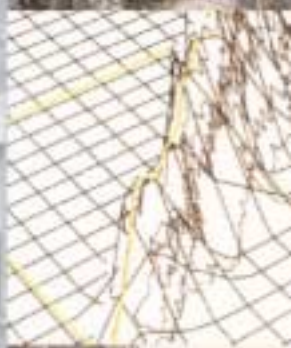
THE CROWN ESTATE

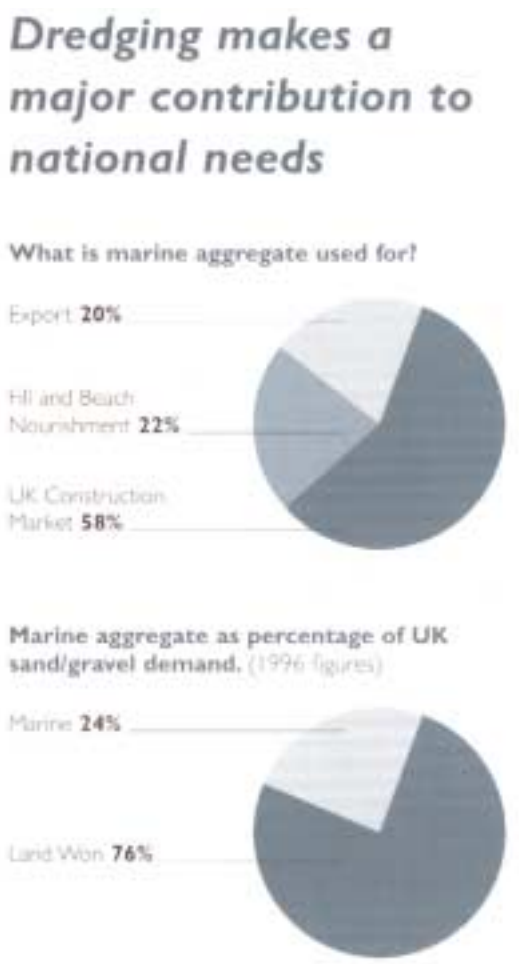
BMAPA

SEABED DREDGING

THE AREA INVOLVED



In the past thirty years the UK marine aggregate industry has become a major supplier of sand and gravel for the UK and European construction industries and domestic coastal protection schemes. Its impact on the seabed is carefully considered and control of the industry's activities is effectively managed and closely monitored.



Marine aggregate resources are geographically well defined

Sand and gravel deposits on the seabed that comply with BS 882 quality standards are not widespread. Economic factors, technical constraints and the occurrence of suitable deposits of sand and gravel dictate the location of dredging areas. Distance from the licence area to the point of landing and market is critical in determining the commercial viability and competitiveness of marine aggregates. Water depth is also fundamental, dredgers can work in a maximum water depth of 50 metres but most extraction takes place between I 0 and 35 metres. These factors have led to a concentration of dredging licences in areas such as the Outer Thames Estuary, off Great Yarmouth and around the Isle of Wight, and their absence in others, for example Lyme Bay and the western approaches.

The area licensed is a tiny percentage of the seabed

The total area of seabed where licences permit dredging and where extraction may take place is equal to 0.8% of the UK Continental Shelf. The actual area dredged each year is only 0.1 2%. Even when considered on a regional basis the areas are small particularly when compared with trawling for fish. The International Council for the Exploration of the Sea (ICES), a fisheries research and protection organisation, state in their I 992 report that only 0.03% of the North Sea is dredged for aggregates each year compared with the trawling of fish, which affects the seabed in a similar way to dredging and covers 54% of the North Sea.

The area dredged is less than l5% of the area licensed

The area of seabed dredged and the tonnage extracted compared with the area licensed and the maximum level of permitted extraction vary widely from licence to licence and region to region These differences mainly reflect:

The distribution of sand and grovel
These can be in well defined areas or in irregular shaped patches with intervening areas of nonproductive seabed. This limits the area of a licence that will be actually dredged.

Material quality
Some reserves are only acceptable for one-off contracts with some licensed areas only being used occasionally.

