

The shifting sands of jurisdictional responsibility in coastal management

Anthony Walsh¹ and John Stewardson²

¹ Environmental Protection Agency PO Box 3495 Rockhampton QLD 4701

² Miriam Vale Shire Council 36 Roe Street Miriam Vale QLD 4677

ABSTRACT

The Environmental Protection Agency (EPA) is the lead agency in regulating the use of land contained within the Coastal Management District (CMD). Generally the CMD is a relatively narrow stretch of land along the coast which, ideally, acts as a buffer to development and allows coastal processes to continue to occur naturally. Throughout the State, the EPA is working alongside local government in managing the CMD, and in particular, the erosion prone area. However, it is clear that development which occurs outside of the CMD has significant potential to impact on the values and health of our coastal foreshore areas. While the *State Coastal Management Plan – Queensland's Coastal Policy* (State Coastal Plan), provides a framework for how these impacts can be managed or mitigated, the jurisdictional roles and responsibilities in its implementation can sometimes be blurred.

This paper explores how a cross jurisdictional and collaborative approach is being taken to managing land within and adjacent to the CMD in the Agnes Water area of the Miriam Vale Shire. It provides three case studies to highlight the jurisdictional opportunities, constraints and challenges of the agencies involved when dealing with key management issues such as urban expansion, vegetation clearing, public access and compliance with development conditions. It also explores how the agencies and stakeholder groups involved have sought to look beyond regulation, to the development of a community based approach for the future use and enjoyment of the Agnes Water foreshore.

INTRODUCTION

Agnes Water and the Town of Seventeen Seventy are small coastal communities located south of Gladstone and north of Bundaberg in Queensland (refer to Figure 1). Like many coastal communities, the township, of around 4000, is experiencing rapid population growth. Due to its many natural assets (fishing, access to the Great Barrier Reef, camping, clean water, beaches, headlands, and national parks) it receives over 25,000 tourists per year.

Agnes Water beach is approximately 5.5km long, and runs from Round Hill in the north down to the headland at Agnes Water (Short 2000). The southern end of Agnes Water beach is protected from the predominate south easterly winds by this headland. Consequently, the southern end of the beach is favoured by swimmers and surfers.

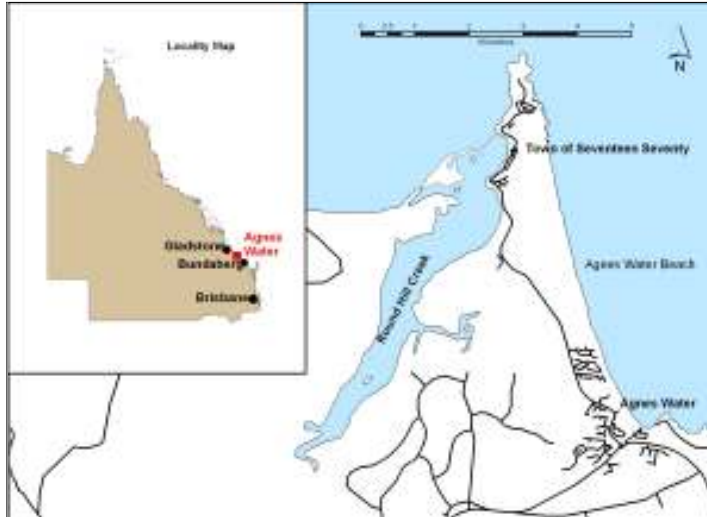


Figure 1. Locality map.

BEACH CHARACTERISTICS

Short (2000) classifies the Agnes Water beach system as being tide dominated (3.5m tidal range) characterised by a reflective beach with bars and rips. That is, wave heights tend to vary between (0.5 to 1.5m), the upper beach is generally steep, with a flatter intertidal zone.

Agnes Water beach takes the form of what is termed a zeta curve or log spiral embayment (reverse J curve). Often with these shaped beaches, the shoreline is still realigning at a geological time scale to be in balance with the predominant wave climate (Tomlinson 2002). As a result the southern end of the embayments generally continue to erode as the beaches try to realign to the full zeta curve.

