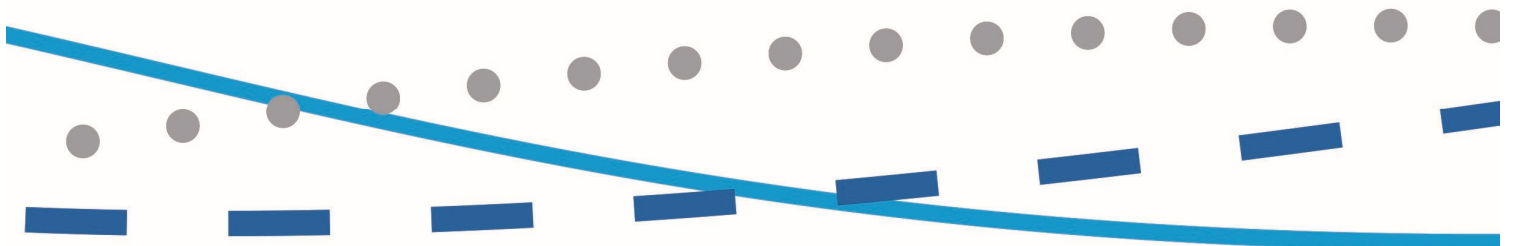




# Frog Rock Coastal Reserve Foreshore Management Plan

2021-2031

Author: Scott Hardy  
Date: 13 May 2021



## TABLE OF CONTENTS

<b>1. Introduction</b> .....	<b>4</b>
<b>2. Background</b> .....	<b>5</b>
2.1 Land Tenure and Land Use .....	5
2.2 Physical Environment .....	6
2.2.1 Geology, Soils and Landform .....	6
2.2.2 Vegetation .....	7
2.2.3 Coastal Process .....	8
2.2.4 Cultural Heritage .....	8
2.3 Legislation and Policy .....	9
2.4 Foreshore Values .....	10
2.4.1 Social Values .....	10
2.4.2 Economic Values .....	10
2.4.3 Environmental Values .....	10
2.4.4 Cultural Values .....	10
2.5 Stakeholders .....	11
2.6 Land Management Issues .....	12
<b>3. Management Plan</b> .....	<b>15</b>
3.1 Goals and Objectives .....	15
3.2 Management Guidelines for Foreshore Area .....	15
3.3 List of Actions .....	16
3.4 Budget .....	19
3.5 Community Consultation .....	19
3.6 Review and Evaluation .....	20
<b>4. Conclusion</b> .....	<b>21</b>
<b>5. References</b> .....	<b>22</b>
<b>6. Appendix</b> .....	<b>23</b>
6.1 Regional Ecosystem Maps .....	23
6.2 Coastal Hazard Maps .....	26
6.3 Site Photographs .....	28

# Executive Summary

The Frog Rock Coastal Foreshore Reserve is located on the western side of Cape Gloucester in the Whitsunday Regional Council local government area, approximately 30 kilometres north of Proserpine and covers approximately 8.5ha. Frog Rock Reserve is an attractive location which is experiencing the pressures of tourism leading to impacts on the environment. The purpose of the Frog Rock Coastal Reserve Foreshore Management Plan is to:

- plan for increased tourist visitation to the reserve,
- identify areas of the reserve to rehabilitate to restore,
- identify areas for future recreation, and,
- plan for improved protection of the site's cultural heritage.

The Frog Rock Coastal Reserve Foreshore Management Plan contains a program of works to rehabilitate some of the foreshore whilst identifying areas for future recreation. The Foreshore Management Plan aims to balance the restoration of the endangered littoral rainforest with social and recreational outcomes.

## Document Control

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# 1. Introduction

The Frog Rock Foreshore Reserve is located on the western side of Gloucester Peninsula, approximately 5 kilometres west of Hydeaway Bay and 30 kilometres north of Proserpine. The coastal foreshore reserve is located on the coast between Cape Gloucester Road and the ocean. The reserve is almost 800m long and the width ranges from 100m to 15m wide and covers 8.5ha. The reserve is located in Unallocated State Land and Esplanade.

The Frog Rock Coastal Reserve is located on the foot slope of Cape Gloucester and incorporates a fragile coastal dune system. In recent years, there has been an increasing use of this area by tourists. Whitsunday Regional Council and local residents have noticed that the reserve has become impacted upon by the increased visitation of tourists. Some of the issues which have arisen from the increased visitation include; increase in litter, 4WD use on the beach, damage to the dunes and turtle nesting sites, an increase in erosion, tree removal and illegal camping.

The Frog Rock Reserve is a unique picturesque location which has many special ecological, social and recreational qualities. Council and the Gloucester Community recognise the special qualities of the Frog Rock Foreshore Reserve and seek to protect its intrinsic values whilst allowing and managing the tourists to minimise impacts. The narrow fringing coastal beach scrub ecosystem or littoral rainforest is one of the terrestrial ecosystems which can be found along the Frog Rock Reserve which is protected under Commonwealth and Queensland legislation. The nearby marine ecosystem which is in the Great Barrier Reef Marine Park has its own set of values which need management and protection.

The purpose of this Foreshore Management Plan is to guide the future use and management of the Frog Rock Coastal Reserve to manage tourist visitation and minimise environmental impacts. The intension of the Foreshore Management Plan is to balance the economic, social, cultural and environmental values of the reserve. The reserve has three distinct beaches which have their own informal car park. The objectives of the Foreshore Management Plan are to;

- a) describe the values of the foreshore reserve
- b) describe the current impacts and issues in the reserve
- c) outline the management guidelines and future actions which will guide the use and management of the reserve.



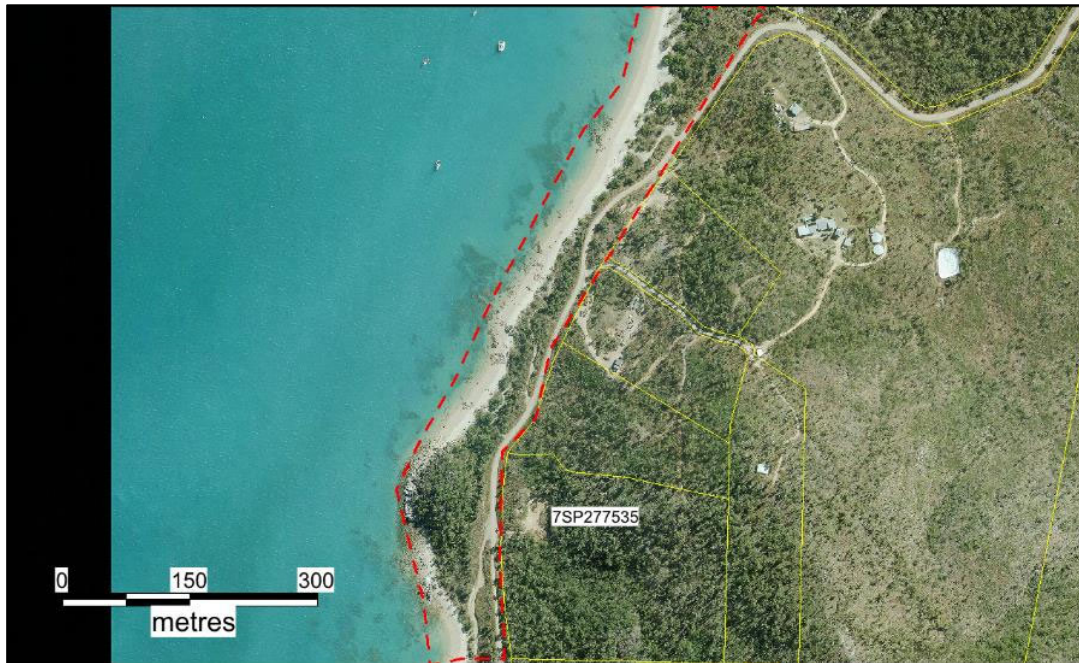
**Figure 1:** Location of Frog Rock Coastal Reserve



## 2. Background

### 2.1 Land Tenure and Land Use

The Frog Rock Foreshore Reserve is Unallocated State Land or Esplanade. There is no lot covering the land between Gloucester Road and the ocean. The Frog Rock foreshore reserve is located next to Lot 7 on SP277535.



