



HR Wallingford
Working with water

Coastal management

Delivering sustainable strategies and solutions



Specialist expertise in



Beach processes
and behaviour



Coastal and
estuarine
process studies



Coastal structures



Climate change
adaptation studies



Coastal erosion
mapping and
investigations



Environmental
Impact
Assessment
and Appropriate
Assessment



Flood and coastal
erosion risk
management



Managed
realignment and
habitat creation



Offshore
development



Waterfront
developments

Coastal management

HR Wallingford has an international track record of achievement in applied coastal research and specialist consultancy. We use our detailed knowledge of coastal environments and processes to deliver sustainable strategies and solutions.

Our world-renowned experts work with a wide range of clients, from consultants and contractors to developers, local and regional governments, regulators, NGOs and private landowners. We provide input at all stages of a project: from initial high level advice, to the specification and supervision of field survey work and onto detailed computational and/or physical modelling for engineering design and environmental impact assessment.



Planning guidance

- > Coastal strategy studies.
- > Integrated coastal zone management.
- > Coastal defence and scheme design.
- > Asset management and monitoring plans.
- > Support for Shoreline Management Plans (SMP).
- > Project appraisal reports (PAR) and environmental impact assessments (EIA).
- > Beach Management Plans.

Physical processes

- > Investigation of complex physical processes, such as waves, water levels, surges, flows and sediment transport.
- > Use of state-of-the-art numerical and physical models.

Morphological assessment

- > Advice on morphological change.
- > Application of appropriate top-down / bottom-up modelling approaches.

Sedimentation

- > Assessment of sedimentation regime within navigation channels and basins, such as ports, harbours and marinas.
- > Advice on potential infill rates to inform maintenance dredging requirements.

Scour

- > World-leading advice on scour around coastal structures and at landfalls of cable and pipeline routes.
- > Guidance on scour protection design and installation.
- > Scour management plans.



Engineering design

- > Integrated, optimum engineering solutions to ensure that the schemes assessed are appropriate, buildable and cost effective from feasibility through to completion.
- > World-leading expertise in performance and function of coastal structures.

Beach design and management

- > Appropriate level of assessment to advise on the processes affecting beach management to maintain existing and create new safe, sustainable beaches.
- > Development of beach management plans.
- > Development of effective beach designs to provide sound defence solutions including consideration of bather safety and aesthetics.
- > Advice on beach nourishment and recharge including sediment quality, frequency and methodology for placement.
- > Establishment of monitoring programmes and review of monitoring data.

Coastal impact

- > High-level desk assessments.
- > Coastal characterisation.
- > Numerical modelling of changes in near-shore wave conditions, tidal currents and sediment transport patterns.
- > Internationally recognised authority on release of sediment and subsequent plume dispersion from dredging activities.
- > Assessment of cumulative and in-combination effects.



Environment

- > Scoping of environmental studies, surveys and data requirements.
- > Consultation with regulators and stakeholders.
- > Environmental Impact Assessment (EIA) and preparation of Environmental Statement (ES) chapters.
- > Numerical modelling of coastal, estuarine and fluvial processes.
- > Ecological modelling.
- > Noise modelling.
- > Establishment of monitoring programmes.

Field data collection

- > Extensive experience of the scoping, planning and execution of field data collection.

Data analysis and management

- > Management, analysis and interpretation of data.
- > Peer review of all forms of monitoring data.



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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.

