Themeda grassland (GTL) along the coastal strip, which include a variety of native grasses and herbs, including wallaby-grasses (*Rytidosperma* sp.), spear-grasses (*Austrostipa* sp.), kangaroo grass (*Themeda triandra*), tussock-grasses (*Poa* sp.) peachberry heath (*Lissanthe strigosa*) and native cranberry (*Astroloma humifusum*).

Acacia longifolia coastal scrub (SAC) occurs along occurs along Cremorne Beach and in front of Pipe Clay Avenue (Figure 2). This vegetation contains a shrub layer of coast wattle (*Acacia longifolia* var. *sophorae*), grey saltbush (*Atriplex cinerea*), coastal beardheath (*Leucopogon parviflorus*), common boobialla (*Myoporum insulare*), coastal saltbush (*Rhagodia candolleana*) and drooping sheoak

(*Allocasuarina verticillata*) over coastal tussockgrass (*Poa poiformis*) and marram grass (*Ammophila arenaria*). There is a strip of succulent saline herb-land (ASS) saltmarsh fringes Pipe Clay Lagoon at either end of Cremorne Avenue. The community contains shrubby glasswort (*Sclerostegia arbuscula*), glasswort (*Sarcocornia* sp.), grey saltbush, marsh saltbush (*Atriplex paludosa*) and chaffy sawsedge (*Gahnia filum*).

There are no threatened vegetation communities within the Cremorne Coastal Reserve. However, Calverts Hill Nature Reserve contains one of the two remaining patches of *Eucalyptus morrisbyi* forest and woodland (DMO) in Tasmania and is of very high conservation importance. Parks and Wildlife and Threatened Plants Tasmania are undertaking a project to conserve *E. morrisbyi* which includes management of the reserve and plantings in the wider Cremorne area. Refer to Appendix 5 for an update on this project and contact details.

3.2 Flora Values

Threatened Species

Two threatened flora species occur within the reserve network.

New holland daisy (*Vittadinia muelleri*) – this small daisy was recorded along the coastal trail to the north of Cremorne Beach. The species was recorded in low numbers although it has the potential to rapidly expand under suitable conditions.

Morrisbys gum (*Eucalyptus morrisbyi*) – this threatened eucalypt occurs in the reserve along Pipe Clay Avenue and in road reserves in the township and either side of Cremorne avenue near South Arm Road. The majority of these trees have been planted by the Coastcare Group or as part of revegetation efforts as associated with the morrisbys gum recovery plan. Calvert's Hill contains one of the two remaining natural stands of morrisbys gum remaining in the State (refer to Appendix 5)

Two additional species have been recorded around the edge of Pipe Clay Lagoon - tall blowngrass (*Lachnagrostis robusta*) and tiny arrowgrass (*Triglochin minutissima*). These species were not recorded during recent surveys however the reserve along the Lagoon edge provides some potential habitat.

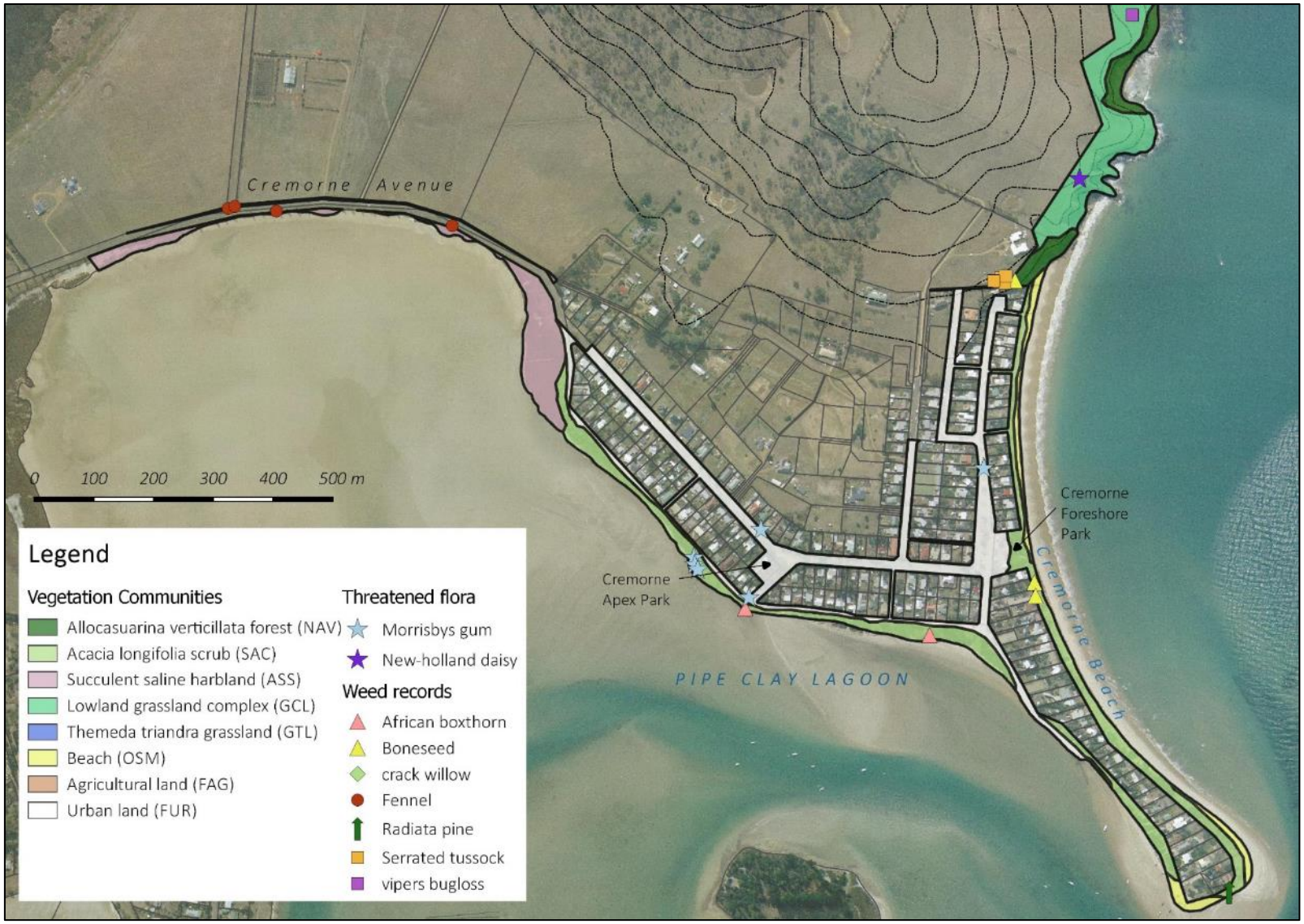


Figure 2: Vegetation communities, threatened flora records and weeds within the Cremorne Coastal Reserves (Southern end).

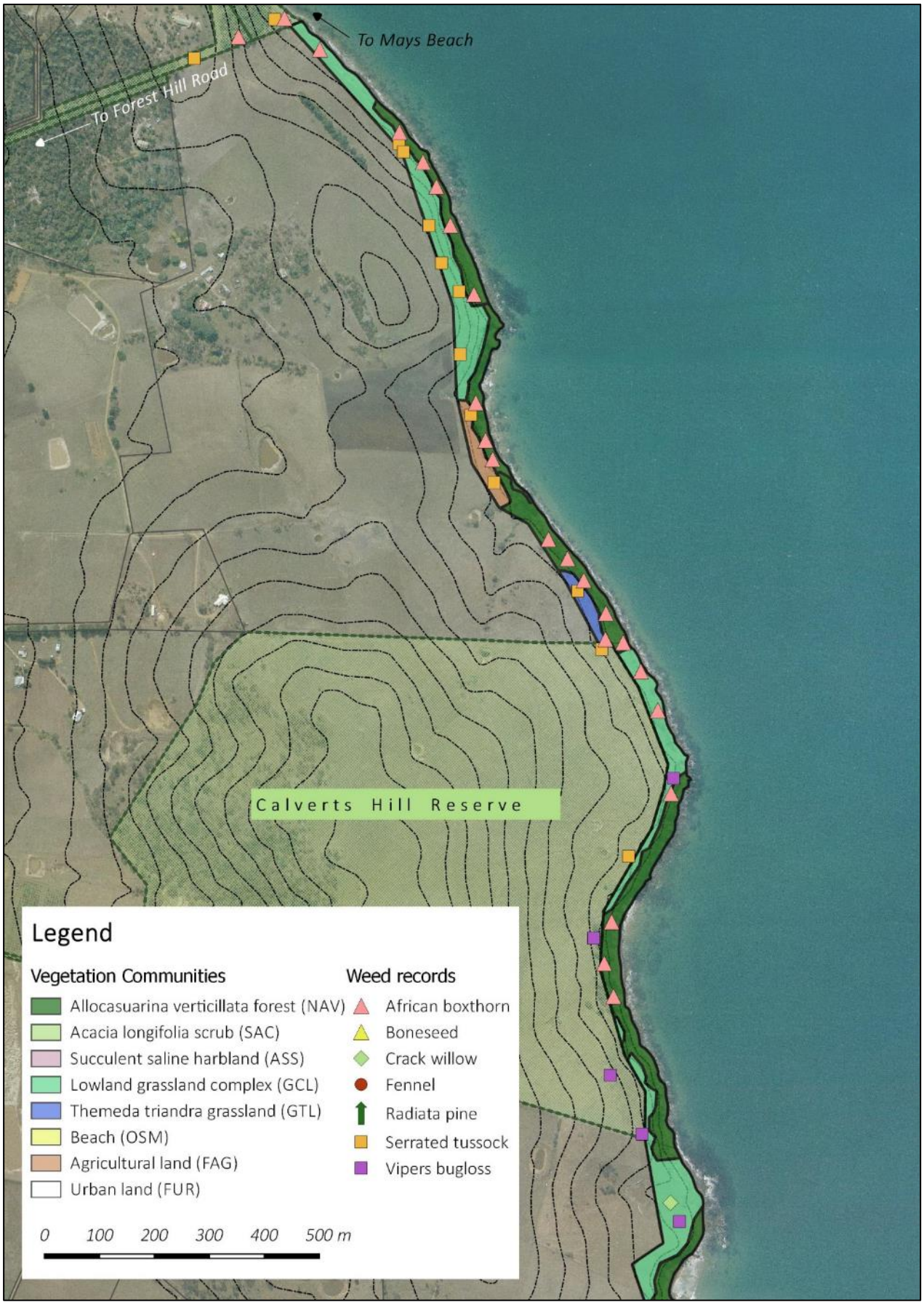


Figure 3: Vegetation communities and weeds within the Cremorne Coastal Reserves (Northern end).

3.2.1 Introduced Species

The coastal reserves contain a wide range of introduced species due to the land use history of the area, disturbance levels and proximity to residential gardens. The weeds range from highly invasive environmental weeds to more benign introduced species such as pasture grasses and some garden species. The '*Weed Management Plan Cremorne Beach and Pipe Clay Lagoon Foreshore (2008)*' identified three declared weeds within the reserve – blackberry (*Rubus fruticosus*), boneseed (*Chrysanthemoides monilifera*) and african boxthorn (*Lycium ferocissimum*) with serrated tussock (*Nassella trichotoma*) present in Calverts Hill Reserve. In addition to these weeds a range of environmental weeds were also identified including myrtle-leaf milkwort (*Polygala myrtifolia*), mirror bush (*Coprosma repens*), cape wattle (*Paraserianthes lophantha*), hawthorn (*Crataegus monogyna*), golden wattle (*Acacia pycnantha*), radiata pine (*Pinus radiata*), sweet briar (*Rosa rubiginosa*), pride of Madeira (*Echium candicans*), cape ivy (*Senecio angulatus*), red valerian (*Centranthus ruber*), cape daisy (*Dimorphotheca* sp.), gazania (*Gazania linearis*) and wood sorrel (*Oxalis* sp.). Marram grass (*Ammophila arenaria*) was widespread in the foredunes along Cremorne Beach.

Additional weed mapping was carried out as part of the RAP. Weeds occurring along the coastline from Cremorne Beach to the Forest Hill Road were mapped and weeds around Cremorne Beach were remapped. Serrated tussock is dominant and widespread in grassy areas adjacent to agricultural land and on Calverts Hill along with scattered vipers bugloss (*Echium vulgare*) plants also recorded. Mature African boxthorn plants are well established and common on the steep shoreline north of Cremorne Beach and isolated crack willows (*Salix fragilis*) occur at the edge of a small dam (Figure 3). Fennel (*Foeniculum vulgare*) occurs along the edge of Cremorne Avenue at the top of Pipe Clay Lagoon (Figure 2).

As a result of considerable efforts of the Coastcare Group blackberry, boneseed and african boxthorn are now largely controlled within the reserves along the Cremorne Beach and around the Pipe Clay Lagoon (Figure 2 shows indicative weed locations only).

A large population of Chilean needle grass (Nassella neesiana) has been detected in the nearby areas of Honeywood Drive, Delphis Drive, School Road and South Arm Highway in nearby Sandford, including a gravel quarry on School Road. Whilst this species has not been recorded in the Cremorne area given the proximity to the closest known populations, less than a kilometre away on South Arm Highway, and the mode of spread along roadsides through slashing activities there is potential for this species to establish. Due to difficulty in identification of this species ongoing monitoring is required for early detection or immediate eradication of any established populations.

3.3 FAUNA VALUES

The coastal vegetation along Cremorne beach and to the north provides habitat for a number of bird species and small mammals. White-bellied sea eagles foraging along the coastline and around the lagoon and are likely to perch in remnant vegetation (a nest is recorded in vegetation south of the Cremorne spit). The threatened eastern barred bandicoot has been recorded among grassland along the coast and is also likely to occur in remnant vegetation, along roadsides and in backyards and parkland within the Cremorne township.

