What socio-economic data do we need to collect to help inform the planning of marine protected areas?

Marine Theme Objective: Integrating Science into Marine Management

What's the problem?

The UK (and the Devolved Administrations) are in the process of planning a network of Marine Protected Areas (MPAs) to be delivered by 2012. Work is already underway to identify marine flora and fauna, habitats and geomorphological features which may be included within the MPA network. As part of the designation process socio-economic factors may be taken into account in the selection of sites (excluding Scotland), so we need to know where this activity occurs and when. The outputs from this research will assist those responsible for taking forward the planning of the MPA network in understanding where socio-economic activity occurs in UK marine waters. Once sites are selected, conservation objectives will be established for each site and these objectives will determine the level of protection needed. As such information on 'pressures' associated with different human activities will be important in setting the management measures.

What are the aims of the project?

This project provided data layers describing the spatial distribution of human activities occurring in UK marine waters. These data layers were also interpreted in terms of the pressure they generate (e.g. physical pressure on the seabed), which will help with both the designation and the management of MPAs.

This project developed a national fishing activity data layer for inshore waters from data collected by the Sea Fisheries Committees and Marine Management Organization (MMO).

A Geographical Information System (GIS) database comprising available data on the distribution and frequency of major activities associated with industries in England, Scotland, Northern Ireland, and Wales and UK offshore waters has been developed.

Activity data sets show a range of activities such as information on oil and gas infrastructure, renewable energy development, inshore and offshore fishing, and seasonal fishing areas. Data layers describing physical pressures will help identify areas where socio-economic activities interact with conservation features.

All information generated under this project has been made available to those responsible for taking forward the designation of MPAs in UK waters to support stakeholder engagement.

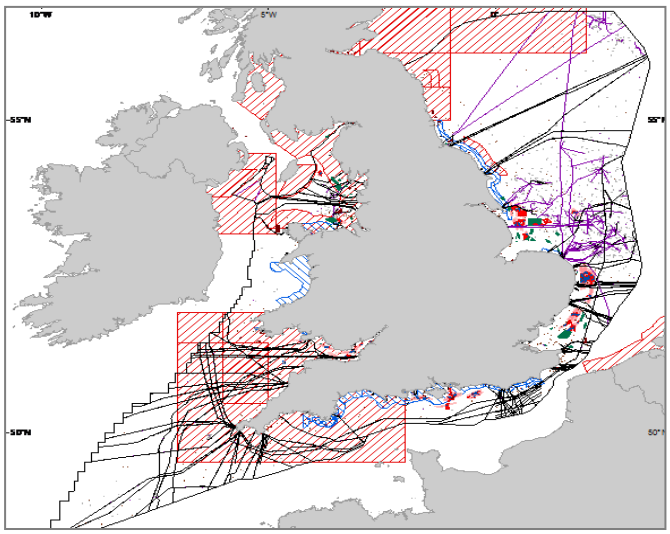

Figure 1: Human activities such as platforms, cables, pipelines, well heads, wind turbines, and wrecks causing obstruction of the seabed (source: Cefas).

Which policy areas will the research inform?

Information generated as part of this project will be important in supporting the selection of Marine Protected Areas and identifying their management needs. Outputs will also be used to inform a range of policy areas dealing with management of the marine environment, including the implementation of the Marine Strategy Framework Directive (MFSD) and the Marine and Coastal Access Act (and equivalent Marine Act in Scotland), which both consider marine planning as a key management measure.

JNCC Joint Nature Conservation Committee

DOE Department of the Environment www.doeni.gov.uk

The Scottish Government Riaghaltas na h-Alba

defra Department for Environment Food and Rural Affairs

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What are the results from the project and how will they be used?

The main outputs from this project have been the provision of a number of key data layers on socio-economic activities occurring in UK waters, e.g. oil and gas locations; renewable energy areas; archaeological sites of interest; fishing activity and closed areas. These data layers have been made available to the Regional Marine Conservation Zone Projects to take forward the identification of MCZ sites for Defra and the Devolved Administrations, for their own MPA selection process.

