

## Current research

### Guidelines for the conduct of benthic studies at aggregate dredging sites

The Centre for Environment, Fisheries & Aquaculture Science (CEFAS) has published guidelines, on behalf of the UK Office of the Deputy Prime Minister, on the conduct of benthic surveys at commercial aggregate extraction sites. The guidelines aim to facilitate consistency of approaches among consultants when carrying out baseline and monitoring surveys, and to foster compatibility between ongoing regulatory monitoring activity and related R & D. This document is targeted at experienced marine scientists working on behalf of the aggregate extraction industry or the regulator.

Copies of the report (Boyd, 2002) are available from [www.planning.odpm.gov.uk/benthic/index.htm](http://www.planning.odpm.gov.uk/benthic/index.htm) or [www.cefas.co.uk/publications/02dpl001.pdf](http://www.cefas.co.uk/publications/02dpl001.pdf)

### Marine aggregate dredging and the historic environment

The British Marine Aggregate Producers Association (BMAPA), in conjunction with English Heritage and the Royal Commission for Historic Monuments of England, have sponsored three projects considering the marine historic environment and its relationship to marine aggregate development. These are:

- a technical guidance note (by Wessex Archaeology), to assist with the assessment, evaluation, mitigation and monitoring of the archaeological effects of marine aggregates dredging
- an examination of the potential for palaeolithic and mesolithic archaeology to be found upon the seabed and within marine aggregate deposits on the UK continental shelf
- a GIS-based project attempting to broadly characterise marine archaeological potential on the shelf from the Isle of Wight to the Humber.

The results of these will be available late 2002, see [www.bmapa.org.uk](http://www.bmapa.org.uk) for further details.



Source: BMAPA

### BMAPA publishes research on the impact of marine aggregate dredging

BMAPA recently published the results of its research project, undertaken by Marine Ecological Surveys Limited, investigating the biological impact of marine aggregate extraction. As well as the direct impacts of aggregate dredging, the study has considered effects associated with screening.

The study area was an existing production licence, located in the southern North Sea, 100 km off the Humber. Some of the findings are listed below.

- many macrofauna present are opportunistic species, capable of rapid rates of recolonisation and recovery following disturbance
- biomass within actively dredged areas was suppressed by up to 83 per cent, however the variety and numbers of species present were similar to those in adjacent, non-dredged areas, suggesting rates of recolonisation by larvae and juveniles in surrounding deposits are sufficient to allow rapid restoration
- there was evidence of change in the relative dominance of some components of the macro fauna community
- in adjacent, non-dredged areas where effects of screening processes may be expected, species variety and population density remained largely unchanged
- analysis in previously dredged areas suggests that the restoration of the biomass is largely accomplished within 12 months of the cessation of dredging.

A full copy of the final report can be downloaded from the BMAPA website [www.bmapa.org](http://www.bmapa.org)

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

BMAPA\*  
Royal Boskalis Westminster 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  
Ministry of Economic Affairs (Belgium)  
Ministry of Transport, Public Works and Water Management, North Sea Directorate\*  
National Forest & Nature Agency (Denmark)  
Netherlands Institute of Applied Geoscience TNO

This is the sixth bi-annual bulletin of the European Marine Sand And Gravel Group (EMSAGG). The aim of these bulletins is to promote the sharing of information and experience relating to commercial extraction of marine sand and gravel throughout Europe.

EMSAGG is an international group made up of organisations spanning an area of interest from the Atlantic to the Baltic. Membership of the group includes national governments, regulators, dredging and aggregate companies, conservation bodies, academics and research institutions.

## In this issue

- EMSAGG News
- Marine aggregate extraction figures
- UK planning guidance on aggregates
- Sand pit morphology research
- Dredging and its impacts and effects
- Guidance on conduct of benthic studies

## EMSAGG conference update

The EMSAGG conference will be held on 20-21 February 2003, Delft University, The Netherlands. The conference includes 17 presentations from six European countries and a site visit to Hanson Aggregates Amsterdam - Europe's newest and largest marine sand and gravel processing plant outside the UK.

If you require further details please contact Elizabeth Holliday at CIRIA.

## Request for articles

EMSAGG's geographical remit covers North-West Europe, and this bulletin is primarily concerned with the issues and news of dredging activities in this area. However, in keeping with its aims of sharing information and experience relating to the commercial extraction of marine sand and gravel, EMSAGG plans to produce a one-off special international bulletin next issue. If you have any news or information of interest to NW Europe from outside this area and would like to provide an article, please contact Elizabeth Holliday at CIRIA.

*If you wish to contribute to future issues of this bulletin or would like to know more about EMSAGG, please contact Elizabeth Holliday at CIRIA*

## EMSAGG meeting, IFREMER, 25 April 2002

Ifremer hosted the ninth bi-annual EMSAGG meeting. Following the discussions the group enjoyed an interesting tour around Ifremer's research facilities.

