

Pumicestone Passage

A unique waterway

Steeped in history, rich in wildlife and natural beauty, and one of the world's most ecologically important waterways – Pumicestone Passage is the body of water which separates Bribie Island from the mainland. Stretching for 35 kilometres, from Caloundra in the north to Deception Bay in the south, the passage is a narrow, shallow estuary, encompassing a meandering system of channels, salt marshes, mud flats, sea grass beds, sand banks and islands.

It is the shallowness of the water and the diversity of geological forms that makes Pumicestone Passage one of the most important waterways in Australia. The first provides an ideal habitat for juvenile fish and hundreds of thousands of birds to access a range of abundant food sources. The latter provides for a wide variety of ecosystems supporting a great diversity of plant and animal species.

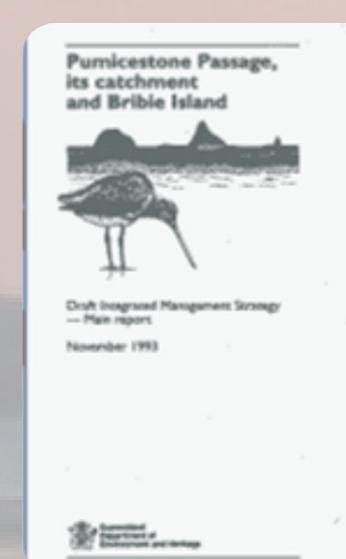
The biodiversity of the Pumicestone Passage is significant across the board. It supports the largest area of orange mangrove (*Bruguiera gymnorhiza*) in South East Queensland. It is home to over 370 species of birds. It provides habitat for endangered marine mammals including dugong (*Dugon dugon*), loggerhead turtles (*Caretta caretta*) and green turtles (*Chelonia mydas*). It supports important populations of the water mouse (*Xeromys myoides*) and wallum frog species (*Litoria olongburensis*, *Crinia tinnula*, *Litoria freycineti*).



Water Quality

The primary driver of ecosystem health in the Pumicestone Passage is water quality. Water quality impacts on every level of the food pyramid from the tiniest algae and invertebrates to the largest mangroves, dolphins or iconic bird species such as the black swan and pied cormorant.