Shorebirds - The saltmarsh vegetation fringing Pipe Clay Lagoon provides important habitat for resident and migratory shorebirds, invertebrates and fish species. *'Migratory bird species recorded from within Pipe Clay Lagoon, protected under international treaties and/or under threatened species legislation, include the curlew sandpiper, red-necked stint, short-tailed shearwater, pectoral sandpiper, sharp-tailed sandpiper, Caspian tern, white-bellied sea eagle, crested tern, bar-tailed godwit, great white egret and Lathams snipe. The Lagoon also provides habitat for non-migratory species such as pied oystercatchers, sooty oystercatchers and the red-capped plover. Cormorants, gulls, herons and masked lapwings are common in the area. The Lagoon is used for feeding, roosting and nesting' (Cremorne Foreshore Management Plan).*

Other Fauna - The Cheveron Looper moth (*Amelora acontistica*) has been found in the saltmarsh vegetation and there are records of the endangered spotted hand fish (*Brachionichthys hirsutus*) and live bearing sea star (*Parvulastra vivipara*) within the lagoon. In addition to providing fauna habitat the fringing vegetation around the lagoon edge also plays an important buffer role between areas of urban and rural land and Frederick Henry Bay and Pipe Clay Lagoon which contributes to managing water quality and protecting the habitat for these species.

A list of birds recorded within the Cremorne Reserves and adjacent Lagoon is provided in (Appendix 6).

4 SOCIAL & CULTURAL VALUES

Cremorne is a small coastal village which offers a low-key, seaside lifestyle and sense of community. Residents are attracted by the surrounding natural environment, easy access to beaches and the water and recreational opportunities such as fishing, sailing, beach combing, walking, dog walking, biking, bird watching and horse riding. Many residents commute into Hobart or nearby suburbs for work and there is an increasing number of young families now living in the area.

4.1 ABORIGINAL HERITAGE

The area surrounding Pipe Clay Lagoon formed a part of the Moomairemener aboriginal homeland. A 2010 Aboriginal heritage survey of the area did not identify any Aboriginal cultural material in addition to a known shell midden on the hill at the north end of Cremorne Beach. This is the only known aboriginal artefact within the Reserve and is a protected site under the *Aboriginal Relics Act 1975*. The site is not to be disturbed by revegetation or trail works associated with this RAP. Clarence City Council holds the report for the heritage survey. Details of the Aboriginal shell midden must be shared with the trail builders to ensure the trail is constructed appropriately in the vicinity of the midden. Trail builders should follow Unanticipated Discovery Plan (UDP) during trail construction. The UDP is available at https://www.aboriginalheritage.tas.gov.au/Documents/UDP.pdf

4.2 EUROPEAN HERITAGE

The last 200 years have seen many modifications to the area in terms of agriculture, shack and residential development and recreational use. Land clearing occurred in the 1800s and orchards became the main commercial venture in the early 1900s (Figure 4). The town became a week end shack destination during the 1930's to 50's and over time shacks have been converted or replaced with permanent residential dwellings.



Figure 4: Example of useful historic photo of Cremorne Spit for photogrammetry (Source: S. Morrisby).

4.3 Recreational Values

The Cremorne reserves provide opportunities for the community to access the beach and lagoon and provide connections to the coastline and reserves to the north. They are utilised for walking, bike riding and dog walking, horse riding and provide access to the water for bird watching, swimming and boating.

Cremorne is also used by the wider community as a recreational destination with the population increasing dramatically during summer. Cremorne also provides one of the only boat launching areas in the local area and the spit area can become very busy during warmer months.

The township provides basic public facilities including the Cremorne Foreshore Park which has public toilets, BBQ area, shaded seating areas and fitness equipment. The park has been progressively upgraded over the past few years as per recommendations contained in the Cremorne Foreshore Management Plan (2012). There is also a community playground on Cremorne Avenue which contains children's play equipment a ball court and a covered picnic table. The playground space is sometimes used for public events.

4.3.1 Existing beach and lagoon access and trails

Access - There are formal access points to Cremorne Beach through Cremorne Foreshore Park and along Frederick Henry Parade (3 entrances north of park) and a number of informal access points to the Lagoon along Pipe Clay Avenue (Figure 5 and 6). In addition, there are numerous private access trails through the dunes along Cremorne Beach.



Figure 5 – Existing beach access point along Frederick Henry Parade.



Figure 6 – Existing access to lagoon off Pipe Clay Avenue

Coastal trails - There is an existing rough trail from the end of Cremorne Beach along the coastline towards Mays Beach. This trail is largely informal and poorly formed and eroded at the southern end where it runs from the beach to the top of the coastline cliffs (Figure 7). Access to the trail is restricted during high tide events however there is an alternative access to the headland trail is via a narrow trail off the end of Wisteria Road. This access also provides a potential route for mountain bikes.



Figure 7 – Existing eroded trail along coastline at northern end of Cremorne Beach and *alternative access to headland trail adjacent to 41 Frederick Henry Parade.*

The Clarence Council Trails and Trails Strategy 2012 identified the link between Cremorne and Mays Beach as a priority section of the Clarence Foreshore Trail. As the trail crosses Crown and Parks & Wildlife Service (PWS) land discussions have been held and agreement reached for the ongoing management of the trails by Council. Upgrading the Cremorne trails was widely supported at the Walk and Talk and in initial written contributions from the public.

There is a formed trail through the coastal vegetation are the end of the spit (Figure 8) which includes interpretive signs.

There is currently no footpath or access trail connecting Cremorne with South Arm Road and onto the Tangara Trail off Delphis Drive and more broadly to Lauderdale and Clifton Beach. This link was identified as a priority during community consultation as part of the RAP and during the development

of the Cremorne Foreshore Management Plan (2012) and the connection is also recognised in the Clarence Bike Strategy.

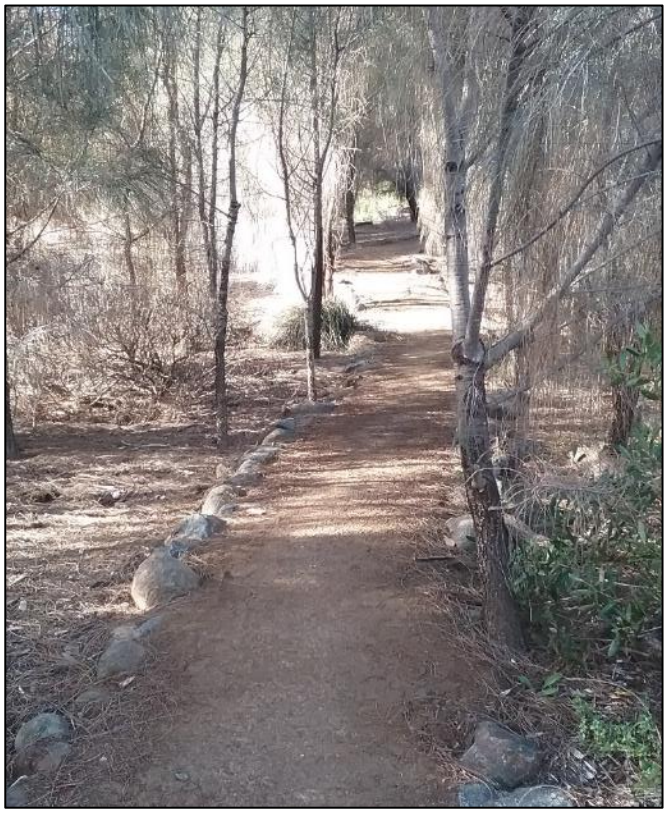


Figure 8 - existing coastal trail across end of the spit.

5 MANAGAMENT ISSUES AND RECOMMENDATIONS

A range of management issues were identified during the consultation phase of the Draft RAP. Issues have been divided into two major groupings: - management of natural values and management of recreation values and public amenity.

Each section includes management actions, with priority actions those that had strong community support and/or were identified as important issues by Council officers or experts.

Natural Values Management

- Vegetation management;
- Weeds;
- Domestic animals;
- Coastal erosion and inundation.

Recreational Values and Public Amenity

- Trails and connectivity;
- Stormwater Management;
- Entrance upgrades, signs and bins;
- Speed limits;
- Cremorne Village Plan;
- Parking;
- Pontoon access and parking;
- Community Involvement.

5.1 VEGETATION MANAGEMENT

The coastal vegetation within the Cremorne Reserves faces a number of impacts including weed invasion, trampling, clearance and pruning, encroachment from neighbouring land and impacts of coastal erosion.

Informal access - The narrow reserves along Cremorne Beach and Pipe Clay Lagoon are particularly impacted by informal access trails from private land to the beach and to the lagoon. These trails destabilise the dune (causing wind tunnels and dune blow out), degrade stabilising vegetation and encourage weed invasion. The storage of dinghies and kayaks in among the dunes and coastal

vegetation and the parking of vehicles and trailers along the edge of the reserves also degrade the vegetation.

Pruning and clearance of vegetation along Pipe Clay Esplanade to maintain fields of view is also a management issue. These issues were identified in the CFMP in 2012 however the issue is still current.

A public awareness campaign should be undertaken regarding the importance of the dune and lagoon fringing vegetation in terms of mitigating shoreline erosion. The Cremorne Village Plan should also consider the closing and rehabilitating of informal trails along the lagoon foreshore and the placement of physical barriers to prevent encroachment into the reserve vegetation.

VM1 Action – Rationalise trails across dunes and coastal vegetation and close informal trails.

VM2 Action – Owners to remove dinghies and kayaks off the dunes and coastal reserve and store on their property.

VM3 Action – Plan to protect Pipe Clay Esplanade vegetation by closing unapproved access and parking.



Figure 5 – informal access to Pipe Clay Lagoon. Contributes to loss of vegetation and coastal erosion.

Coastal erosion - The existing native vegetation is also prone to the impacts of coastal erosion however the management of this issue is discussed in Section 5.4 Coastal Erosion.

The monitoring of the coastal vegetation and the saltmarsh vegetation through a formal vegetation condition assessment (VCA) process is recommended. This monitoring is a useful tool to determine if vegetation is being degraded by coastal inundation, weeds and vegetation impacts.

VM4 Action – Establish Vegetation Condition Assessment (VCA) plots in coastal vegetation (dunes, saltmarsh and fringing vegetation) to monitor condition of vegetation over time.

5.2 WEED MANAGEMENT

The control of weeds in the Cremorne reserves has been carried out by Coastcare Group members and residents with the support of Council. Declared weed species as such as canary broom, boneseed and blackberry have been priorities as identified in the '*Weed Management Plan Cremorne Beach and Pipe Clay Lagoon Foreshore (2008)'.* As a result of the weed management efforts these species have been largely controlled around the Cremorne township.

Other lower priority weed species are still present in the coastal reserve and remnant vegetation around the lagoon however many of these species play a role in dune stabilisation (marram grass) and erosion control. As such control of these species is of lower priority unless removal of the weeds can be carried out in conjunction with replacement with native species.

Weed species that have increased in density since the 2008 plan was written include serrated tussock and vipers bugloss. The Calvert Hills Reserve and surrounding grasslands are now dominated by serrated tussock and as such control efforts for this species will be restricted to minimising its spread along the coastline and into Cremorne.

Since the WMP was written, serrated tussock (*Nassella trichotoma*) has spread into the coastal reserve, surrounding properties and parts of Cremorne from the known population in Calverts Hill Reserve. Whilst serrated tussock is a declared weed and a weed of national significance (WONS) due to the extent of this species control or eradication is now unlikely without significant effort and investment. Management priority for the Calverts Hill Reserve is limited to management of the *Eucalyptus* morrisbyi trees and as such it is unlikely that serrated tussock populations will be extensively managed in the near future by Parks and Wildlife Service.

Preventing the spread of vipers bugloss along the coastal reserve and into adjacent grassland and farmland is of higher priority as this invasive weeds is still manageable.

African boxthorn is widespread along the coastal reserve north of Cremorne Beach. Due to the size of individual plants and clusters and their location (on steep cliff faces – Figure 9) control of this species

will be restricted to accessible plants on the hilltop. There will be some opportunity to physically remove small to medium sized plants during trail upgrades along the Headland trail in order to maintain user safety. Preventing this species from spreading further in the coastal reserve is more achievable.

Chilean needle grass - a higher priority for weed management is Chilean needle grass. The Cremorne area should be monitored for this species and if found or suspected in the Reserve, township or along of Cremorne Avenue, it should be reported to the Council Weed Officer for swift action. Refer to the DPIPWE website for facts about Chilean needle grass (https://dpipwe.tas.gov.au/invasive-species/weeds/weeds-index/declared-weeds-index/chillean-needle-grass).

The recommended approach to monitoring both weed control measures and revegetation success is to establish photo monitoring points where photos are taken throughout the year and then collated to demonstrate encroaching weeds or revegetation success.

It is also recommended that public education be provided regarding weeds in the area. The Coastal Weeds of Tasmania booklet available on line at https://dpipwe.tas.gov.au/Documents/Coastal-Weed-of-Tasmania-booklet.pdf is a very relevant source of information for Cremorne.

WM1 Action – Continue to control priority declared weeds as recommended by the 2008 WMP – PRIORITY

WM2 Action – Control vipers bugloss plants in coastal reserve – PRIORITY

WM3 Action – Control serrated tussock along margins of reserves, trail corridor and where not already established to prevent further spread – PRIORITY

WM4 – Control African boxthorn along margins of reserve, on hilltops and along the trail corridor to prevent further spread and manage public safety risk – PRIORITY

WM5 Action – Request community support to monitor Chilean needle grass –PRIORITY

WM6 Action – Establish photo point monitoring sites to monitor weed and vegetation rehabilitation sites

WM7 Action – Promote the Coastal Weeds of Tasmania booklet



Figure 3: African Boxthorn within the Cremorne Coastal Reserve on steep coastal cliffs.

5.3 Domestic Animal Management

Domestic animals including dogs, cats and horses can impact important fauna species known from the reserves and the adjoining lagoon through predation, spread of disease, disturbance of foraging, breeding and nesting activities and through trampling of important habitat (such as saltmarsh).

It is important that dogs are kept under effective control whilst in the Reserve to minimise conflict with other users and reduce risks to wildlife, including shorebirds and bandicoots.

Feral cats have been observed in the Reserve and are known to have significant impacts on native fauna through the predation of small mammals (including eastern barred bandicoots), birds and lizards and the spread of disease such as toxoplasmosis. Domestic cats that roam bushland can have similar impacts to feral cats. The CCC supports the *Cat Management Act 2012* which requires de-sexing, micro chipping and keeping cats under control and inside at night.

