Rose Bay Foreshore Management Plan

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Foreword

This Management Plan has been written in consultation with the Rose Bay community, Burdekin Dry Tropics NRM and the Whitsunday Regional Council. A number of community meetings have occurred to gauge the opinions and thoughts of local residents regarding how the Rose Bay foreshore could be managed. The Council would like to acknowledge the role Burdekin Dry Tropics NRM have had in community consultation and contributing to this Plan. It is hoped that this management plan will assist in providing some guidance to the long term management and maintenance of the Rose Bay foreshore.

Acknowledgements

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- Peter Arthofer – Community Support & Engagement Facilitator Burdekin Dry Tropics NRM
- Leonie Maddigan – Local Government Coastal Projects Officer Burdekin Dry Tropics NRM
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- Michelle Ramsay – Queensland Environmental Protection Agency
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    - Julie-anne Mitchell
    - Scott Mitchell
    - Chris Richards
    - Sharyn Ryan
    - Tony & Marilyn Hont
    - John & Jennifer Knight
    - Sybil Payne

1. Introduction

The purpose of this report is to describe the guidelines that will be used to manage the Rose Bay foreshore. Rose Bay beach is located on Bluewater Avenue, three kilometres north-east of Bowen (Figure 1 and 2). The foreshore reserve does not have a registered lot but is considered Unallocated State Land. The population of Rose Bay is approximately 200 permanent residents with the caravan park accommodating up to 50 people during peak holiday periods. In peak holiday times it is not uncommon to see more than 50 people on the beach at any one time.

The foreshore encompasses an embayment with a rocky granite outcrop marking its northern boundary and a small coastal creek marking its southern boundary. The orientation of the bay is to the south-east. The foreshore is a picturesque location which is popular with local residents and tourists.

The local community at Rose bay greatly value their local foreshore reserve and beach. In recent years, a number of local residents have undertaken working bees and invested their own time into assisting Council to manage the foreshore reserve. Recent inspections of the reserve have demonstrated that the work of many local residents have assisted in rehabilitating parts of the reserve which benefits the whole of the community. The Council has installed underground water to the reserve adjacent to the residential areas.

The management of community reserves can be a balance between providing social recreation opportunities and protecting a community asset. Different community groups, individuals and government may have differing opinions on how coastal reserves should be managed. It is hoped that the management guidelines in this report provide some certainty for those residents who want to play an active role in assisting Council to manage the Rose Bay foreshore.

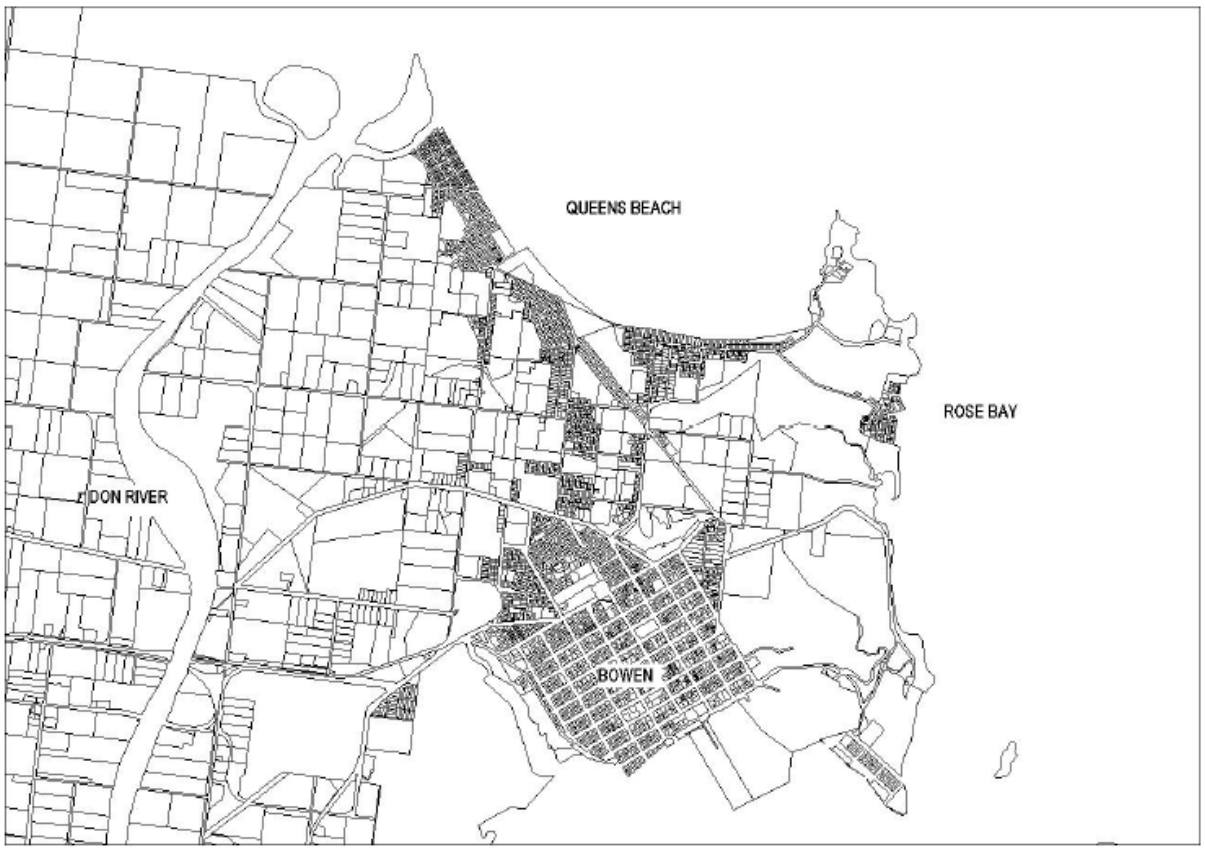

Figure 1. Location of Rose Bay foreshore reserve.