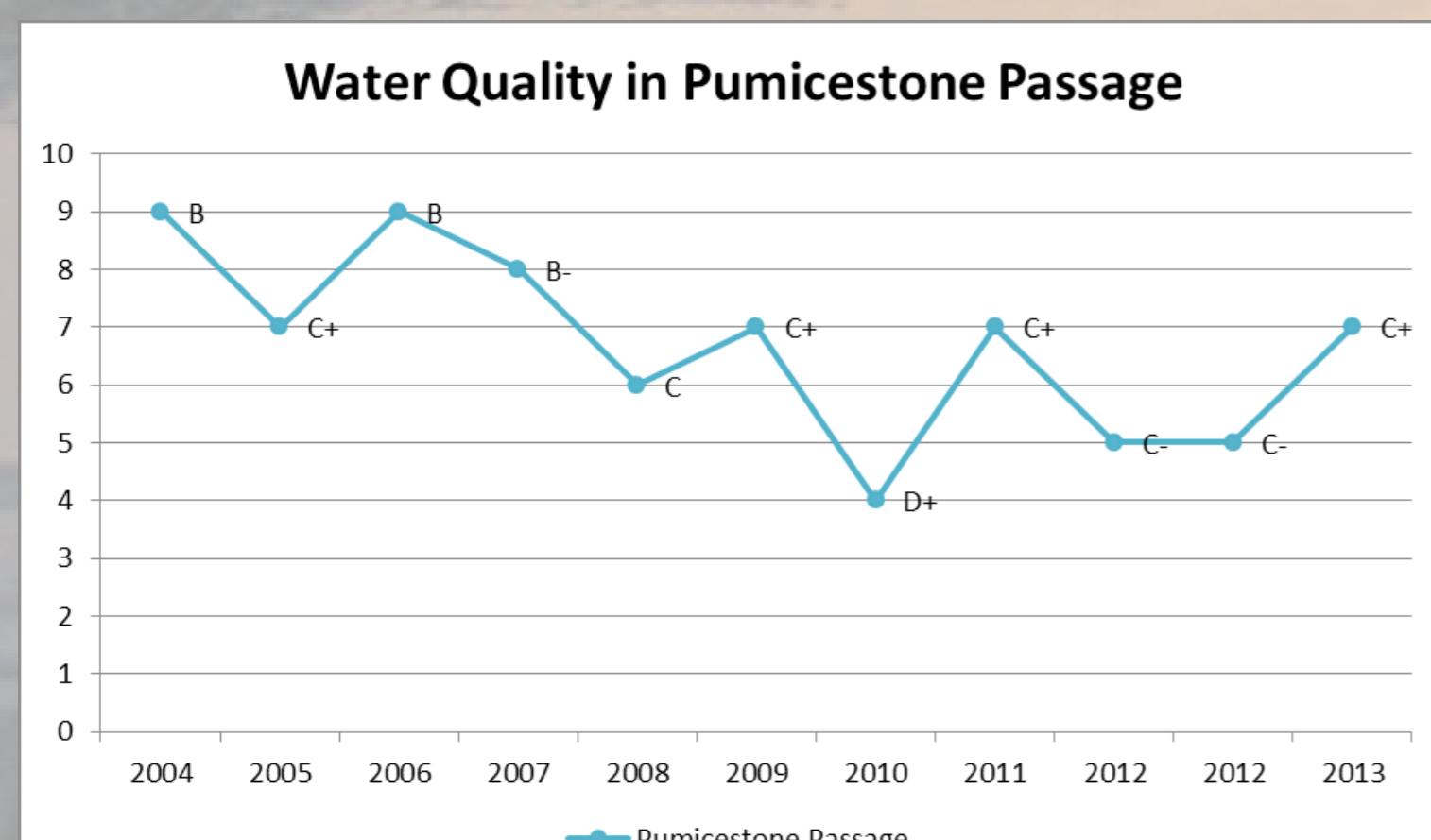
The first significant studies of water quality in the Pumicestone Passage were undertaken in the late 70's and early 80's. The science of water quality monitoring was only just evolving in those days and there was little baseline data to make comparisons or identify trends at the time.



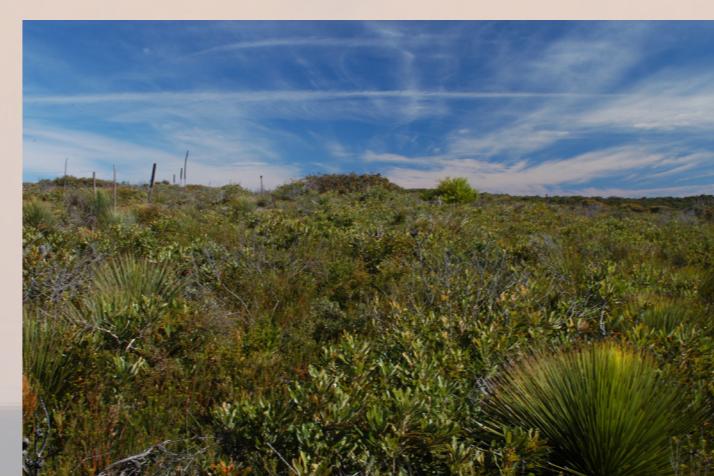
However, a national study conducted in 1992 was able to examine trends in water quality and associated ecosystem health. It came to the alarming conclusion that: *'a change in estuarine water quality is observable in the period 1978-1980 to 1991 which suggests that changes in pollutant exports associated with changes in land use and management practices are already well in excess of sustainable levels.'*

There has been significant further changes in land use and management since that time with major changes in agriculture, forestry and urban development. A recent study undertaken by Sunshine Coast Council in preparation of its Pumicestone Passage and Catchment Action Plan 2013-2016 found that the five main sources of impacts on water quality are:

- Agricultural inputs
- On-site sewage systems (septic tanks)
- Forestry
- Urban sewerage
- Urban development



Water Quality data from the Environmental Health Monitoring Program (EHMP). Since 2008 the passage has received a C grade (Fair: Conditions meet some of the set ecosystem health values in most of the reporting region; some key processes are functional and some critical habitat are impacted) down from a B grade in the early 2000s.