The council policy in terms of dogs and horse assess to Pipe Clay Lagoon and Cremorne Beach is as follows;

- Dogs and horses are not permitted at any time along Pipe Clay Lagoon from 91 Cremorne Avenue west to 201 Cremorne Avenue (Figure 10). The key reasons for this exclusion zone are to prevent impacts on the resident and migratory shorebirds and their habitat; and protection of the sensitive salt marsh vegetation from trampling.

- Horses are not permitted on any council managed beaches (including beaches in Pipe Clay Lagoon and along Cremorne Beach).
- Dogs are to be under effective control along the reminder of Pipe Clay Lagoon towards Cremorne, along Cremorne Beach and along the western side of Pipe Clay Lagoon from 91 Cremorne Avenue to the southern end at Clifton. Effective control means that a dog may be taken off lead but must remain within close proximity and within line of sight of the owner, plus the dog must be immediately responsive to an owner's command.

Free roaming domestic dogs, also domestic and feral cats can be a threat to native fauna particularly birds by way of disturbance when foraging or resting, nest destruction and predation.

The public should be aware that cats are required to be de-sexed and micro-chipped by the *Cat Management Act 2012*. In addition, cats should be kept indoors at night to prevent them from hunting native animals and birds.

The Pipe Clay Coastcare Group supports Birds Tasmania annual bird surveys of nesting birds and the existing signs (Figure 12) about bird species in the area aims to raise awareness about the importance and variety of species. More awareness may be provided by referring to or distributing DPIPWE's "Shorebirds in Tasmania" information sheet. (https://www.parks.tas.gov.au/file.aspx?id=6947).

Actions that individuals can take to prevent damage to wildlife and their habitat include:

- Keep dogs on lead and away from shorebirds, and respect dog control signs;
- Walk on wet sand below high-tide mark to minimise the chance of stepping on eggs and disturbing adults;
- Do not drive on the beach; and
- Do not collect seaweed or other natural beach materials.

DM1 Action – Distribute DPIPWE's "Shorebirds in Tasmania" information sheet.

DM2 Action - Install signs regarding prohibition of dogs and horses from northern end of Pipe Clay Lagoon. – PRIORITY

DM3 Action - Promote requirements of the *Cat Management Act 2012* including de-sexing and microchipping. Promote cats being kept inside at night

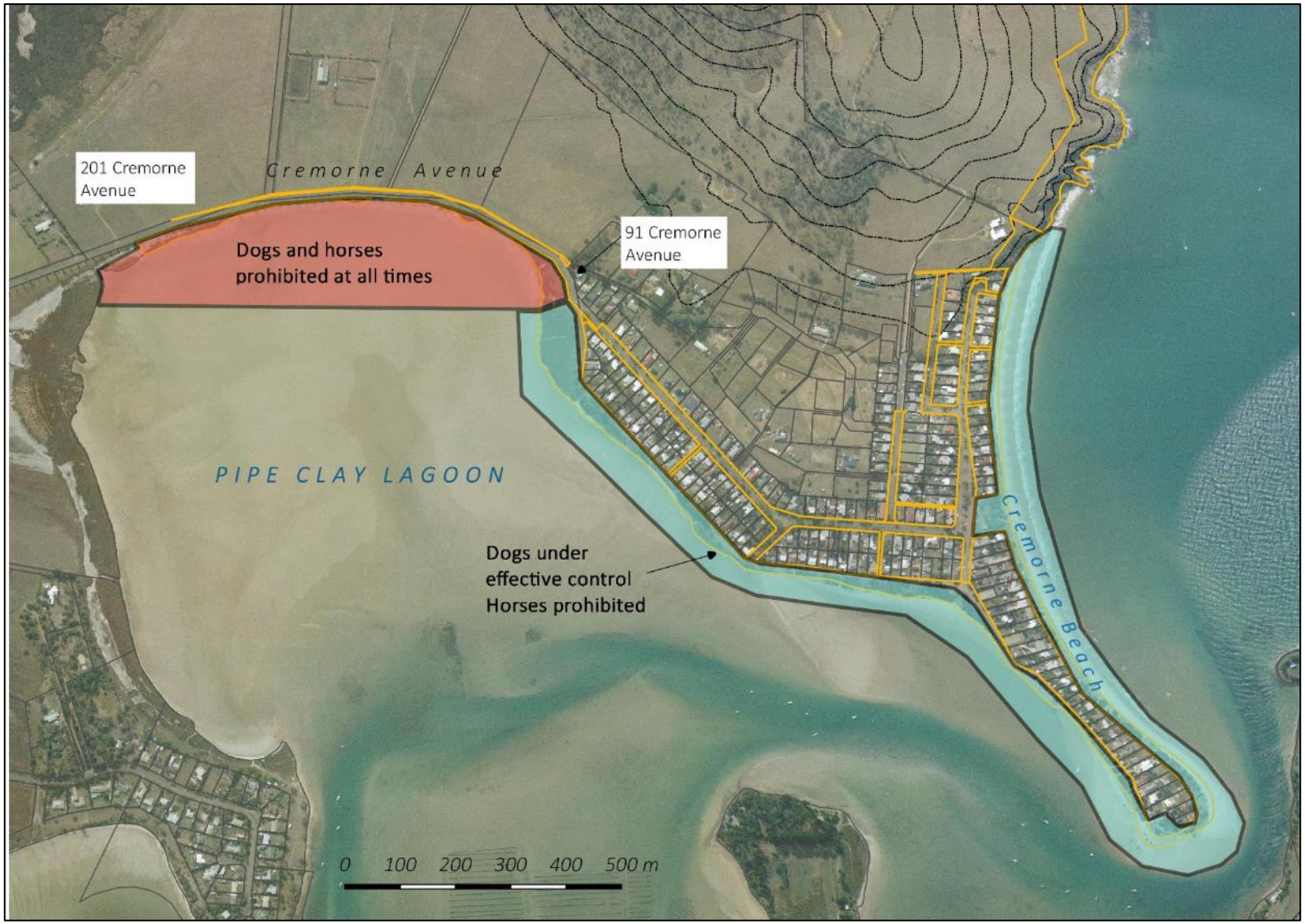


Figure 4: Dog and horse restricted areas around Cremorne.

5.4 COASTAL EROSION

In 2008, the Clarence Council initiated a project in response to Council and community concerns about erosion of beaches and shorelines and flooding events in coastal areas. The purpose of the project was to provide an integrated assessment of climate change risks on coastal areas. The report titled '*Climate Change Impacts on Clarence Coastal Area*' identified Cremorne as a priority area currently at risk and provided potentially feasible adaptive management options to address inundation and erosion, subject to detailed studies, including: raising land levels and short-term flood barriers; and a seawall and groyne nourishment to manage erosion at Cremorne Beach (SGS 2009). A sand nourishment project was undertaken in combination with jute and planting to provide some dune stabilisation.

As the result of a prolonged storm event in 2011 which caused extensive erosion and shoreline retreat across beaches in Clarence, the CCC Shoreline Monitoring Program was initiated. The ongoing program involves annual coastal surveying that documents contemporary and historical changes in shoreline structure and position of beaches to expose trends in erosion and accretion over the longer term. Cremorne Beach (including the eastern side of Pipe Clay Lagoon (Figure 12) is one of the priority beaches monitored as part of the program). Figure 11 is a specially prepared image which illustrates the shoreline movement from 1958 to 2018 using three images from 1958, 2011 and 2018. The image demonstrates the value of the annual high-resolution aerial beach monitoring program and the historic sequence of ortho-rectified aerial photos (photogrammetry) which map the shoreline position using the edge of the dune vegetation and ground control markers. At this stage, there are only three images available but more aerial photos should be processed in the future to demonstrate the trends. Maintenance of ground control markers located at the rear of the beach is vital to ensure the images have consistent ground control points to enable processing of the aerial photography.

CE1 Action – Continue the CCC Shoreline Monitoring Program at Cremorne Beach and Pipe Clay Lagoon combining technical and public participation – PRIORITY

Coastline – Cremorne Beach

The Cremorne Beach shoreline, facing Frederick Henry Bay, showed uniform recovery between 2013 and 2017 since the prolonged storm event in 2011. It has been relatively stable since the 2016-17 survey with an average seaward growth of 60 cm (Dell 2017). The 2016-17 results indicated "easing of the rate of shoreline retreat" (Dell 2017). The 2018 results "*exhibited ongoing recovery of the*

shoreline position" and stabilisation, which was attributed to the sand replenishment program and rapidly expanding marram grass (*Ammophila arenaria*) along the fore dunes.

Pipe Clay Lagoon

Between 2013 and 2017 the shoreline of Pipe Clay lagoon to the west of Cremorne has retreated up to 3 m in places.

> *"For the first time since 2013 the shoreline of Pipe Clay Lagoon from inside the spit towards the South Arm Road was mapped in response to community concern about observed ongoing erosion. A recession of around 20-40 cm is observed at two of the monitoring points associated with a slight retreat in the dune scarp and associated vegetation is present along much of the northern half of the beach. During the four-year interval between sampling a noticeable and consistent shoreline retreat of over one metre of the saltmarsh community has occurred to the west of 2 Pipe Clay Lagoon Esplanade. In comparison the shoreline on the northern end of Pipe Clay Lagoon close to the road has remained relatively stable"* (Dell 2017).



Figure 5: Beach Monitoring results from 1958, 2011 and 2018 (Source: Dell 2018)

Retaining walls - Due to ongoing retreat of the shoreline within the lagoon, rock retaining walls were constructed along a section of the shoreline by community volunteers using materials supplied by the Council. This infrastructure has held up well but is now showing signs of deterioration and may require augmenting or extending. Council has initiated a scoping project by coastal engineers to determine the best long-term approach to land stabilisation inside the lagoon. This planning phase aims to develop a methodology that will stabilise erosion and prevent shoreline recession for the next two decades for a 300 m stretch of coastline on the northern shore of Pipe Clay Lagoon along Pipe Clay Esplanade. Any design of a seawall needs to consider possible impacts on the shorebird habitat as a result of installing a hard seawall structure along the lagoon edge.

At this stage, the deliverable will be a technical report, detailing both the methodology and tabulated design parameters along with concept design drawings.

> **CE2 Action – Develop and carry out a staged approach in accordance with a Coastal Engineers report, to limit erosion along the eastern and northern Pipe Clay Lagoon shoreline.**

As part of the Shoreline Monitoring Program, Council would like to collect images (new and old) of the Cremorne Coastline (Figure 3) particularly during or following major storm or inundation events. This collection of photos will enhance and support understanding trends in coastal erosion and inundation into the future along with Council's current program of capturing high resolution aerial beach photography and developing photogrammetry.

> **CE3 Action – Compile and collate photos to contribute to understanding of trends in coastal erosion and inundation. Contact Council on 6217 9713.**

Protection of the coastal vegetation from clearing and pruning and impacts from informal beach access (refer to Section 5.1) to Cremorne Beach dunes and Pipe Clay Lagoon plays an important role is minimising coastal erosion. Providing more education about protecting the dunes is needed to ensure the broader community understands the importance of coastal vegetation.

> **CE4 Action – Develop and promote the importance of protecting dunes through Council's social media.**

5.5 TRAILS & CONNECTIVITY

The development and upgrade of a number of trails to improve access and connectivity between Cremorne and surrounding towns was strongly supported during the community consultation and is a key priority of previous management plans of the area.

Proposed trail works include the following;

- Upgrade coastal trail to Forest Hill Road
- New trail from Cremorne to South Arm Road
- Cremorne Spit trail - extension of pedestrian access from southern end of Pipe Clay Esplanade towards spit.

5.5.1 Headland Coastal Trail

Upgrading the coastal trail from the north end of Cremorne Beach to Forest Hill Road (and Mays Beach) was identified as a priority of the Clarence Foreshore Trail in the Clarence Council Tracks and Trails Strategy 2012. Developing the trail and upgrading the entrance from the northern end of Cremorne Beach was strongly supported during community consultation. Use of the narrow reserve off the end of Wisteria Drive as an alternative entry was also supported (during high tides and for bikes) however there were some concerns from residents in regard to privacy through increased use of this trail. Dependent on usage levels screen plantings may be needed for this section of trail.

The proposed Headlands to Forest Hill trail will be constructed to Class 3 trail standard and be made from natural materials, in keeping with the local environment. A Class 3 walking trail has modified surfaces with hardened sections, natural hazards such as steep slopes and unstable surfaces and a width of 1.2 m or less in compliance with AS2056.1-2001. Users should have a moderate level of fitness and expect occasional encounters with other users.

The route of the linear coastal trail has been assessed by Mountain Trails Pty Ltd for upgrade. The alignment of the existing trail follows contours with less than 10% gradient except for the southern end of the trail and was the subject of a more detailed study by John Hughes (2018). It is proposed that the existing trail be gravelled, small creek gullies hardened, and grade dips will be added every 10 m. The proposed gravel is road base topped with mudstone for the 0.8m wide trail (Mountain Trails 2016). The detailed study of the trail alignment for the south end of the headlands to Forest Hill Walk determined that steps and a hand rail and a re-route are required due to the steep nature of the ascent from the north end of Cremorne beach to the headlands. The preferred route will close and rehabilitate two short sections of the existing trail to provide walker comfort on a contoured route (Figure 5).

TC1 Action – Upgrade the headlands portion of coastal trail to Forest Hill Road – PRIORITY

The trails have also been assessed for Aboriginal heritage with only one site discovered at the north end of Cremorne Beach. The trail builders will be informed of its location to ensure the trail avoids the area.

