Aggregate Levy Sustainability Fund

Marine Environment Protection Fund

defra
Department for Environment Food and Rural Affairs

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MES

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British Geological Survey

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HR Wallingford

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ABP mer
marine environmental research

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Cefas administers the Marine Environment Protection Fund (MEPF) on behalf of Defra, which contributes to the second objective of the ALSF: 'promoting environmentally friendly extraction and transport' in the context of the marine environment. The following summarises the MEPF outputs to date, including the portfolio of current projects.

These projects regularly report progress to the Marine ALSF Distributing Bodies Steering Committee. Additionally, each research project has either a Co-Project Officer or a Steering Group to oversee progress against the project milestones to ensure delivery meets the requirements of the Marine ALSF. Progress on these projects will be communicated at the 2006 Marine ALSF conference

Marine ALSF Science Co-ordinator

Dr Richard Newell, MES, was appointed to this role in October 2004. The main objectives are: to provide "independent" science input to the commissioning of appropriate research; to monitor progress; to co-ordinate science activity across Marine ALSF Distributing Bodies to promote co-operation: and to ensure that best use of marine ALSF funds is achieved to meet the ALSF objectives. Dr Newell's progress reports and annual reviews are available at: www.seasurvey.co.uk/downloads

2005 Marine ALSF Technical Conference

This conference, organised by CMS and held in July 2005, attracted approx. 120 delegates. Outputs are available at: www.coastms.co.uk
Preparations are underway for the 2006 conference, which will be held at the National Oceanography Centre, Southampton, on 7 & 8 September. Further details of the conference are available from CMS or Cefas.

Assessment of the rehabilitation of the seabed following marine aggregate dredging

Project Leader: Dr Keith Cooper, Cefas

This project augmented the existing time-series of data at four contrasting extraction areas in order to provide further information on the time-scales for physical and biological recovery following cessation. The results have strengthened the quality of ongoing scientific advice to Government Departments, the marine aggregate extraction industry and other stakeholders. The aim was to extend research conducted under 'Rehabilitation of the seabed following aggregate dredging' (funded by the ODPM, Defra and The Crown Estate). This project, jointly funded by MEPF and The Crown Estate, was completed in Summer 2005 and the final report is available at: www.alsf-mepf.org.uk/projects

1 Defra logo.
2 MES logo.
3 British Geological Survey logo.
4 HR Wallingford logo.
5 ABP mer logo.

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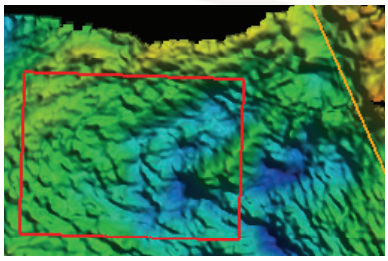

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Eastern English Channel seabed habitat mapping

Project Leader: Ceri James (BGS and partners)

This aim of the project is to provide integrated broadscale habitat maps for an extensive area within the central part of the Eastern English Channel in order to support the sustainable management of offshore resources.

The maps will be based on an inter-disciplinary approach, integrating geological, geophysical and biological data and interpretations, including new surveys using modern high resolution geophysical systems, ground truthed with sampling and video. The immediate driver is the discovery of substantial aggregate resources in this area and the requirement to manage the sustainable development of this resource and minimise potential impacts. The area of resource needs to be assessed within the broader context of the Eastern English Channel. The results will be available in GIS format and used by Government, Nature Conservation bodies and the aggregate industry to inform the planning process and aid in the effective development of the EC Habitates directive.

Successful geophysical and ground truthing survey were conducted during Summer 2005, and the results are currently being processed and interpreted. Further information is available at: www.alsf-mepf.org.uk/projects

Predictive Framework for Assessment of Recoverability of Marine Benthic Communities Following Cessation of Aggregate Dredging

Project Leader: Dr Jamie Robinson (MES)

The main objective of the study is to provide a framework for prediction of recoverability of biodiversity and community structure of marine benthos following cessation of dredging. This project will be quite different from traditional site-specific studies of 'recovery' over time. The latter are of importance for documenting restoration of physical and biological resources at specific dredge sites, but have proved to be of limited value in predicting the nature and timing of recovery in seabed deposits elsewhere, and moreover need to be continued for (unpredictable) lengthy periods until 'recovery' is judged to be complete. The output will be relevant to assessment of long-term 'risk' to biodiversity from marine aggregate dredging.

