

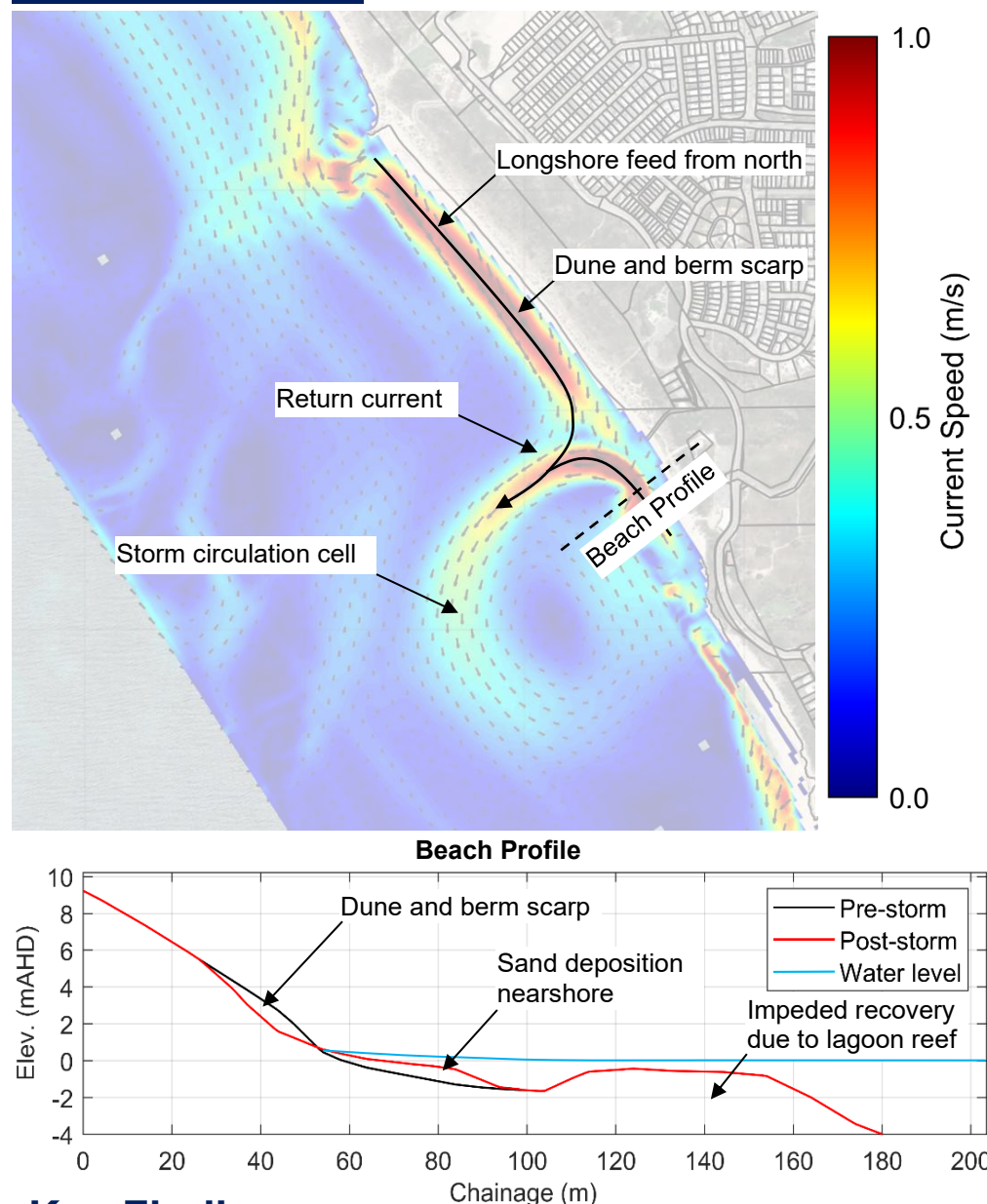
Yanchep Coastal Management Study – Coastal Processes Assessment

Stage 1 – Coastal Processes Assessment

Stage 1 of the study included the following tasks:

- Literature Review.
- Data analysis including local metocean data, geotechnical data and historical shoreline/vegetation line data.
- Coastal numerical modelling including waves, hydrodynamics, short term shoreline response (storms) and long-term shoreline evolution.
- Assessment of existing beach accessways.

Storm Response



Key Findings

- Seasonal coastal changes between summer and winter are significant with annual sand movement in the order of 100,000m³ per year. Seasonal changes are dependent on the intensity and frequency of winter storm events and the strength and persistence of sea breeze wind conditions during summer.
- Long term erosion is evident but on a smaller scale compared with seasonal changes, however climate change and sea level rise will have an impact on these long-term changes. Sediment budget along the Yanchep coastline generally shows a sediment deficit (loss) per year.
- Some limestone bedrock is present beneath the beach and dune system however this is not continuous or consistently at a sufficient level to rely on for long term coastal protection and additional coastal management measures are required to ensure protection of vulnerable coastal assets.
- The existing coastal protection infrastructure (Capricorn Groyne) is functional in retaining a beach south of the structure but is currently in poor condition.
- Beach access considerations:
 - Long term machinery access to the beach is required for future construction works and coastal maintenance activities. The loss of the existing pathway at the old surf club location will require an alternative.
 - The Yanchep Lagoon beach access ramp structure has not been adequately designed to accommodate beach dynamics and will require modification to account for ongoing erosion and undermining.
 - Fisherman's Hollow southern staircase has been previously undermined and may require extension to account for ongoing significant seasonal beach change.

Seasonal Coastal Change