TC2 Action – Continue to protect midden and artefact sites during trail upgrades and other works and implement 'Unanticipated Discovery Protocols' as necessary - PRIORITY

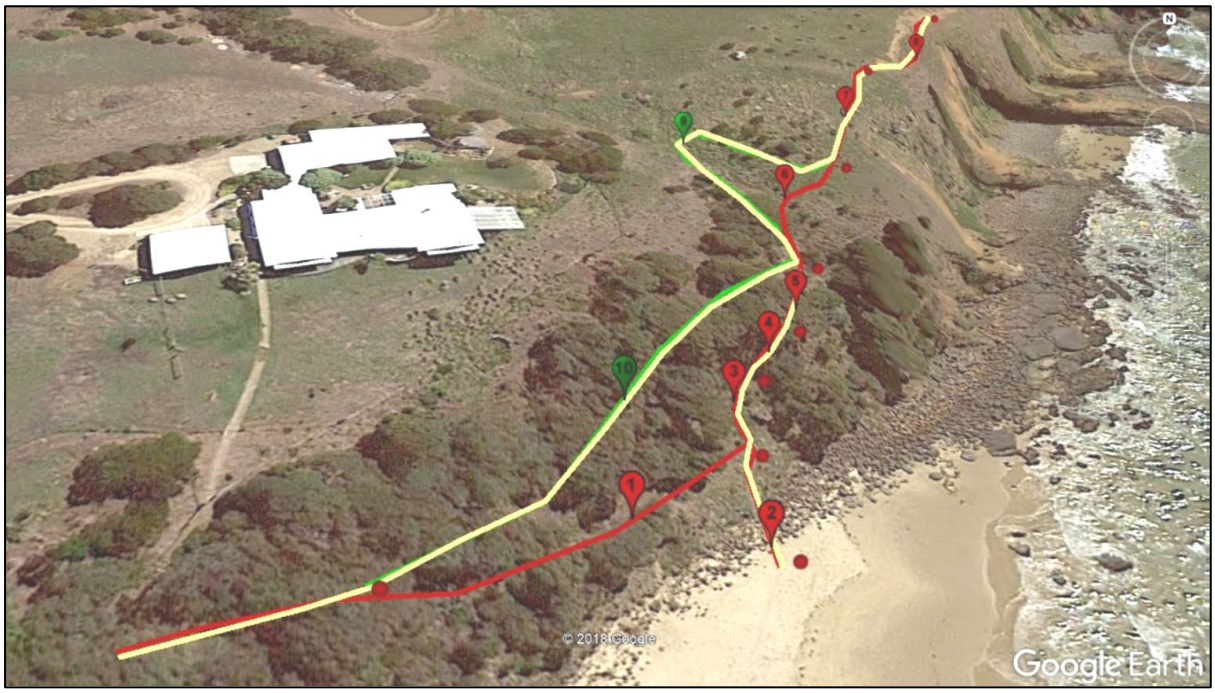


Figure 12: Preferred routes in yellow with sections 1 and 6 to be closed and regenerated to a natural state (Source: Hughes Oct 2018).

5.5.2 Cremorne Avenue path

The development of a footpath along Cremorne Avenue to South Arm Highway is proposed to provide a safe walking and biking trail for the community and to provide a future link to Lauderdale, Clifton Beach and the Tangara Trail (off Delphis Drive). The dual use path should be constructed to a high standard to allow for use by prams and bikes. The path is proposed to be located on the northern side of Cremorne Avenue within an existing 2-metre wide road reserve. While there is some preference from the community to locate the path on the southern side of Cremorne Avenue the

northern side will provide a buffer to the important shorebird habitat (and potential disturbance of resident and migratory bird species) and will not be impacted by future coastal erosion. This trail has significant community support and adjoining residents will be notified once a final design for the footpath is complete.

It is recommended that a formal path to connect Cremorne Avenue and Delphis Drive along the South Arm Highway. An initial assessment has been done by the Department of State Growth and Council will need to prepare a design for the path. This will provide a safe connection to the Tangara Trail network which will provide connectivity to other areas. In addition, a feasibility study to extend the route for bike riders and pedestrians to Clifton Beach is recommended.

TC3 Action – Plan and Construct a Cremorne Avenue Trail – PRIORITY

5.5.3 Cremorne Spit trail (extension)

Pedestrian access to houses along the spit during high tide is currently via an informal trail within the reserve along the front of properties. During high tides these properties are inaccessible by vehicle along the beach or by walking along the beach. It is recommended that this trail be upgraded to a Class 2 standard trail while retaining as much of the existing vegetation as possible. To establish a good alignment, a trail assessment of vegetation and drainage based on Figure 6 is recommended. In addition, the assessment should be coordinated with the Cremorne Village Landscape Plan.

TC4 Action – Plan and Construct Cremorne Spit trail – PRIORITY



Figure 13: Proposed trail route on lagoon side of the spit to provide pedestrian access to houses during high tide events.

5.6 Stormwater Management

Stormwater management around the streets of Cremorne and into the Lagoon was a significant issue raised by the community during the RAP consultation process and previously as part of the development of the Cremorne Foreshore Management Plan.

Regional Storm Water Management Plan

Clarence City Council has been progressively developing storm water management plans for catchments across the municipality. These plans require significant technical expertise to model the storm water flows in the area of interest and to use this information to develop risk maps of locations that could potentially be inundated under high intensity events. These plans also provide a range of options to mitigate the potential for inundation including Water Sensitive Urban Design (WSUD) options. A consultancy has just been allocated to complete a comprehensive Storm Water Management Plan from *Lauderdale to South Arm* which includes Cremorne.

Water Sensitive Urban Design (WSUD) measures can be considered as part of the Storm Water Management Plan. These measures aim to deliver water quality improvements to Pipe Clay Lagoon. A

number of WSUD measures, such as those following, may be considered as part of the plan or by individual landholders:

- Install rainwater tanks to collect more runoff from roof areas which reduce flooding by providing adequate temporary storage;
- Bioretention swales or biofiltration trenches are systems to convey minor floods associated with frequent rainfall events i.e. 1-year average recurrence interval and provide low level of extended detention;
- Sand filters operate in a similar manner to bioretention systems but do not support any vegetation because the filtration media is free-draining and dries out too frequently to support vegetation; or
- Infiltration measures which are subsurface water filtration systems designed to allow water to infiltrate into surrounding soil/sand. They encourage infiltration of stormwater, reduced runoff, pollutant retention, and have some detention and retention function (EPA 2012).

Note: Pipe Clay Esplanade is a private road i.e. it is not managed by Council or Department of State Growth.

SM1 Action – Upgrade the Cremorne Avenue village stormwater drainage as per recommendations of 'Storm Water Management Plan – Lauderdale to South Arm'.

5.7 INFRASTRUCTURE

5.7.1 Entrance upgrading and signs

The main entrance to the trail network in Cremorne is located at the Cremorne Foreshore Park at 16 Frederick Henry Parade (Figure 14). It provides access to beach walking, the trail north up over the headland to Marys Beach and the spit trail (Figure 8). Upgrading the coastal trail and the additional trails to extend the spit trail along to the end of Pipe Clay Esplanade and the connecting footpath along Cremorne Avenue to South Arm Road will extend the network (refer to Section 5.5).



Figure 14 – Main entrance (E1) to Cremorne Beach and coastal trail.

As the focal point of the village, Cremorne Park's design and management are an important component of Cremorne Village. The expansion or upgrading of trails may led to an increase in usage and as such the foreshore park entrance (Entrance 1) may need to be upgraded to include improved landscaping and trail network signs. This signs will indicate the trails to Mays Beach and Forest Hill Road and indicate the Class 3 nature of the trail. Signs will incorporate existing dog lead status of the beach and trail.

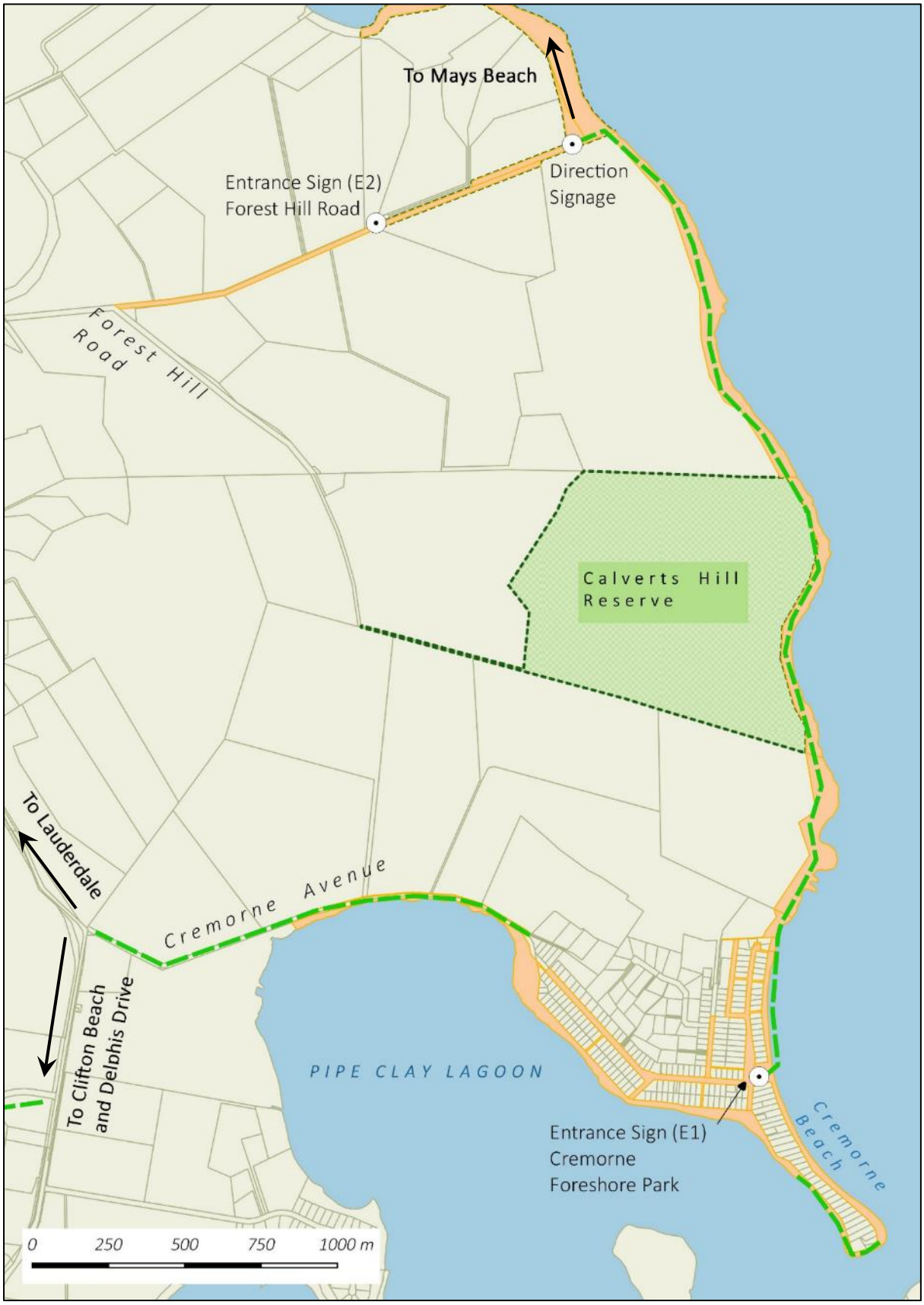


Figure 15 – Trail connectivity and location of signs

Additional trail signs at the Forest Hill Road entrance (Entrance 2) may also be required (Figures 15 and 16). In addition, signs at the intersection of the Forest Hill Road trail and the Mays Beach trail may be installed to indicate distances to Mays Beach, Forest Hill Road (E2) and Cremorne Beach.

IS1 – Install new signs at intersection of Forest Hill Road trail to indicate distances to Mays Beach, Forest Hill Road (E2) and Cremorne Beach.

A review of entrance landscaping and parking at the Forest Hill Road entrance may be required if this point become more commonly used.



Figure 14 – current entrance (E2) to coastal reserve from end of Forest Hill Road (limited parking available).

The Coastcare Group at Clifton (Wildcare Deslacs) has designed and installed a saltmarsh interpretive sign (Figure 16). It is recommended that a similar sign be located adjacent to the Cremorne Avenue saltmarsh to inform people of the significance of this habitat.

IS2 – Install new information sign about Saltmarshes at east end of Pipe Clay Lagoon

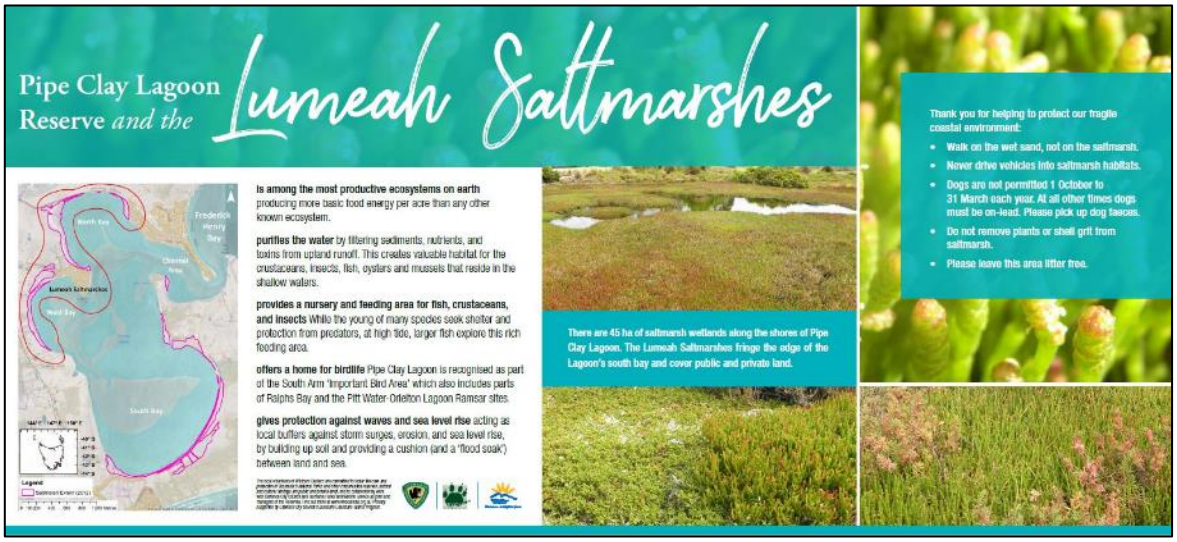


Figure 6: Example of sign installed at Blessington Street. Additional sign may be adapted and installed along Lagoon edge at Cremorne Avenue.

A review of signs in relation to dog exercise areas and dog and horse access regulations should be undertaken to ensure restriction are cleared indicated. The condition of existing signs should also be reviewed and signs repaired or replaced as required.