**Figure 2:** Lot Boundaries of the Frog Rock Coastal Reserve Area

## 2.2 Physical Environment

### 2.2.1 Geology, Soils and Landform

The geology of the Frog Rock area has been mapped by Malone and Paine (1971). The lithology of the undulating hills upland from Frog Rock is Permian granite (Figure 3). The thin coastal dunal system is composed of Holocene marine sediments. The granite weathers to very sandy soil which can be quite erodible.

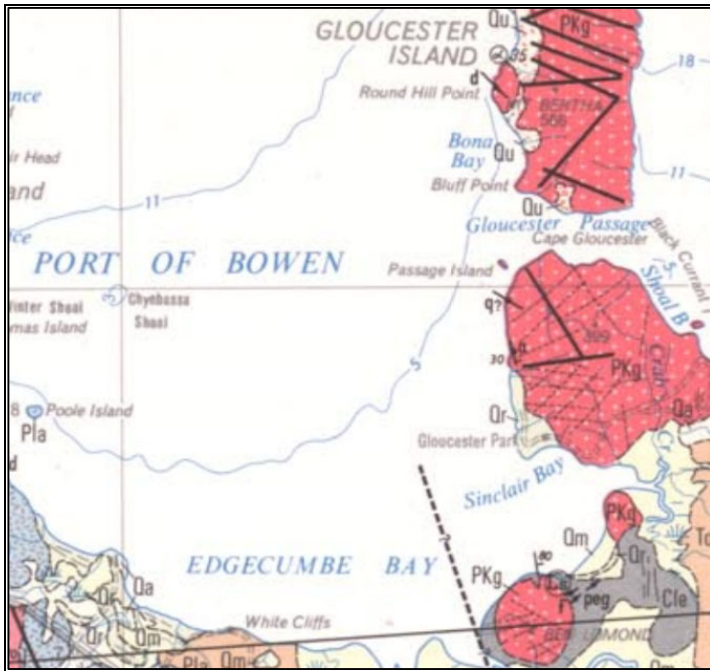


Figure 3: Geology of the Cape Gloucester Area

The soils of the Frog Rock area were mapped by Hardy (2003). The soils on the lower foot slopes are sandy colluvial soils (Qd soil profile class) which have been formed by the weathering of the granite and depositional material from historical mass movement events (Figure 4).

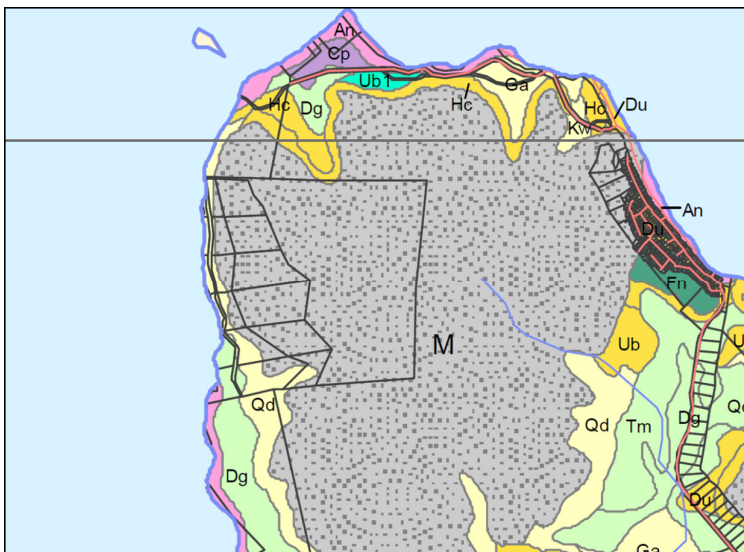


Figure 4: Soils and Landform of the Cape Gloucester Peninsula

## 2.2.2 Vegetation

The dominant vegetation types in the Frog Rock reserve are the Eucalypt woodlands on the colluvial foot slopes and beach scrub (littoral rainforest) vegetation on the dunes. The regional ecosystems are:

- Regional Ecosystem 8.12.14
  - Conservation Status = Least concern.
  - Eucalyptus drepanophylla and/or E. crebra and/or E. exserta and/or Acacia spirorbis subsp. solandri and/or Lophostemon confertus low woodland on islands and headlands, on Mesozoic to Proterozoic igneous rocks, and Tertiary acid to intermediate volcanics.
- Regional ecosystem 8.2.2.
  - Conservation status = Endangered.
  - Semi-evergreen microphyll vine thicket to vine forest on coastal dunes.

The Queensland herbarium description of the beach scrub vegetation is:

- *Semi-evergreen microphyll vine thicket to vine forest. The canopy is sometimes clumped forming an open scrub to tall shrubland with open areas of bare sand or grassland/herbland.*
- *Emergents may include Mimusops elengi, Pleiogynium timorense and occasionally Brachychiton australis. Common canopy species are Mimusops elengi, Diospyros geminata, Drypetes deplanchei, Aglaia elaeagnoidea, Polyalthia nitidissima, Ganophyllum falcatum, Planchonella pohlmaniana, Cupaniopsis anacardioides, Sersalisia sericea and Sterculia quadrifida. In some places Argyrodermum polyandrum is common in the canopy or as emergents.*
- *There is often a lower tree or shrub layer dominated by species such as Exocarpos latifolius, Aidia racemosa, Diospyros compacta, Diospyros geminata, Miliusa brahei, Chionanthus ramiflorus, Elaeodendron melanocarpum, Cupaniopsis anacardioides, Sersalisia sericea and Micromelum minutum. Eugenia reinwardtiana sometimes forms a lower shrub layer.*
- *The ground layer is usually very sparse but may have dense clumps of Drynaria sparsisora, or more scattered occurrences of Crinum pedunculatum, Oplismenus aemulus, Dianella caerulea and Ancistrachne uncinulata. Vines are common, especially Trophis scandens, Jasminum simplicifolium, Cissua oblonga and Jasminum didymum. Epiphytes such as Dendrobium discolor are occasionally present. Coastal sand dunes, or ridges of coral or rock formed by wave action.*
- *Geologies mapped as Qhcb (Holocene quartzose to shelly sand beach ridges), Qpd (Pleistocene high parabolic quartz sand dunes), Qhd (Holocene high blow-out quartz dune sand), Qhf (Holocene quartzose foredune sand) and Qhcd (Holocene blow-out frontal quartz dune). (BVG1M: 3a)*

Some of the existing plants on site have been identified and are shown in Table 1.