Figure 2. Air photograph of Rose Bay locality.

2. Background

2.1 Physical environment

2.1.1 Geology, landform and soils

The underlying bedrock of Rose Bay and the outcrops is Lower Permian (120 -240 Million years old) leuco-granite. The underlying granite bedrock has influenced the shape of the Rose Bay embayment and foreshore. The depth to bedrock underneath the Bluewater avenue houses is approximatley 1-2m at the northern end and up to 10m at the southern end. The foreshore dune is Holocene in age which is less than 10,000 years old. The dune has been formed by a number of natural coastal processes. Long shore currents moving north up the coast have brought sand from the Edgecumbe Bay area. Local creeks such as Greta and Yeates are the likely source of the Rose Bay foreshore sand. The heavy minerals found on the beach is likely to include zircon, titanium and rutile.

2.1.2 Vegetation

The vegetation in coastal foreshore areas occur in zones (figure 3). The vegetation in the Rose Bay fore dune area includes:

- Spinifex (*Spinifex sericeus or hirsutus*)
- Sand couch (*Sporobolus virginicus*) – creeping perennial grass, seed heads like a rats tail.
- Green couch (*Cynodon dactylon*) – flowers have between two and seven spikes.
- Goats foot Convolvulus (*Ipomea pes caprae subsp. Brasiliensis*) – first to colonise dunes. The leaves of the Convolvulus was used by aborigines to treat bites and stings and other inflamed skin conditions (Anderson, 1993)

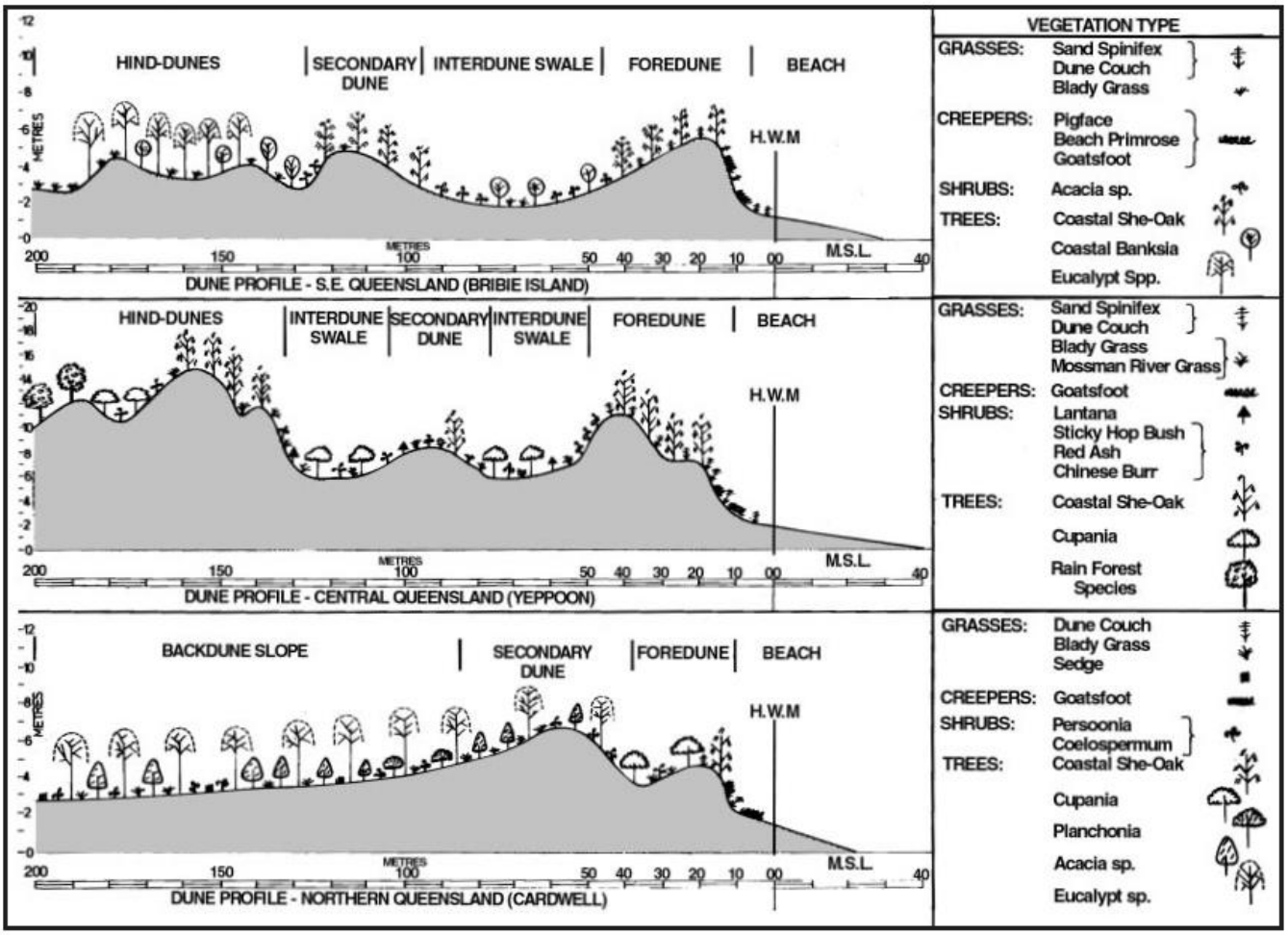

Figure 3. The dune profiles at three locations along the Queensland coast (source: QEPA, 1996)

The secondary dune vegetation is dominated by *Casuarina equistifolia*. A number of weeds inhabit the foreshore reserve. The dominant weeds are:

- Caltrop (*Tribulus terrestris*) – goats head burr – small yellow flower (environmental weed)
- Mother of Millions (*Bryophyllum tubiflorum*) (Class 3 declared weed under the Queensland Land Protection Act (2002)
- Para grass (*Brachiaria mutica*)
- Mossman river grass (*Cenchrus echinatus*) (spiky hard seed head)
- Guinea grass (*Megathyrsus maximus)*

A more comprehensive list of vegetation is located in Appendix 1.