> IS3 Action – Review and install signs at appropriate locations to indicate which areas are on-lead or off-lead dog exercise areas
>
> IS4 Action – Review all reserve signs for graffiti, damage and aging and plan replacement

A lack of dog dispensers and bins was identified during the community consultant. Installing a dispenser and bin at the Foreshore Park is recommended.

> IS5 Action – Provide and maintain dog bag dispenser and bin at Cremorne Reserve entrance (E1)

5.7.2 Speed limits

A reduction in speed limits for vehicles was identified during the community consultation period as an ongoing issue. Currently speed limits along Cremorne Avenue are 100 km/hr (from highway along Cremorne Avenue) and 80km/hr (from midway along Cremorne Avenue into Cremorne township). These speeds pose a safety risk for pedestrians, bike riders, hose riders and children. The current speed limit on Cremorne spit is 40km/h which is also seen as a safety issue for pedestrian and wildlife and contributing to speeding and hooning.

While this issue is outside the general scope of a RAP it is noted that Council officers support the community's interest in lowering the speed limit in the area and Council is working with the Department of State Growth (DSG), which is the controlling authority for setting of speed limits. DSG is reviewing the speed limits on several Tasmanian rural roads, one of which is Cremorne Avenue.

IS6 Action – Communicate and follow-up need for speed limit reduction on Cremorne Avenue with Department of State Growth – PRIORITY

5.7.3 Cremorne Pontoon access and parking

The existing jetty and pontoon were installed in 2011 by Marine and Safety Tasmania (MAST). MAST is responsible for the ongoing management and maintenance of the infrastructure.

A number of public submissions raised concerns with access to the platoon and associated issues with car parking nearby to the pontoon. Access to the pontoon and boat launching area is from Pipe Clay Esplanade though the coastal reserve which is managed by the Clarence City Council.

Access to dwellings (vehicular and pedestrian) and to the pontoon is restricted during high tide events.

Issues identified by the community included the following;

- Impacts on shorebirds (identified by Birdlife Tasmanian during pervious consultation about the Cremorne Foreshore Management Plan);
- Impacts on shoreline vegetation by vehicles accessing beach at high tide;
- Parking on beach in peak periods or during high tide events – access to dwelling can be blocked; and
- Speed limits on beach – refer to Section 5.10

IS7 Action– Council in conjunction with MAST to review of access and parking

There is some parking available at the Foreshore Park on Frederick Henry Parade. Parking requirements may increase as a result of increased trail and beach usage. The development of a Cremorne Village Landscape Plan should consider this potential issue.

IS8 Action – Parking requirements to be considered as part of Cremorne Village Landscaping Plan.

5.7.4 Coordinated Landscape Planning

It was identified during community consultation that there is a lack of a coordinated and cohesive approach to landscaping planning and development of infrastructure in Cremorne. The development of a Cremorne Village Landscaping Plan was suggested as a means addressing a range of issues raised during the consultation including;

- Maintenance and enhancement of urban street trees - enhance the tree-scape, improve amenity and public safety with consideration to power and other infrastructure;
- An upgrade of entrance to the beach from Foreshore park and ensure that Cremorne Park is the hub for the local trail network (Section 5.7.1);
- Assess vehicle parking requirements in relation to increased pedestrian flows around the foreshore park and spit, boat launch arrangements, passive recreational areas and amenities;
- Clearly delineate vegetated areas, formal access ways to lagoon (closure of unapproved access ways), car parking where appropriate and passive recreation facilities including potential for art installations along Pipe Clay Esplanade.
- Identify trails to be rehabilitated to promote land stabilisation and provide habitat and promote shared trails to cater for clusters of residences (refer to the Tasmanian Coastal Works Manual 2010);
- Undertake audit of footpaths (and landscaping) and stormwater drainage (Section 5.6);
- Maintenance program for the existing infrastructure around the village e.g. playground on Cremorne Avenue;
- Provide a coordinated approach to signs, including trail signs (Section 5.7.1).
- Assessment of current street lighting along spit (identified during consultation).
- Inclusion of speed limit assessment (Section 5.7.2).

The development of a Village Landscape plan is outside the scope of this RAP.

IS9 Action – Develop Cremorne Village Landscaping Plan.

5.8 COMMUNITY COASTCARE INVOLVEMENT

The community Pipe Clay Coastcare Group provides a great service to the community by undertaking weed control, plantings, clean-up the beach days etc. and the individuals who participate benefit by being active and socially engaged. The group instigated and have implemented many of the

recommendations from the Cremorne Foreshore Management Plan (Inspiring Place 2010 - refer to Appendix 3).

Council should continue to support the CCG to increase participation in the group which will in turn increase the local community's awareness and protect the values of the area.

CI1 Action – Provide support for Pipe Clay Coastcare Group activities and increase the local community's awareness and participation in the group

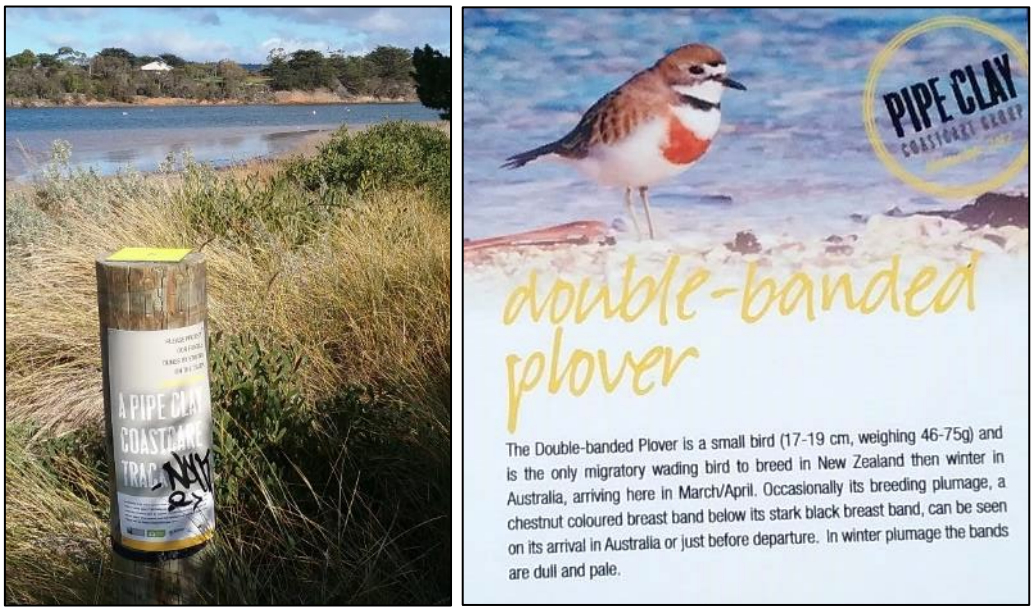


Figure 7: Vandalism of signs has occurred but generally the signs are intact and providing excellent information

6 REVIEW OF RESERVE ACTIVITY PLAN

The Cremorne Coastal Reserve Activity Plan will be reviewed at the end of the 10-year plan period (2029). To maintain currency of the recommendations and implementation plan, a review and update of the recommendations and Implementation plan involving the key stakeholders will be carried out after 5 years (2023)

Ongoing monitoring and maintenance of works e.g. weed control and trail maintenance outlined in the implementation plan should be undertaken by the responsible organisation. Weed management priorities may need to be updated to incorporate new information, such as new weed incursions. Photo point sites may be established to monitor weed management and vegetation rehabilitation.

R1 Action: Review the recommendations and implementation plan after 5 years (2023) and undertake complete review of the RAP in 2029

7 IMPLEMENTATION PLAN

	ACTION	TIMING	RESPONSIBILITY	PRIORITY
VEGETATION MANAGEMENT				
VM1	Rationalise trails across dunes and coastal vegetation and close informal trails	2019	Council	HIGH
VM2	Owners to remove dinghies and kayaks off the dunes and coastal reserve and store on their property	2019	Landowners, Council	HIGH
VM3	Plan to protect Pipe Clay Esplanade vegetation by closing unapproved access and parking.	2019-2020	Council	HIGH
VM4	Establish Vegetation Condition Assessment (VCA) plots in coastal vegetation (dunes, saltmarsh and fringing vegetation) to monitor condition of vegetation over time	2020	Council & CCG	MEDIUM
WEED MANAGEMENT				
WM1	Control priority declared weeds as recommended by the WMP (TasFlora 2008)	2019-2029	Council, CCG & Contractor	HIGH
WM2	Control vipers bugloss plants in coastal reserve	2019-2029	Council, CCG & Contractor	HIGH
WM3	Control serrated tussock along margins of reserves, trail corridor and where not already established to prevent further spread.	2019-2029	Council, CCG & Contractor	HIGH
WM4	Control African boxthorn along margins of reserve, on hilltops and along the trail corridor to prevent further spread and manage public safety risk	2019-2029	Council, CCG & Contractor	High
WM5	Request community support to monitor for suspected Chilean Needle Grass	Annually	Council, CCG	HIGH

	ACTION	TIMING	RESPONSIBILITY	PRIORITY
WM6	Establish photo point monitoring sites to monitor weed and vegetation rehabilitation sites	2019	Council & CCG	MEDIUM
WM7	Promote the Coastal Weeds of Tasmania booklet	Annually	Council & CCG	MEDIUM
DOMESTIC ANIMAL MANAGEMENT				
DM1	Distribute DPIPWE's "Shorebirds in Tasmania" information sheet	Ongoing	Council, CCG	MEDIUM
DM2	Install signs to prohibit dogs and horses from northern end of Pipe Clay Lagoon.	2019	Council	HIGH
DM3	Promote requirements of the *Cat Management Act 2012* including de-sexing and microchipping. Promote cats inside at night	Ongoing	Council	MEDIUM
COASTAL EROSION				
CE1	Continue the CCC Shoreline Monitoring Program at Cremorne Beach and Pipe Clay Lagoon combining technical and public participation	Annual	Council, Consultant	HIGH
CE2	Develop and carry out a staged approach in accordance with a Coastal Engineers report, to limit erosion along the eastern and northern Pipe Clay Lagoon shoreline	2019-2020	Council, Consultant	HIGH
CE3	Compile and collate photos to contribute to understanding of trends in coastal erosion and inundation. Contact Council on 6217 9713	Ongoing	Community & Council	MEDIUM
CE4	Develop and promote the importance of protecting dunes through Council's social media	Ongoing	Council	HIGH
TRAILS & CONNECTIVITY				
TC1	Upgrade the headlands portion of coastal trail to Forest Hill Road	2018 – 2019	Council, Contractor	HIGH
TC2	Continue to protect midden and artefact sites during trail upgrades and other works and implement 'Unanticipated Discovery Protocols' as necessary.	Ongoing	Council, Contractor	HIGH

	ACTION	TIMING	RESPONSIBILITY	PRIORITY
TC3	Plan and Construct a Cremorne Avenue Trail	2019-2020	Council & Contractor	HIGH
TC4	Plan and Construct Cremorne Spit Trail	2019	Council, Contractor	HIGH
STORMWATER MANAGEMENT				
SM1	Upgrade the Cremorne Avenue village stormwater drainage as per recommendations of 'Storm Water Management Plan – Lauderdale to South Arm'	2019 - 2029	Council & Contractor	MEDIUM
INFRASTRUCTURE				
IS1	Install new signs at intersection of Forest Hill Road trail to indicate distances to Mays Beach, Forest Hill Road (E2) and Cremorne Beach.	2019-2020	Council & Contractor	MEDIUM
IS2	Install new information sign about Saltmarshes at east end of Pipe Clay Lagoon	2019	Council, CCG	MEDIUM
IS3	Review and install signs at appropriate locations to indicate which areas are on-lead or off-lead dog exercise areas	2018 - 2019	Council & DSG	HIGH
IS4	Review all reserve signs for graffiti, damage and aging and plan replacement	2019	Council & Contractor	MEDIUM
IS5	Provide and maintain dog bag dispenser and bin at Cremorne Reserve entrance (E1)	2019	Council	MEDIUM
IS6	Communicate and follow-up need for speed limit reduction on Cremorne Avenue with Department of State Growth	2019	Council	HIGH
IS7	Council in conjunction with MAST to review of access and parking	2019	Council	MEDIUM
IS8	Parking requirements to be considered as part of Cremorne Village Landscaping Plan	2019	Council	MEDIUM
IS9	Develop Cremorne Village Landscaping Plan.	2019-2022	Council	HIGH
COMMUNITY COASTCARE INVOLVEMENT				

	ACTION	TIMING	RESPONSIBILITY	PRIORITY
CI1	Provide support for Pipe Clay Coastcare Group activities and increase the local community's awareness and participation in the group.	Ongoing	Council & Contractor	HIGH
REVIEW & EVALUATION				
R1	Review the recommendations and implementation plan after 5 years (2023) and undertake complete review of the RAP in 2029	2023 and 2029	Council, CCG, Contractor	MEDIUM

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APPENDIX 1: CREMORNE COASTAL RESERVE REPORT CARD

THE DRAFT CREMORNE COASTAL RESERVE ACTIVITY PLAN RECOMMENDS:

- >> Rationalise tracks across dunes and coastal vegetation and close informal tracks
- >> Owners to remove dinghies and kayaks off the dunes and store on their own properties
- >> Plan to protect Pipe Clay Esplanade vegetation by closing unapproved lagoon access and parking
- >> Request community support to monitor for suspected Chilean needle grass weed
- >> Install signage to prohibit dogs and horses on north end of Pipe Clay Lagoon
- >> Plan and construct a Cremorne Avenue track
- >> Plan and construct Cremorne Spit track
- >> Develop a Cremorne Village Landscape Plan

STAY WITH US...

Council invites your comments on the draft Plan. The Plan will guide the community and Council as we work together to improve the management of the Reserves. You can find the draft plan at **www.ccc.tas.gov.au/consultation**

USE THE ONLINE FORM OR CONTACT
BY FRIDAY 26 APRIL 2019

Andy Welling 0400 151 205
andy.welling@enviro-dynamics.com.au
Phil Watson 6217 9713
pwatson@ccc.tas.gov.au

Clarence... a brighter place



Green rosella
(Platycercus caledonicus)

"We all live here because of our love for outdoors and connection with our community."

