

## Report on 13th EMSAGG meeting

EMSAGG held its 13th meeting at GSI's offices in Dublin on the 27th April. The EMSAGG strategy and key aims were reviewed and it was also agreed that the next EMSAGG conference should take place early in 2006. The group discussed the activity programme over the next year; with the aim to increase the activities of the group in exchanging information electronically and through more widely accessible group meetings.

## Beach recharge scheme wins top UK environmental award

Leading technical and management consultancy Babbie Group, as part of its Babbie Brown and Root (BBR) Joint Venture, has been presented with a CEEQUAL award (see companion story for information on CEEQUAL). The award is for the Littlestone to St. Mary's Bay Sea Defences Project in Kent, south east England. The project was promoted by the UK's Environment Agency, which also received the award, with funding from the Department for Environment and Rural Affairs.

BBR designed and supervised the ongoing works with the outline and detail design works being completed in only 14 months, including planning consent and public consultation. This allowed construction to start in June 2002. Due to the scale of the scheme, the works were split in two phases. The first phase consisted of the rock works and the delivery of 82,000m<sup>3</sup> of shingle. Phase two included the delivery of a further 158,000m<sup>3</sup> of shingle.

The construction work was carried out by a joint venture of Westminster Dredging and Van Oord ACZ. The Phase 1 shingle delivery was carried out using the "Volvox Scaldia" dredger, which

discharged, onto the beach via a 450m floating pipeline. During the Phase 2 works the "Volvox Scaldia" was joined by the "Sospan Dau" dredger, which delivered shingle onto the beach, by rainbowing, reprofiling was then undertaken by land-based machinery.

The new beach will be managed through a regime of annual recycling from areas of accumulation to areas of erosion. The third and final phase begins in the summer of 2004 and involves the upgrading of the hard flood defence by raising the seawall. The seawall works will be carried out by the Agency's National Framework Contractor, Van Oord/Mackley. This contractor has been involved in the design development and helped provide value engineering on the project.

Receiving a mark of 91.9% from the CEEQUAL judges, the project was commended for its effective approach to environmental management in the scheme design, implementation and site management. The Littlestone scheme is currently on schedule and within budget, thanks to the project partners.



Photo courtesy of D Bowie, Babbie

**CIRIA, Classic House, 174-180 Old Street, London EC1V 9BP**  
Tel: +44 (0) 20 7549 3300  
Fax: +44 (0) 20 7253 0523  
email: [craig.elliott@ciria.org](mailto:craig.elliott@ciria.org)

## CEEQUAL: A new Civil Engineering Environmental Quality Assessment and Award Scheme.

CEEQUAL is an UK based awards scheme assessing the environmental quality of civil engineering projects a civil engineering equivalent to BREEAM (BRE Environmental Assessment Method) for buildings. It is being promoted by ICE, BRE, CIRIA and a group of committed industry organisations. Its objective is to encourage the attainment of environmental excellence in civil engineering projects and thus delivering improved environmental performance in project specification, design and construction.

CEEQUAL uses a credit-based assessment framework, which is applicable to any civil engineering project and includes environmental aspects such as the use of water, energy and land as well as ecology, landscape, nuisance to neighbours, archaeology, waste minimisation and management, and community amenity.

A CEEQUAL award publicly recognises the achievement of high environmental performance. Awards are made to projects in which the clients, designers and contractors go beyond the legal and environmental minima to achieve distinctive environmental standards of performance.

Visit [www.ceequal.com](http://www.ceequal.com) for more information.

## An update on marine aggregates in Belgium

1.63 and 1.65 million m<sup>3</sup> of marine aggregates were extracted from Belgian waters in 2002 and 2003 respectively. Simultaneously, exports of marine aggregates from Belgium have decreased from 12.1% in 2001 to 11.0% in 2002 and 9.3% in 2003. The contribution of aggregates extracted from the Kwintebank to the overall production

in Belgium has decreased from 90% in 2001 to 80% in 2002 and 76% in 2003.

New Belgian legislation concerning marine sand and gravel extraction is scheduled for approval and publication by the middle of 2004. Changes will be made to the procedure for obtaining a concession and these will include a requirement for an environmental assessment report. The delimitation of the proposed extraction areas will be modified and there will be a greater focus on environmental issues, while taking into consideration the economic interests of industry. An extended article on these changes will be published in the next issue.

