AQUATIC POLLUTION GROUP

WESTLAKES
SCIENTIFIC CONSULTING

SEDIMENT TRANSPORT MODELLING AND MONITORING

Our Capabilities

A wide range of models are available at WSC for investigating sediment transport in the marine environment. Models available include the MIKE21 Sediment Transport, Mud Transport and Particle Tracking modules. Coastal morphology may also be investigated by combination of the wave, flow and sediment transport models into a fully dynamic morphological model. In addition, we have developed bespoke models for sediments in estuaries. Modelling applications have included probability mapping for particle discharges and sediment transport in estuarine systems.

Our Clients include:

- Sellafield Ltd
- NNC Ltd
- BNFL Risley Ltd
- RSK Environment Ltd

Our Services

We can provide modelling services for investigating the impacts of proposed offshore developments, including wind farms and oil rigs.

Typical applications include:

- Baseline investigation of suspended solids, scour effects, sediment transport and winnowing due to tides and waves during construction, operational and decommissioning activities in the offshore area.
- Optimisation of port layouts with respect to sedimentation and siltation issues in harbours, navigational fairways and dredging studies.
- Detailed coastal area investigation of the impact of shore protection structures on adjacent shoreline, including sand losses from bays due to rip currents.
- Sediment transport studies for fine cohesive materials or sand/mud mixtures in estuaries and coastal areas in which environmental aspects are involved and degradation of water quality may occur.
- Simulation of transport and fate of dissolved and suspended substances discharged or accidentally spilled, where discharged substances may be dissolved matter or mud and sand.
- Calculation of sediment radionuclide inventory for engineering works in areas near coastal nuclear installations.

In addition to sediment modelling, WSC also offer laboratory services for particle sizing and alpha, beta and gamma analysis of suspended and bed sediments.

Certificate No 13950

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