# Coastal Asset Management



As global sea level rises, low lying coastal regions will be subject to inundation and more frequent extreme flooding events, threatening economic and environmental assets. It is critical that scientific knowledge is effectively applied to inform decision-making.

The National Oceanography Centre (NOC) is at the forefront of research to improve understanding of the underlying processes influencing hazards that face assets owners and operators along the coast. The Centre has been providing information, software and advice for over 80 years.

We have developed advanced modelling capabilities to predict the occurrence of storm surge flooding – the UK's single biggest natural disaster risk. These models are run at the UK Met Office and are a critical part of today's coastal flood warning system.

Our science underpins elements of the Intergovernmental Panel on Climate Change reports. We are contributing to UKCP18 to make sure decision-makers have the most up-to-date information on the future of our climate.

We provide advisory support to coastal managers to help improve shoreline management practices and prepare for coastal change.

We are world leading in tidal analysis and prediction – developing accurate tide timetables and providing marine information at the coast and offshore. Our models feed the predictions supplied by the UK Hydrographic Office used by ports across the world. We directly license

National Oceanography Centre
NATURAL ENVIRONMENT RESEARCH COUNCIL

To discuss how the NOC can work with you, please email **nocbusiness@noc.ac.uk**

a suite of powerful tidal analysis and prediction software.

Through collaborative activities and knowledge exchange opportunities, we strive to strengthen partnerships with owners and operators of coastal assets.

We aim to turn knowledge and technology innovations into applications for government, business and the public. Our expertise includes environmental modelling and *in-situ* and remote sensing of the marine and coastal environment. Our unique data-collection, modelling and validation techniques offer a robust basis for planning future investment decisions – including dredging, beach reinforcements and artificial reefs for port and harbour protection.

*We can deliver:*

- exceptional capabilities for sediment transport modelling and monitoring, using computer models, radar technology and satellite imaging.
- advisory support relating to wave, tides and sedimentation data modelling
- unique modelling capabilities around the UK coastline, covering coastal flooding and erosion, tidal range and currents, temperature, wind-driven sea level (surge), wave climate, biogeochemistry, ecosystem, and water quality parameters.

Examples of our collaborative work include projects aimed at reducing the high costs associated with new sea defences, reducing the cost of keeping shipping channels open whilst minimising damage to the environment, helping predict regional sediment budgets, morphological change and how the coast recovers after sequences of storms, and helping organisations in Mozambique and Madagascar understand and plan for changes at the coastline.