This is the first study to integrate analysis of population dynamics and growth data into the widely-used multivariate analysis of community composition used in benthic studies in UK waters. Analysis of samples and collation of data is underway, and further information is available at: www.alsf-mepf.org.uk/projects

4 Multibeam bathymetry.
5 Capitellid polychaete.
6 Assorted benthos.

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MARA - Marine Aggregate Extraction Risk Assessment Framework

Project Leader: Paul Sayers (HR Wallingford and partners)

The project aims to develop a practical risk assessment framework and associated guidance for assessing the risks caused by the exploitation of marine minerals. The approach considers both the nature of the impact and probability in determining the significance of different risks and will utilise both quantitative and qualitative methods. A key aspect of the risk framework is to recognise the importance of uncertainties and to provide guidance on appropriate strategies to deal with uncertainty within the decision-making process. The principles of DETR's Guidelines for Environmental Risk Assessment and Management will be presented in a framework for decision makers.

The main progress so far is the development of example applications of the risk assessment framework. Partners have been developing working examples of influence diagrams. Further details are available at: www.alsf-mepf.org.uk/projects

Coupling Physical and Ecological Models: A New Approach to Predicting the Impacts of Aggregate Extraction on Biological

Project Leader: Dr Steven Freeman (ABP mer)

This study is developing a new approach to predicting the impacts of aggregate extraction on the benthic environment. The approach will, for the first time, model the complex biological responses of recolonisation and recoverability to the physical processes associated with extraction activities (e.g. sediment transport, deposition and plume dispersion). The research will improve current assessment methods and provide new insights into the current state of knowledge, and fill the gap which presently exists between current numerical modelling capabilities and the level of sophistication needed to model the biological responses.

A technical report on developing a cellular-based model to capture the physical environment has been completed. A number of modelling scenarios have been performed showing the physical affects of a dredge trench. The technical development of the biological component is in progress. Further information is available at: www.alsf-mepf.org.uk/projects

7 Dredger at work.
8 Pomatoceros lamarki.
9 Grab sample.

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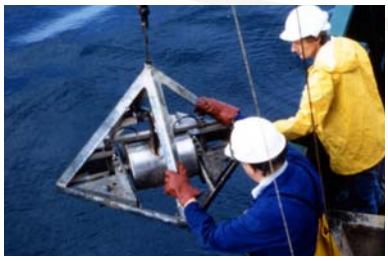

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Marine ALSF GIS Database Project

Project Leader: Jamie Moore (ABP mer)

This study will improve 'knowledge management' of marine aggregate project information via a web-based facility which will hold a live register of research studies structured as a spatial database and, where available, provide direct links to research outputs. Projects may be directly related to marine aggregates or associated to another sectoral interest, they may offer a UK context or be developed from an overseas study. The database recognises planned, current and past activities with associated funding bodies and research institutes. The use of GIS will be included to provide a means of assisting search facilities and determining areas which may be data rich or data poor.

Project progress includes the development of the database and webGIS and the sourcing of aggregate project information to populate the system. These items will be tested and verified during in a pilot study scheduled for Summer 2006. Further functionality will allow registered users to add references for current research projects into the database by completing online metadata forms. This will enable the dissemination of project information to a wider community and also ensure that the database remains as a contemporary resource after the project has been completed. The project has produced a range of reports and these are available along with further information and a discussion forum on the project website http://www.MarineALSF.org.uk/

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About Cefas

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 of working closely with clients to ensure that their needs are fully met. (www.cefastechnology.co.uk)

10 Grab being deployed.
11 Dredger and plume.
12 Digital sidescan.

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