The project built on a GIS database already developed under a Defra funded project on the development of practical tools for marine planning (ME1420). As the focus of ME1420 had been in UK offshore waters, additional work was undertaken to provide data layers describing inshore fishing activity. Initially, an economic assessment of shellfisheries within inshore waters was undertaken at a relatively coarse scale. Further work brought together all observation data from Sea Fisheries Committees in England and Wales and the MMO to develop a National Inshore Fisheries Data Layer, the first of its kind. A methodology was developed to integrate the inshore data with offshore fishing activity data. Additionally, a GIS Toolbox was also developed to facilitate future data analysis by Sea Fisheries Committees.

Data layers have been produced for renewable energy resources (tidal, wind and wave areas), mariculture sites (aquaculture and shellfish), anthropological and archaeological sites (including the development of a data layer on location of wrecks) covering the UK Continental Shelf (UKCS) (inshore and offshore waters). Information on licensing /ownership, projection format, resolution and available spatial extent have been provided for each of the key human activities data layers. An assessment of how different activities affect the marine environment was undertaken by grouping physical pressures into generic pressure categories such as physical loss (smothering, obstruction and removal) and physical damage (physical disturbance and abrasion), following the categorisation applied in the EU MSFD.

This information will be important for the selection of sites as it will identify areas of greatest sensitivity to human pressures. The work will make a long-term contribution to sustainable development and contribute to the delivery of marine planning and a network of MPAs in UK waters.

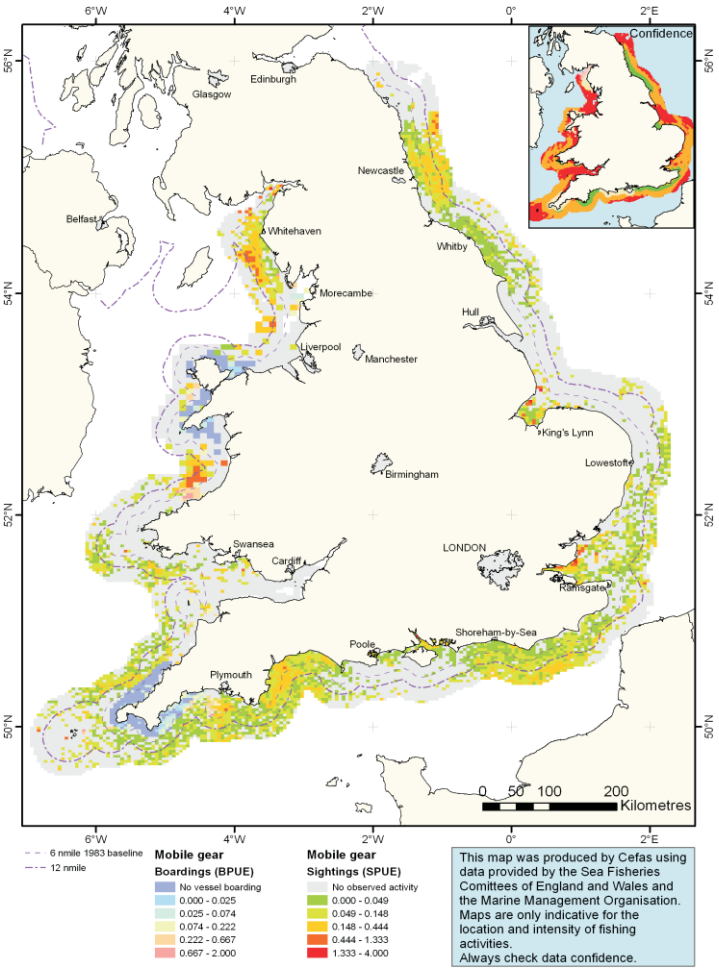

Figure 2: Example, output from the series of National Inshore Fisheries Data Layers developed under this contract. The map illustrates where highest fishing intensity takes place within inshore waters, mainly by vessels under 15 metres in overall length. (Source: Cefas)

Where can I find further information about this and related research?

Cefas (supported by ABPmer) are leading the development of these outputs. Contact Janette Lee at: janette.lee@cefas.co.uk. Details on the inshore fisheries component can be obtained from Koen Vanstaen at: koen.vanstaen@cefas.co.uk.

Alternatively, please contact the Marine and Fisheries Science Unit marinescience@defra.gsi.gov.uk.

Defra Science – did you know?

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