Local resident


Narrow leaf New Holland daisy (Vittadinia muelleri)


Morrisby's Gum
(Eucalyptus morrisbyi)

CREMORNE COASTAL RESERVE

REPORT CARD



Oyster Catcher
(Haematopus palliatus)

Your Community and Council working together to care for our Reserves

In the spring of 2018, Clarence City Council asked the community about the Cremorne Coastal Reserve . . . these are the results.

Clarence City Council
MAR 08 2019
TASMANIA

	EVALUATION				DESCRIPTION	COMMUNITY COMMENTS
	OUTSTANDING	VERY GOOD	PASS	CAN DO BETTER	**CREMORNE COASTAL RESERVE**	
LOCATION AND LANDSCAPE					Popular beachside village with scenic coastal headlands.	
CULTURAL HERITAGE					Originally occupied by the Mumirimina band of the Oyster Bay Nation.	*Please protect Aboriginal middens sites during track work*
VEGETATION					Remnant coastal and Morrisby gum woodlands and saltmarsh areas.	*Morrisby Gum woodland is iconic to Cremorne area*
ANIMALS AND BIRDS					Crucial Shorebird habitat around the lagoon's sand flats and saltmarshes and on the beach.	*It's lovely to see the terns diving*
ACCESS AND CONNECTIVITY					Good beach accesses. Coastal tracks linking to Lauderdale and South Arm Highway are planned.	
RECREATION & USAGE					Tracks in the reserves are enjoyed for walking, biking and dog walking.	*We are looking forward to the new coastal tracks!*
THREATS					Weeds, lagoon erosion, dogs and horses on sandflats, unapproved tracks and watercraft on sensitive dune vegetation.	*Traffic speed along Cremorne Avenue is too fast!*

Stay with us on the journey of caring for the Cremorne Coastal Reserve. Your comments are highly valued!
Go to http://www.ccc.tas.gov.au/consultation to comment.



View over Cremorne Beach from the headland trail

APPENDIX 2: RESULTS OF COMMUNITY CONSULTATION

The following provides a summary of the community consultation carried out prior to the Draft Reserve Activity Plan (RAP) compilation. An indication of how community consultation for the RAP will progress is also provided.

Initial Community Consultation

As part of the development of the RAP for the Cremorne Coastal Reserve, consultation was undertaken with adjoining landowners and stakeholders, user groups and the broader community. A 'walk and talk' session was held in the Reserve on 5th August 2018. This event was facilitated by Phil Watson of the Clarence City Council and Andrew Welling of Enviro-dynamics. The event was attended by 35 resident adults and 6 dogs.

In addition to information gathered at the community event, 14 written feedback forms or emails from the public were received prior to the cut-off date of 28th September 2018. All communications from the public regarding the management of the Cremorne Coastal Reserve are considered by Enviro-dynamics during the development of the RAP.

All the responses received during the 'walk and talk' session and through the feedback forms are summarised in Table 1. The table is cross referenced to the Response Action numbers in the 'Implementation Plan for Cremorne Coastal Reserve' which indicate the recommended actions to be taken to address specific community consultation comments. Where "no action required" is noted in the Response column, this indicates the comments are outside the scope of this RAP but are included to inform Council.

More detail from the written submissions received is provided in Table 2 of this Appendix. A compilation of the comments received that are outside the scope of the Reserve Activity Plan but may be of interest to Council and Aldermen is presented in Table 3 of this Appendix.

Table 1 – Community consultation prior to Draft Reserve Activity Plan compilation

No.	Summary of Management Issues/Comments from walk & talk, phone and written responses	Number of submissions	Issue	Response Action #
1	Support shared trail along coast (walking-all) (bike-2).	18	Trail Quality	TC1
2	Supports path along Cremorne Ave - Class 1 or 2	16	Trail link and quality	TC3
3	Natural trails in keeping with environment - Class 3 along the coast minimise impact on tree removal	18	Trail Quality & Natural Values	TC1
4	Connectivity to Mays Beach, Sandford, Clifton Beach and around Cremorne	23	Trail Routes	TC3
5	Concern about trail routes; Ensure privacy provided along trails through Cremorne village; avoid intrusive fences	8	Privacy & Trail Routes	TC1, TC3

No.	Summary of Management Issues/Comments from walk & talk, phone and written responses	Number of submissions	Issue	Response Action #
6	Concern about erosion in lagoon area and undermining of rock wall	7	Beach Erosion	CE2
7	Spit walk route assessment and construction; consider public input (below)	3	Trail Route & Quality	TC4
8	Protect the beach and lagoon; nesting bird sites from dogs, horses etc.	3	Conservation	VM1, VM2 VM3, DM1, DM2,
9	Signs for conservation and natural values (e.g. saltmarsh env); trail hub at Cremorne Park with directions; dog control; re parking/no standing; impacts of poor boat management on dunes	5	Signs	IS1, IS2, IS3, IS8, IS9
10	Pontoon/jetty access impacts	8	Pontoon/beach access	IS7, IS9
11	High speed limits on Cremorne Ave are unsafe for bike riders and pedestrians	6	Safety – speed limits	IS6
12	Masterplan or Landscape Plan is needed for the Park, so management is not ad hoc.	5	Park / Hub	IS9
13	Parking requirements during peak usage times	4	Parking	IS7, IS8, IS9
14	Ongoing weed management within the reserves	2	Weeds	WM1, WM2, WM3, WM4
15	Lighting to improve safety	1	Safety – lighting	IS9

Table 2 – Detailed community input received prior to Draft Reserve Activity Plan compilation

No.	Management Issues/Comments details from phone and written responses	Issue
1	Dogs must be kept under control throughout the reserve	Dog mgmt - signs
2	Concern regarding beach erosion more than 2-dimensional satellite photos needed because volume of sand is decreasing. Need study regarding sand volume.	Erosion (beach)

No.	Management Issues/Comments details from phone and written responses	Issue
3	Concern about the state of the rock retaining wall on Pipe Clay Lagoon from number 10 to past 20 on Pipe Clay Esplanade. It appears the major reasons for the collapse of the wall is erosion of the sand and soil behind the rocks. My fear is that this erosion of the area will be a lot quicker and severe. The area of a "right-of-way" between #16 and #17 Pipe Clay Esplanade was the site of Council work installing 2 x stormwater drains, is also of concern. Contractor removed shrubs and a tree from lagoon bank and did not restore site back to original level. Contractor removed existing rock wall and did not restore; Concrete stormwater access pit in middle of 'right-of-way' sits approx. 100mm above finished ground level. It is now a major trip hazard for people using the right-of-way, particularly after dark. We were assured by Council that the right-of-way would be back-filled, and top dressed on completion of works - the Contractor has never returned to complete this.	Erosion (beach) and infrastructure
4	Erosion in the lagoon is a concern	Erosion (lagoon)
5	Persons unknown have dumped clean fill and concrete in attempts to thwart erosion – not only ineffective but ugly	Erosion (lagoon)
6	Does the Council take any responsibility for the maintenance and extension of the rock wall running along parts of the western end of Pipe Clay Esplanade? This wall is integral to the foreshore protection of this sensitive area. It was constructed during the 70s as part of the 'Red' scheme and has had no maintenance done to it since. As part of this 'coastal reserve protection activity plan' I feel it would be wise to consider further works on the ongoing maintenance of this coastal barrier.	Erosion (lagoon)
7	Path on dunes at end of Pipe Clay Esp. where people load boats is a problem at high tide and is damaging the dune	Erosion (spit)
8	Reserve improvements are a large investment for Council need to consider if this is the best use of funds for the community.	Cost
9	Spend on existing infrastructure maintenance rather than new infrastructure e.g. the footpath along Cremorne Ave needs maintenance at two locations where there are sharp bends causing sight distance restrictions.	Infrastructure
10	I agree with the proposed trail corridor. My only concern is the potential loss of any mature trees on the coastal reserve to make way for the 5-metre wide trail corridor. Will there be any subsequent re-planting to replace any vegetation loss due to the construction of this trail?	Natural values
11	Any trail work undertaken should be done with minimal disruption to existing vegetation. Besides the aesthetic qualities of this vegetation, it provides a habitat for a variety of native animals and shelter from prevailing westerly winds for pedestrians.	Natural values
12	There should be no intensification of parking or traffic on this laneway.	Parking
13	Alternate access from Frederick Henry Parade or Wisteria Ave are not suitable sites for casual trail users to park their vehicles	Parking
14	Park is a focal point and should represent good NRM management instead of the hodge podge approach to management.	Park Hub
15	Cremorne Beach Reserve should be the subject of an overall development plan prepared by the Clarence City Council in conjunction with residents	Park hub
16	New “No Standing” signs be erected along the lowest section of this beach roadway (the section currently gravelled). The current “No Standing Signs” on the elevated, made, section of the roadway, be removed and re-sited along the water’s edge, or alternatively paint a single line on the roadway designating no standing or no parking thus moving parked cars from the exposed waterside of the road to the safer side where the houses are.	Road Signs

No.	Management Issues/Comments details from phone and written responses	Issue
17	Of greater importance when the corridor is completed along the entire length of Cremorne Ave would be a review of the traffic speed limit on Cremorne Ave. As a designated 80 km per hour zone until the village, heading to a no through road area, this should be reduced to at least 60 km per hour, if not lower, regardless of the proposed developments. This is critical if people are to use this area for walking, cycling and or horse riding so close to speeding traffic. No doubt the proposed corridor will be beneficial for many, especially the children that presently cycle precariously along Cremorne Ave. The speed limit at present is far too high for this road that has resulted in many car crashes over the years due to speed and inattentiveness. The first bend along Cremorne Ave, where my property is, has claimed many cars over time. This should be immediately reviewed by Council and or State Growth. I also have great concerns if the corridor is intended to connect the Tangara Trail along School Road. This obviously means crossing South Arm Highway that has a maximum speed of 110 km per hour. Whilst I assume there would be appropriate signs etc, this would be an extremely dangerous highway to cross with a horse, or even a child on a bike as many vehicles including fully laden heavy haulage trucks use this highway at maximum speed. In the absence of an underpass you should consider this very carefully. It is bad enough when livestock escape on to the highway causing havoc.	Speed Limits
18	Existing speed limit along the beach should be reduced from the existing 40 km/h to 10 km/h. During the weekends, particularly during the summer months, this section of the beach serves as a car park (over 160 vehicles have been counted at any one time), boat ramp, playground and picnic area. It has only been due to good luck rather than good planning that serious accidents have been avoided. Much of the above has already been brought to the attention of Clarence Council officers but I have been informed that there is no need for changing the current speed limit as drivers "must drive to the conditions" and when invited to view weekend congestion on the beach I have been informant that "we don't work on the week-end". Anecdotal evidence would suggest that since the 40kmph speed signs have been erected speeds on the beach have actually increased!	Speed Limits
19	Cremorne Ave between the 40 zone and South Arm Hwy has unrestricted speed. There are rarely pedestrians or cyclists, but it is not safe for them.	Speed Limits
20	I believe that shared use (by mtn bike and walkers) are not compatible as walkers with dogs, on or off lead, do not mix safely with mountain bikers, this is particularly so when a trail runs in close proximity to high and unfenced cliffs.	Trail - Headland walking only
21	We don't have a problem with the walkway as it is, its local very low use only. I have just a bit of an issue about privacy. Also, there is a very valuable walkway just south of us between Frederick Henry Parade and Wisteria Avenue and mysteriously one part of that walkway seems to have been closed off. Those sorts of forward planning decisions to create local walkways are rare and it is a potential missed opportunity if it is not used even if it is only 2 or 3 people a day.	Trail - privacy and support
22	The construction of the trail to Forest Hill Road will be delayed until some land is rezoned but commencement could be made from the northern end of the beach to the first section of the trail, that part that would lead up the cliff to a vantage point that would overlook the beach and would be a destination.	Trail - Headland and support
23	I fully support the activity plan as set out in your letter. I do believe that any extension to the coastal path will be an asset for the future and I look forward to further continuations. The long-term goal must be for a trail covering the whole length of the arm.	Trail - support

No.	Management Issues/Comments details from phone and written responses	Issue
24	This proposed trail corridor will open up a spectacular walk along the Coastal Reserve. A very good idea.	Trail - support
25	Go for it! Sounds a great plan and will encourage active recreation. Fully supported!	Trail - support
26	Something like the trail between Lauderdale and Seven Mile Beach would be lovely. We would be interested in hearing some more details.	Trail - support
27	About time, thank you	Trail - support
28	Fantastic plan - great trail	Trail - support
29	As you know Cremorne is a bustling community with lots of kids, grown-ups and various pets who all live here because of our love for the outdoors and connection with our community. Any opportunity to better connect our community with others is a fantastic step forward. We endorse the trails particularly the one out to the main road. We have lobbied hard for this over the past many years and have been disappointed by the general lack of attention and action. Anything we (the community) can do to help make this happen please don't hesitate to ask.	Trail - support
30	Visitors park at the toilets and walk along the beach. Cyclists might use Cremorne Ave, Frederick Henry Parade to get to the start of the trail. The alternative past 41 Frederick Henry Parade is steep and it would be disturbing and may cause problems for residents. Concern that more use would degrade further a poor accessway which we maintain at our expense.	Trail - support
31	Like to have linkages; in the future to Clifton Beach	Trail - support
32	This trail will be used by many more people for recreational purposes than those who would use it only to access their properties.	Trail - support
33	Support Cremorne Ave path and would like to see better links to other communities and school rather than just Tangara Trail as these options provide practical destinations for users, not just experience	Trail -support
34	Nominal start of this headland trail, including all signs, should be from the existing Cremorne Beach Reserve and car park.	Trail access and support
35	Access to trail from the beach by steps formed from natural materials.	Trail access and support
36	Is this trail a bike or walking trail? Gravel or woodchip, what material? How wide is the proposed trail? Is there any point considering the amount of erosion and rising water? A bike trail along South Arm Hwy would be far more beneficial considering the idiot who decided 2 bikes abreast is a good thing. I don't agree with 2 bikes abreast either. I think a trail is a good idea.	Trail alternatives and considerations
37	Propose the construction of an all-weather trail from the current position of the MAST information board to the sealed area adjacent to Number 84 Pipe Clay Esplanade and that this should be given the highest priority. The extension of this pedestrian trail along the topside of the beach to link up with the existing trail on the tip of the spit being of lower priority and completed later.	Spit Trail extension - alternative
38	A frequent observation about the end of spit trail is that the missing link of this section of pathway makes it impossible for pedestrians to reach this trail at times of high tide.	Spit Trail extension - alternative
39	As a property owner who may be seen to benefit from any improvement to access to my property I feel that I must explain my own situation. I have lived on the Spit for about eleven years. Over the past three years, on three separate occasions I have been wheelchair bound for twelve weeks, thirty-six weeks in total, my prognosis is uncertain at this time. Each of these occasions was followed by four weeks when I needed to use crutches. During these times my opportunity to leave and return to my home was limited by tide height. Although I consulted published	Spit trail extension