Given the protection at the southern end of the beach from the predominate south easterly wave climate, the dunes at the southern end are typically smaller in height and progressively increase in height heading north. In the middle of Agnes Water beach the frontal dune is often eroded leaving a steep secondary dune to traverse. These dunes range in height up to 10m and present a significant management issue for beach access.

The width of the erosion prone area for Agnes Water beach is 110m measured landward from the toe of the frontal dune. This is the width that the beach may erode in a 50 year planning period and includes allowance for short term storm erosion, long term erosion, greenhouse effect, and dune slumping. As there is presently no regional coastal management plan present for this section of the coast, the erosion prone area defines the location of the CMD. The CMD is the area of land that triggers EPA involvement in the assessment of certain types of development.

CURRENT AND FUTURE PRESSURES

Agnes Water is typical of most small Queensland coastal towns and is experiencing increased tourism and urban development pressures. The majority of development along Agnes Water beach is set back from the frontal dune providing the opportunity to maintain a natural buffer from erosion and storm surge events. This is mainly due

to previous surrender of erosion prone land under the repealed *Beach Protection Act 1968* and Miriam Vale Shire Council's vision to see this area protected for future generations. This has resulted in a significant section of the coast protected by a number of reserves which Miriam Vale Shire Council manage as trustee. However, there still are a number of freehold beach front properties which complicate dune management for Agnes Water beach. From a dune management perspective, the best means of protecting coastal dunes is to have this area in a tenure which limits development pressure, such as a reserve.

Recent events at Agnes Water such as clearing of frontal dune vegetation for improved ocean views from adjacent development, replacement of coastal caravan parks with intensive unit developments, and uncontrolled pedestrian access to the beach, has highlighted the need for improved dune management through community awareness and a clearer understanding of legislative roles and responsibilities.

CASE STUDIES

To highlight the recent pressures that have been experienced at Agnes Water and how State and local government, regional bodies and community groups have responded, three case studies below are detailed to demonstrate the tools that have been used to assist in dune management.

Vegetation damage on freehold land

Through concerned citizens, the EPA became aware of work being undertaken on coastal dunes on freehold land. The work involved clearing and damage to dune vegetation namely, coastal vitex (*Vitex trifolia*) and horsetail she-oak (*Casuarina equisetifolia* var. *incana*). The works undertaken were located on the frontal dune on an area vulnerable to land degradation by wind erosion. Due to the nature and location of the works, the clearing works may have resulted in dune destabilisation.

Removal or interference with coastal dunes on freehold and leasehold land in an erosion prone area is assessable development under the *Integrated Planning Act 1997* (IPA). No development approval was issued for the works undertaken. Under the IPA it is an offence to undertake assessable development without an effective development permit. Investigations into this alleged offence are continuing.

To ensure that the damage to the dune was remediated, a coastal protection notice under the *Coastal Protection and Management Act 1995* (Coastal Act) was issued. This notice directed action to be taken to protect the disturbed frontal dune which included restricting access to the land, planting, cultivating and preserving vegetation native to the area, and to do anything else necessary to protect the land from wind erosion.

As the clearing works scraped the surface of the ground, the previous plant's roots (mainly goat's foot convolvulus (*Ipomoea pes-caprae*) and coastal vitex) assisted in rapid natural regeneration in some areas. However, as a result of the enforcement notice, the disturbed area was fenced, weeding undertaken, and supplementary plantings of native species completed (refer to Figure 2). As with most revegetation programs on coastal dunes, it is important that regular weeding is undertaken until the ground cover has substantially re-established.



Figure 2. Revegetation area.

In this instance a regulatory approach was taken and the outcome of protecting the dunes was obtained.

Vegetation damage on state coastal land

Recently Miriam Vale Shire Council and the EPA were made aware of significant damage and clearing of mature horsetail she-oaks along Agnes Water beach. The damage occurred on land that had been dedicated as a reserve for beach protection with Council as trustee. The clearing and ringbarking of mature horsetail she-oaks generated significant community interest.

To assist in the protection of coastal dunes and associated vegetation, there is a range of legislation in place. The Department of Natural Resources and Water administers the *Vegetation Management Act 1999* and the *Land Act 1994* which provides protection for regionally important vegetation and manages the activities that occur on State land, respectively. The EPA administers the Coastal Act which provides for regulation of activities on coastal dunes.

