



The Research Director  
State Development, Infrastructure and Industry Committee  
Parliament House  
George Street  
BRISBANE QLD 4000

Submission No. 019  
17 January 2014  
11.1.14

Dear Sir / Madam

**RE: Feedback on the Regional Planning Interests Bill 2013**

The Great Barrier Reef Marine Park Authority manages the Great Barrier Reef Marine Park to provide for the long term protection and conservation of the environment, biodiversity and heritage values of the Great Barrier Reef Region<sup>i</sup>.

Most of the commercial and non-commercial use of the Great Barrier Reef is dependent on intact, healthy and resilient coastal and marine ecosystems. Coastal and marine ecosystems are challenged by complex factors such as climate change, catchment runoff and coastal development. Coral bleaching is already evident, and inshore marine ecosystems continue to be exposed to and affected by increased levels of sediments, nutrients and other pollutants. Coastal development is increasing the loss of coastal ecosystems that provide ecological services and functions that support a healthy and resilient marine environment.

Improving water quality and reducing the loss of coastal ecosystems and their functions will give the species and habitats of the Great Barrier Reef the best chance to adapt to and recover from serious threats<sup>ii</sup>.

Attachment A summarises work of the Great Barrier Reef Marine Park Authority describing the important coastal ecosystems in the Queensland catchment, and summarises some of the ecosystem functions that these coastal ecosystems provide for the Great Barrier Reef World Heritage Area.

Attachment A has been developed based on best available information, however new research and information continues to support the important role coastal ecosystems have in maintaining the health of the inshore Great Barrier Reef World Heritage Area<sup>iii</sup>. Coastal ecosystems and their functions that they provide to the Great Barrier Reef World Heritage Area should be considered under the criteria for Strategic Environmental Areas:

- Coastal ecosystems and the functions they provide are conducive to the ecological health and resilience of the ecosystems of the Great Barrier Reef World Heritage Area
- Coastal ecosystems provide important bio-physical functions for threatened terrestrial and marine plant and animal species
- Coastal ecosystems provide ecological corridor and habitat connections in the landscape important to marine plant and animal species with connections to the Great Barrier Reef World Heritage Area

Maintaining and restoring coastal ecosystems and their functions is a priority for the Great Barrier Reef Marine Park Authority and are essential to halting and reversing declines in water quality and inshore biodiversity and maintaining the Outstanding Universal Value of the World Heritage Area<sup>iv</sup>. If you would like to discuss this feedback further, you can contact Paul Groves on (07) 4750 0608 or by email: [paul.groves@gbrmpa.gov.au](mailto:paul.groves@gbrmpa.gov.au).

Yours sincerely



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Great Barrier Reef Marine Park Authority  
16 January 2014

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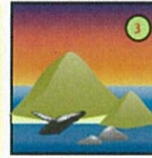

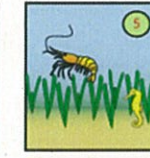
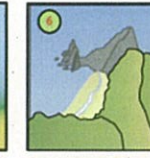
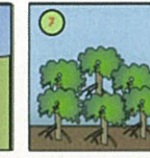
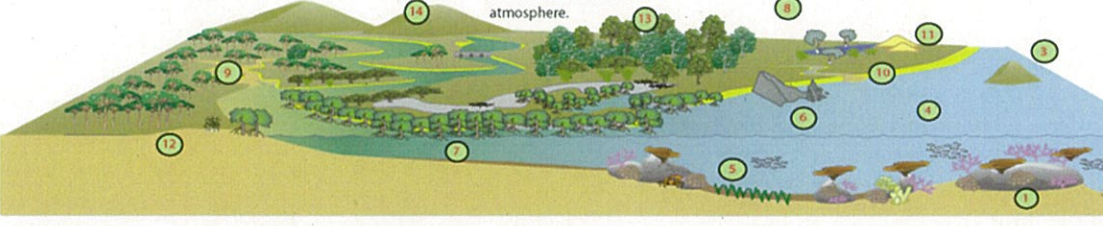
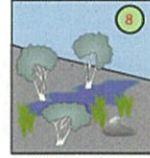
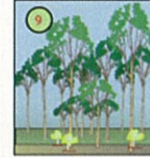

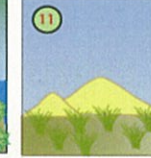
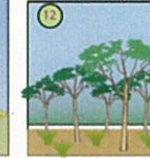
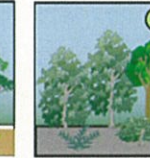
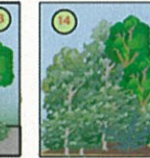
<sup>i</sup> *Great Barrier Reef Marine Park Act 1975*

<sup>ii</sup> *Great Barrier Reef Outlook Report 2009*

<sup>iii</sup> *Informing the Outlook for Great Barrier Reef coastal ecosystems 2012*

<sup>iv</sup> *Informing the Outlook for Great Barrier Reef coastal ecosystems 2012*