2.1.3 Waterways

Sand hills creek is found at the southern end of Rose Bay foreshore reserve. The catchment of this creek is estimated to be 300ha. There is a small estuarine area which appears to be in good condition.

2.1.4 Role and processes of coastal dunes

Sand dunes are formed by a number of coastal processes. Coastal currents carry sand along the coast and transport it into the tidal zone. Off-shore winds then blow the sand landwards where it accumulates and forms dunes. Dunes are stabilised by vegetation. The vegetation reduces wind velocity which encourages sand grain particles to settle. Plant parts such as roots and stems trap sand grains. In coastal sand dune areas without vegetation, the dune becomes mobile and the sand can travel inland. Vegetated foredunes restrict wind and sand movements inland (QEPA, 1996a).

The horizontal and vertical size of dunes is determined by the quantity of sand transported into the tidal zone by longshore coastal currents, the aspect of the bay and strength and dominance of the direction of the wind. Coastal dune systems can be kilometres in width where sand supply from nearby rivers is plentiful and the dominant wind direction is favourable.

Coastal dunes protect coastal areas from storm events. During storm events it is natural for dunes to be undercut and eroded. In many situations the eroded sand is taken away by retreating wave currents and settle in bars offshore. During calmer conditions these bars gradually migrate back towards the foreshore and into the tidal range where the wind will once again transport the sand towards the dune. Over time, the sand from these bars will restore the dune system with the assistance of vegetation. However, during extremely large storm events it is possible for the sand to be transported a distance offshore, beyond the reach of currents which normally transport the sand back. In these extreme situations, it will take the dune longer to recover.

2.2 Current use

The Rose Bay foreshore is used by local residents and tourists. There is a car park at the northern end of the beach which caters for approximatley eight cars. During peak holiday season cars park along the road adjacent to the beach. There are currently no seating or picnic facilities at or near the foreshore. The Bowen Shire Council installed water to the foreshore a number of years ago. Locals and tourists use the beach for swimming, walking and fishing.

There are four existing accesses to the beach from Bluewater avenue. One access north of the car park has been constructed from treated pine wood and provides good access to the beach. However, this northern access is probably 5 -10m too long with the last 3m has been undercut by wave and tide action. The damaged last 3m of walkway needs urgent repair. Large 1 tonne sand bags have been placed parallel to the beach at this northern access way to reduce erosion and provide a foundation for the walkway.

The middle access path is well used by local residents and has incised over time. Local residents maintain this middle access track with brush cutters and undertake weeding. Another access point is located approximately 100m south of this point and is a less maintained track which probably services a hand full of residents. Presently, there is a 1.2m scarp where the path enters the beach which is a hazard. This access path could be closed or Council could place sand bags or large straw bales to provide better temporary access to the beach at this location. The southern most access path is found at the end of the road and travels behind the dune to the estuary.

2.3 Legislation and policy

The coastal zone is recognised as a high use area and a fragile environment. The Commonwealth Government developed its Coastal Policy in 1995. The purpose of the Commonwealth Coastal Policy is to describe how the management of the coastal zone could be improved. The adoption of the Commonwealth Coastal Policy has triggered all Australian States to develop similar coastal polices and legislation.

The Queensland Government passed the Coastal Protection and Management Act in 1995. The purpose of this Coastal Management Act is to (Section 3):

a) provide for the protection, conservation, rehabilitation and management of the coast, including its resources and biological diversity; and

b) have regard to the goal, core objectives and guiding principles of the National Strategy for Ecologically Sustainable Development in the use of the coastal zone; and

c) provide, in conjunction with other legislation, a coordinated and integrated management and administrative framework for the ecologically sustainable development of the coastal zone; and

d) encourage the enhancement of knowledge of coastal resources and the effect of human activities on the coastal zone.

The Coastal Protection and Management Act provided the impetus for the development of the Queensland State Coastal Management Plan which was released in 2001 (QEPA, 2001). The Coastal plan describes how the coastal zone should be managed via the development of 48 polices. Some of the polices that are relevant to the management of the Rose Bay foreshore include:

- 2.2.2. Erosion prone areas
- 2.2.4. Coastal hazards
- 2.2.5. Beach protection structures
- 2.3.1. Future need for access
- 2.3.4. Vehicle use on beaches
- 2.8.1. Areas of State significance (Natural resources)
- 2.8.3. Biodiversity
- 2.8.4. Rehabilitation of coastal resources
- 2.8.5. Pest species management
- 2.9.1. Regional Coastal management plans
- 2.9.3. State land on the coast
- 2.9.4. Private use of State land on the coast

- 2.9.5. Control districts

Other Queensland legislation that is relevant to the management of the Rose Bay foreshore includes the Environmental Protection Act (1995) (s3 and s319), the Land Act (1994 (s4), Integrated Planning Act (1997) and the Nature Conservation Act (1992). The Commonwealth Government has recently declared Beach scrub (or coastal rainforest) as critically endangered under the Environmental Protection and Biodiversity Conservation Act (1999).

2.4 Foreshore values

2.4.1 Social values

The Rose Bay foreshore is an attractive coastal setting used by local residents and tourists for passive recreation activities such as walking, fishing and swimming. There is a low key caravan park located approximately 50m from the car park on Bluewater avenue which is popular during the holiday periods. The caravan park visitors and tourists are attracted to Rose Bay because of the natural and attractive setting.

