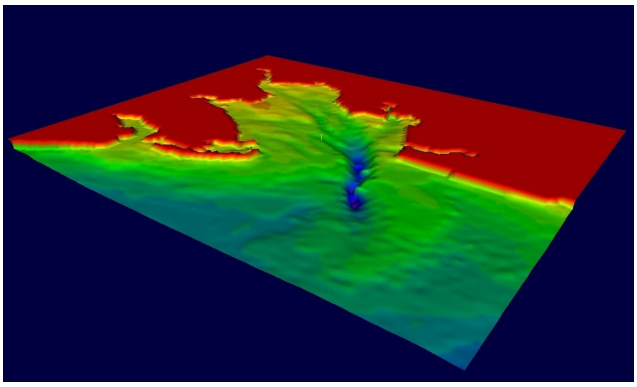
Numerical Modelling

About

Numerical models are a sophisticated decision-support tool. They can provide the user with a wealth of information from natural processes to short-term impacts and consequences over the longer term.



ABP Marine Environmental Research Ltd (ABPmer) has a long established Modelling team which provides a comprehensive service to support hydraulic investigations of river, estuary, coastal and marine systems, offering descriptions of flows, sediment transport, water quality and waves.

Good site information is a fundamental requirement for model selection, design, construction and calibrating. Our in-house Data team provides this through field survey, data collation, processing and analysis. They also have mapping and presentation capabilities.

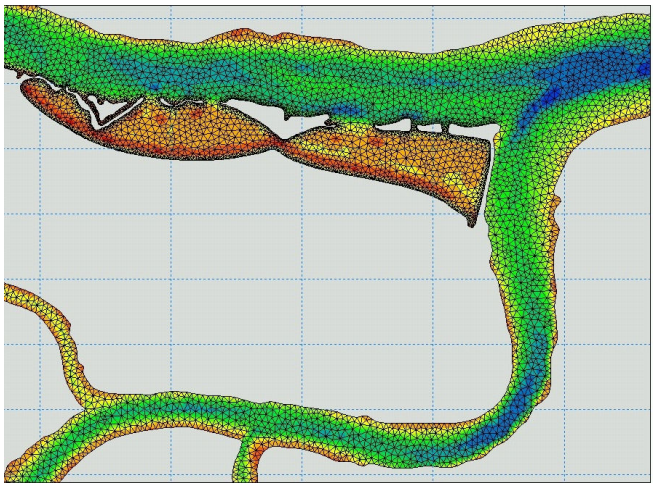
Areas of Application

Working with our Data, Environment and Processes teams we have used modelling outputs to support a wide range of studies:

- Aggregate extraction
- Basin flushing
- Cable/pipeline burial
- Coastal response prediction
- Dredged spoil disposal
- Habitat creation
- Installation of structures
- Intake/Outfall studies
- Joint probability analysis of waves and water levels
- Land reclamation
- Long-term predictions of morphological change
- Managed realignment
- Metocean marine climate analysis
- Navigation channel design
- Oil spill and contaminant dispersion
- Overtopping and flood risk assessment
- Renewable energy deployment
- Wave behaviour in harbours and estuaries

Our Capability

We maintain a wide range of sophisticated modelling software to provide the best available solution to meet individual project requirements. Thanks to our significant experience we hold numerous models covering many areas of the UK and overseas. They are applicable at varying scales and can be tailored for understanding particular systems' behaviours and client needs.



MIKE 11 – 1D modelling tool from Danish Hydraulics Institute (DHI) to examine hydraulic flows in open channel systems
MIKE 21 – 2D DHI modeling tool to examine complex free surface flow regimes in estuaries and coasts
MIKE 3 – 3D DHI modelling tool for complex free surface flow regimes
MIKE FM – 2D & 3D DHI flexible mesh modelling tool used to examine complex free surface flow regimes

LITPACK – 1D DHI modelling to examine nearshore littoral processes and coastal evolution
DELFT-3D – 2D & 3D modelling tool from Delft Hydraulics to examine free surface flow regimes in estuaries and coasts. processes and coastal evolution

Further Information

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