

Report on elements of Cefas Cruise CEND 12/05 relating to Cefas project C2282 (MEPF 04/01) 'Eastern English Channel Large-scale Seabed Habitat Map'

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Background

The MEPF 04/01 project entitled 'Eastern English Channel Large-scale Seabed Habitat Map' has been funded by the Department of the Environment, Fisheries and Rural Affairs (Defra) under the Marine Environmental Protection Fund (MEPF) section of the Aggregates Levy Sustainability Fund (ALSF). This is a three year project led by the British Geological Survey (BGS), with the Centre for Environment, Fisheries and Aquaculture Science (Cefas) and the Joint Nature Conservation Committee (JNCC) as partners, and Marine Ecological Surveys Ltd (MES) as sub-contractors.

The aim of the project is to provide a large-scale habitat map of a section of the Eastern English Channel that contains a number of areas where applications have been made for licenses to extract marine aggregates (Figure 1). These application areas have been subject to detailed Environmental Impact Assessments, and we wish to place these in a broader spatial context through the development of a large-scale habitat map.

The development of this habitat map requires the integration of geophysical and biological data. In broad terms, the BGS is undertaking the geophysical work associated with the project and Cefas, JNCC and MES are undertaking the biological work. The Cefas element of this work is being used as matched funding for the MESH project. Within Cefas, this element of work has been given the project code 'C2282'.

In May/June 2005, the BGS commissioned an acoustic survey of the study area. In July/August 2005, Cefas undertook a directed benthic sampling survey to groundtruth that prior acoustic survey (Figure 1), with the assistance of staff from JNCC and MES. This survey was conducted over an 11 day period (26th July to 5th August) during the latter part of the Cefas cruise 'CEND 12/05' on the RV *CEFAS Endeavour*.

Objectives

1. To collect groundtruth samples using Hamon grab (with camera fitted), video observations (towed video sledge &/or drop camera) and 2m Beam trawls, from up to 150 sites in the Eastern English Channel.
2. To collect opportunistic acoustic data (multibeam, sidescan sonar, AGDS) from within the boundaries of the survey area.

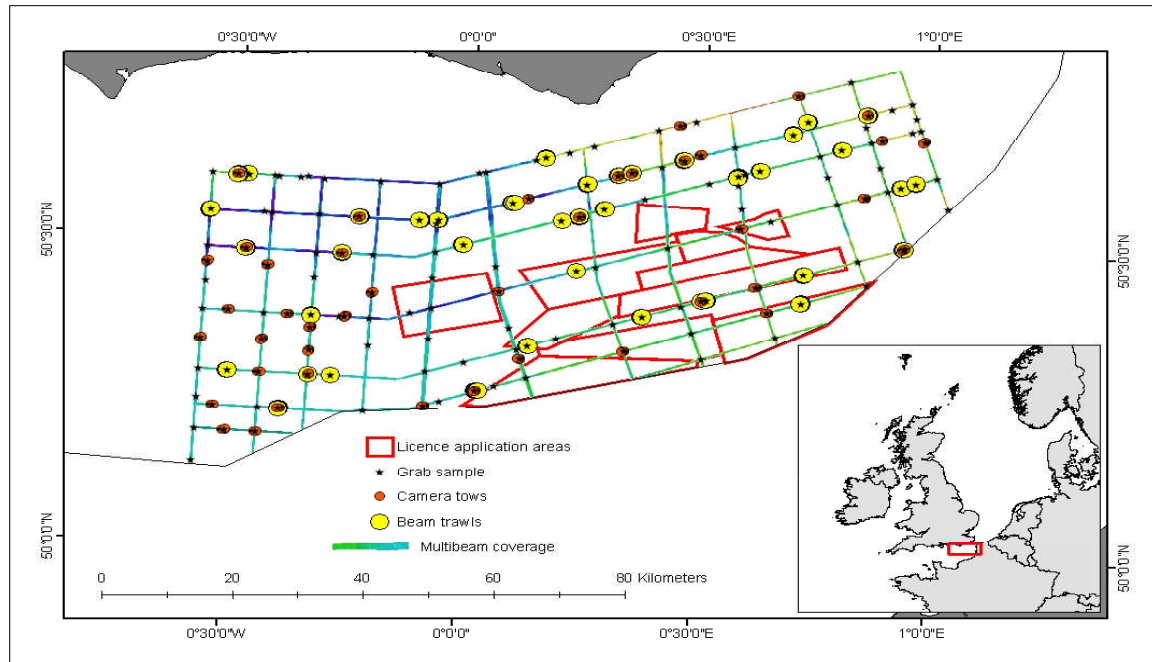


Figure 1. Study area in the Eastern English Channel, showing license application areas, the matrix of 'corridors' covered by the May/June acoustic survey, and the positions of groundtruth samples collected by a variety of sampling techniques on the July/August survey.

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Grab samples were collected at 150 sites, using a 0.1m² Hamon grab fitted with a video camera and CTD probe. Samples were processed on board, with the infaunal elements being returned to the MES laboratory for identification, and the sediment samples to the Cefas laboratory for particle size analysis. The CTD data will provide environmental data (salinity, temperature and depth) that will be included in the multivariate analysis of biological data.

Epifaunal samples were collected at 40 stations using a 2-metre beam trawl. These were processed on board, with reference collections returned to the Cefas laboratory for confirmation of the faunal identification.

During the overnight periods, visual surveys of epifauna were conducted at 40 stations using either a towed video sledge or drop camera, depending on the topography, and concentrating on areas of hard seabed. Here, the multibeam bathymetry data delivered by the geophysical survey proved a highly valuable asset to gear selection, allowing the topography and nature of the seabed to be assessed prior to deploying the video equipment. Epifauna will be identified and quantified from these video and photographic records by JNCC.

Throughout the groundtruth survey, the opportunity was taken to collect multibeam bathymetry and Acoustic Ground Discrimination System data during the transit between each sampling station. These data were intended to complement the acoustic data sets collected during the geophysical survey.