

Coastal Erosion Forcados South Point

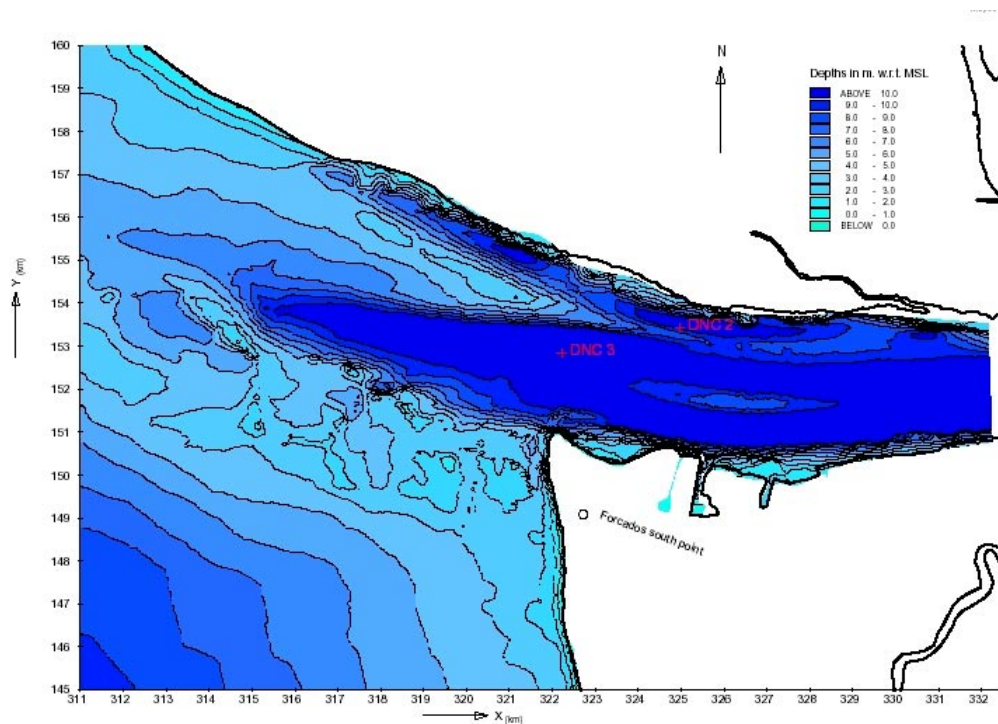
Background

The Forcados river is part of the complex Niger delta system. The shorelines on both sides of the Forcados river mouth have suffered from erosion for a long period of time. The erosion on the north bank seems to be combated effectively with revetments. The relevant processes behind the erosion of the shores are coupled with the relevant processes in the coastal inlet / tidal river mouth environment, such as tidal currents, waves, density currents and river discharges. Seasonal fluctuations in the hydraulic conditions play an important role in the morpho-dynamic behaviour of Forcados South Point.

Objective

The objective of the study is to identify and to quantify the responsible processes behind the observed erosion problems. Furthermore to develop a coastal protection scheme.

Type of project	Coastal Morphology
Location	Nigeria
Client	Aveco
Period	1997 - 1998



Project description

Study approach

The coastal, estuarine and riverine processes in the Forcados inlet system are simulated in a two-dimensional numerical model, based on our DELFT3D-MOR modelling suite. A whole set of regional and detailed nested hydraulic models are constructed from large scale (covering the entire Gulf of Guinea) to very detailed (Forcados river mouth). Seabed evolution in the project area is simulated with the Morpho-dynamic Modelling Approach, which means that computed bottom changes are regularly fed back into the hydrodynamic models, thereby giving a better reproduction of the actual seabed developments.

The model output is interpreted by qualified morphological experts to combine "real world" qualitative understanding of coastal systems with the "virtual reality" of the quantitative models.

Applied tools

SWAN	spectral wave model
HYDROBASE	wave climate representation
DELFT3D-FLOW	flow model
GETIJSYS	tidal analysis and prediction

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