



Brisk Bay Foreshore Reserve Management Plan 2011-2016

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November 2011

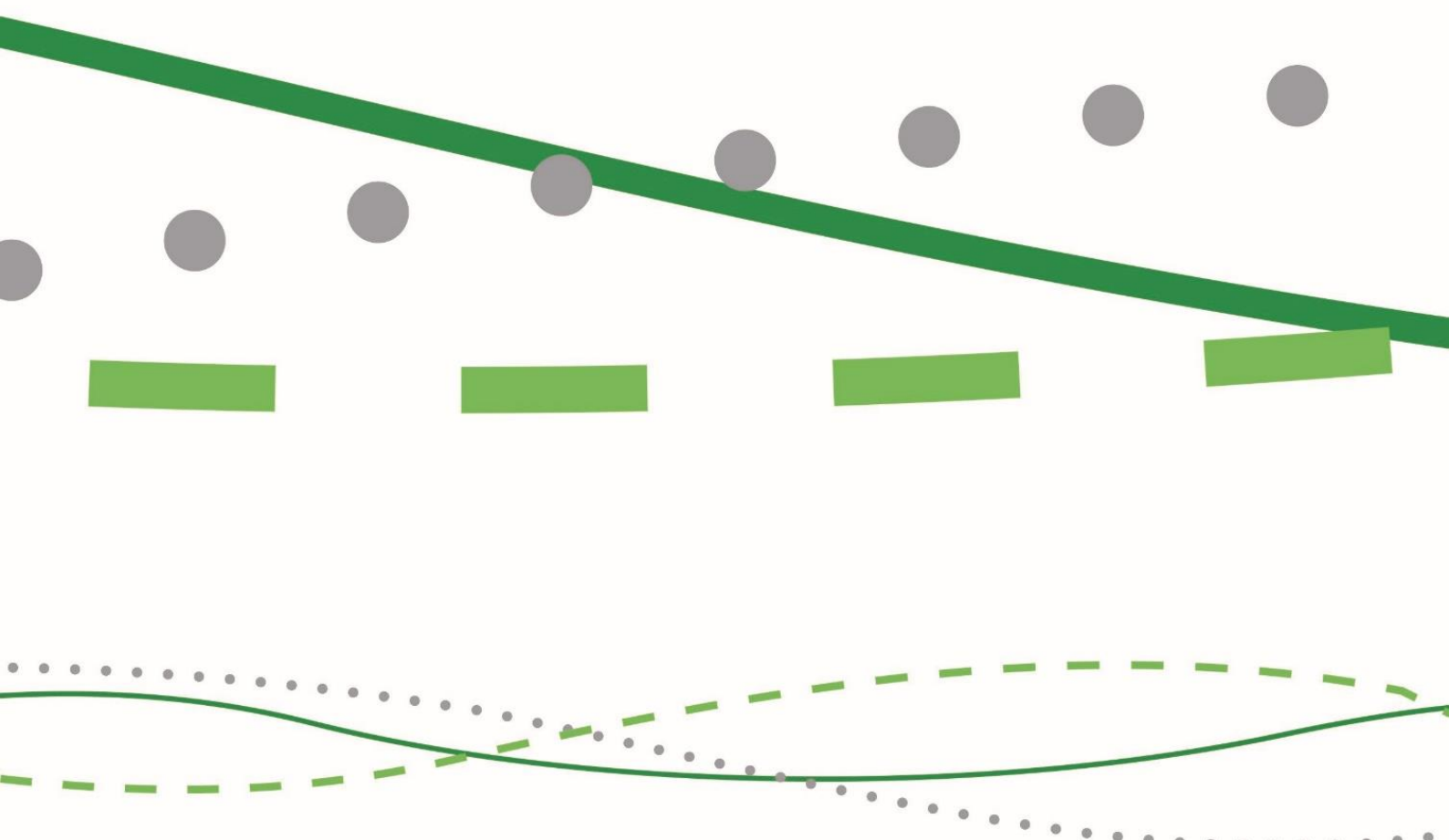


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Acknowledgements

The authors would like to thank the Brisk Bay community for providing feedback on the foreshore issues and earlier versions of the Brisk Bay Foreshore Reserve Management Plan.