The social values of the Rose bay foreshore could be improved with the placement of picnic shelters and an increase in the maintenance of foreshore vegetation particularly with the removal of weeds and control of exotic grasses and some revegetation.

2.4.2 Economic values

The Rose bay area is an exclusive suburb of Bowen. Relatively high house prices occur in this area which are assisted by the close proximity of the beach. The local caravan park attracts clientele who primarily want to be close to Rose Bay beach. A resort north of the beach has been constructed within the last three years mostly due to the attractiveness of the Rose Bay precinct. There are some economic incentives for maintaining and improving the Rose Bay foreshore.

The Council road between the foreshore and the houses along Bluewater avenue needs to be protected against under cutting from future erosion. The absence of vegetation along the foreshore increases the susceptibility of the sand to erosion and increases the likelihood that sandbagging or rocking may be required in the future, subject to State government advice and approvals. It is recommended that the dune is monitored over the next 12 months to determine rates of movement so that Council and the State government has some certainty concerning the need to invest in revegetation, sand bagging or rocking works.

2.4.3 Environmental Values

Most of the Rose Bay foreshore has been disturbed. The southern section of the reserve, or about 25% is in a moderately undisturbed state. The vegetation in the southern section is a relatively good example of Regional Ecosystem 11.2.3 which is low notophyll to microphyll vine forest (beach scrub) on sandy beach ridges, and has a conservation status as “Of Concern”. This classification means that there is between 10 and 30% of this type of vegetation remaining in the Northern Brigalow belt Bioregion which includes the Bowen region.

The middle and northern sections of the foreshore have individual trees and shrubs remaining. Local residents have undertaken weed control and the replanting of native grasses over the last few years which has by all accounts improved the attractiveness of the beach and its ecological values.

Guinea grass (*Megathyrsus maximum*) which is a tall (up to 1.5m) grass had been colonising the foreshore extensively in previous years. This plant can grow quickly and is a fire hazard. Guinea grass is pyrophytic which means that it likes fire and regenerates well after being burnt. The most effective management for Guinea grass is the use of chemical or hand pulling the grass tufts. Local residents have reduced the infestations of guinea grass and also Mother of Millions (*Bryophyllum tubiflorum).*

The Rose Bay foreshore has recently experienced some severe beach erosion. Local residents estimate that between 1 and 3m of foreshore dune has been cut away in the last six months. The eroded sand can

be seen in near shore sand bars. It is presumed that this erosion is natural and that the sand will return in time if favourable and calm ocean conditions permit. However, the absence of vegetation on the dune does make the sand more vulnerable to erosion. It is recommended that the dune erosion is monitored using photo points. If the dune continues to eroded without periods of stabilisation, then sandbagging the foreshore may have to be an option. The sand bagging or rocking of the foreshore will be an expensive exercise. The decision of whether sand bagging or rock walls are constructed will be based on State Government agency advice and permissions. A cheaper and more long term solution would be revegetation, although this would disrupt views.

Turtles use coastal dunes to nest and lay eggs. It is possible that turtles such as the Green and Loggerhead may use the beach to nest.

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Local residents report that turtles have nested in the dune system in the past, however some believe that the erosion scarp may be hindering the turtle's ability to lay eggs in the dune system. More information regarding turtle use of Rose Bay beach is required.

The tidal flats, dune and hind dune areas are utilised by a range of birds. Brush Turkeys (*Alectura lathami*) can be found in the hind dune area near the estuary where they build nests. The Red tailed Black Cockatoo (*Calyptorhynchus banksii*) have been observed eating the Coastal she oak (*Casuarina equestifolia*) seeds. There are numerous bird species which utilised the tidal areas which are migratory, including the Bar-tailed Godwit (*Limosa lapponica*)which nests in the northern arctic areas. The Beach stone-curlew (*Esacus magnirostris*) is listed as vulnerable under the Queensland Nature Conservation Act and can be found using the inter-tidal flats.

The southern boundary of the Rose Bay foreshore is Sand hills creek. This estuary is clean and appears to be in relatively good condition, however water quality monitoring could be undertaken to confirm its status.

A stormwater drain is located mid way through the foreshore reserve. This stormwater system is used to discharge water from the urban development through the foreshore and into the foreshore area. The discharge point is eroding and needs to be stabilised.

2.4.4 Cultural values

Local indigenous people would have used the Rose Bay area to gather seafood and food derived from the local plants. It is uncertain the extent of indigenous use or whether there are significant cultural heritage sites in the area. Further investigations are needed to document how the traditional owners used the Rose Bay foreshore area.

3. Management plan

3.1 Management guidelines for foreshore areas

The Rose Bay foreshore has been divided up into four management units (Figure 4). Each management unit has unique landform, vegetation and usage. The creation of management units allows specific actions to be allocated to each unique section of the foreshore. Each management unit will have a defined set of guidelines for its management and maintenance. The goals of the foreshore management plan are:

1. To protect the existing environmental values of the foreshore and improve them where possible over time.
2. To provide a safe coastal recreation area for local residents and tourists.
3. To ensure that the foreshore is maintained in a sustainable way that protects and enhances its natural values.
4. To ensure management and maintenance is consistent with best management practises and aligns with State legislation.

