

Erosion on the ocean side of Bribie Island



Why is Bribie Island eroding?

Bribie Island has been subject to natural coastal processes for thousands of years.

It was the process of erosion and sedimentation that built Bribie Island, and it is these forces that will continue to shape and change Bribie Island well into the future.

Erosion is a natural process. The erosion of the Bribie Island Spit occurs in episodes during severe storms, with rebuild-up of sand in between storms during calmer weather.

The entrance to the Pumicestone Passage is always subject to change. South of the entrance, retreat of the shoreline on the ocean side is greater than the Passage side. On the ocean side of northern Bribie Island, the long term trend of erosion is an average rate of 1 metre per year, but can be up to 10 metres during storm events (refer to Figure 1).

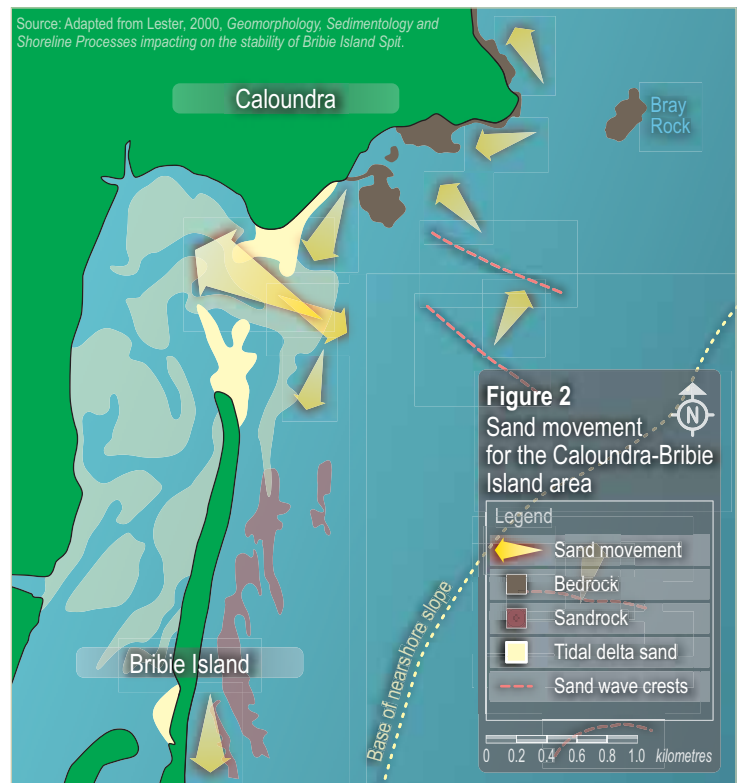
Beach erosion on the ocean side of Bribie Island



Sand eroded on the ocean side is lost by wave and tide action to the south, the north and into the Passage (refer Figure 2).

As there is no present day supply of sand from Moreton Bay or elsewhere to the shoreline of Bribie Island, inevitably – Bribie Island is eroding.

It is the erosion on the ocean side that is of most concern to a potential tidal breakthrough of northern Bribie Island, and this risk is amplified where the island is narrow and the dunes are low and subject to wave washover.



Is sand dredging from Moreton Bay increasing the rate of erosion?

No.

Sand dredging of the Spitfire Channel is occurring some 28 kilometres to the south.

An independent scientific investigation of the impacts of this sand dredging operation clearly indicated that there is no impact on the beaches of northern Bribie Island.

What will happen if this erosion continues?

There are four narrow sections of Bribie Island where the dunes are also low (refer Figure 3). It is anticipated that in these areas, waves from the ocean side of Bribie Island will wash over the foredune and lower the sand surface level. The tides will then scour out a tidal channel in these lower lying areas.

Over time, a new tidal channel may widen, become the dominant channel and form a new entrance, and the existing inlet may close over. As the Bribie Island Spit continues to narrow, multiple entrances may form in the long term.

This scenario may be many years away, but it is dependent on the weather and particularly the intensity and frequency of severe storm events.

How will a new entrance south of the Caloundra bar affect Golden Beach?

If a new entrance were to form north of Lamerough Canal there would probably be very little impact on Golden Beach. The entrance has been well south of its existing position before (refer Figure 4).

If a new entrance were to form south of Lamerough Canal, it is not clear what the impact would be, but a risk assessment is currently in progress to provide further information.

Some have claimed that there will be big waves crashing on Golden Beach and we will need massive rock walls – is this true?

As is evident, there is little wave penetration through the existing entrance now and it would be the same for a new entrance. Similar to the existing entrance, a new entrance will also form sand bars which would limit waves entering the Pumicestone Passage. The existing wide shallow sand banks in the Passage will further protect Golden Beach and rock walls are not likely to be needed.

Sections of Golden Beach currently experience erosion and are maintained with groynes and sand renourishment.

Groynes and sand renourishment would continue to be preferred to the use of rock walls, so that a sandy beach environment is maintained.



Pumicestone Passage looking west to Golden Beach.

Isn't the Environmental Protection Agency concerned about the loss of the environment?

Bribie Island is a designated Recreation Area and the Environmental Protection Agency is committed to conserving the dynamic landscape in its "natural state".

Bribie Island has been subject to natural coastal processes for thousands of years and will continue to change with the prevailing wind, waves and tides.

The Environmental Protection Agency views the erosion and an inevitable ocean breakthrough as a natural event.

Why don't we stop the erosion?

Natural coastal erosion processes should be recognised and generally allowed to occur without interference. Development protection works will only occur if there is a real threat to Golden Beach.

What is the Environmental Protection Agency and Council doing about the issue?

Council is monitoring the four areas of potential tidal breakthrough by aerial and ground surveys and site inspections.

In addition, Council has been successful in obtaining a grant from the Federal and State Government to undertake a risk assessment of a potential tidal breakthrough of northern Bribie Island and its implications to foreshore infrastructure and development along Golden Beach. This risk assessment is currently in progress.

The Environmental Protection Agency is also closely monitoring the situation and may undertake works to assist in dune recovery in critical areas until the potential impacts of a tidal breakthrough to the community is more clearly understood.

Further updates on the progress of this issue will be provided to the community.



The erosion on Bribie Island is a naturally occurring process.



The effects of wash through on Bribie Island.



Areas of potential breakthrough are being monitored by Council.



PUMICESTONE
PASSAGE
ADVISORY
TASK FORCE

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All figures are indicative only.

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