1. Introduction

Brisk Bay is a small coastal community located 16km south-east of Bowen (Figure1). The population of the Brisk Bay Township is approximately 120 residents and up to 300 in the holiday season. The township lies adjacent to the Brisk Bay foreshore reserve. The foreshore reserve is an important attraction for people to live at Brisk Bay, and it has become an integral part of many resident's lifestyle. Many residents interact with the foreshore on a daily or weekly basis. With this interaction some pressure on the natural environment of the foreshore is inevitable. Managing coastal foreshores near small communities is often a delicate balance between supporting the continued use of the foreshore, while protecting some of the natural ecological and physical functions.

The Brisk Bay foreshore area is a focus of social interaction and recreational use for local residents. There are two boat launching areas in the reserve, one directly adjacent to the residents in Whyte avenue, and the other located just north of the community. Over recent years the Whitsunday Regional Council has received complaints from some residents over how the foreshore has been used. The Council has also identified some issues associated with the use of the foreshore reserve. Some of the issues identified in the reserve include:

- use of vehicles on the beach and dune,
- expansion of declared and environmental weeds in the foreshore reserve,
- encroachment of gardens into the foreshore reserve,
- building of structures on the reserve,
- illegal camping,
- concern over turtle nesting,
- loose dogs,
- bushfire hazard management, and,
- vegetation management.

Many of the above issues are common along the coast where small communities back onto foreshore reserves. In response to the pressures and impacts on coastal areas the Queensland Government has developed a new Coastal Plan and Coastal Management Policy. This Coastal Policy provides guidelines on how coastal foreshore areas should be managed. The recommended mechanism used to manage the interaction of humans in coastal foreshore areas is by developing a Management Plan to identify the issues and management solutions.

The purpose of this Brisk Bay Foreshore Reserve Management Plan is to identify the foreshore issues and describe how they will be managed. This Management Plan will apply to the foreshore area between Barramundi Creek to the north west of the residential area and Poole Island Creek to the south east of the residential area. It is envisaged that this Plan will be reviewed by the Council and the community in five years.



Figure 1. Location of Brisk Bay.

2. Background

2.1 Site Description

The Brisk Bay foreshore reserve is located between Barramundi and Poole Creeks (Figure 2). The reserve is comprised of Unallocated State Land and Council managed land. The section of Brisk Bay reserve which is the subject of this Management Plan covers 13.98ha and is 1.95 kilometres in length. There is 1.03ha of land dedicated to the Council surrounding the green waste facility, the remainder of the reserve is Unallocated State Land.



Figure 2. Brisk Bay foreshore reserve

2.2 Physical environment

2.2.1 Geology, landform and soils

The underlying bedrock of the Brisk Bay foreshore reserve is Permian volcanics. The Brisk Bay area is made up of a number of geological units including;

- Quaternary aged coastal mud flats,
- Quaternary aged alluvium ,
- Quaternary aged coastal sand dune, and,
- Permian intermediate volcanics.

The soils within the reserve have been described by Hardy (2003) in “Soils and Land Suitability of the Whitsunday Coast area, Central Queensland. The Brisk Bay beach ridge system is described as the outer sand dunes which are most likely Holocene in age (less than 10,000 years old) and lack profile development (Hardy 2003). Since the stabilisation of the sea level rise about 6,500 years ago following the last ice age, coastal processes of wind and water have helped form the sand dune system. Coastal longshore drift transports sand in a net northerly direction along the Central Queensland coast. Sand is then blown from the tidal zone into the land by the wind, accumulating as dunes. The dunes can be eroded by wave action and currents associated with large coastal storm events. The dune areas of Brisk Bay are represented by the Andergrove soil type (An) shown in Figure 3.