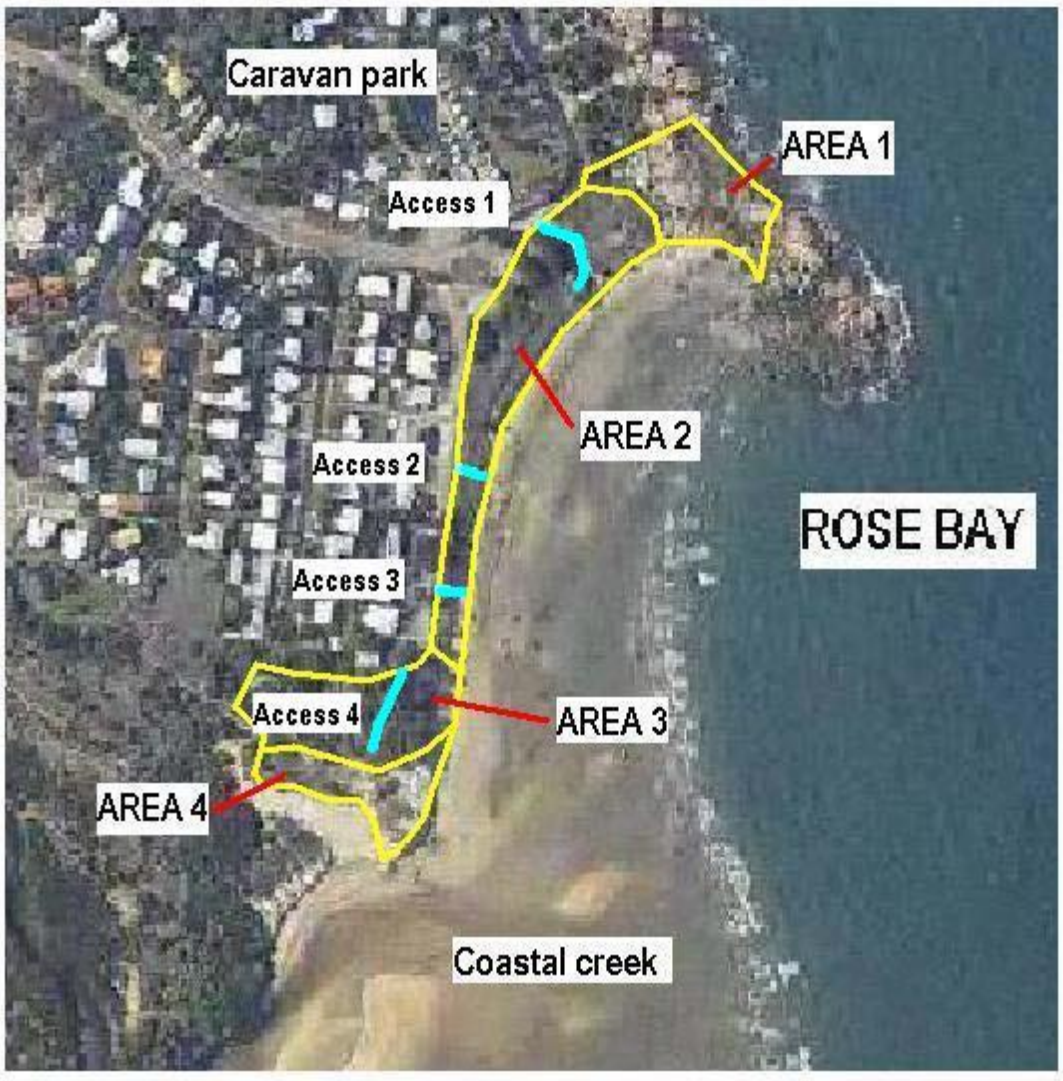


Figure 4. Rose Bay foreshore management areas and existing access points.

3.1.1 Management guidelines for area 1

Management area 1 is an elevated area formed on granite. The following will be used to guide the management of area 1.

Issue	Description of management and maintenance	Roles and responsibility
1. Weed management	Grass weeds will be controlled using hand held weed spray pack units with biactive Glysophate. Mother of Millions will be hand pulled and placed in a designated area to die or placed in plastic bags and disposed of in rubbish bins.	Community – hand pulling weeds. Can use hand held spray packs to control weeds under instructions from Council pest management officers. Council – Council to spray chemicals on the public land. To spray for declared weeds twice a year.
2. Revegetation	This area can be planted with scattered shade trees. The preferred species is Quinine tree (*Petalostigma pubescens)* and Bauhinia (*Lysiphyllum hookeri*). The number and location of trees to be determined in consultation with residents.	Community – Assist with tree planting Council – To provide trees, mulch and irrigation piping.
3. Dune stabilisation – mechanical methods	Non required	
4. Dune stabilisation – non-mechanical methods	Non required	
5. Infrastructure	One picnic table setting with over head cover	Community – Assist in identifying location. Council – To provide picnic shelter
6. Vegetation management	To maintain area free of exotic grass and other weeds. Dead trees to be removed if they are hazardous. Dead limbs of trees to be removed if they are a hazard.	Community – To hand pull weeds. To hand remove dead or dying trees and limbs where possible Council – To spray for declared weeds. To remove dead trees if hazardous.
7. Beach access	Fix damage to end of walkway One access point – access point 1.	Council to fix damaged walkway
8. Other	No vehicles on the beach or dune areas	Community

Figure 5. Management Area 1.

3.1.2 Management guidelines for area 2

Management area 2 is the foredune area adjacent to the residential area. The following will be used to guide the management of area 2.

Issue	Description of management and maintenance	Roles and responsibility
1. Weed management	Grass weeds will be controlled using hand held weed spray pack units with biactive Glysophate. Mother of Millions will be hand pulled and placed in a designated area to die or placed in plastic bags and disposed of in rubbish bins.	Community – hand pulling weeds. Can use hand held spray packs to control weeds under instructions from Council pest management officers. Council – Council to spray chemicals on the public land. To spray for declared weeds twice a year
2. Revegetation	This area can be planted with local native grasses such as Spinifex and vines such as Convolvulus Further revegetation using shrubs and trees will be undertaken through consultation with relevant residents.	Community – Assist with tree planting Council – To provide grass, vines, shrubs, trees and irrigation piping.
3. Dune stabilisation – mechanical methods	No stabilisation measures required, allow natural sand accumulation.	Community - Council – To provide straw bales or sand bags if need has been established through monitoring and with QEPA approval.

