



Flood and Coastal Erosion Risk Management Research Programme

Coastal morphological modelling for decision-makers

Project Summary SC090036/S

This report provides guidance to coastal practitioners on coastal processes and morphological models, methods and tools that can be used to help understand coastal change. It explains how to choose and use coastal morphological models to support coastal management decisions.

What is coastal morphological modelling?

Coastal morphology is the study of the origin and evolution of coastal features such as beaches, shore platforms, cliffs, dunes and the seabed. Morphological models help us understand how and why the coast is changing through computer simulation of real-world coastal features and processes.

Target audience

This report is aimed at coastal managers and engineers who may be required to assess the needs for, commission and review the outputs from coastal morphological models.

How can I use this guide?

This report seeks to help coastal managers and engineers understand how different morphological models might be used to help answer the following typical coastal management questions.

- What is the likely trend of change in geometry of the coastal feature (for example, beach, cliff, dune, barrier beach) and how is that likely to change naturally in the future?
- What is the likely future impact of different coastal management interventions on the feature?
- What is the likely future impact of different coastal management interventions on adjacent frontages and further afield?
- What is the likely impact of climate-related changes on the feature in the future?
- What is the likely future short-term impact (for example, beach lowering) following a storm?
- To what extent might the feature recover following an extreme storm?
- What is the likely future impact of estuarine change on coastal morphology?
- What coastal morphological changes might have an impact on landward flood risk?

How will the Environment Agency use this guidance?

The Environment Agency will use the guide to help inform Shoreline Management Plans, Coastal and Estuarine Strategies, future iterations of Coastal Habitat Management Plans, Beach Management Plans, Catchment Flood Risk Management Plans and River Basin Management Plans.

This summary relates to information from project SC090036, reported in detail in the following output(s):

Report: SC090036/R

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