The creek flat and marine plain soils within the Brisk Bay area have been formed on Quaternary alluvium and Quaternary marine sediments. Quaternary alluvium is material derived from recent flooding from rivers and creeks. Soils formed on Quaternary (Holocene) marine sediments are formed by floods and estuarine

processes and are composed of freshwater, estuarine and marine sediments (Hardy 2003). The marine soils are represented by the Salt Flats and Dundula soil types and are shown in Figure 3 as “SF” and “Dn” respectively.

The soils formed on the intermediate volcanic soils are referred to as Wagoora soil types (Wr) and are shown in Figure 3. The Wagoora moderate to deep gradational to uniform soil with a clay loam to light clay topsoil over and acid, brownish-red clay subsoil formed on intermediate volcanics and are common in the central section of the reserve.

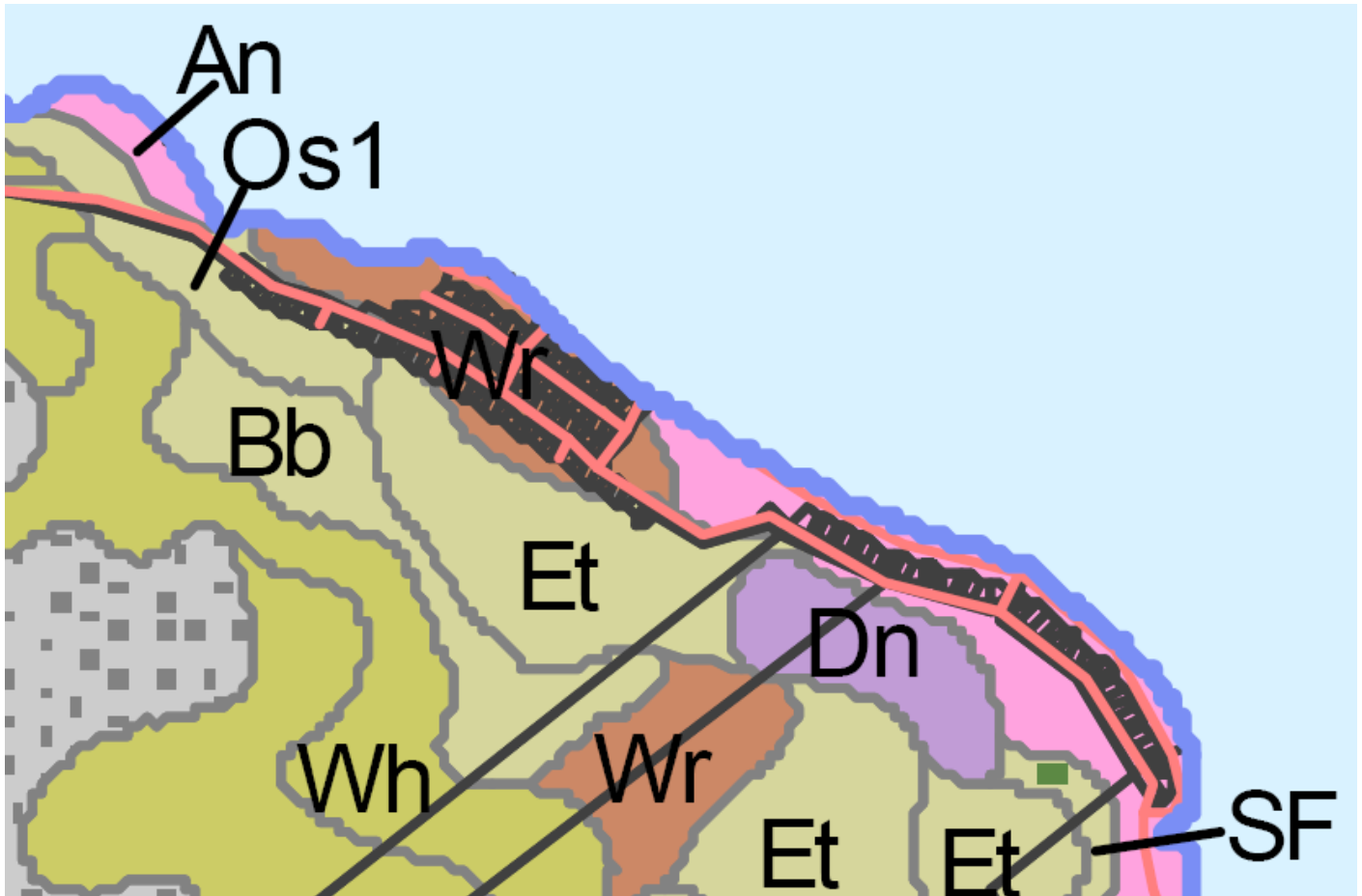


Figure 3. Soil map of Brisk Bay.