4. Dune stabilisation – non-mechanical methods	Ensure at least 80% ground cover with grasses and vines. Use fertiliser to provide a boost to plant growth where revegetation is undertaken. Drift wood can be placed flat on the ground at the base of the dune (though this is not a practise promoted by the Environmental Protection Agency). This drift wood may assist in trapping sand which will help to re-build the dune. Lawn clippings are not to be dumped or spread on the dune system as they may introduce weed seed.	Community – Community may place drift wood at the base of the dune to trap wind blown sand. Council – To provide plants, and establish photo points to monitor the erosion.
5. Infrastructure	A bollard fence is required between the road and fore dune areas. This fence is currently subject to a joint project between the Burdekin Dry tropics NRM and the Whitsunday Regional Council. Signage indicating that the foreshore is under restoration. Stormwater drain through dune – the outlet should have a layer of geofabric laid down with large rocks placed on it to reduce the stormwater flow velocity and stabilise the outlet.	Community – Assist in the construction of the fence if they wish to become involved. Council –The Council and Burdekin Dry Tropics NRM to provide funds and labour to construct the bollard fence line. Council to provide sign – foreshore under restoration. Council to stabilise the stormwater outlet.
6. Vegetation management	* To maintain area free of exotic grass and other weeds. * Dead trees to be removed if they are a hazard. * Dead limbs of trees to be removed if they are a hazard. * View management – No more than 30% of the crown of a tree can be removed to maintain or improve views. * Trees and or shrubs can be planted in a way that will not reduce views. The location of new trees will be in consultation with the community.	Community – To hand pull weeds. To hand remove dead or dying trees and limbs where possible Council – To spray for declared weeds. To remove dead trees if they are a hazard (Council officers to determine).
7. Beach access	There are currently two access points. The southern most access point is to be phased out. Access point 3 – path width to be maintained at a maximum of 1.5m wide.	Community – use access point 3 only in this section. Are allowed to maintain a 1.5m wide access path from the road to the beach.
8. Other	No vehicles on the beach or dune areas	Community

Figure 6. Area 2, access point number 2.

3.1.3 Management guidelines for area 3

Management area 3 is the foredune area south of the Bluewater avenue houses. The following will be used to guide the management of area 3.

Issue	Description of management and maintenance	Roles and responsibility
1. Weed management	Grass weeds will be controlled using hand held weed spray pack units with biactive Glysophate or hand pulled. Mother of Millions will be hand pulled and placed in a designated area to die or placed in plastic bags and disposed of in rubbish bins. However, the use of herbicide is effective in this weeds control.	Community – hand pulling weeds. Can use hand held spray packs to control weeds under instructions from Council Pest Management Officers. Council – Council to spray chemicals on the public land.
2. Revegetation	The condition of the native vegetation in this section is quite good. Some minor revegetation with local native species could occur.	Community – Assist with tree planting Council – To provide grass seeds/seedlings, vines, native seedlings and irrigation piping (if required).
3. Dune stabilisation – mechanical methods	Nil	

4. Dune stabilisation – non-mechanical methods	Ensure at least 70% canopy cover . Drift wood can be placed flat on the ground at the base of the dune (though this is not a practise promoted by the Environmental Protection Agency). This drift wood may assist in trapping sand which will help to re-build the dune but its effectiveness is likely to be very small. Lawn clippings should not be dumped in this location.	Community - Community may place drift wood at the base of the dune to trap wind blown sand, but this practise may not be very effective. Council –To provide plants, and establish photo points to monitor the erosion.
5. Infrastructure	Ensure bollards continue to the end of the road Erect sign to ensure cars are not parked at the end of the cul-de-sac. Cars parked at the end of the cul-de-sac makes it difficult for cards and trucks to turn around. Bollarding to be installed at the end of Casuarina street to reduce vehicle access to the dune and estuary areas. Large rocks could be used to reduce vehicle access to estuary area.	Community - Council – To provide signage, bollards and rock.
6. Vegetation management	To maintain area free of exotic grass and other weeds. Dead trees NOT to be removed Dead limbs of trees NOT to be removed unless they are a hazard.	Community – To hand pull weeds. To hand remove dead or dying trees and limbs where possible Council – To spray for declared weeds twice a year. To remove dead trees.
7. Beach access	Access path at the end of the road to be kept to a maximum of 1.5m wide where possible. Ensure steps from the road to the dune are safe.	Council – ensure steps are safe leading to the dune.
8. Other	No vehicles on the beach or dune areas	Community

3.1.4 Management guidelines for area 4

Management area 4 is the sandy mobile foredune area south of the residential areas. The following will be used to guide the management of area 4.