Ifremer ([www.ifremer.fr](http://www.ifremer.fr)) is the French research institute for the exploitation of the sea, established in 1984. Ifremer develops research, expertise and technologies in the:

- identification, evaluation, forecasting and sustainable exploitation of marine resources
- development of more efficient methods for the monitoring, forecasting, protection and enhancement of marine and coastal environments
- encouragement of the economic development of maritime activity.

One of Ifremer's roles is to assess the validity of environmental impact studies carried out by marine aggregate producers when submitting their licence applications.

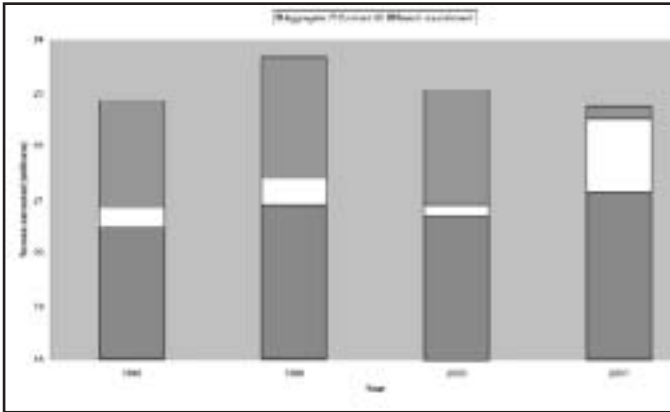


**CIRIA** 1-2 Castle Lane  
Westminster London SW1E 6DR  
Telephone: +44 (0)20 7828 4441  
Fax: +44 (0)20 7828 4055  
[www.ciria.org.uk/emsagg](http://www.ciria.org.uk/emsagg)  
email: [elizabeth.holliday@ciria.org.uk](mailto:elizabeth.holliday@ciria.org.uk)

## Spotlight on Europe

### France

Marine aggregate extraction has been stable over the past decade (as shown by the chart below) with an annual production of around 2.4 million m<sup>3</sup> of siliceous sand and gravel and carbonate sands.

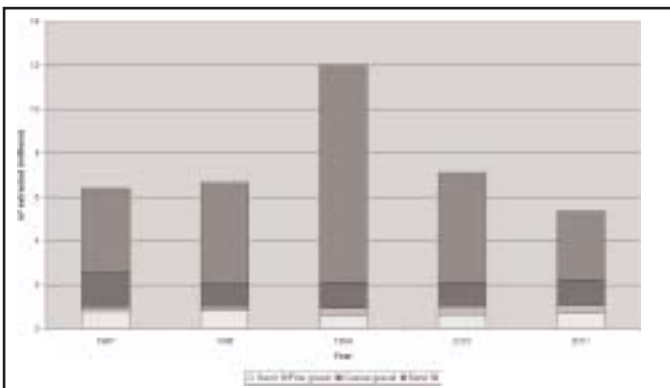


Source: ICES

### Denmark

Dredging takes place in number of environmentally designated areas in the Baltic, the Inner Danish Waters and the North Sea. The production of construction aggregates has been relatively stable in the last five years, however, the production of coarse aggregates has been slightly decreasing. Dredging of sand fill for land reclamation has increased markedly over the last 10 years due to several major marine infrastructure projects and harbour expansions.

The extraction of sand for beach nourishment on the west coast of Jytlund has shown a pronounced increase since 1980 (40 000 m<sup>3</sup>) and extraction has now stabilized at 2.5 million m<sup>3</sup>/year.



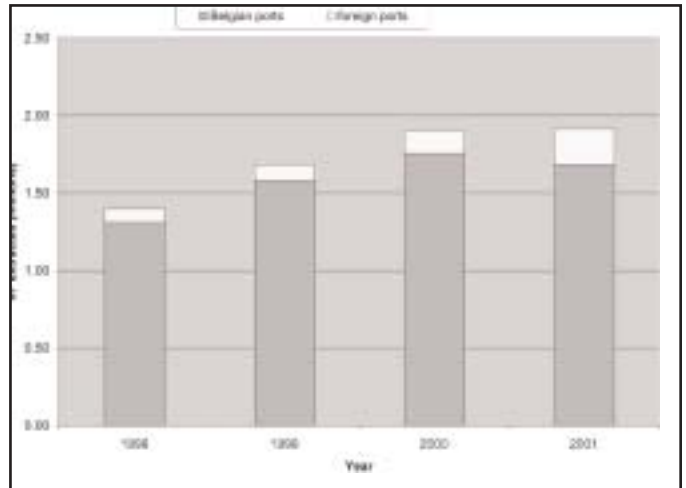
Source: Danish Forest and Nature Agency

### Belgium

Last year 1.91 million m<sup>3</sup> (approximately 3 million tonnes) of marine aggregates were extracted in Belgium. This is a status quo compared to the figures for 2000.

The landings in Belgian ports decreased by nearly 5 per cent compared to the year 2000, however, the landing in foreign ports increased by more than 50 per cent, reaching nearly 12 per cent of the total production in 2001.