# Attachment A

						
<p><b>CORAL REEFS</b></p>	<p><b>LAGOON FLOOR</b></p>	<p><b>ISLANDS</b></p>	<p><b>OPEN WATER</b></p>	<p><b>SEAGRASSES</b></p>	<p><b>COASTLINE</b></p>	<p><b>ESTUARIES</b></p>
<p>Coral reefs provide hard substrates (habitat) and food for some 411 species of hard corals, at least 150 species of soft corals, 1625 species of bony fishes and a multitude of other organisms from microscopic algae to large mammals. Coral reefs provide a complex structure which provides a diverse mix of habitats for many species. Coral reefs are of high value to the tourism and fishing industries.</p>	<p>The lagoon floor environment is the area between reefs and supports approximately 5300 species. The substrate in this area ranges from fine silts to hard rocky areas such as shoals. These inter-reef areas are home to crucial meiofauna (animals that live between sand grains) such as nematodes. Nematodes trap and accumulate small particles and stimulate important bacterial production within the sediment, critical to the food web and ecosystem functions.</p>	<p>There are 1050 islands consisting of 300 coral cays, 600 continental islands and 105 mangrove islands in the Great Barrier Reef. They are important refuges for terrestrial and marine species such as turtles and seabirds which use islands for nesting. They provide critical feeding, breeding and nursery habitat for fish and other marine animals. Islands are also highly valued for recreation and the tourism industry.</p>	<p>The water column, as a habitat, is home to a range of organisms ranging in size from small bacteria to whales. This is an area of high primary productivity. Nutrients, exported by floodplumes are taken up by pelagic microbial communities leading to high levels of organic production that passes up the food chain. Viruses in the open water directly and indirectly influence biogeochemical cycles, the carbon sequestration capacity of the oceans through gas exchange between the ocean surface and the atmosphere.</p>	<p>14 species of seagrass (marine flowering plants that grow underwater on soft sediments) are found in the Great Barrier Reef. Seagrass is an important food source for animals ranging from prawns to dugong and turtle. They are also used as a habitat by many animals. Seagrasses provide habitat structure for a broad range of species. They are used by commercially important species such as tiger prawns.</p>	<p>The Great Barrier Reef coast comprises 42% sandy, 39% muddy and 19% rocky coastline. The coastline provides a diverse range of habitats for a wide range of organisms. For example sandy beaches are used by turtles for nesting and seabirds for foraging. Muddy shores are used by migratory shore birds as feeding areas. Rocky shores provide hard surfaces for shellfish. Coastlines function as filters and recycle nutrients and trace elements.</p>	<p>Estuaries encompass mangroves, mudflats, unconsolidated soft bottoms and salt marshes. These areas are important for cycling nutrients and are some of the highest natural carbon sinks. Estuaries are also an important habitat for both marine and terrestrial animals, including the freshwater sawfish and spartooth shark.</p>
						
						
<p><b>FRESHWATER WETLANDS</b></p>	<p><b>FOREST FLOODPLAIN</b></p>	<p><b>HEATH &amp; SHRUBLANDS</b></p>	<p><b>GRASS &amp; SEDGELANDS</b></p>	<p><b>WOODLANDS</b></p>	<p><b>FORESTS</b></p>	<p><b>RAINFORESTS</b></p>
<p>Freshwater wetlands are usually associated with coastal areas subject to periodic flooding where standing freshwater persists for at least part of the year, in most years. These areas slow the overland flows of water and cycle nutrients and sediments. Wetlands are important dry season refugia for many species and are used by some marine species for parts of their life history.</p>	<p>Forest floodplains experience periods of inundation during the monsoon season and are a pathway for overland flows helping to slow, capture and recycle nutrients and sediments while protecting the soil surface from the erosive forces of rainfall. These areas are important areas for groundwater recharge and discharge, which can prevent groundwater salinity. These areas are important nursery areas for many species with connections to the Great Barrier Reef.</p>	<p>Heath and shrublands are dominated by small shrubs with small hard leaves that occur on infertile or waterlogged sites in coastal areas helping to slow water flows preventing erosion, recycling nutrients and sediments. Coastal heath and shrublands are important as buffers on steep coastal hillslopes.</p>	<p>Grass and sedgelands include tussock grasslands, forblands, hummock grasslands, bluegrass, Brigalow belt grasslands, herblands, sedgelands and rushlands. Some grasslands are associated with permanent freshwater wetlands and slow overland flows. Grass and sedgelands are used for feeding and roosting migratory bird species with connections to the Great Barrier Reef. Vegetation in these areas is dense, slowing flows thereby capturing and recycling nutrients and sediments.</p>	<p>Woodlands are areas of mature, single stemmed trees that have between 20% and 50% canopy cover. Woodlands and the woodland understorey reduce flood risk by slowing overland water velocity, thereby regulating sediment and nutrient supply to the Great Barrier Reef. Woodlands are often found in more drier regions with understoreys of grasses and sedges.</p>	<p>Forests are areas of mature trees with single stems that have greater than 50% canopy cover. Forests contribute to the hydrological cycle through evapotranspiration, cloud formation and rainfall generation, which assists with reef salinity regulation and temperature control.</p>	<p>Rainforests are areas of mature trees that have close to 100% canopy cover and are typically moist ecosystems. This high canopy cover reduces the velocity of raindrops, thus minimising soil loss through erosion. Rainforest growth on steep slopes and in gullies etc bind and stabilise soils in these areas.</p>