No.	Management Issues/Comments details from phone and written responses	Issue
	tide tables these were not always accurate as tide height is a function of not only astronomical conditions but also weather patterns including barometric pressure and prevailing winds, a westerly wind could, for example, lift the tide height by ten centimetres and I have had to miss several important medical appointments as a result. As a resident, it is not unreasonable to expect 24-hour access for emergency vehicles including ambulance and fire to access our properties or for emergency vehicles be able to collect injured members of the public from the pontoon.	
40	Firstly, I note that you intend to develop a continuing corridor along Cremorne Ave to South Arm Highway. Is the corridor a footpath? Can the corridor be developed without land acquisitions? Just along Cremorne Avenue, where I reside, and if you need to acquire land to develop the corridor, there would have to be the relocation of power poles, new fencing, re-engineering of driveways, relocation of major culverts and other excavation works to cater for a compliant footpath. For your information, Cremorne's telecommunication infrastructure runs underground within the bounds of private properties along Cremorne Avenue. The cables are approx. one metre or so inside all the boundary fences. I don't think the cables are deep enough in the ground as the cables have previously been severed when renewing fence posts in the ground. Even without the requirement of additional land, Council will need to move or alter a lot of the above infrastructure.	Trail route alternative
41	The issue of protecting the southern side of Cremorne Ave due to shorebird sensitivities has been a long-standing argument by the bird group lobbyists. However, as a long-term resident (34 years), operating a hobby farm, I do not believe it would have any long-term impact in this area to use the southern side. I do note in the plan that you intend to develop the southern side of Pipe Clay Esplanade. What, no birds there?	Trail route alternative
42	As a discussion thought, Rushy Lagoon is co-privately owned by residents (including myself) and The Crown and is mostly redundant land. Sensitively developed, through an acquisition process, this could be considered as an alternative route by placing a raised and fenced corridor along the internal property boundaries of Rushy Lagoon, that could then divert onto Forest Hill Road and then onto Calvert's Hill. There is no underground infrastructure to worry about in this region.	Trail route alternative
43	Consider an alternative route that runs up a gully about 15m further north of the current trail. It is easier in terms of gradient, safer in terms of there is no dangerous drop off the trail, and cheaper in terms of there is very little earthworks required to build it. It will also look much better when viewed from the beach or water as works are hidden by the nature of the gully.	Trail route and Visual amenity and support
44	There would be less than one person/day using the trail adjacent to 41 Frederick Henry Parade in winter and maximum of 10 people/day in summer (families, joggers and dog walkers). Beach is used in summer by up to 100 people, but this is only on rare hot days. People enjoy the sand, dynamic nature of water, social place, flat place to walk, can be incorporated into healthy daily routine.	Recreational usage
45	Use by cyclists is low. They stick to road cycling or slow, occasional riders like mums/dads and kids. Occasionally see kids on their own. As a guide, resident probably sees one cyclist/week anywhere on his daily route in/out of Cremorne.	Cycling use observation
46	Coastcare will manage weed contractors in accordance with Inspiring Place Management Plan and Weed Management Plan	Weeds

Table 3 – Community input for Council but outside the scope of the Reserve Activity Plan

	Management Issues/Comments for Council's Information	ISSUE
1	Note that serrated tussock from Calvert's Hill is spreading and is the responsibility of PWS	Weeds in PWS reserve
2	Thank you for the opportunity to discuss the Coastal Reserve Activity Plan. The discussion led by Phil Watson was very informative and on the whole, I would say most of the people at the 'Walk & Talk' meeting were extremely positive in regard to the two proposed trails from Cremorne. We reside at 39 Frederick Henry Parade with car access from a rough trail which turns left off Frederick Henry Parade. This trail is owned by Council, but they are presently not interested in improving it for better access for four residences in the corner of Frederick Henry Parade. With the start to the proposed improved coastal trail coming off the top of our trail (as well as off the beach corner), we thought we may experience more cars (and so greater degradation of our private access. We would like to urge the Council to try and improve our access by laying some rocks and gravel in the massive potholes which threaten to swallow us up every time we leave our residence!	Road maintenance
3	Whilst the idea to promote recreational trails is fantastic, the village of Cremorne desperately requires proper footpaths and drainage/guttering in the Cremorne Ave and Pipe Clay Lagoon Frederick Henry Streets where the immediate population live and recreate/walk dogs etc. The pipes from Wisteria Ave to Lagoon do not cope with rainwater runoff - they are too small to cope with heavy rain and runoff from hill behind Wisteria, resulting in flooding in the streets and driveways. This has been an ongoing problem in Cremorne Ave for over 15 years. Clarence area recreational trails are fantastic and a great incentive for activity	Road maintenance/ drainage
4	It must be noted that the council undertakes no maintenance for this roadway and it has become a dumping ground for hard building waste.	Road maintenance
5	Undertake a study to determine the effect of the floating pontoon and associated jetty structure on the laminar flow of water entering and leaving the lagoon and their contribution to erosion within the lagoon – the sand piled up against the side of this structure has come from somewhere!	Ponton/jetty issues
6	Cremorne Lagoon is the only all-weather launch and retrieval facility for boats on this side of Frederick Henry Bay and, as such, is very popular with boat owners, as noted above over 160 vehicles being parked on the adjacent beach during summer weekends. It is also serving as an essential base for sea rescues and it played an important role in the evacuation and providing supplies to the Tasman Peninsular during the 2013 fires. Pipe Clay Lagoon beach and pontoon is also the popular launch spot for surfers, support craft and media accessing the Shipstern's Bluff Break and will no doubt ably play an important role in the forthcoming Red Bull Big Wave Challenge (imagine the embarrassment to the council and State's image if this facility is not accessible due to high tide as it was when inspected on Sunday 4th August).	Access to pontoon/jetty
7	With the closure of one of the boat ramps at Lauderdale it would be fair to assume that there will be more vehicle using Cremorne as a boat launch/retrieval location and so there will be greater loads placed on existing facilities here.	Access to pontoon/Jetty usage levels
8	The Pontoon (Jetty) has also changed access and patterns of use of the beach. Prior to the pontoon's construction, boat owners did not generally drive through high water as parking on the beach at high tide is too limited and the distance from the beach to the channel drop-off, that point where boats could be launched and retrieved, was too great. The Pontoon is now accessed by fishermen who drive cars through the high water to access the pontoon for fishing at any time. This has resulted in the red gravel surface being ground to a fine clay silt and this being distributed along the beach and throughout the lagoon - with the potential to interfere with the pristine water required for oyster growing with potentially dire results. This use during high tide has accelerated the erosion of the roadway as evident by the step up from the gravel road surface to recently constructed driveways.	Pontoon/jetty access impacts

	Management Issues/Comments for Council's Information	ISSUE
9	Any improvement to the access and use of this area must include the removal of the failed gabion breakwater erected near the end of the sealed section of road, adjacent to number 72 Pipe Clay Esplanade. This was not visible on the day due to the height of the tide, but it is a hazard for all beach users, particularly for those who are attempting to launch and retrieve their boats from the boat launch facility at the end of the sealed road.	Pontoon/jetty access impacts
10	Pipe Clay Lagoon is a recognised fish nursery for a number of fish varieties, however the regular and indiscriminate use of the beach by wheeled vehicles means that there is a continual cycle of sand compaction and disturbance with a notable reduction in the number of intertidal species, particularly soldier crabs, in this section of the lagoon shore line as compared with that in more inaccessible and thus protected areas of the shore line. The available food for young fish is directly proportional to the number and variety of intertidal animals. This has been brought to the attention of the DPIPWE with no result.	Natural values Spit access
11	In information provided by you at the public meeting held at Cremorne on Sunday 4th August it is stated that the "only receding shoreline observed was due to shrub pruning near where the sealed road ends at the back of the spit". I suggest that the this "shrub pruning" can be contributed to vehicle shear – the action of vehicles brushing up against the vegetation as drivers attempt to avoid driving in the salt water. The erosion at this site, and indeed along the length of the low gravelled section of the beach can be attributed to the bow waves caused by the wheels of vehicles moving through the high water. The action of this movement has not only lowered the road surface but eroded into the bank, making driveways almost inaccessible and exposing services, as shown in the included photos, dangerously damaging supporting stay wires for power poles and destroying Telstra/NBN junction boxes.	Access to spit/pontoon-erosion issues
12	About two years ago a proposal for construction of a single concrete lane from the end of the sealed road to Number 84 Pipe Clay Esplanade was submitted to, and rejected by, the Clarence Council - there was even an expectation that that time that those whose properties might "benefit' from such an improvement would be expected to contribute to the cost of construction, an unreasonable expectation when one considers the cause of the problem and the benefits the whole community would get from this amenity	Access to spit/pontoon-
13	A street light on every Aurora Pole rather than every second pole as existing along the proposed route	Safety
14	Consultation is an area with traps for the unwary. I can name at least 3 consultations recently where Council has fallen into the traps. And I have seen practitioners at Councils I worked at intentionally misusing consultation processes to engineer a result they personally think is right. I am speaking of public servants with their own agendas which should see them sacked but that never happens. Can I outline what I found to work in the 35 years I spent doing consultation which largely prevents unintentional or intentional bias. 1. Firstly, identify what the perceived problems are from residents. Is it safety, or mobility or erosion etc A full problem definition. That is what your first session 'walk and talk' should be, and no more. 2. Go away then and get the information that you can use to check the perceived problems and form a considered response about the extent of actual problems. So, for example, if a perceived problem is safety, check the crash record, or use judgement as to how serious the safety issue is. What is the level of risk for users. For mobility/erosion etc, again measure it in the field or use available statistics. 3. Then when you know the real problem set, identify all the available options and work out the pros and cons of each. 4. Then feed all this back to the ratepayers in a discussion document which accurately reflects the problem, the alternatives to fix the problems, the pros/cons and the costs. Important in this is the impact on directly affected ratepayers of any of the options. 5. Then get the informed comment of ratepayers on this discussion document and then develop your first draft then with this informed opinion. So, an example that I feel sure will come up because there will be the fanatical cyclist at the meeting. They will mention the need	Multiple

Management Issues/Comments for Council's Information	ISSUE
for an off-road bike trail or shared path in Cremorne Ave from the 40 zone to the Highway. The perceived problem is safety for cyclists and pedestrians. Fair enough. Measure the real extent of the problem by crash history. You won't find anything because the volumes of cars/peds/cyclists etc is so low and sight lines are great. So, the actual risk to a ped or cyclist is extremely low but there are options to improve it. The options to test are: a) the status quo b) reduce the speed zone value from unrestricted to say 70 or 60. c) as above in b) but widen the road shoulders and possibly put in a marked bike lane d) an off-road shared path There are other options no doubt. So, the next step is to give some idea of usage. I can tell you the usage by vehicles, pedestrians and cyclists is low. The cyclists that use it are the road warriors who can easily manage the low conflict with vehicles and will not use an off-road path in any case. There are a few joggers and pedestrians. I'd say lucky to be one or two of each per day. Cycling maybe one or two per day. Vehicle volumes estimate 1500 to 2000 per day which is moderate, a collector type residential road. So now you have the problem described as best you can, the usage stats, and a range of options with indicative cost (low, median, high cost). If you give all this to ratepayers, they are intelligent and will make a good informed comment on it all. Or they might disagree with your analysis and then you need to do a feedback to them and check your facts. The feedback process is a safety net for you the practitioner to ensure you have the best information within reason. If you don't do this and you simply have a talk about solutions right from the start you are off on the wrong foot from which you won't recover. Then it becomes a case of who can advocate loudest about some personal view they have about what should happen. If you then put all this in a draft report, that draft will basically become the final and the Aldermen will simply adopt your report without much thought. The process I outline above also protects you as a professional from any claims made of bias from you the report author. If you have a transparent process that everyone can have access to during the process and subsequent to the process, then yourself and the Council cannot be faulted. People may still disagree with final recommendations, but they can't disagree about bias in the process. I speak from bad experience with this Council where the draft becomes the final very quietly with no real public participation or scrutiny. When actual projects then get funded later and ratepayers find out the impact on them, there is shock/horror, and there is no due process that one can look up through the Council records. And the Aldermen have no idea what they voted for in the final report. A bad look for Council all round. So, the aim of all this is that stakeholders can see their views AND others' views and how you have processed all those views in an unbiased, scientific method. How your recommendations for policy, projects and other actions relate to the problems raised and checked in a cost benefit way.	