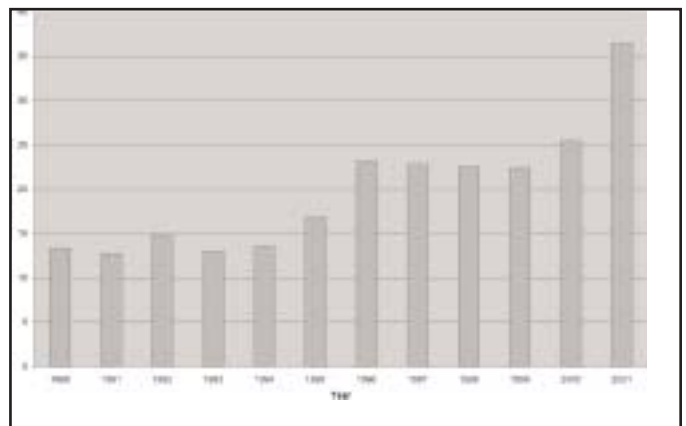
Almost 90 percent of the aggregates were extracted on the Kwintebank, the remaining being equally distributed over the other sandbanks in the two extraction areas. For further information see [www.sandandgravel.com](http://www.sandandgravel.com)



Source: Fund for Sand Extraction

### The Netherlands

In 2001 36.4 million m<sup>3</sup> were extracted from the Netherlands Continental Shelf, 35 per cent of this taken from the approaching channels to harbours of Rotterdam and Amsterdam. Of this 36.4 Mm<sup>3</sup>, 13.14 Mm<sup>3</sup> was used for coastal nourishment project.



Source: ICES

### UK

Over 22.7 million tonnes of marine aggregates were extracted from Crown Estate licences during 2001. Bulletin 5 featured a full article on the UK's dredging statistics and copies can be obtained from CIRIA or the EMSAGG website [www.ciria.org.uk/emsagg](http://www.ciria.org.uk/emsagg) Alternatively see [www.crownestate.co.uk](http://www.crownestate.co.uk)

## UK planning guidance on aggregates

Policy for supply of aggregates is currently contained in Minerals Planning Guidance Note 6 *Guidelines for aggregates provision in England* (1994).

This is now out of date because:

- the demand estimates used have proved to be too high compared with actual production/demand
- significant developments in both European and UK legislation/policy, and the introduction of economic instruments, have taken place since 1994.

Work began on replacing the guidance in 2000. This was delayed so that the new guidance could provide a more concise statement of key policies linked into the reforms of the planning system set out in the green paper *Planning - delivering a fundamental change*. In the meantime, revision of demand estimates and quantitative regional supply guidelines was set in hand. A consultation paper containing draft guidelines for aggregates provision in England (2001-2016) was published in August 2002. This suggested that national supply should be approximately 24 per cent lower than the 1994 figures (reflecting actual production levels) at the start of the period, growing slowly thereafter. The consultation ended on 4th November and responses are now being analysed. It is hoped that the finalised guidelines will be published before Easter 2003.

Priority is also being given to replacing MPG1 *General considerations and the development plan system*, setting out national policies in respect of all minerals, with public consultation planned for late 2002/early 2003. Subsequently, attention will be turned to providing brief guidance on national policies for aggregates.



Source: BMAPA

Research projects relating to marine sand and gravel currently being undertaken or those that have been recently completed by EMSAGG members and organisations associated with EMSAGG.

## Current research work by Ifremer

Ifremer has initiated a research program aimed at understanding the impact on the bottom morphology of sand pits in shallow water, in order to predict long-term evolutions and reduce negative impacts, due to poor coastal management.

Several physical models have studied the effects of sand pits in a wave tank (Migniot and Viguiere, 1983) and numerical models are now available to understand quantitatively how the different physical parameters interact in long-term morphological evolutions.

Ifremer have embarked on testing the ability of a state-of-the-art morphodynamic model to reproduce the morphological evolutions monitored in a wave tank (Migniot and Viguiere's experiments, 1983). Simultaneously, they will apply the model to a real site for which morphological evolutions have been monitored over 15 years, in order to compare observed evolutions with modelled hind-cast predictions.

The study aims to establish a methodological guide based on simulations run in different environments (for example, different wave climates or sediment types) in order to define a number of indicators to be investigated within an environmental impact study, along with accepted values for these indicators.

Reference: Mignot C and Viguiere J, 1983, *Analyse par simulation des effets sur le littoral de l'ouverture de souilles destinées à l'extraction de granulats marins*. Maisons-Alfort: Rapport LCHF, CNEXO, DDE Pyrénées Atlantiques, Service Central Technique

## Correction:

In Bulletin 5, EMSAGG reported on A novel seabed classification system for downward, forward-, or side-looking sonar. The results of this sea trial were omitted from the article. To correct this, the full article has been enclosed with this issue of EMSAGG. We apologise for any confusion.