## The Outer Bristol Channel Marine Habitats study

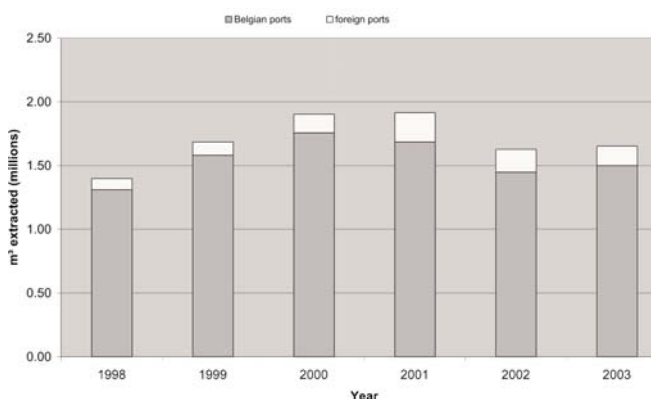
The Outer Bristol Channel is an area that may have marine aggregate resource potential in the future. The aim of the Marine Habitat Study is to address the lack of broad-scale biological and geological data for the Outer Bristol Channel.

Policy and decision-making for potential developments in the marine environment requires knowledge of the current physical and ecological state of the area under consideration. This includes developing an appropriate understanding of the morphology, geology, biology and sediments of the seabed. Baseline information is essential for strategic management and the conservation of biological diversity. Responsible stewardship requires an understanding of the way the marine environment functions and how the sea may respond to human activity. It also means involving stakeholders as an integral part of policy making. This study, lead by the British Geological Survey (BGS) and the National Museums & Galleries of Wales (NMGW) was designed to deliver this key information and further demonstrate the commitment to robust assessment of the seabed.

Study programme and objectives:

The study included six main work phases:

1. A marine geophysics survey with multibeam, sidescan and sub-bottom seismic reflection systems.
2. A sediment and benthic fauna survey.
3. Through co-operation with other organisations actively seek to gather and utilise any multibeam, geophysical and biological data available in the Outer Bristol Channel.
4. Integrate new and archive geophysical, geological and biological survey data to produce comprehensive interpretations of marine species, habitats and biodiversity distributions within the study area.

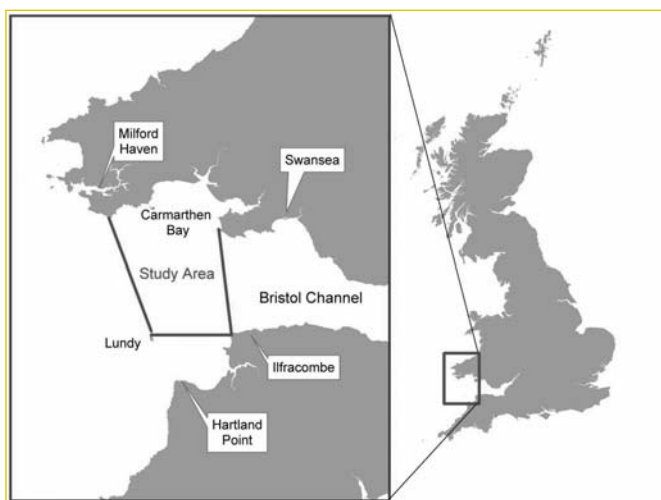


5. Provide physical, geological and biological data as baseline criteria for the sustainable development of seabed resources, including fisheries, aggregates and wind farms. Inform the planning and regulatory process with regard to marine conservation, and national and EU legislation.
6. As well as providing key information through maps, reports and scientific publications, the project will also seek to make its results available to a wider audience. This will be achieved by disseminating findings through a bilingual multimedia CD-ROM, web pages, museum exhibition and outreach awareness sessions at education institutions (Universities, colleges, schools), societies and interest groups throughout Wales particularly around the survey area (south west Wales).

## Surveys

A two-week cruise in July 2003 sampled at 136 sites using the RV Prince Madog (University of Wales Bangor UWB). This comprised of 114 biological stations, 121 sediment samples, and a series of 12 underwater video/photographic tows taken by Ivor Rees (Univ Wales Bangor). A team of five has been employed since October to sort and help identify the invertebrate animals in the samples.

