



## Fitzroy River Delta QLD04.03.04

### Regional setting

The regional processes dominating this region include the wet tropics to humid sub-tropical climate, south-east trade winds, meso-macro tides (4.05m), strong tidal currents, low to moderate south-east seas (south-east wind-waves), dominantly terrigenous sediments with interrupted northerly longshore sediment transport (low-moderate), the El Nino Southern Oscillation (driving sea-level variability, tropical cyclone frequency, beach erosion/accretion cycles); and the Madden-Julian Oscillation (driving weather patterns including monsoons and tropical cyclones).

Regional hazards or processes driving large scale rapid coastal changes include: tropical cyclones, storm surges, river flooding, and variable longshore sand transport.

This compartment extends from Zilzie Point to Station Point.

### Justification of sensitivity

The entire compartment, apart from a few headlands, is sensitive to inundation and erosion, thus earning a sensitivity rating of 4.

### General comment

This compartment contains the large Fitzroy River mouth and delta and the regressive Coconut-Castle Bellas barrier to the north; all are embayed between Station Point, the northern tip of Curtis Island and Zilzie Point, and contained in the 25 km wide Keppel Bay, with approx. 100 km of shoreline. This is a very sheltered, low wave energy, low lying coast with the low regressive barrier, northern Keppel Sand Creek and the extensive tidal flats of the river mouth, which cover an area of approx. 60 km<sup>2</sup>. All of these areas are prone to inundation from storm surge and sea level rise, with the tidal flats predicated to be eroded by up to 400 m by 2100. The



only development is at Keppel Sands and Port Alma in the delta, both of which are subject to inundation.

Sediments are derived from the Fitzroy River and transported northwards as fine well-sorted sands, together with local carbonate production. Suggested damming of the river would severely impact the supply of sediment to the delta and adjacent shores. As sea level rises, the funnel shaped, tide-dominated river mouth could also be impacted by changes in the tide range.

#### **Additional information (links and references)**

BPA, 1979, *Capricorn Coast Beaches*, Beach Protection Authority, Brisbane, 238 pp.

Short, A D, 2000, *Beaches of the Queensland Coast: Cooktown to Coolangatta*. Sydney University Press, Sydney, 360 pp.

<https://www.ehp.qld.gov.au/coastalplan/coastalhazards.html>

[http://www.ehp.qld.gov.au/coastal/management/maps/pdf/9051-243\\_keppel\\_sands.pdf](http://www.ehp.qld.gov.au/coastal/management/maps/pdf/9051-243_keppel_sands.pdf)



*Fitzroy River Delta – Zilzie Point to Station Point.*