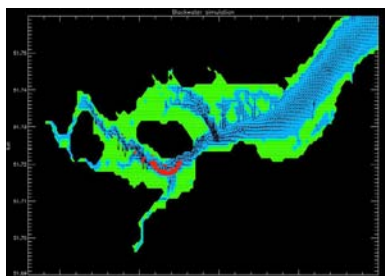
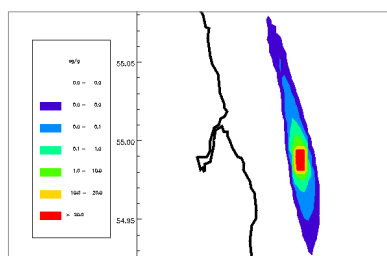


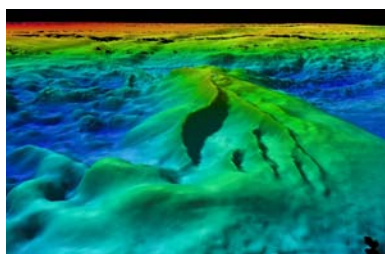
Cefas modelling capability



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1 Nutrients implications of managed retreat in the Blackwater estuary

2 TBT concentrations in seabed sediments

3 Seabed imaging after dredging

Expertise and application

Cefas has over 25 expert modellers all of whom have a strong track record in delivering modelling services to Government and the consulting business sector.

We continually invest in computer technology to develop increasingly complex, yet faster, models. We apply models to assess the effects of a range of influences, such as fishing, dredging, pollution and coastal constructions. We integrate GIS and remote-sensing techniques into the models to produce management tools for tackling specific current environmental issues, and long-term environmental protection.

Modelling transferability

All models are calibrated for particular applications. There is great scope for developing and applying models in alternative geographical locations, or for different biological systems, to match client specifications. The complexity of this application will be variable depending on the nature of your requirements. Generally more complex models require greater investment to assure accurate transferability. Specific models for data poor environments also exist; this is particularly advantageous for application in less developed regions of the world.

Synopsis of Cefas modelling capability

Sediment

- SEDPLUME Simple particle tracking model with tidal database and user-friendly interface.
- SEDETIDE. CFD Navier Stokes solver, with turbulence and suspended sediments (3D).

Biological

- ERSEM. State of the art ecosystem modelling of primary production and lower trophic levels (phytoplankton up to zooplankton, including benthos).
- NPZ Simplified primary production model.
- WEED. Model of seaweed growth in the inter-tidal zone.

Hydrodynamic

- PRISM. Barotropic for fast tide and wind driven flows (2D or 3D) including tidal flats.
- POM. Full prognostic baroclinic model (3D).
- GETM. Prognostic baroclinic model (3D) including tidal flats.
- WAM/SWAN/WINDWAVE spectral wave models.
- Hydrotrack. Simple hydrodynamics with particle tracking.

Chemical

- COSE suspended sediment/contaminant/radionuclide transport with multiple size classes, bed interaction (2D).
- Radiological dose assessment models
- Spill3D Particle tracking model based on EUROSPILL for emergency response to oil and chemical spills.

Fisheries

- Single and multi-species stock assessment models.
- Individual Based Model (IBM) for tracking of fish larvae
- Epidemiological models of fish disease.
- Modelling of industry behaviour, including within Marine Protected Areas, fleets and vessels.

Contact us

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4 Beach recharge operation

5 Saltmarsh

6 Marine fish farm, Japan (© CORBIS)

About us

Cefas is a multidisciplinary scientific research and consultancy centre providing a comprehensive range of services in fisheries management, environmental monitoring and assessment, and aquaculture to a large number of clients worldwide. We have more than 500 staff based in 3 laboratories, our own ocean-going research vessel, and over 100 years of fisheries experience. We have a long and successful track record in delivering high-quality services to clients in a confidential and impartial manner. (www.cefas.co.uk)

Cefas Technology Limited (CTL) is a wholly owned subsidiary of Cefas specialising in the application of Cefas technology to specific customer needs in a cost-effective and focussed manner. CTL systems are developed by teams that are experienced in fisheries and environmental management and in working closely with clients to ensure that their needs are fully met. (www.cefastechnology.co.uk)

Customer focus

With our unique facilities and breadth of expertise in environmental and fisheries management, we can rapidly put together a multi-disciplinary team of experienced specialists, fully supported by our comprehensive in-house resources.

Our existing customers are drawn from a broad spectrum with wide ranging interests. Clients include:

- international and UK government departments
- the European Commission
- the World Bank
- United Nations Food and Agriculture Organisation (UNFAO)
- oil, water, chemical, pharmaceutical, agro-chemical, aggregate and marine industries
- non-governmental and environmental organisations
- regulators and enforcement agencies
- local authorities and other public bodies

We also work successfully in partnership with other organisations, operate in international consortia and have several joint ventures commercialising our intellectual property.