**Table 1:** Existing Plants in the Foreshore Reserve

Scientific Name	Common Name
<i>Corymbia tessellaris</i>	Moreton Bay ash
<i>Cupaniopsis anacardioides</i>	Tuckeroo
<i>Diospyros geminata</i>	Ebony
<i>Mimusops elengi</i>	Red Condoo
<i>Pleiogynium timorense</i>	Burdekin Plum
<i>Acacia ororia</i>	Coastal wattle
<i>Ficus opposita</i>	Sandpaper fig
<i>Geijera salicifolia</i>	Geijera
<i>Eugenia reinwardtiana</i>	Cedar bay Cheery
<i>Ipomoea pes-caprae</i>	Goats foot creeper
<i>Guilandina bonduc</i>	Knicker nut
<i>Acacia salicina</i>	Sally wattle
<i>Jasminum suavissimum</i>	Jasmine vine

### 2.2.3 Coastal Process

The foreshore reserve lies adjacent to the coast line. The coastline is a tide dominated coastal area rather than a wave dominated area. The foreshore aspect is west, with the wave fetch distance being quite small. The reserve is subject to the processes of coastal erosion and storm surge. The Queensland State Government storm surge mapping for the reserve is shown in the appendix. There are no waterways through the reserve. The tidal range for Bowen is summarised in Table 2.

*Table 2: Tidal Reference Data for Bowen*

Tidal Plane		Tide Level (mLAT)	Tide Level (m AHD)
Highest Astronomical Tide	HAT	3.73	1.95
Mean High Water Spring	MHWS	2.83	1.05
Mean High Water Neap	MHWN	2.21	0.43
Mean Sea Level	MSL	1.76	-0.02
Mean Low Water Neap	MLWN	1.31	-0.47
Mean Low Water Spring	MLWS	0.67	-1.11
Lowest Astronomical Tide	LAT	-	-1.78

### 2.2.4 Cultural Heritage

The traditional owners of the Frog Rock Foreshore Reserve area are the Gia and Ngaro people. Council is not aware of any cultural heritage surveys conducted in the reserve.



## 2.3 Legislation and Policy

The Frog Rock foreshore reserve is located in an environmentally sensitive area. The use and activities in the reserve are regulated. The main legislation which regulate the foreshore are listed in Table 3.

**Table 3: Relevant Legislation**

Legislation	Application
<i>Queensland Fisheries Act 1994 &amp; Fisheries Regulations 2008</i>	Protects the tidal or inter-tidal Marine plants and Fish Habitat areas below the level of Highest Astronomical Tide.
<i>Great Barrier Reef Marine Park Act 1975 (Com) &amp; Great Barrier Reef Marine Park Regulations 2012 (Com)</i>	The Great Barrier Reef Marine Park (Commonwealth) Townsville/Whitsunday Management Area to Mean Low Water
<i>Queensland Marine Parks Act 2004 &amp; Marine Parks Regulations 2006</i>	The intertidal zone (to MHW) within the Townsville/Whitsunday Management Area i.e. all tidal & and intertidal areas.
<i>Queensland Coastal Protection and Management Act 1995</i>	Within tidal and inter-tidal regions and erosion prone areas
<i>Queensland Coastal Protection and Management Act 1995 (Transport Infrastructure Act 1994)</i>	In/on tidal lands or waters adjacent or within coastal shipping activities.
<i>Environmental Protection Act 1994 &amp; Environmental Protection Regulations 2008 &amp; Environmental Protection (Water) Policy 2009</i>	Applicable to all lands and waterways (natural or manmade) in Queensland.
<i>Queensland Planning Act 2017</i>	Applicable to all development on the site.
<i>Commonwealth Environmental Protection and Biodiversity Conservation Act 1999</i>	Matters of national environmental significance: GBRMP, GBRWHA to Mean Low Water
<i>Queensland Vegetation Management Act (1999)</i>	Protects native vegetation and regional ecosystems.
<i>Queensland Cultural Heritage Act (2003)</i>	Protects sites important to traditional owners.
<i>Queensland Conservation Act (1992)</i>	Protects native plants, particularly important plants which have been listed as Endangered, near threatened, Vulnerable and Threatened.

The DEWHA, 2009 state that “the Littoral Rainforest and Coastal Vine Thickets of Eastern Australia is a critically endangered ecological community listed under the Australian Government’s *EPBC Act*. The ecological community provides habitat for over 70 threatened plants and animals and it provides an important buffer to coastal erosion and wind damage”. The CDEE (2019) state Littoral Rainforest also continues to be reduced and fragmented by land clearance, weed invasion, recreational disturbance, animal browsing/grazing, fire and natural disturbance. In 2019 the National Recovery Plan for the Littoral Rainforest was developed by the Commonwealth Government (CDEE, 2019). The objectives of the National Recovery Plan for the Littoral Rainforest and Coastal Vine Thickets of Eastern Australia Ecological Community are that by 2029:

- The management actions necessary to stop the decline of the ecological community across its distribution are well understood and being implemented;
- The known extent (area) of Littoral Rainforest has been maintained or extended;
- The condition of the ecological community has been improved across its distribution; and
- The chances of the long-term persistence of Littoral Rainforest in nature have been maximised (CDEE, 2019)

Whitsunday Regional Council has a Local Law which regulates the activities of Council owned and Trusted land.

## **2.4 Foreshore Values**

### **2.4.1 Social Values**

The Frog Rock Reserve is used by tourists and local residents for picnic and camping. It is not uncommon to see more than a dozen vehicles parked at the three informal car parks at the three beaches. The reserve is used for fishing and day use. There are reports of 4WDs accessing the beach and driving along the beach. The Frog Rock Beach has been used to launch boats. The coastal reserve has the potential to attract more tourists to this location in the future, however the impacts of the increased traffic and usage would need to be managed.

### **2.4.2 Economic Values**

The Frog Rock Reserve is Unallocated State Land and has no defined real estate value, but if it was a privately owned lot would be valuable and highly sought after. The reserve is attractive to tourists who drive from Airlie Beach and Bowen to use the site. There may be some economic benefit derived from the reserve and Gloucester Peninsula by businesses in the Cape Gloucester area from the day tourists.

### **2.4.3 Environmental Values**

The Frog Rock Reserve has a range of environmental values. The reserve has an attractive setting and features the endangered littoral rainforest and clean calm ocean waters. The dune system provides a good location for marine turtle nesting which are protected under Commonwealth and Queensland legislation.

### **2.4.4 Cultural Values**

The Gia and Nagaro people are the traditional owners of the Frog Rock area. It is not known whether there are specific cultural heritage sites within the reserve.

## 2.5 Stakeholders

The organisations and individuals who may be interested in the development of the reserve plan are termed the project stakeholders. Some stakeholders may have more interest in the Plan than others due to perceived impacts or opportunities. The stakeholders of the Plan were consulted in the development of this Management Plan where possible. The stakeholders in the Frog Rock Foreshore Reserve Management Plan are listed in Table 4.

**Table 4:** Frog Rock Foreshore Management Plan Stakeholders

Organisation	Possible Interest	Method of Consultation
State Government – Dept. of Environment and Science	No formal interest in the rehabilitation of the reserve. No permissions required for rehabilitation works. May be interested for future development of the Frog Rock area. The Beach scrub vegetation is protected under State and Commonwealth legislation.	A copy of the Management Plan was provided to key staff.
Reef Catchments NRM	Reef Catchments have a Beach Scrub rehabilitation program. Reef Catchments may be able to assist with funding.	A copy of the Management Plan was provided to key staff.
Whitsunday Catchment Landcare	Interest in protecting coastal ecosystems. May be able to provide suitable plants for rehabilitation.	A copy of the Management Plan was sent to key staff.
Gia and Nagarro Traditional Owner Group	Interest in the cultural heritage values of the reserve.	A copy of the report was sent to members for comment.
Whitsunday Regional Council	Not a formal trustee of the reserve. Not formally responsible for the future management and maintenance of the reserve but will have an interest due to compliance issues.	A copy of the Management Plan was provided to key staff.
Cape Gloucester Residents	Interest in active and passive recreation. Interest in the rehabilitation of areas in the reserve. Concern over loss of views and real estate values.	On-site meetings and letter drop with updates.
West Gloucester Foreshore Preservation Society, Inc.	Interest in conservation activities along the Gloucester coast.	A copy of the Management Plan was provided to the group.
Queensland Marine Parks	Manage coastal issues from the high tide sea-wards.	A copy of the Management Plan was provided to key staff.