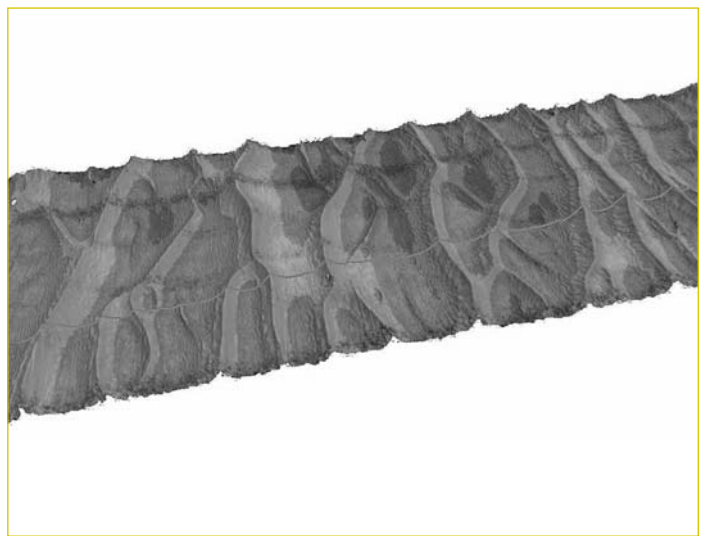
In early November 2003, a two-week geophysics cruise by BGS obtained multibeam data and, despite the generally poor weather, sidescan data was also collected. However, the boomer sub-bottom reflector system could only be deployed on one line because of the sea conditions. Further geophysics and sampling is planned for the summer of 2004.



Location of Outer Bristol Channel Marine Habitat Study (Source Sally Philpott, BGS)

## Funding

The study is a three-year programme, which is planned to be completed in March 2006. The principal funders of the study are the Aggregate Levy Sustainability Fund for Wales, which is administered by the Welsh Assembly Government, and the Sustainable Land Won and Marine Dredged Aggregate Minerals Programme of the Office of the Deputy Prime Minister. The Crown Estate and the British Marine Aggregate Producers Association have supported the study with some funding and contributions of data. The Maritime and Coastguard Agency and Llanelli Sand Dredging have also provided data.



Outer Bristol Channel - sand wave field (Source BGS)



Sea bed image - sand, gravel and hydroids (Source Ivor Rees UWB)

Article by: Ceri James, British Geological Survey & Andrew Mackie, National Museums & Galleries of Wales.

# TASS – Turbidity Assessment Software

To improve our ability to predict sediment release during dredging, the Dutch dredging industry, through SSB (Stichting Speurwerk Baggertechniek) and Rijkswaterstaat, has commissioned new research to produce a software package for use by all key stakeholders in the aggregate production process, including regulators and the industry alike.

The software, known as TASS, predicts sediment release and the initial dynamic behaviour of the sediment plumes in a logical manner and in broad agreement with the sparse field data. The TASS project is being carried out by HR Wallingford and DRL.

The research has sought to identify all of the mechanisms by which sediment is released during dredging and to develop models that predict the rates of release. Use has been made of previous research efforts in this field and in some cases predictive models already exist (e.g. overflow losses from trailer dredgers) . However, in most, little theoretical work has been done. In all cases, accurate field measurements of losses are not available, although some measurements are available which can be used to derive an initial "order of magnitude" calibration.

A detailed review of published reports on sediment release from dredging operations revealed that field measurement methods were inconsistent and frequently failed to collect all of the data required to assess losses with different types of plant working in different soil and rock conditions. The inconsistencies prevent direct and meaningful comparison between the measurements and thus reduce their value. As a result of this work, protocols have been developed for each of five dredger types, grab, cutter suction, bucket ladder, backhoe and trailing suction hopper.

Two field trials have been carried out, one on a grab dredger working in the R. Tees, UK, the other a trailing suction hopper dredger working at Rotterdam, Netherlands. International co-operation is presently being sought to assist with the large number of calibration exercises that are required to give confidence in the models.

Future work will focus on gathering accurate field measurements of sediment release, using conventional and innovative methods, to calibrate and refine the predictive components of the software package. Currently the SSB and Rijkswaterstaat are focusing on trailing suction hopper dredgers. In the next few years, five field trials will be carried out around this kind of dredger to provide a calibrated and validated TASS model.

Article by: Gerard Loman, Boskalis.



CIRIA has published the following guidance *Scoping the assessment of sediment plumes from dredging (C547)* on plume addressing, which aims to address how plumes should be assessed. The report also outlines the necessary components of a structured framework for assessing the environmental effects arising from dredging plumes and considers the steps required to inform the decision-making process. This guidance is available from CIRIA's online bookshop, [www.ciria.books.com](http://www.ciria.books.com)

#### EMSAGG is supported by: (\*funders of EMSAGG)

Babtie  
BMAPA  
Boskalis Westminster Dredging NV\*  
British Geological Survey  
CIRIA\*  
Crown Estate  
Dekker Zandbaggerbedrijf BV\*  
Department of the Marine and Natural Resources (Republic of Ireland)\*  
DHI – Water and Environment  
Geological Survey of Ireland  
Ifremer  
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Netherlands Institute of Applied Geoscience TNO