APPENDIX 3: REVIEW OF CREMORNE FORESHORE MANAGEMENT PLAN 2010

Recommended Actions	Priority	Responsibility	Achievements to date
Climate Change			
Continue to promote community involvement in the TASMARC project and investigate extending number of monitoring sites, and training volunteers.	Ongoing	Pipe Clay Coastcare Group (PCCG) & wider community	This project has been superseded by the Shoreline Monitoring Program by M. Dell.
Investigate development of a community shoreline monitoring program to gather coastal recession data within Pipe Clay Lagoon. Alternatively, incorporate into the TASMARC monitoring program.	High	PCCG & wider community	Shoreline Monitoring Program (M. Dell) addresses in part. Coastal Engineer has scoped work required.
Remove existing retaining wall structure at the southern end of Cremorne spit, and investigate possibility of replacing it with a raised boardwalk.	High-moderate	PCCG & wider community	This has been scoped by a Coastal Engineer.
Environmental Management			
Retain and rehabilitate small remnants of native vegetation along Pipe Clay Esp and elsewhere within the study area.	High-ongoing	PCCG & wider community	Some planting done and having a stabilising effect but weedy.
Work with Birds Tasmania and Council to maintain and enhance the saltmarsh vegetation around Pipe Clay Lagoon.	Moderate	PCCG & wider community	Some planting has been done with mixed success.
Continue to implement the recommendations outlined in the *Weed Management Plan for Cremorne Beach and Pipe Clay Lagoon Foreshore.*	High-ongoing	PCCG & wider community	Ongoing
Incorporate Birds Tasmania guidelines into weeding programs, including scheduling removal of weeds outside of the resident shorebird breeding season.	High-moderate	PCCG & wider community	Most control is undertaken in early spring. Only minor control required near shoreline breeding areas.
Continue to work with PWS and the Friends of Calverts Hill to control serrated tussock grass within the Calverts Hill Nature Reserve.	High-ongoing	Friends of Calverts Hill supported by PCCG & wider community	Refer to Appendix 5 for update re Calverts Hill Nature Reserve from Threatened Plants Tas.
Adopt the Tasmanian Coastal Works Manual as a general guide for best practice coastal works.	High-ongoing	PCCG	This has occurred and remains relevant.
Rehabilitate duplicate pedestrian access paths to Cremorne Beach, including fencing the dune, removal of weeds, and revegetation of large bare patches.	Moderate	PCCG in partnership with Council	Weed control is ongoing and some revegetation has been undertaken. No apparent closing of duplicated trails
Upgrade the existing access trail through the dunes to Cremorne Beach.	Moderate	PCCG in partnership with Council	This is no longer necessary
Investigate the potential to work with other environmental organisations, to aid coastal management in the area.	Moderate	PCCG	Coastcare Group, Cremorne Community Group and Threatened Plants Tasmania

Recommended Actions	Priority	Responsibility	Achievements to date
Continue to engage with residents to encourage involvement in coastal management works.	Ongoing	PCCG	Pipe Clay Coastcare Group
Consider establishing revegetation/ weed monitoring program.	Moderate	PCCG	Ad hoc
Retain remnant native vegetation and rehabilitate where practicable, to provide habitat. Discourage access through remnant saltmarsh and other pockets of native vegetation.	High-ongoing	PCCG	Need to define areas and uses on the Landscape Plan
Work with Birds Tasmania and Council to review Council Dog Management Policy.	High	PCCG	Policy reviewed in2015
Ensure that weeding activities and other coastal works do not adversely impact habitat values.	High-ongoing	PCCG	This has occurred and remains relevant.
Consider ways in which Coastcare Group and wider community can assist Birds Tasmania to monitor and conserve resident and migratory birds.	Moderate	PCCG	Not applicable for RAP
Investigate the potential and need for monitoring programs for other native fauna.	Low	PCCG	Not applicable for RAP
Ensure weeding, revegetation or trail development work does not disturb the Aboriginal shell midden located on the hill above Cremorne Beach.	High	PCCG	This remains relevant and Trail builders must be advised
Access			
Formalise a small number of parking nodes along Pipe Clay Esplanade.	Moderate	PCCG	Has not been done but still desirable. To be included in Landscape Plan
Install bollards along other sections of Pipe Clay Esplanade to prevent informal parking.	Moderate	PCCG	Has not been done but still desirable. To be included in Landscape Plan
Ensure designated beach access trails through dunes are well-designed, marked, and convenient.	High-ongoing	PCCG in partnership with Council	Include in Landscape Plan and which trails should be rehabilitated if any.
Rationalise pedestrian access to the foreshore along Pipe Clay Esplanade.	Moderate	PCCG in partnership with Council	Same as above
Formalise the existing informal path along the lagoon-side of Cremorne spit.	Moderate-low	PCCG in partnership with Council	This has not occurred, remains relevant and is included in RAP.
Investigate the need and potential to upgrade the steep section of trail at the northern end of Cremorne Beach, to provide access to a formal lookout.	Moderate	PCCG in partnership with Council	In progress – development of Headland trail but not formal lookout

APPENDIX 4: PLANT LIST FOR CREMORNE COASTAL RESERVE

This plant list was derived from surveys by TasFlora 2008 and Enviro-dynamics 2018.

KEY: e = endemic i = introduced r = rare E = Endangered (TSPA, EPBCA)

Dicotyledonae

Family name	Species name	Common name
AIZOACEAE		
	Carpobrotus rossii	Native Pigface
	Disphyma crassifolium subsp. clavellatum	
	Tetragonia implexicoma	Ice plant
AMARANTHACEAE		
	Ptilotus spathulatus	Pussy Tails
APIACEAE		
	Apium prostratum subsp. prostratum	
ASTERACEAE		
i	*Arctotheca calendula*	Cape Weed
i	*Cirsium vulgare*	Spear Thistle
ni	*Gazania linearis*	
i	*Hypochoeris radicata*	Cat's ear
i	*Leucanthemum vulgare*	
e	*Ozothamnus costatifructus*	Ribseed Everlasting
	Senecio glomeratus subsp. glomeratus	
n	*Senecio pinnatifolius var. pinnatifolius*	
	Senecio quadridentatus	Cotton Fireweed
i	*Sonchus oleraceus*	Sow Thistle
r	*Vittadinia muelleri*	Narrow-leaf New Holland Daisy
BORAGINACEAE		
	Cynoglossum australe	Hound's Tongue; Forget-me-not
i	*Echium vulgare*	
CAMPANULACEAE		

	Wahlenbergia gracilenta	Bluebell

CASUARINACEAE

	Allocasuarina verticillata	Sheoak

CHENOPODIACEAE

	Atriplex cinerea	Grey Saltbush
	Atriplex paludosa subsp. paludosa	Marsh Saltbush
	Einadia nutans subsp. nutans	Climbing Salt-bush
	Rhagodia candolleana subsp. candolleana	Coastal Saltbush
	Sarcocornia blackiana	Marsh Samphire
	Sarcocornia quinqueflora subsp. quinqueflora	Beaded Glasswort
	Suaeda australis	Austral Seablite
	Tecticornia arbuscula	

CONVOLVULACEAE

	Convolvulus angustissimus var. angustissimus	
	Dichondra repens	Kidney-weed
	Wilsonia backhousei	Narrow-leaf Wilsonia

CRASSULACEAE

	Crassula sieberiana subsp. sieberiana	Austral Stonecrop

EPACRIDACEAE

	Astroloma humifusum	Native Cranberry
	Leucopogon parviflorus	Currant Bush
	Lissanthe strigosa subsp. subulata	

FABACEAE

i	*Chamaecytisus palmensis*	Tree Lucerne
i	*Vicia sativa subsp. nigra*	Narrow-leaf Vetch

FUMARIACEAE

i	*Fumaria officinalis*	

GENTIANACEAE		
i	*Centaurium erythraea*	Common centaury
GERANIACEAE		
	Geranium potentilloides	
	Pelargonium australe	Austral Stork's Bill
LINACEAE		
i	*Linum trigynum*	Yellow Flax
MALVACEAE		
	Lawrencia spicata	Salt Lawrencia
MIMOSACEAE		
	Acacia longifolia subsp. sophorae	
	Acacia mearnsii	Black Wattle
	Acacia melanoxylon	Blackwood
i	*Paraserianthes lophantha subsp. lophantha*	
MYOPORACEAE		
	Myoporum insulare	Boobyalla
MYRTACEAE		
E	*Eucalyptus morrisbyi*	Morrisby's Gum
	Eucalyptus viminalis subsp. viminalis	Manna Gum
OXALIDACEAE		
	Oxalis perennans	Native Oxalis
PITTOSPORACEAE		
i	*Billardiera heterophylla*	
	Bursaria spinosa subsp. spinosa	
	Pittosporum undulatum subsp. undulatum	Sweet Pittosporum
PLANTAGINACEAE		
i	*Plantago coronopus subsp. coronopus*	Buckshorn Plantain
i	*Plantago lanceolata*	Narrow Leaf Plantain

POLYGONACEAE		
i	*Acetosella vulgaris*	Sorrel
PRIMULACEAE		
	Samolus repens	Creeping Brookweed
PROTEACEAE		
	Banksia marginata	Silver Banksia
RANUNCULACEAE		
	Ranunculus lappaceus	Common Buttercup
ROSACEAE		
	Acaena novae-zelandiae	Buzzy
i	*Cotoneaster franchetii*	Cotoneaster
i	*Rosa rubiginosa*	Briar Rose
RUBIACEAE		
	Asperula conferta var. conferta	Common Woodruff
i	*Coprosma repens*	Mirror Bush
RUTACEAE		
	Correa alba var. alba	
SALICACEAE		
i	*Salix fragilis*	Crack Willow
SANTALACEAE		
	Exocarpos cupressiformis	Native Cherry
SAPINDACEAE		
	Dodonaea viscosa subsp. spatulata	
SOLANACEAE		
i	*Lycium ferocissimum*	African Box-thorn
	Solanum laciniatum	Kangaroo Apple

Gymnospermae

Family name	Species name	Common name
PINACEAE		
i	*Pinus radiata*	Monterey Pine

Monocotyledonae

Family name	Species name	Common name
CYPERACEAE		
	Eleocharis acuta	Common Spike-rush
	Gahnia filum	Chaffy Saw-sedge
	Lepidosperma curtisiae	Curtis's Sword sedge
	Lepidosperma laterale	Variable Sword-sedge
	Schoenus apogon	Common Bog-rush
JUNCACEAE		
	Juncus kraussii subsp. australiensis	Sea Rush
	Juncus pallidus	Pale Rush
	Juncus pauciflorus	Loose-flower Rush
LILIACEAE		
	Dianella revoluta	Spreading flax lily
POACEAE		
	Austrostipa rudis subsp. australis	Spear Grass
	Austrostipa stipoides	Coastal Spear Grass
	Austrostipa stuposa	Spear Grass
i	*Bromus diandrus*	Great Brome
i	*Dactylis glomerata*	Cock's Foot
	Distichlis distichophylla	Australian Salt-grass
i	*Ehrharta calycina*	
	Ehrharta stipoides	Weeping Grass
	Elymus scaber	Rough Wheat-grass
i	*Nassella trichotoma*	Serrated tussock
i	*Phalaris aquatica*	cocksfoot
	Poa labillardierei var. labillardierei	Tussock Grass
	Poa poiformis var. poiformis	

Rytidosperma sp.	
Themeda triandra	Kangaroo Grass

XANTHORRHOEACEAE

Lomandra longifolia	Sagg

APPENDIX 5: CALVERTS HILL NATURE RESERVE *E. MORRISBYI* PROJECT SUMMARY – THREATENED PLANTS TASMANIA, 2018

Calverts Hill Nature Reserve contains the largest subpopulation of one of Australia's most threatened eucalyptus, the southern Tasmanian endemic *Eucalyptus morrisbyi*. In recent years this subpopulation has undergone a dramatic and rapid decline with the loss of > 99% of mature plants, and juveniles supressed by heavy browsing pressure. Two wildlife proof fences have been installed, resulting in significant natural regeneration of juvenile plants. The health of these juvenile plants is being monitored monthly to determine if browser control activities are required. All the empty niches within these fenced areas will be planted with *E. morrsibyi* plants. The subpopulation is also being protected from wildfire by the maintenance of a firebreak and fuel management in the adjacent pasture by periodic grazing. Wildfire is a particular risk to the species as most plants are juvenile and are unlikely to be able to re-sprout after fire. Serrated tussock is also being controlled within the wildlife proof fences.

APPENDIX 6: BIRD LIST FOR CREMORNE RESERVE

Bird list compiled from lists of shorebird species recorded at Cremorne in Pipe Clay Lagoon; and surveys undertaken during site assessments in August 2018 and January 2019 by A Welling.

Species listed in taxonomic order.

Common name	**Species name**
Australian Wood Duck	*Chenonetta jubata*
Common Bronzewing	*Phaps chalcoptera*
Masked Lapwing	*Vanellus miles*
White-faced Heron	*Egretta novaehollandiae*
Black-faced Cormorant	*Phalacrocorax fuscescens*
Little black Cormorant	*Phalacrocorax sulcirostris*
Laughing Kookaburra	*Dacelo novaeguineae*
Yellow-tailed Black-Cockatoo	*Zanda funereus*
Galah	*Eolophus roseicapilla*
Green Rosella	*Platycercus caledonicus*
Eastern Rosella	*Platycercus eximius*
Musk Lorikeet	*Glossopsitta concinna*
Superb Fairy-wren	*Malurus cyaneus*
New Holland Honeyeater	*Phylidonyris novaehollandiae*
Yellow-throated Honeyeater	*Nesoptilotis flavicollis*
Little Wattlebird	*Anthochaera chrysoptera*
Noisy Miner	*Manorina melanocephala*
Striated Pardalote	*Pardalotus striatus*
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*
Grey Shrike-thrush	*Colluricincla harmonica*
Australian Magpie	*Gymnorhina tibicen*
Grey Butcherbird	*Cracticus torquatus*
Grey Fantail	*Rhipidura fuliginosa*
Forest Raven	*Corvus tasmanicus*
European Goldfinch	*Carduelis carduelis*
Silvereye	*Zosterops lateralis*
Common Blackbird	*Turdus merula*
Silver gull	*Chroicocephalus novaehollandiae*
Pacific gull	*Larus pacificus*
Kelp gull	*Larus dominicanus*
Pied Oystercatcher	*Haematopus longirostris*
Sooty Oystercatcher	*Haematopus fuliginosus*
Great Crested Tern	*Thalasseus bergii*
Caspian tern	*Hydroprogne caspia*
Latham's snipe	*Gallinago hardwickii*
Sharp-tailed sandpiper	*Calidris acuminata*
Curlew sandpiper	*Calidris ferruginea*
Pectoral sandpiper	*Calidris melanotos*
Red-necked stint	*Calidris ruficollis*

Short-tailed shearwater	*Ardenna tenuirostris*
Red-capped plover	*Charadrius ruficapillus*
Barred-tailed godwit	*Limosa lapponica*
Pelican	*Pelecanus conspicillatus*
Pacific black duck	*Anas superciliosa*
Great egret	*Ardea alba*
Swamp harrier	*Circus approximans*
White-bellied sea eagle	*Haliaeetus leucogaster*
Tasmanian native hen	*Tribonyx mortierii*
Purple swamp hen	*Porphyrio melanotus*
Common starling	*Sturnus vulgaris*
House sparrow	*Passer domesticus*