## 2.6 Land Management Issues

The Frog Rock Foreshore Reserve is located between a residential community and the marine environment. The following are some of the issues identified in the reserve:

### Environment

- The Beach scrub is a thin and endangered ecosystem which may require protection.
- There is historical and more recent clearing of the Beach Scrub vegetation to form car parks, camping sites and access to the beach.

### Social

- The nearby residents may want to utilise the reserve for passive and active recreation.
- The area is used by tourists.
- The site is suitable for passive recreation
- There is history of illegal camping and littering.
- The site has been an informal site for launching small recreational boats.

### Cultural

- There are no known cultural heritage sites in the reserve.

### Economic

- The reserve has an economic value to the Frog Rock community. The coast line and adjacent areas was likely an attractive element for those purchasing property at Cape Gloucester.
- The beach scrub does act to stabilise the dunes and create a natural buffer against coastal storms.
- The increase in tourists to Cape Gloucester may have economic benefits to nearby businesses.

### Planning

- The reserve could be separated up into sections for land use management. Some sections could be used for passive and active open space.

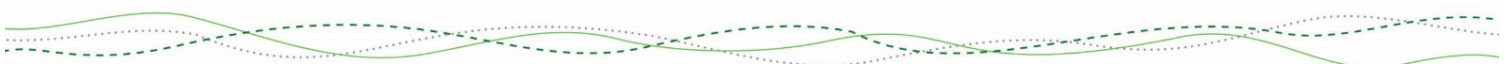




**Figure 5:** Erosion Caused by Vehicle Access to the Beach



**Figure 6:** Area Cleared for Vehicle Parking and Beach Access



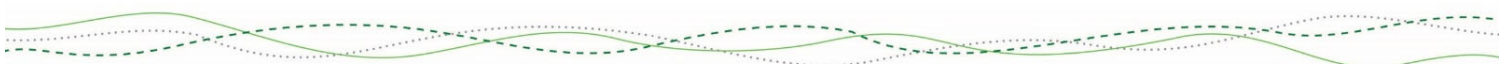




**Figure 7:** Litter left behind by Campers



**Figure 8:** Erosion Caused by Vehicle Access to the Beach



## 3. Management Plan

### 3.1 Goals and Objectives

The goals of the Frog Rock Foreshore Reserve Management Plan are listed in Table 5.

**Table 5: Goals and Objectives of the Management Plan**

No.	Theme	Goals
1	Environment	1.1. To identify areas of the foreshore reserve to rehabilitate.
		1.2. To improve the biodiversity values of the reserve.
2	Social	2.1. To plan for and manage recreation opportunities in the reserve.
		2.2. To provide and retain areas for future passive and possibly active recreation in the reserve.
3	Cultural	3.1. To identify and protect important areas of cultural heritage in the reserve.
4	Economic	4.1. To undertake activities in the reserve which may provide economic value to the community.
5	Planning	5.1. Separate the reserve into management zones for land use and activity planning

### 3.2 Management Guidelines for Foreshore Area

The proposed management guidelines for the Frog Rock Foreshore Reserve are listed in Table 6.

**Table 6: Management Guidelines**

No.	Theme	Guideline
1	Environment	To protect the vegetation in the foreshore reserve
2		To restrict 4wd access to the beach
3		To provide car parking in places which minimise erosion and environmental impacts
4		To rehabilitate degraded areas
5		To protect marine turtle nesting areas
6		To provide suitable regulatory signage
7		To provide suitable rubbish bins for tourists
8	Social	To prevent over-night camping in the foreshore reserve
9		To provide adequate car parking for tourists
10		To provide suitable informative signage
11		To stop boat launching from the beach due to impacts caused by road accesses through the reserve and car and trailer parking.
12	Economic	To encourage day tourist visitation to the reserve
13		To develop a cost-effective infrastructure improvement strategy for the three beach sites to accommodate day visitation.
14	Cultural	To liaise with the traditional owners on the values and management of the reserve



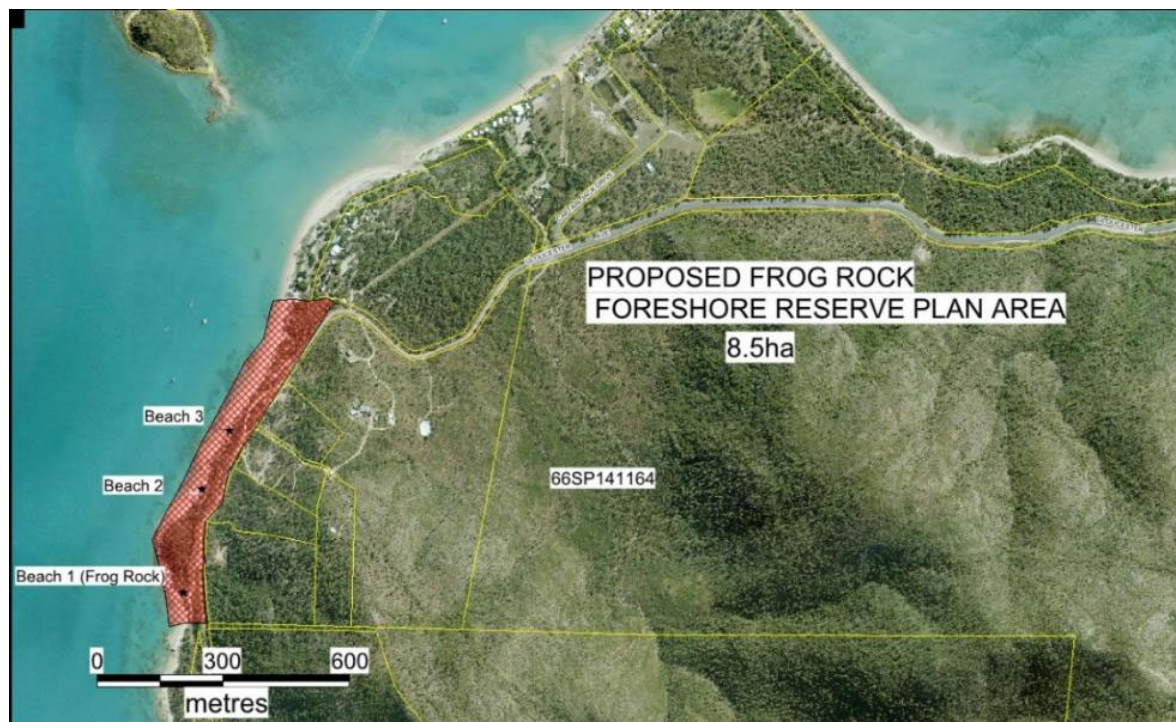
### 3.3 List of Actions

The proposed list of actions in the foreshore reserve to meet the goals and implement the management guidelines are listed in Table 7.

