



Hervey Bay QLD04.04.03

Regional setting

The regional processes dominating this region include the wet tropics to humid sub-tropical climate, south-east trade winds, meso tides (2.6m), decreased southerly swell to the south, 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 Elliott River to Sandy Cape (Fraser Island).

Justification of sensitivity

Overall sensitivity rating of 4.5. The shoreline is sandy and sensitive, with ratings ranging from 4 to 5 in places that are already eroding.

Other comments

Hervey Bay is a large U-shaped bay, 80 km wide at its open northern mouth, with 170 km of predominately sandy shoreline (91%; fine well-sorted quartz sand). It is sheltered by Fraser Island from most ocean swell, and receives only low easterly wind waves. The western shore south of Elliott River consists of a series of long, tide-modified to tide-dominated curving beaches, backed by low regressive barriers, each separated by tidal creeks (Elliott River, Theolodite Creek, Burrum River, Beelbi and Eli Creeks), with the only bedrock being at Point Vernon. Longshore sand transport is



limited by the low wave energy, and to the north, from at least Burrum Point. The bay has been a sink for dune sands from Fraser Island, and marine and terrestrial sand from the Great Sandy Strait, some of which may be derived from the Mary River. The entire sandy shore, the low barriers, and the tidal creeks and flats are susceptible to storm surge and sea level rise, as well as change in tide range; beach erosion is predicted to be between 100-200 m, and even up to 400m in the tidal inlets, by 2100. The higher sand-rich Fraser Island shoreline may be more resilient. There are small coastal communities at Woodgate and Burrum Heads, with the larger Hervey Bay in the south. Parts of the coast are already eroding and this is expected to accelerate with sea level rise.

Additional information (links and references)

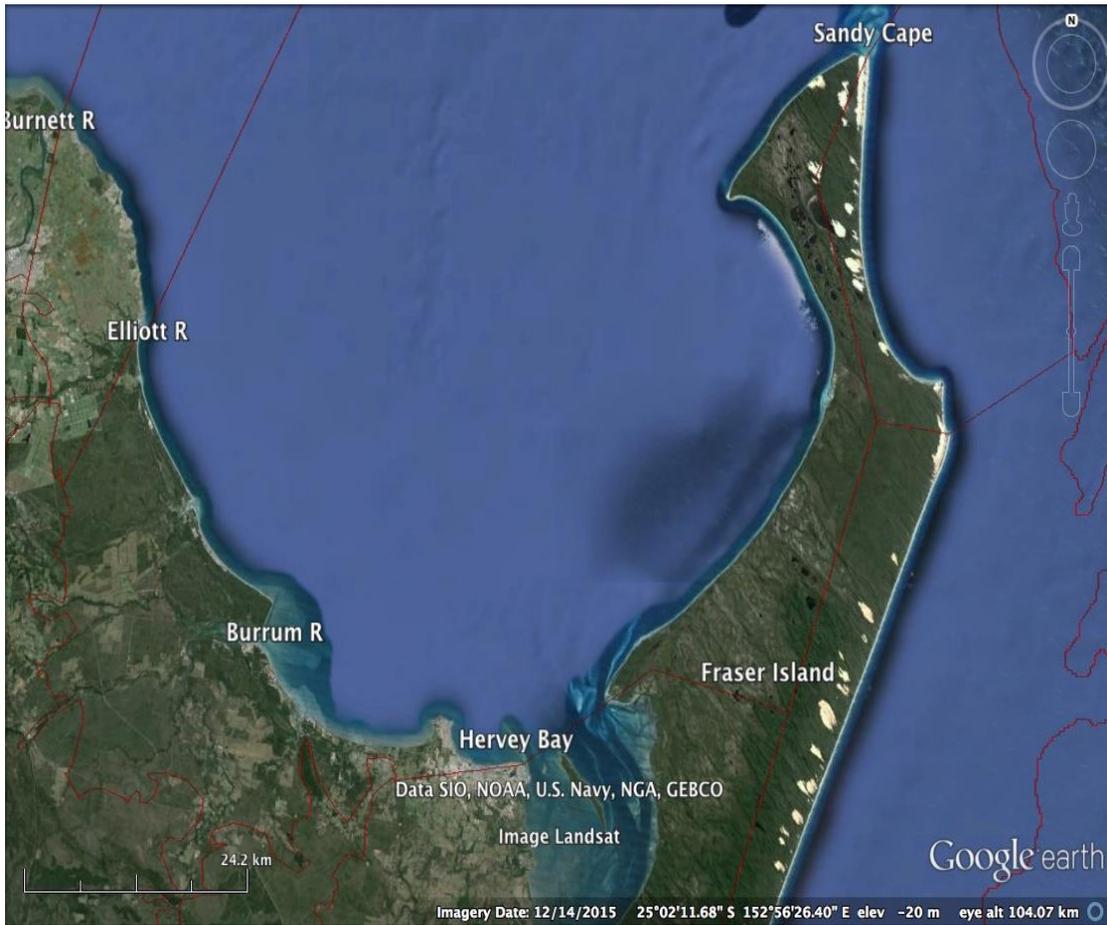
Beach Protection Authority, B., 1989, Hervey Bay Beaches: Brisbane, Beach Protection Authority.

BPA Hervey bay study - Andy Stephens

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

<http://www.frasercoast.qld.gov.au/shoreline-erosion-management-plan>

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



Hervey Bay – Elliott River to Sandy Cape (Fraser Island).