2.2.2 Sand dune formation and role

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 to form 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 dune vegetation can reduce wind erosion, reduce wave erosion caused by over-wash, and assist in building sand dunes back after storm events (QEPA, 1996a).

The horizontal and vertical size of dunes are 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.

The sand dune in the Brisk Bay foreshore reserve is relatively narrow. During cyclones Anthony and Yassi in January and February 2011 it was noted that significant sections of the dune were eroded by wave action. However, it has also been noted that most if not all of the removed sand was replaced by June 2011.

2.2.3 Vegetation

The dominant vegetation community on the coastal dune is low dense semi-deciduous vine thicket or beach scrub (Lavarack, 1991). The beach scrub is classified as Regional Ecosystem 11.2.3 which is listed as Endangered under the Queensland Vegetation Management Act (1999). The beach scrub vegetation communities are listed as an endangered ecological community under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999. Most of the beach scrub is in reasonable condition except for small areas. Some sections of the beach scrub have relatively small infestations of declared and environmental weeds. The most common weeds are Sessile hemp (*Agave sisalana*), Prickly pear (*Opuntia spp*), Moonlight cactus and Rubbervine (*Cryptostegia grandiflora*) (Figures 4 and 5). Sessile hemp has large spines and poisonous sap which pose a threat to residents, nesting and hatching marine turtles. The full list of plants found in the dune area is located in Appendix 5.1.



Figure 4. Sisal hemp infestation



Figure 5. Dense infestations of Sisal hemp, prickly pear and moonlight cactus.

The vegetation on the volcanic rise is open Eucalypt woodland. This Eucalypt vegetation community is classified as Regional Ecosystem 11.12.13 and 11.12.9 and has a conservation status of Least Concern. The dominant vegetation in this community is *Eucalyptus crebra* (Ironbark), *Corymbia tessellaris* (Moreton Bay ash) and *Corymbia intermedia* (Pink Bloodwood).

2.2.4 Fauna

Brisk Bay and Edgecumbe Bay is recognised as one of a number of significant marine turtle nesting beaches in the Whitsunday region. The dune is recognised as a significant nesting habitat for three of the six species of marine turtles which occur in Australian waters namely the Green turtle (*Chelonia mydas*), Leatherback (*Dermochelys coriacea*) and Loggerhead (*Caretta caretta*). Turtle nesting occurs between November and February each year. Marine turtles are protected under the Commonwealth Governments Environmental Protection and Biodiversity Conservation Act (1999).

2.2.5 Climate

The climate in the Bowen region is sometimes referred to as “the dry tropics”. The annual average rainfall for Bowen is approximately 1050mm/yr. Most of the annual rainfall occurs during the summer months from low pressure systems located in the Coral Sea. Occasionally these low pressure systems develop into cyclones. From 1906 to 2007 the Bureau of Meteorology has listed ten cyclones crossing the coast within 50km of Bowen (Figure 6). More recently, in March 2010 cyclone Ului crossed the coast at Airlie beach as a category 3 storm. In January 2011, cyclone Anthony crossed the coast at Bowen as a Category 2 cyclone and Yassi crossed 290 km north in February 2011. A number of other cyclones have passed the coast off Bowen and have influenced its rainfall and caused coastal erosion.