**Table 7: Possible Actions**

No.	Theme	Actions
1	Environment	1.1. To identify areas of the beach scrub vegetation community for rehabilitation
		1.2. To develop a staged plan for the rehabilitation areas.
		1.3. Use large boulders or bollarding to block 4WD access to the beach
2	Social	2.1. To identify future passive and active open space for the community in the reserve
		2.2. To write to the Queensland Department of Transport and main Roads (TMR) to request a review of boat launching facilities at Frog Rock.
		2.3. To develop a naming system for the three beaches with appropriate signage.
		2.4. Consider the implementation of a suitable toilet facility.
3	Cultural	3.1. To develop cultural heritage signage at the site if appropriate.
4	Economic	4.1. To ensure that works in the reserve are attractive and are valued by the community. Providing adequate funding to ensure work completed is to a good standard.
		4.2. Implement suitable car parking for the three beach areas.
5	Planning	5.1. To separate the foreshore reserve up into management units for land use planning.

The Frog Rock Reserve has been divided up into three beach management areas (Figure 9). The individual site plans for the three beaches are shown in Figures 10, 11 and 12. The details of the tasks to be completed at each of the three beach sites is shown in Table 8.



**Figure 9: Location of the Three Beaches**





Figure 10: Beach 1 – Frog Rock Beach



Figure 11: Beach 2

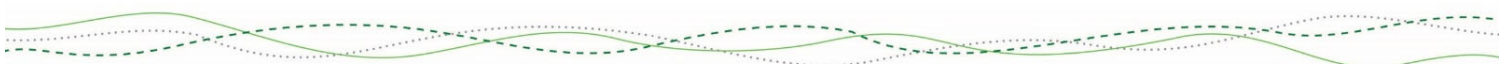






Figure 12: Beach 3

Table 8: Summary of Tasks to be Completed at Each of the Three Beaches

Beach	List of Tasks	Details
1 (Frog Rock)	Car parking	Area = 20m x 6m (120m <sup>2</sup> )
	Bollard fencing	Length = 200m
	Revegetation	Area = 500m <sup>2</sup>
	Use of boulders to block 4WD access	Number = 3 rocks for 5m
	Drainage	Need to extend stormwater drainage
	Signage	1 x compliance sign and 1 x Information sign
2	Car parking	Area = 10m x 12m (120m <sup>2</sup> )
	Bollard fencing	Length = 120m
	Revegetation	Area = 600m <sup>2</sup>
	Use of boulders to block 4WD access	Number = 4 tracks to block = 21 m need 12 boulders
	Signage	1 x compliance sign
3	Car parking	Area = 10m x 12m (120m <sup>2</sup> )
	Bollard fencing	Length = 100m
	Revegetation	Area = 100m <sup>2</sup>
	Use of boulders to block 4WD access	Number = 2 tracks to block = 12m width = 6 rocks/boulders
	Signage	1 x compliance sign

### 3.4 Budget

The implementation of the actions outlined in the Frog Rock Foreshore Management Plan will require funds to implement. The summary of actions needed to implement the Plan will be:

- Revised new car parking areas = 360m<sup>2</sup>
- Bollard fencing – 420m
- Boulders and earthworks – 21 boulders delivered and installed
- Revegetation – 1200m<sup>2</sup>
- Signage – 4 signs

The total estimated budget will be determined by requesting quotes for the above works. The proposed range of works may cost between \$50,000 and \$120,000.

### 3.5 Community Consultation

The Draft Frog Rock Foreshore Reserve Plan was placed on public display from 23 February 2021 to 21 March 2021. The results of the community consultation process were:

- 43 responses to the on-line survey
- 2 formal written submissions
- 12 visits to the community information stall at Hydeaway Bay.
- 55% happy and very happy and support for the Plan.
- 2% were very unhappy and 12% unhappy against the Plan.
- 31% undecided about their support for the Plan.
- The post had a reach of 3,595 people, with 55 likes/shares and 130 link clicks through to Your Say Whitsunday.
- 12 people attended the Community information stall on 6 March 2021.
- 2 written submissions received.

The main comments from the community consultation were:

- Concern about the removal of boat launching from the beach.
- Acknowledgement that tourists will continue to visit the area.
- Acknowledgement that the area is being damaged by the increased visitation.
- Request for Council to investigate options to restrict over-night parking at the reserve.
- Lack of mainland camping sites.

The following are the proposed amendments to the Frog Rock foreshore Management Plan from the results of the community consultation process. The following are the additional actions:

- Council to investigate the regulation of overnight parking by introducing parking restriction signage from 10:00pm to 5:00am.
- Council to write to the Queensland Transport and Main Roads enquiring about the possible development of boat launching facilities at Frog Rock.
- Council to install place name and interpretative signage at the beaches.

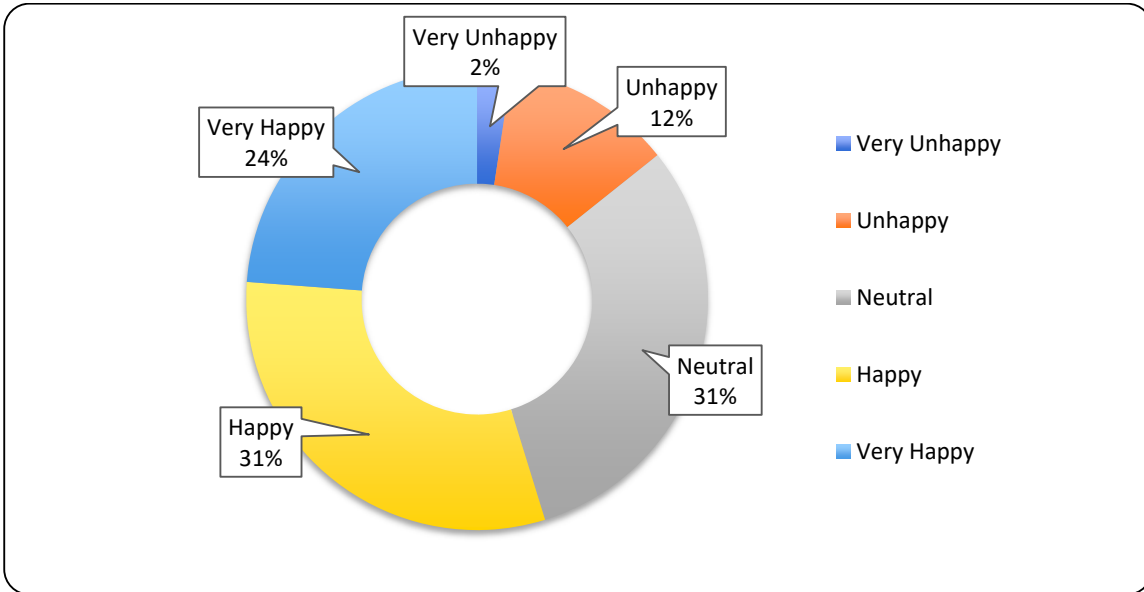


Figure 13: Results of the Community Consultation Process – Levels of Support for the Plan