A protected waterway

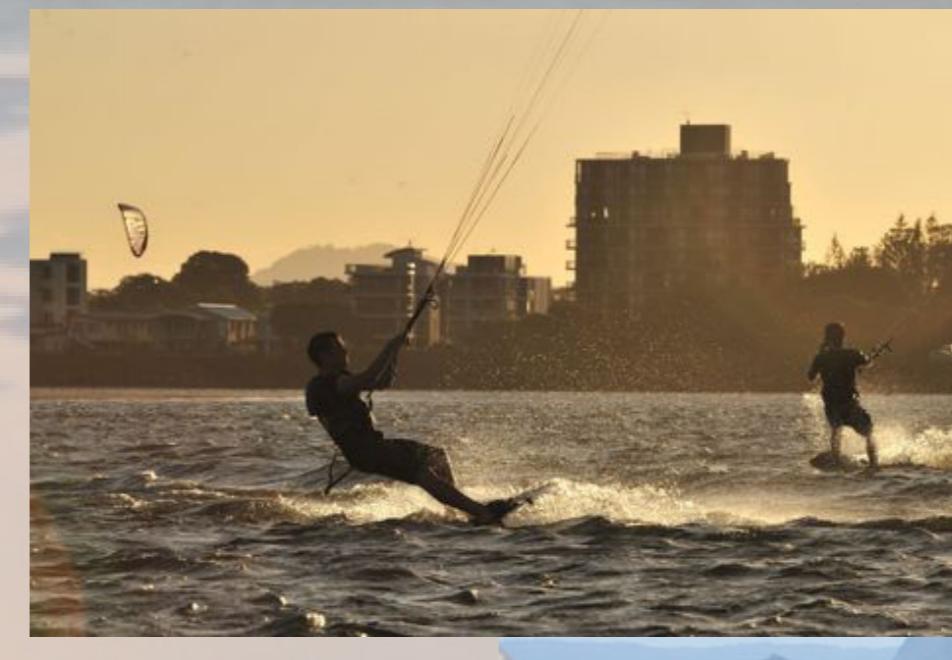
- Pumicestone Fish Habitat area – Queensland's oldest fish habitat area protecting habitat for juveniles of fish species with ecological, commercial and recreational significance
- Moreton Bay Marine Park – All of the Pumicestone Passage and its coastal wetlands are part of the Moreton Bay Marine Park
- Environmental Protection Act (QLD) – More than 1150 species are known to occur within the Pumicestone Passage including 21 species that are listed as vulnerable or endangered
- Environmental Protection and Biodiversity Conservation Act (C'wth) – Pumicestone Passage provides habitat for 65 threatened species, 70 migratory species and 2 threatened ecological communities protected under the EPBC Act
- Ramsar Convention – The Pumicestone Passage is a wetland of international significance listed under the Ramsar Convention on Wetlands



Social & Economic Values

The environmental values of the Pumicestone Passage underpin important social and economic values. The passage is an integral part of the setting and amenity of the Caloundra community, providing an important recreational space less than a stone's throw away from the people of Golden Beach and Pelican Waters. It is a waterway that is used by families from across the Sunshine Coast for swimming, fishing, kite surfing, boating, kayaking and a host of other activities.

The natural beauty of the Pumicestone Passage is central to the tourism industry in Caloundra. Our competitive advantage is the unique combination of a pristine natural setting side by side with the convenience and comfort of a contemporary urban community.



These social and economic values are dependent on the ecological health of the Pumicestone Passage. If in stream and shore based ecosystems were to die off (due to changes in water quality) the amenity value of the Passage would be lost and with it its attraction to locals and visitors alike.

Water based recreational activities are equally dependent upon a healthy waterway. A decline in water quality will undermine fish stocks and increase the chance of algal blooms including outbreaks of toxic lyngbya which can result in the closure of the waterway and adjacent shore areas (as occurred in the late 90s and early 2000s).