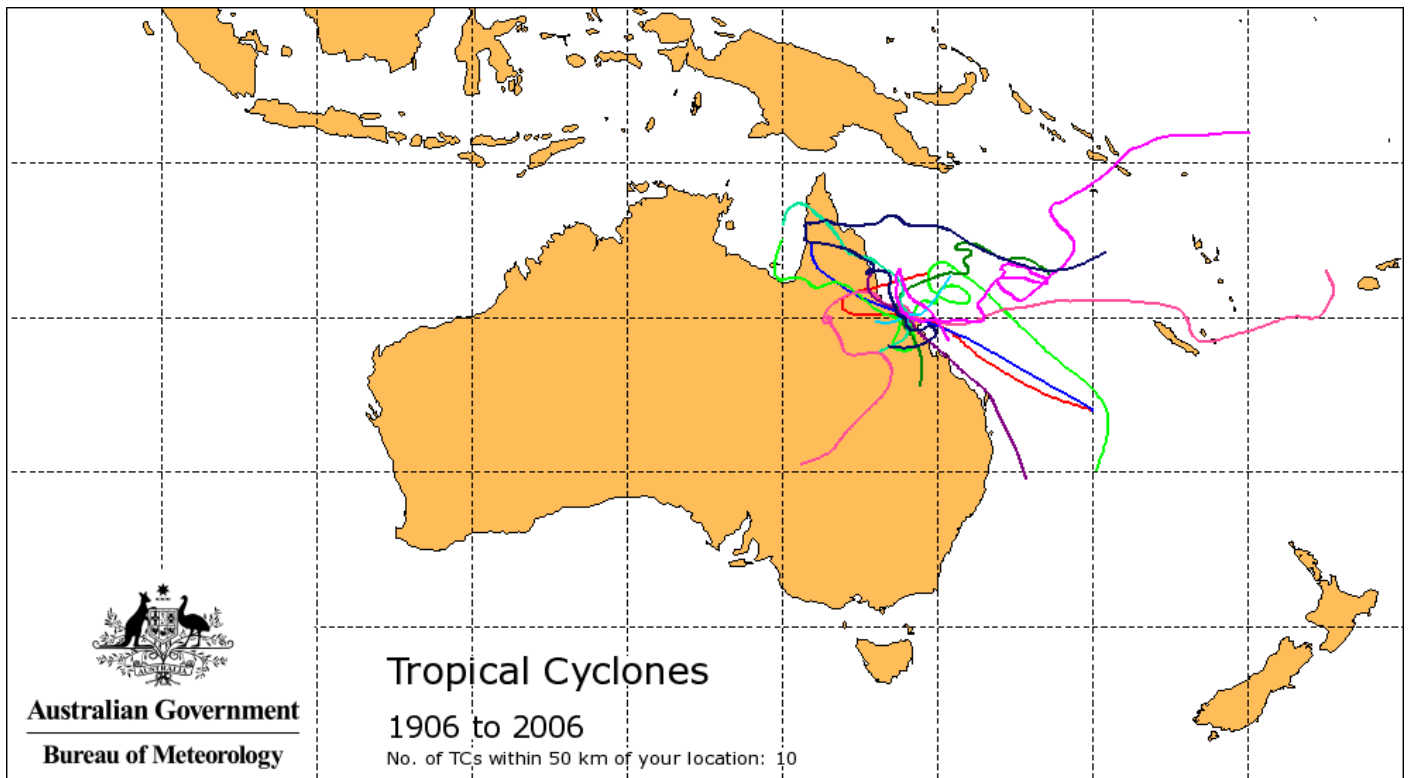


Figure 6. Cyclones that have crossed the coast within 50km of Bowen from 1906 to 2007 (Source: BOM, August 2011).

2.3 Past and current use

Brisk Bay was first developed as a holiday getaway in the early 1960's. Present day uses include;

- residential housing,
- recreational fishing and boating, and,
- swimming and snorkelling.
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Many residents have small boats which they launch from the two sites within the reserve (Figure 7). The main boat launching area is located adjacent to Whyte avenue. The other boat launching location is located north-west of Whyte avenue. This western site is referred by some as the “gazetted” boat launching area. In 1977, The State government gazetted the western site as a boat ramp. The survey plans for both boat launching areas are found in Appendix 5.2. To date there is no “official” boat ramp in the Brisk Bay area.