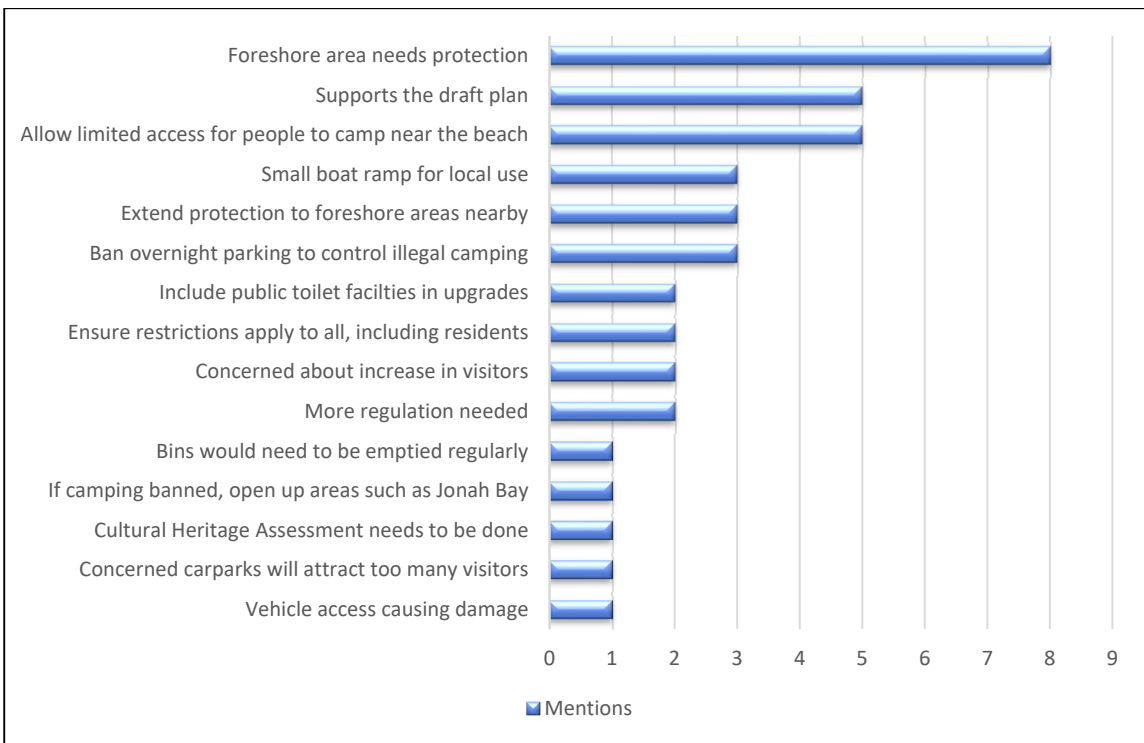


Figure 14: Dominant Issues Raised Through the Consultation Process

### 3.6 Review and Evaluation

The proposed Frog Rock Coastal Reserve Foreshore Management Plan will be reviewed every two years by Council in consultation with the nearby community. It is envisaged that the Plan will be formally reviewed in 10 years.



## 4. Conclusion

The Frog Rock Foreshore Reserve is a focal point for the Gloucester community. The foreshore reserve has many environmental, social, cultural and economic values. The purpose of the Frog Rock Coastal Reserve Foreshore Management Plan is to document improvements to the foreshore reserve which will improve the biodiversity, social, cultural and economic values. The proposed Foreshore Management Plan will take time to implement. Council will seek community input into the Foreshore Management Plan over-time as various stages are implemented. Council will aim to seek external funding where available for the implementation of this Plan.

## 5. References

Commonwealth Dept. Environment and Energy, 2019. National Recovery Plan for the Littoral Rainforest and Coastal Vine Thickets of Eastern Australia Ecological Community. Aust Government, Canberra.

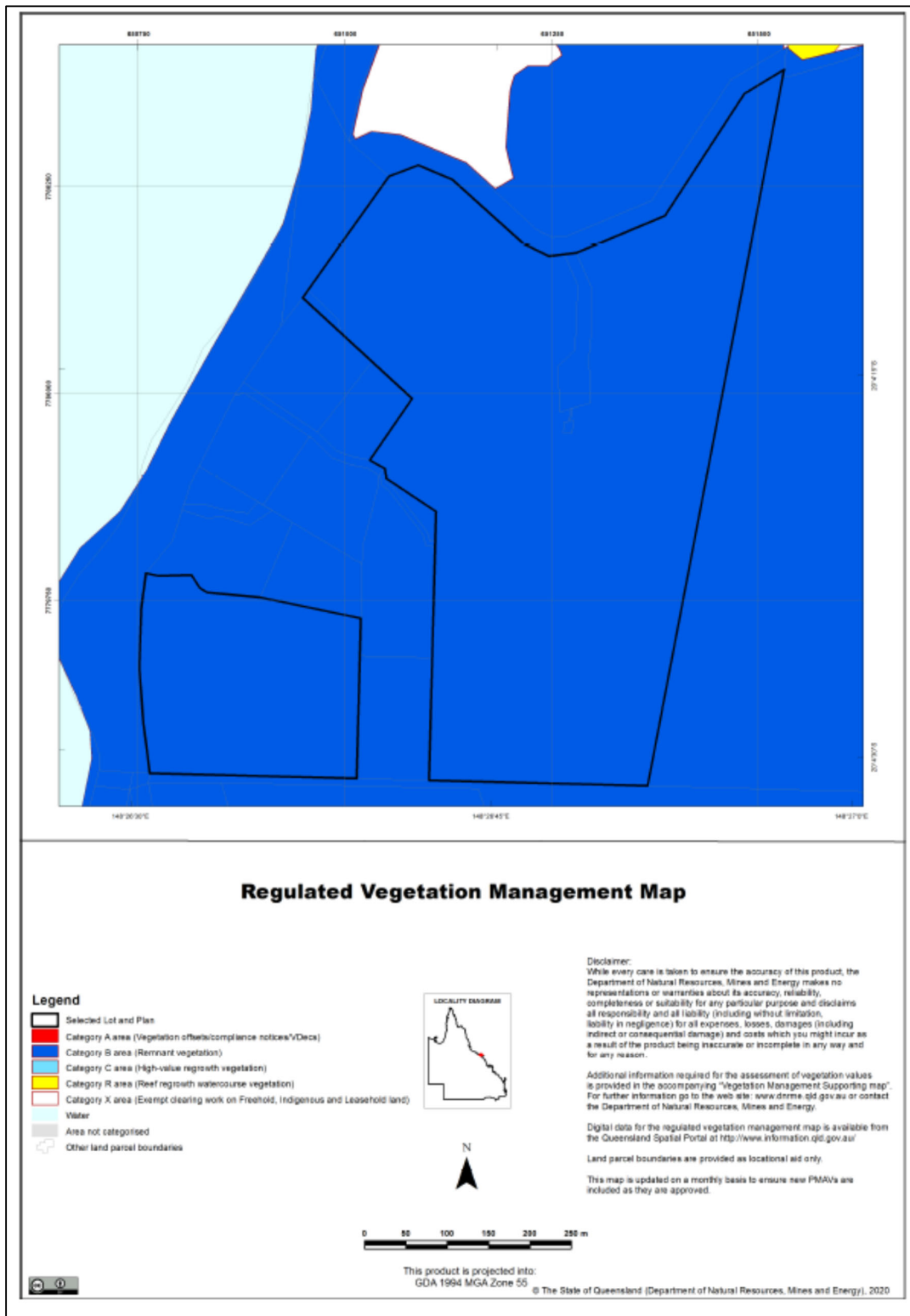
DEWHA, 2009. Littoral Rainforest and Coastal Vine Thickets of Eastern Australia A nationally threatened ecological community. Policy statement 3.9. DEWHA, Canberra