Market demand
This varies significantly from year to year and can be strongly influenced by major infrastructure projects such as road, rail and development schemes, and beach nourishment requirements.

Area of seabed licensed in 1997

Region	Approximate* Area of Seabed/km2	Total Area Licensed for Dredging/km2	% of Seabed Licensed	Total Area Dredged Annually km²	% of Licensed Seabed Dredged Annually
Humber	90,000	468.5	0.52	51.3	11.0
East	10,000	404.5	4.05	98.4	24.3
Thames	I0,000	328.6	3.29	26.0	7.9
South	40,000	311.9	0.83	36.6	11.7
South West	30,000	51.5	0.117	18.5	35.9
North West	20.000	96.2	0.48	0.89	0.9
Total	**200,000**	**1661.2**	**0.83**	**231.7**	**14.0**

* east of Scilly Isles.

We are doing more to reduce the area licensed and the area dredged

Even when a positive Government View has been issued and a licence granted, the licensees organise their dredging to reduce as far as possible the impact on other sea users, particularly fishermen.

Zoning
Restricting dredging to only part of a licence area this effectively reduces the area of seabed available for dredging at any one time by 33%.

Seasonal restrictions
These arrangements prohibit dredging from part or whole of a licence area during a period of the year to allow access for fishermen.

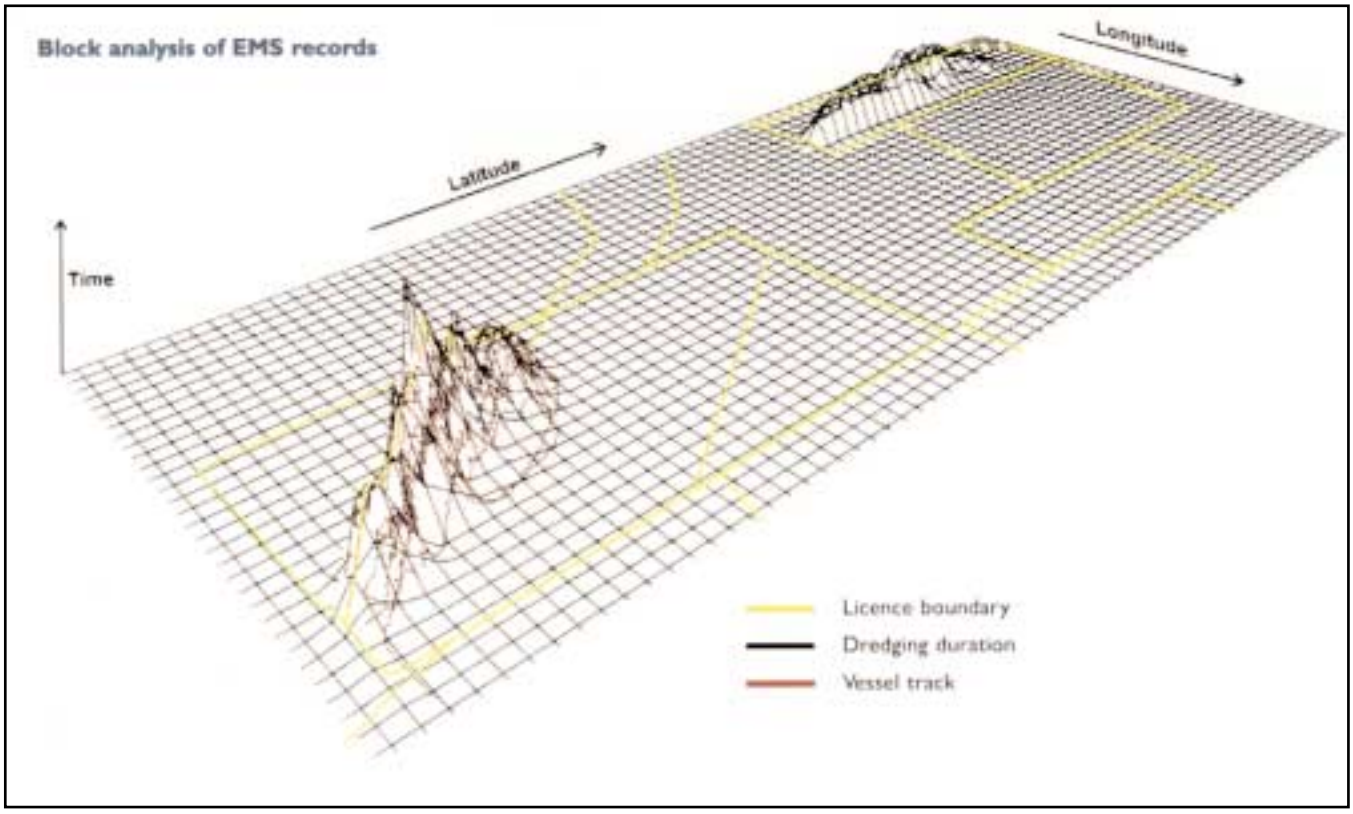
Shoring resources
By extracting resources through joint or shared licences more than one company's requirements can be met from a single area. This effectively shortens the licence period and reduces the area of seabed worked at any one time.