The EPA investigated the alleged offence as it is an offence under the Coastal Act to damage vegetation on state coastal land (such as reserves) without the written approval of the entity responsible for the management and control of the land. However, as with most incidents of this nature, the offender(s) responsible were never identified.

As no offender could be found, the issue that remained was how to stop this from happening again and to rehabilitate the affected areas. This occurred in a number of ways. Public awareness was raised about the importance of coastal vegetation and the penalties involved through EPA's investigation and media releases, and the local landcare group convened a meeting of concerned citizens.

To assist with revegetation of the cleared and damaged areas, Council, the Burnett Mary Regional Group (BMRG) and landcare group, revegetated certain areas, installed signage, and installed three 10m long by 3m high screens to mimic the natural wind resistance given by the previous vegetation (refer to Figure 3). These screens also restricted the view corridors to the coast of adjacent new development.



Figure 3. Wind screen.

As a result of this event, there has been an increased awareness regarding the importance of coastal dune vegetation and activities that are prohibited in reserve land. Miriam Vale Shire Council has also started development of a local law which will provide greater protection and enforcement at a local level for vegetation on reserve and esplanade lands.

Uncontrolled beach access

Historically, the development of beach front land for residential lots in Agnes Water occurred in an ad hoc manner. Although the erosion prone area was surrendered to the State, developers often constructed tracks to the top of the dunes with large viewing shelters, prior to surrender of this land. These constructed tracks and structures were made using inappropriate materials for such areas and not to the design standards required by Council. As the tracks stopped at the top of the dune, they did not provide controlled access to the beach. As these subdivisions developed, uncontrolled pedestrian access resulted in a number of tracks being made to the beach. In some cases this has led to significant sand blows and required considerable repair works.

In one instance, a bond was obtained from a developer as a consequence of unapproved works being undertaken. The bond was to secure performance of remediation works to EPA's satisfaction. That is, ensure works were constructed to a suitable standard, undertake revegetation of exposed sand areas, and construct a suitable access to the beach..

Uncontrolled access to the beach had resulted in two tracks to the beach being created one to the north and one through the sand blow to the south. Since the initial subdivision the sand blow had increased in area and the frontal dune was lowered to the level of the beach.

To resolve the situation, Miriam Vale Shire Council obtained additional funding through the BMRG to assist in completing rehabilitation works. Rectification works were completed using the bond and the additional funding from BMRG. This included removal of rock material, and construction a new access to the beach. The track through the sand blow area was closed and an excavator used to re-establish the natural height of the frontal dune. This has assisted to accelerate the natural dune rebuilding process, and reduced loss of sand to wind erosion. Stabilisation of the

frontal dune with plants and wind break screens followed quickly to ensure the stability of this area.

In this approach a combination of regulation by the State, local government assistance and community partnerships has assisted in resolving an environmental problem with the common goal of improved dune management. As a result Miriam Vale Shire Council has committed to development of a shoreline erosion management plan to better maintain the coastal dune and plan the location of future beach access, facilities and pathways.



Figure 5. Sand blow area.

TAKE HOME MESSAGES

Agnes Water is typical of most small Queensland coastal towns and is experiencing increased tourism and urban development. Over many years the EPA has pursued its preferred approach to management of the erosion prone area, through land surrender. This ensures that the erosion prone area is secured as a reserve under the trusteeship of local government, and allows natural processes of erosion and accretion to continue without threatening property. However, the case studies above highlight how development can still impact upon the erosion prone area even when it is located outside of the active zone. They also highlight the need to plan now to deal with existing and future pressures. Often the community sees the regulatory approach as being the only means of ensuring protection of dune areas. However often, the regulatory approach is not always the only (or best) means of obtaining the environmental outcome that is sought. This can often be obtained through a coordinated approach from all stakeholders including state and local government, regional bodies and community groups.

REFERENCES

Short AD (2000) *Beaches of the Queensland Coast: Cooktown to Coolangatta, A guide to their nature, characteristics, surf and safety*. University of Sydney, Sydney.

Tomlinson R (2002) 'Beaches – Our Asset, Planning and Management for Natural Variability on Open Coastlines' paper presented at the Proceedings of the Public Workshop on Beach protection: risk and management, Yeppoon, 7 February.