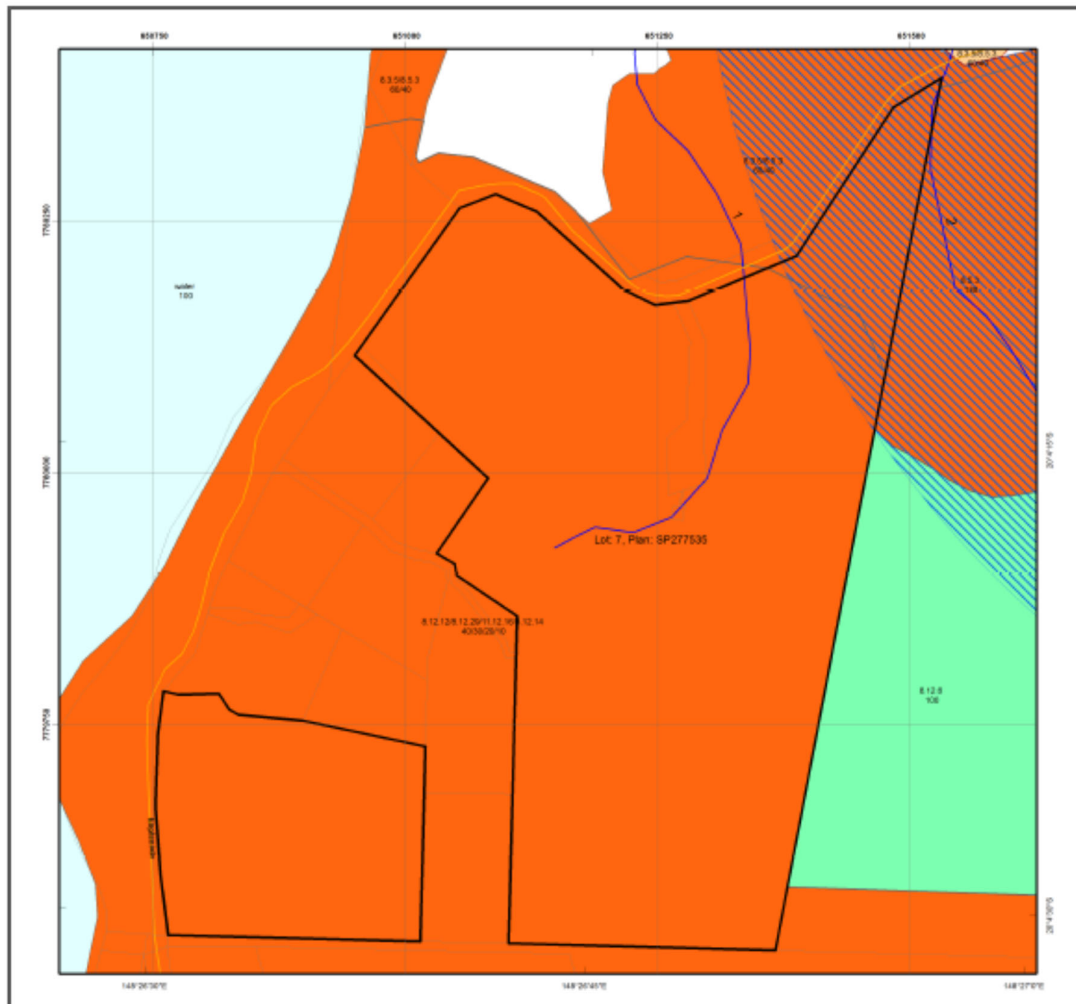
Hardy, S., 2003. Soils and Land Suitability of the Whitsunday Coast Area, Central Queensland". Whitsunday Shire Council, Queensland.

Malone, E.J., Paine, A.G.L., 1971, Bowen, Queensland, 1:250 000 geological series map. Sheet SF/55-03, 1st edition., Bureau of Mineral Resources, Australia,

# 6. Appendix

## 6.1 Regional Ecosystem Maps

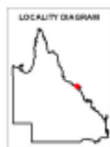




## Vegetation Management Supporting Map

### Legend

- Selected Lot and Plan
- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem
- Category A or B area under Section 20AH  
These areas are edged in yellow and filled with the remnant RE Status
- Category C or R area containing endangered regional ecosystems
- Category C or R area containing of concern regional ecosystems
- Category C or R area that is a least concern regional ecosystem
- Category C area under Section 20AI  
These areas are edged in purple and filled with the remnant RE Status
- Category X area
- Water
- Wetland on the vegetation management wetlands map
- Essential habitat on the essential habitat map
- Essential habitat species record
- Watercourses and drainage features on the vegetation management watercourse and drainage features map  
(Stream order shown as black number against stream where available)
- Highway
- Connector
- Street/Local Road
- National Parks, State Forest and other reserves
- Other land parcel boundaries



N

0 30 60 90 120 150 m

This product is projected into:  
GDA 1994 MGA Zone 55

Labels for Essential Habitat are centred on the area of enquiry.

Regional ecosystem linework has been compiled at a scale of 1:100 000, except in designated areas where a completion scale of 1:50 000 is available. Linework should be used as a guide only. The positional accuracy of RE data mapped at a scale of 1:100 000 is +/- 100 metres.

#### Disclaimer:

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Additional information may be required for the purposes of land clearing or assessment of a regional ecosystem map or PMAA applications. For further information go to the web site: [www.dnrme.qld.gov.au](http://www.dnrme.qld.gov.au) or contact the Department of Natural Resources, Mines and Energy.

Digital data for the vegetation management watercourse and drainage feature map, vegetation management wetlands map, essential habitat map and the vegetation management remnant and regional ecosystem map are available from the Queensland Spatial Portal at <http://www.information.qld.gov.au>

Land parcel boundaries are provided as locational aid only.

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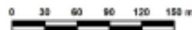
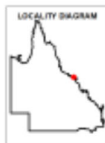




### Protected Plants Flora Survey Trigger Map

#### Legend

- Selected Lot and Plan
- High risk area
- Other land parcel boundaries
- Freeways / motorways / highways
- Secondary roads / streets



This product is projected into:  
GDA 1994 MGA Zone 55

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

Land parcel boundaries are provided as locational aid only.

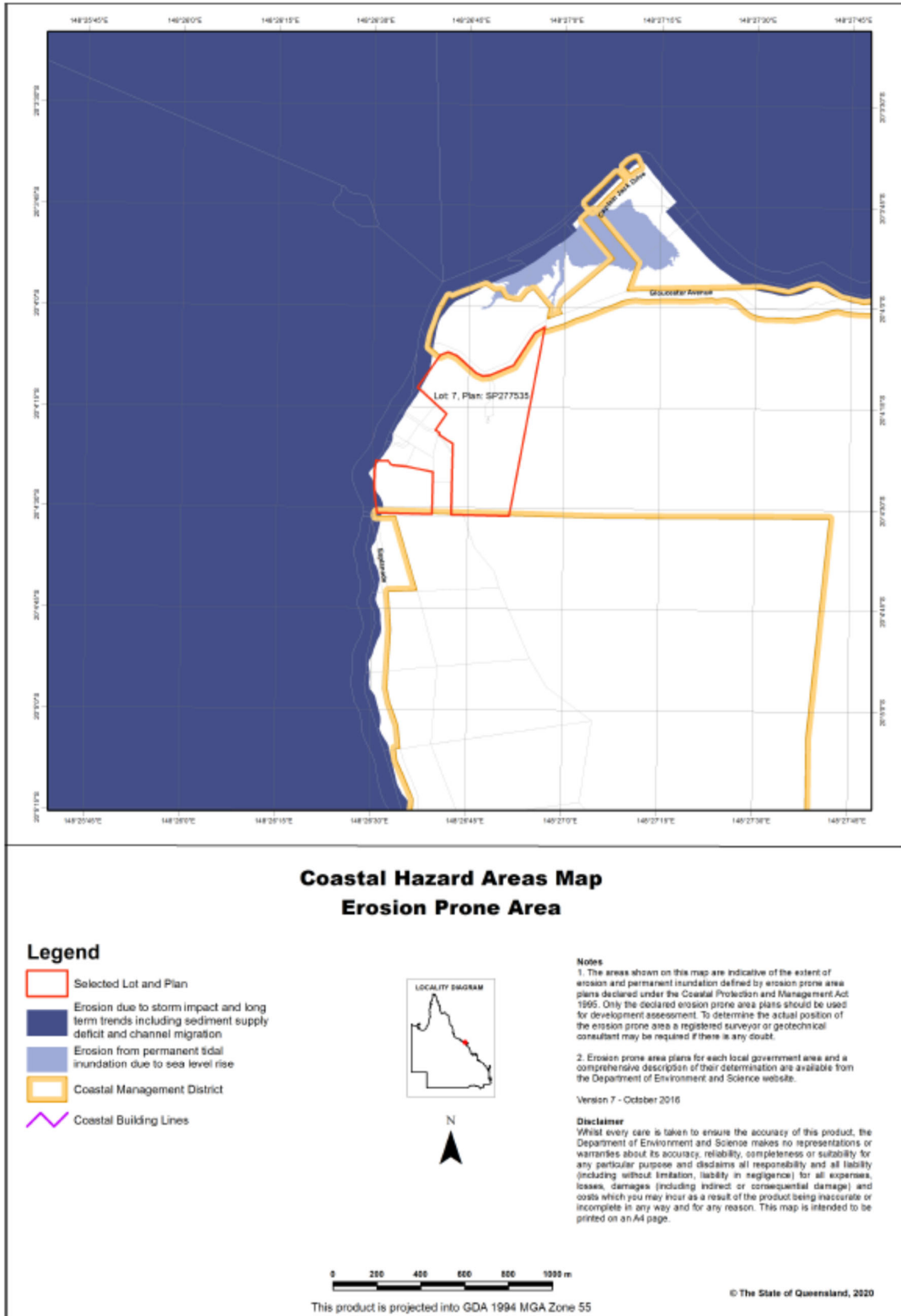
This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