Accurate dredging
Modern dredging vessels are very sophisticated and can dredge with a high degree of precision using satellite navigation systems. Analysis of Electronic Monitoring System (EMS) records shows that more than 90 % of material is extracted from only I 0% of the area licensed.

Dredging is closely monitored

Since I 993 every vessel dredging on a Crown [state licence has been fitted with an Electronic Monitoring System(EMS) which automatically records the date, time and position of all dredging activity on a computer disk. These records are analysed to give precise details of the area of seabed dredged.

EMS records of a dredger's position



We will continue to ensure that the impact is restricted by striving for maximum efficiency in the area dredged

Regular Resource Surveys
The use of modern survey methods means that the resources available can be identified and targeted more accurately increasing the efficiency of use of licensed areas.

Licence Monitoring
The effects of dredging will continue to be monitored to a very high standard and will be used to develop management plans.

Research
Research into the effects of aggregate extraction on the marine environment will continue to be funded by the Crown Estate and the dredging industry and the results made available to all concerned.

Background

Dredging offshore for aggregates began in the early Twentieth Century but it did not reach a significant scale until the 1 970s as markets for marine aggregates expanded and dredging technology improved.
Al most all marine aggregate extraction takes place from licences on seabed owned by the Crown Estate. Planning permission is granted by the Department of the Environment, Transport and the Regions or the Welsh/Scottish Office under the Government View Procedure. The Crown [state will only grant a licence following a favourable Government View.

The Crown Estate

The Crown Estate is a landed estate including more than I 20,000 hectares of agricultural land in England, Scotland and Wales, substantial blocks of commercial property (primarily in London) and an extensive marine estate covering 55% of the foreshore and all of the seabed out to the I 2 mile Territorial Limit. Its origins date back to the reign of King Edward the Confessor
The Crown Estate is part of the hereditary possessions of the Sovereign "in right of the Crown" managed under the provisions of the Crown Estate Act I 96 I by the Crown Estate Commissioners who have a duty to maintain and enhance the value of the Estate and the income derived from it. The net revenue surplus is paid to the Exchequer

BMAPA

The British Marine Aggregate Producers Association (BMAPA) was formed in I 992 and comprises members of the Quarry Products Association with a marine interest. The UK operates around 35 vessels on 78 production licences around the UK. The vessels are almost entirely British registered and carry British crew. BMAPA represents the industry and its members are: ARC Marine Ltd, Britannia Aggregates Ltd, British Dredging Aggregates Ltd, Kendall Bros. (Portsmouth) Ltd, Northwood (Fareham)Ltd, Norwest Sand and Ballast Company Ltd, South Coast Shipping Company Ltd, United Marine Dredging Ltd, East Coast Aggregates Ltd.

THE CROWN ESTATE
The Crown Estate 16 Carlton House Terrace London SW1Y 5AH
Marine Estates Telephone: 0171 210 4322
Email: Marine Estates Manager@crownestate.co.uk
Web site: http://www.crownestate.co.uk

BMAPA
British Marine Aggregate Producers Association
156 Buckingham Palace Road London SW1W 9TR
Telephone: 0171 730 8199
Fax: 0171 730 4355