Issue	Description	Roles and responsibility
1.Weed management	Grass weeds will be controlled using hand held weed spray pack units with biactive Glysophate. Mother of Millions will be hand pulled and placed in a designated area to die or placed in plastic bags and disposed of in rubbish bins.	Community – hand pulling weeds. Can use hand held spray packs to control weeds under instructions from Council pest management officers. Council – Council to spray chemicals on the public land.
2. Revegetation	This area can be planted with local native grasses and vines such as *Spinifex* and *Convolvulus.*	Community – Assist with tree planting Council – To provide grass and vines and irrigation piping.
3. Dune stabilisation – mechanical methods	If approved by QEPA, placement of large straw bales or sand bags at base of dune.	Community - Nil Council – To provide bales and sand bags if need has been established through monitoring, and if QEPA approve.
4. Dune stabilisation – non-mechanical methods	Ensure at least 80% ground cover with grasses and vines. Drift wood can be placed flat on the ground at the base of the dune (though this is not a practise promoted by the Environmental Protection Agency). This drift wood may assist in trapping sand which will help to re-build the dune. This practise may not be very effective in trapping sand and assisting to stabilise the dune. Monitor dune over time	Community - Community may place drift wood at the base of the dune to trap wind blown sand. However, this practise may not be very effective in helping to stabilise the dune. Council – To provide plants
5. Infrastructure	Nil	
6.Vegetation management	To maintain area free of exotic grass and other weeds. Dead trees to be removed if hazardous (Council officers to determine). Dead limbs of trees to be removed if they are a hazard (Council officers to determine).	Community – To hand pull weeds. To hand remove dead or dying trees and limbs where possible Council – To spray for declared weeds. To remove dead trees if hazardous (Council officers to determine).
7. Beach access	Via access point 4 and beach for pedestrians.	Community
8. Other	No vehicles on the beach or dune areas	Community

Figure 7. Management Area 4.

3.2 Review and evaluation

The Rose Bay Foreshore Management Plan will be reviewed in 12 months after it is adopted by the Whitsunday Regional Council. The review process will include a public meeting on site to discuss the implementation of the plan. Any proposed changes to the plan from the public meeting and consultation with the State Government will involve the development of a revised version of the Management Plan and the changes adopted by the Council.

4. References

Anderson, E., 1993. *Plants of Central Queensland: their identification and uses*. Information Series QI92037. Queensland Department of Primary Industries, Brisbane.

Queensland Environmental Protection Agency, 1996. *Leaflet: Management guidelines for dune use*. Leaflet number V-01.1, QEPA, Brisbane.

Queensland Environmental Protection Agency, 1996a. Leaflet: *The formation and function of sand dunes*. Leaflet number V-11.02, QEPA, Brisbane.

Queensland Environmental Protection Agency, (2001). *State Coastal Management Plan –*

Queensland's coastal policy. QEPA, Brisbane.

5. Appendix

5.1 Vegetation list

Area 1.

Species Name	Common Name
Acacia salicina	Sally Wattle
Casuarina equestifolia	Horsetail sheoak
Catharanthus roseus (E)	Perriwinkle
Cenchrus echinatus (E)	Mossman River Grass
Centrosema pubescens (E)	Centro
Clerodendron floribunda	Lolly Bush
Euphorbia cyanthophora (E)	Painted Spurge
Indigofera pratensis	Forest Indigo
Ipomea pes caprae subsp. *Brasiliensis*	Goat's foot convolvulus
Megathyrsus maximum (E)	Guinea grass
Pandanus tectorius	Screw Pine
Panicum pousum (E)	Panic Grass
Spinifex sericeus	Beach/Hairy Spinifex
Terminalia catappa	Beach Almond
Terminalia porphyrocarpa	
Tribulus cistoides (E)	Caltrop

Area 2.

Species Name	Common Name
Catharanthus roseus (E)	Periwinkle
Cenchrus ciliaris (E)	Buffle Grass
Centrosema pubescens (E)	Centro
Chloris inflate (E)	Purpletop Chloris
Cocus nucifera (E)	Coconut Palm
Cynodon dactylon	Green Couch
Euphorbia cyanthophora (E)	Painted Spurge
Euphorbia heterophyla (locally declared)	Milkweed
Fucus sp.	Fig species
Ipomea pes caprae subsp. *Brasiliensis*	Goat's foot convolvulus
Melinis repens repens (E)	Red Natal
Panicum pousum (E)	Panic Grass
Panicum maximum (E)	Guinea grass
Sansevieria hyacinthoides	Mother-in-laws tongue
Spinifex sericeus	Beach/Hairy Spinifex
Stylosanthes sp. (E)	
Tribulus cistoides (E)	Caltrop

Area 3

Species Name	Common Name
Casuarina equestifolia	Horsetail sheoak
Passiflora foetida (E)	Stinking Passion Flower
Spinifex sericeus	Beach/Hairy Spinifex
Terminalia catappa	Beach Almond
Unknown sp. (purple flower)	