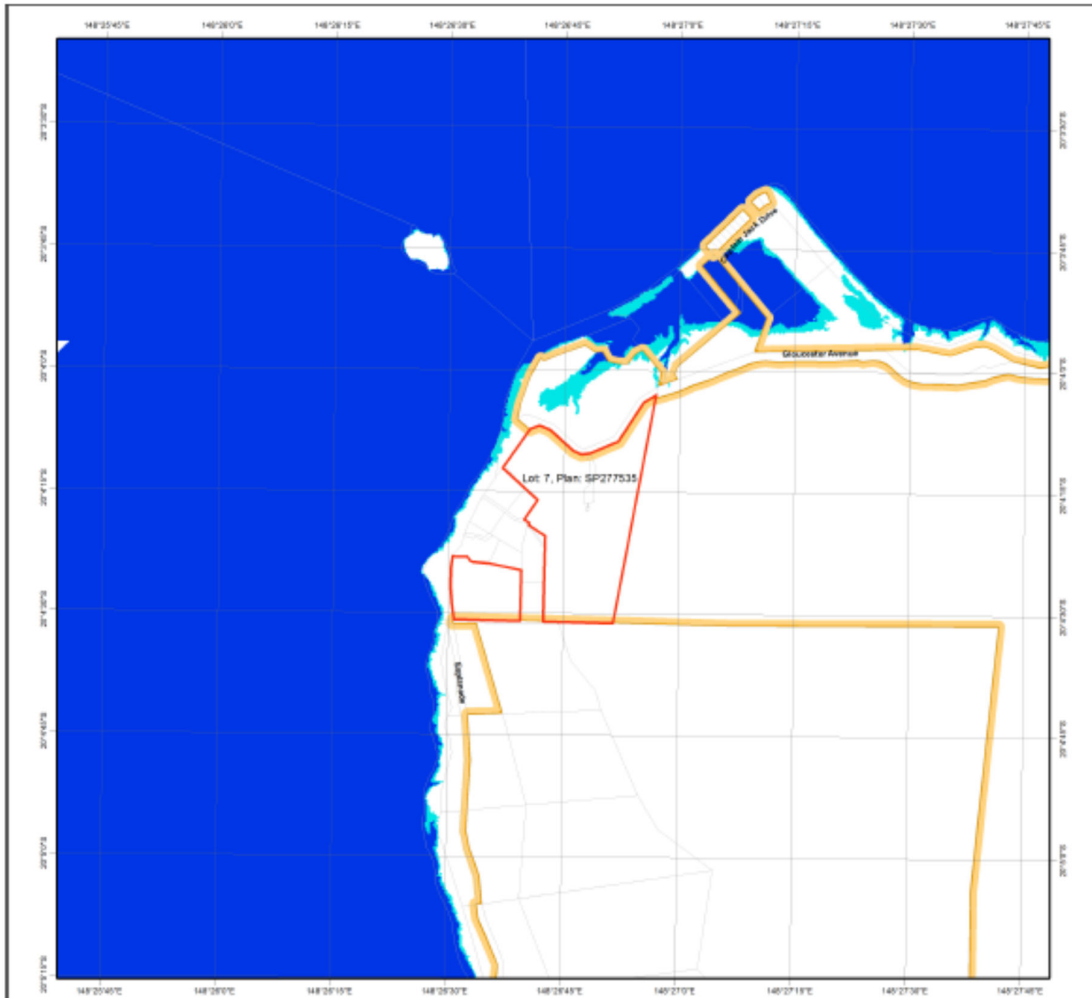
For further information or assistance with interpretation of this product, please contact the Department of Environment and Science at [palm@ehp.qld.gov.au](mailto:palm@ehp.qld.gov.au)

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## 6.2 Coastal Hazard Maps





### Coastal Hazard Areas Map Storm Tide Inundation Area

#### Legend

- Selected Lot and Plan
- High hazard area (greater than 1.0m water depth)
- Medium hazard area (less than 1.0m water depth)
- Coastal Management District
- Coastal hazard data not available in this area
- Coastal Building Lines

\* Regional default values for a 100yr ARI inundation level including 0.8m sea level rise.



#### Notes

1. A default storm tide inundation level of 1.5 m HAT in South East Queensland regional planning area and 2 m HAT for the remainder of Queensland is used where projected storm tide inundation levels have not been determined locally.
2. The high hazard area may coincide with the area of permanent inundation - refer to the Erosion Prone Area map.
3. The map should be used as a guide only. Field surveys are recommended to verify feature boundaries.

Version 4 - July 2015

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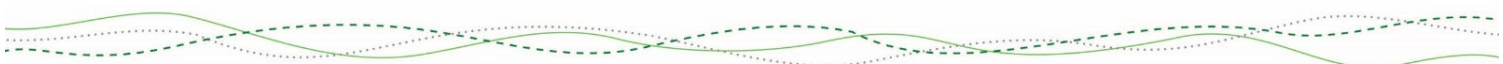
### 6.3 Site Photographs



**Photo 1:** 4WD Access at Beach 2



**Photo 2:** Current Carpark at Beach 2





**Photo 3:** Current Carpark at Beach 3



**Photo 4:** Erosion at Beach 3



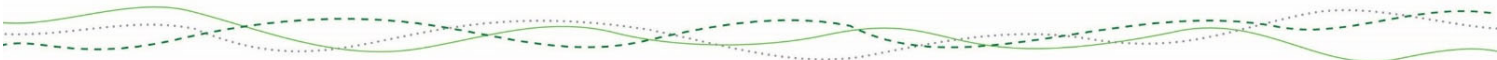




**Photo 5:** Current Carpark at Beach 3



**Photo 6:** Litter at Beach 2







**Photo 7:** Current Carpark at Beach 2



**Photo 8:** Current Carpark at Beach 1 - Frog Rock Beach





**Photo 9:** Current Carpark at Beach 1 - Frog Rock Beach

