



HR Wallingford  
*Working with water*

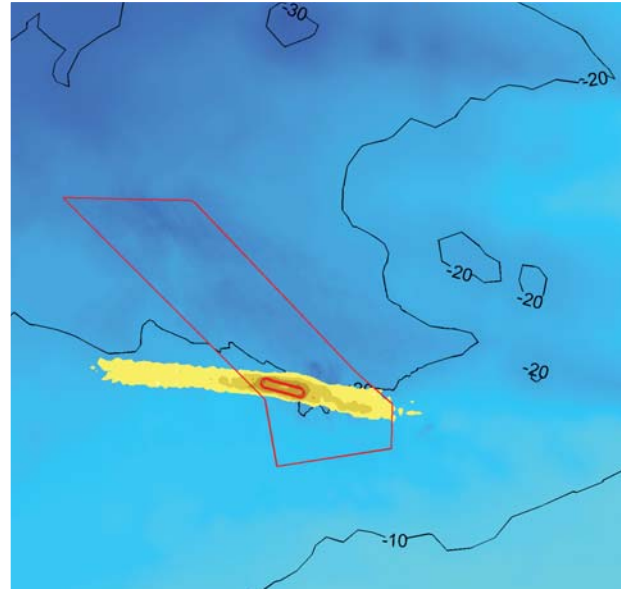
## Marine aggregate dredging

Expertise and services for the UK marine aggregate industry



# Marine aggregate dredging

HR Wallingford is an internationally recognised authority in the aggregate dredging sector. With a 30 year track record, we have the expertise and skills to offer a full range of services tailored to meet our clients' needs. We have worked for and with aggregate producers, trade associations, environmental consultants, regulators and stakeholders to deliver sustainable strategies and solutions.



## Coastal impact

- > High-level desk assessments.
- > Coastal and seabed characterisation.
- > Numerical modelling of changes in:
  - near-shore wave conditions
  - tidal currents
  - sediment transport patterns.
- > Assessing:
  - the risk of interrupting sediment supply to the coast and sandbanks
  - cumulative effects caused by dredging in several areas in the same region of seabed
  - in-combination effects arising from aggregate dredging and other developments.

## Plume dispersion

- > Release of sediment and subsequent plume dispersion from dredging activities.
- > Provision of source terms for overflow and screening.
- > Modelling of fine sediment plumes.
- > Modelling of longer term dispersion of screened sand.
- > Plume assessments for local or regional focus.

## Beach recharge and reclamation fill

- > Advice on the required sediment quality, frequency and methodology for placement of aggregate on beaches.
- > Advice on reclamation including placement methodology, bund design and run-off management.

## Monitoring, data analysis and management

- > Scoping, detailed design, implementation, management, analysis, interpretation and peer review of all forms of monitoring.
- > Analysis of pre-dredge monitoring to provide a clear understanding of the resource area environment (including metocean, water quality, bathymetry, and seabed sediment data).
- > Monitoring dredging effects at specific sensitive locations such as fishery habitats or sandbanks.
- > Specialist monitoring of sediment release from the dredger and its dispersion in the near and far field.



## Environmental scoping and assessment

- > Scoping of environmental studies, surveys and data requirements.
- > Regulator and stakeholder consultation.
- > Environmental Impact Assessment (EIA) and preparation of Environmental Statement (ES) chapters.
- > Regional Environmental Assessment of past and proposed Marine Aggregate dredging (MAREAs).

## Consultation and liaison

- > Liaison between aggregate producers, trade associations, environmental consultants, regulators and stakeholders.
- > Evidence-based science to clarify the issues and resolve conflicts associated with aggregate extraction between industry, regulator and stakeholder.
- > Visual material to aid discussion and communication when dealing with stakeholder concerns.

## Expert advice

- > Advice on dredging plans.
- > Peer review of Environmental Statements and technical reports.

## Research and strategic studies

- > International authority on the plumes formed by trailer suction hopper dredgers.
- > Led the physical process assessments for the recent Thames, South Coast and Anglian region MAREAs.
- > We have developed new numerical techniques for modelling the effect of noise on marine species.
- > Detailed monitoring and analysis of release of fine sediment and dredging plumes for the East English Channel Regional Impact Assessment.
- > Projects for Defra, the Aggregate Levy Sustainability Fund and CIRIA.



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HR Wallingford  
Howbery Park  
Wallingford  
Oxfordshire OX10 8BA  
United Kingdom

tel +44 (0)1491 835381  
fax +44 (0)1491 832233  
email [info@hrwallingford.com](mailto:info@hrwallingford.com)

[www.hrwallingford.com](http://www.hrwallingford.com)



HR Wallingford is an independent engineering and environmental hydraulics organisation. We deliver practical solutions to the complex water-related challenges faced by our international clients. A dynamic research programme underpins all that we do and keeps us at the leading edge. Our unique mix of know-how, assets and facilities includes state of the art physical modelling laboratories, a full range of numerical modelling tools and, above all, enthusiastic people with world-renowned skills and expertise.