Area 4

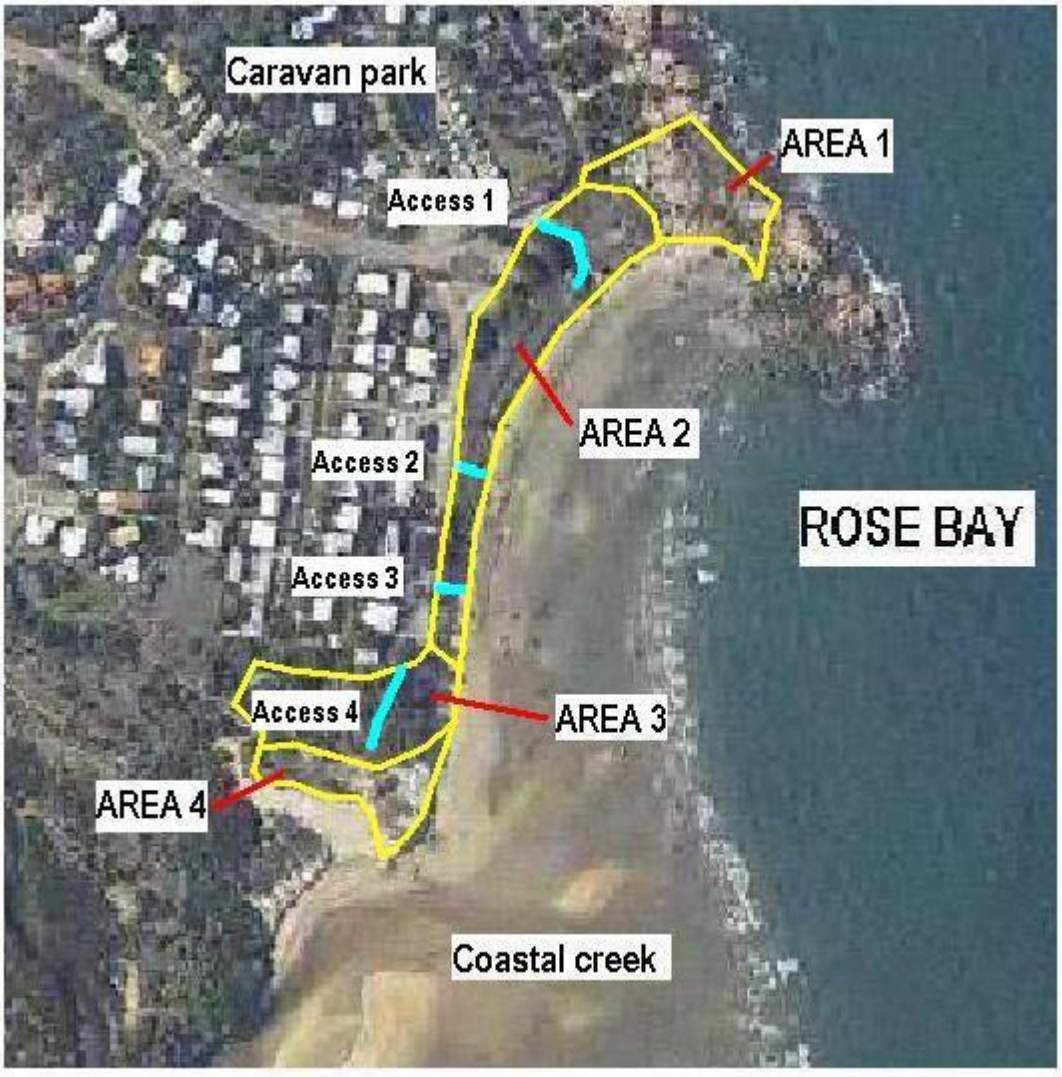
Species Name	Common Name
Acacia salicina	Sally Wattle
Casuarina equestifolia	Horsetail sheoak
Cenchrus echinatus (E)	Mossman River Grass
Centrosema pubescens (E)	Centro
Ipomea pes caprae subsp. *Brasiliensis*	Goat's foot convolvulus
Passiflora foetida (E)	Stinking Passion Flower
Spinifex sericeus	Beach/Hairy Spinifex

(E) = Exotic Species

5.2 Foreshore Maintenance information sheet

Rose Bay foreshore Management Plan: Maintenance guidelines

The Rose Bay foreshore has been divided up into four management units (see map below). The following information is provided as a quick reference guide to the management and maintenance of the foreshore area. These management and maintenance guidelines have been approved by the Whitsunday Regional Council. For more detailed information please refer to the Rose Bay Foreshore Management Plan (2008).



Map. Rose Bay management areas and access points.

Issue	Description	Roles and responsibility
1. Weed management	Grass weeds will be controlled using hand held weed spray pack units with biactive Glysophate. Mother of Millions will be hand pulled and placed in a designated area to die or placed in plastic bags and disposed of in rubbish bins.	Community – hand pulling weeds Council – Council to spray chemicals on the public land. To spray for declared weeds twice a year
2. Revegetation	AREA 1 - This area can be planted with scattered shade trees. The preferred species is Quinine tree (*Petalostigma pubescens)* and Bauhinia (*Lysiphyllum hookeri*). The number and location of trees to be determined in consultation with residents. AREA 2 – This area can be planted with local native grasses and vines such as *Convolvulus.* AREA 3- The condition of the native vegetation in this section is quite good. Some minor revegetation with local native species could occur. AREA 4 - Ensure at least 80% ground cover with grasses and vines	Community – Assist with tree planting and maintenance Council – To provide trees, mulch and irrigation piping.
3. Dune stabilisation – methods	AREA 1 - Non required AREA 2 – No large straw bales at access points at this stage. Need to monitor dune movement over time with the use of photo monitoring points. Ensure at least 80% ground cover with grasses and vines. AREA 3- Ensure at least 80% ground cover with grasses and vines. AREA 4- May require placement of large straw bales or sand bags at access points – subject to QEPA approval and further advice All areas – no vehicles on beach or dune.	Community – To assist in planting and maintaining plants. Council – Council to provide sand bags if needed and assist in providing plants. If sand bags are required, need approval from Queensland Environmental Protection Agency. Council - establish photo points to monitor the erosion.
4. Infrastructure	One picnic table setting with over head cover in Area 1. Signage in Area 2 indicating the foreshore is being rehabilitated. Stormwater outlet requires stabilisation	Council – To provide picnic shelter, signage, bollarding and sand bags. Council to stabilise stormwater outlet
5. Vegetation management	To maintain area free of exotic grass and other weeds. Dead trees to be removed in area 1 and 2 only subject to Council officer inspections. Dead limbs of trees to be removed if they are a hazard.	Community – To hand pull weeds. To hand remove dead or dying trees and limbs where possible after gaining permission from Council officers. Council – To spray for declared weeds. To remove dead trees.
6. Beach access	Access to the beach will be encouraged at access points 1,2 and 4. Access point 3 will be phased out. Fix access point 1 walkway which is damaged Fix access point at the end of Bluewater ave.	Council to maintain beach access points

For more information on managing and maintenance of the dune please contact either Catchment Services at Whitsunday Regional Council on 49450237 or Burdekin Dry Tropics NRM on 4724 3544.

Websites: http://www.whitsunday.qld.gov.au/

http://www.burdekindrytropics.org.au/index.html