Peninsula Range QLD04.03.01

Regional setting

The regional processes dominating this region include the wet tropics to humid sub-tropical climate, south-east trade winds, meso-macro tides (3.8m), strong tidal currents, low to moderate south-east seas (local 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 Cape Townshend to Cape Manifold.

Justification of sensitivity

Sensitivity ratings range from 3 on the bedrock section, to 4 along the beaches and the Port Clinton tidal flats.

Other comments

This compartment contains 65 km of shoreline: starting in the north at Townshend Island with a predominately bedrock shoreline and several small embayed beaches, then from Reef Point to Cape Manifold are three larger embayed beaches and barriers (Pearl Bay, outer Port Clinton and Freshwater Bay) containing stable transgressive dunes extending 2-3 km inland. The barriers are backed by the large Island Head Creek and Port Clinton, both with shorelines dominated by wide tidal flats and mangroves. The port also contains a substantial, regressive, inner Pleistocene barrier. There is no development in the area, though the entire

compartment is part of the Shoalwater Bay Military Training Area. While this compartment has received considerable fine quartz sand from the Fitzroy River, it is likely to experience erosion with sea level rise, while the tidal flats are susceptible to both storm urges and sea level rise.

Note: Compartment 4.03 has a major sediment source – the Fitzroy River, which has supplied sand to the coast for approximately 150 km to the north to compartments 01, 02, 03 and 04. Huge volumes (~ 580 M m^3) of fine quartz sand have been deposited in regressive barriers in the south (02, 03 & 04) and in flood tide deltas and transgressive dunes in the north (01 & 02).

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.

Somer, L, Worral, R, Bell, C and Krogh, P, 20??, Shoalwater Bay Training Area: Ch 2: The Defence Environment

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

www.defence.gov.au/environment/swbta/Defence%20SOE%20report_chapter%202f.pdf

Peninsula Range – Cape Townshend to Cape Manifold.