



Britain is a trading nation



Everybody needs **good neighbours**

WHILE the majority of aggregates dredged from our shores go towards meeting UK demand, a third is exported to our European neighbours. The greatest demand comes from Holland, to which we supply over 3.5 million tonnes of material every year for construction purposes.

Although the Dutch have fairly plentiful supplies of sand on their continental shelf and their production is twice that of the UK, they have a shortage of gravel. In 2004, Holland dredged over 36 million tonnes of sand, of which 3.6 million tonnes was exported. The Dutch have traditionally dredged riverbeds for gravel, but the resources are diminishing and licenses are harder to secure. The UK – along with Germany in particular – supplies them with a vital resource.

Its evidence can be seen in a number of important construction projects over recent years. A new metro tunnel connecting the

residential north of Amsterdam with the more industrial south is expected to be complete in 2011. For the thousands of Dutch workers who commute every day, this 9.5 kilometre track, with trains running every four minutes during rush hour, will provide the missing link in the subway system. It is a significant project requiring 500,000 cubic metres of concrete – made using marine aggregate supplied by the UK industry.

Over double that amount of concrete has been used in another major Dutch project. A small, increasingly crowded country, the Netherlands is suffering acutely from the growing demands on its infrastructure. Congestion at its airport near Amsterdam – a major hub between European centres and worldwide destinations – is already an issue.

The problem has been helped considerably by a new high-speed railway link between Antwerp in

Belgium and Amsterdam. It has been incorporated into the growing European rail network, and cuts the Amsterdam – Paris journey time from almost 4.5 hours, to just over three hours. The track is designed so that each pair of rails is built into a u-shaped concrete bed, with transparent raised sections that help to reduce noise.

Marine aggregates from the UK have played a major role in each project. Andrew Bellamy, resource manager for United Marine Aggregates, is resolute about the need to export aggregates: 'Provided new licences are granted there are ample reserves on the seabed to serve UK demand and also to make a contribution to that of continental countries. We are part of the European Union, and as such, a trading nation that needs to import and export a variety of minerals. We buy minerals from the Continent that we lack, and so we need to reciprocate.'



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BMAPA is one of the constituent bodies of the Quarry Products Association, the trade association for the aggregates, asphalt and ready-mixed concrete industries.

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an update from the British Marine Aggregate Producers Association

Backing Britain

Marine aggregate may be a low-key industry but the projects it underpins are crucial to the achievement of the government's strategy, and especially to regeneration.

OF all those backing the bid to bring the Olympics to London, few have a more important role than the marine aggregate industry.

But even if the games go elsewhere, the regeneration of a massive 40-mile long swathe of Thameside still rests heavily on a dedicated fleet of dredgers – and on their capacity to deliver sand and gravel from the seabed. It's a similar story in areas like South Wales, the south coast, the north east and even Liverpool Bay, where an inconspicuous industry is substantially underpinning visionary projects.

'The need has never been greater,' says BMAPA chairman, Martin Drury. 'We make an essential contribution to sustaining the economy and quality of life across much of Britain.'

We, therefore, welcome the news (as this review went to press) that the Office of the Deputy Prime Minister has given three long awaited – 'positive' government views, to applications in the English Channel.

The plans for regeneration and sustainable community projects like Thameside Gateway rest very heavily on our ability to draw on new resources like these into the future.

'Like any capital intensive industry, we need to have confidence about our future in order to justify heavy investment. In our case, we are talking in particular about ships that cost in excess of £20 million a time. The additional demands of working in deeper waters further from shore mean that we must continually

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Supplying Welsh needs 24 hours-a-day

No harm to Welsh beaches

In doubt during a recent policy review, the future of the marine aggregate industry off South Wales is now looking assured

BMAPA has welcomed the emergence from the Welsh Assembly Government of a new policy on dredging in the Bristol Channel and Severn Estuary.

While confirming that the industry must look progressively further from shore over the next ten years, Environment Minister, Carwyn Jones, has made clear that the industry has an important long-term role to play in the Welsh economy.

'Independent studies do not support claims that dredging harms our beaches,' he said. 'But I believe that moving dredging further offshore and to the outer channel areas better fits our policy on sustainable development.'

'Stopping dredging altogether is not an option. It is vital to the Welsh economy that the construction industry has an adequate supply of minerals. It is unlikely that, in the foreseeable future, marine-dredged sand could be replaced to any great degree from other sources.'

BMAPA's Ian Selby said that he and his colleagues welcomed the greater certainty provided by the new policy. 'We are very pleased that the Minister has confirmed that dredging does not harm beaches and that he has given us a mandate and a framework for the future,' he said. 'We have yet to see how well the policy works, but it is certainly a step in the right direction.'



The Children's Hospital for Wales – sand from the seabed

A key feature of the new policy is the establishment of six categories of 'sediment environment which are correlated with policy guidance'. While site-specific assessment is needed, this provides operators with preliminary guidance on which areas are likely to be looked upon favourably for dredging and which can usually be considered 'no go'.

Since 1996, dredging has provided over 85 per cent of the natural sand needed in south Wales

– the great majority of it blended with crushed rock for use in concrete. Sand landed at wharves in the region is valued at some £9 million a year, also supporting around 1,700 direct and indirect jobs.

Welsh projects that have relied upon marine sand include the new Children's Hospital for Wales in Cardiff. Opened in February 2005, it will treat 8,000 sick children as inpatients each year and a further 20,000 as outpatients.

Ships for tomorrow



RMC Marine's Sand Falcon has been adapted to allow her to dredge to a depth of 50 metres

THE need for new investment is one of the big issues facing the marine aggregate industry as it looks at how best to satisfy the UK's needs over the coming years.

Lack of certainty over new long-term licences has meant that operators have not had the confidence to invest in new ships costing perhaps £20 million a time. As a result, the average age of the 29 vessels in the current fleet has crept up to almost 19 years.

Some of the existing fleet can be adapted to enable them to work in deeper waters that are likely to satisfy the UK's needs in the future, but there will also need to be major investment in new ships.

'There are some difficult decisions to be made,' says Tim Gibbs, fleet manager with United Marine Dredging. 'Bigger ships are needed to move the material economically over the greater distances and to work in more exposed areas – but bigger means that they are less versatile in terms of the ports they can use and the tidal windows in which they can operate.'

'An additional consideration is that ships of this type are not available 'off the shelf' and it can take up to three years to actually build the vessel.'

'But on one point there can be no doubt – no-one will make the necessary investment without confidence about both future licences and retaining existing ones.'

Managing the resource

BMAPA and the Crown Estate are continuing their open door approach to dredging statistics.

The latest 'area dredged' review shows that a total of 22.22 million tonnes of sand and gravel were extracted from the licensed areas in England and Wales during 2003. This represents a slight increase from the previous year when 21.93 million tonnes were dredged.

The report is part of the joint commitment to manage marine resources as effectively as possible. Other initiatives include the review of all dredging licences over a five-year rolling period and the surrender of areas no longer containing commercially useful sand and gravel reserves.

The latest review shows that the total area of seabed licensed in 2003 decreased by four per cent to 1,245 sq km, while the area actually dredged reduced by a similar percentage to 144 sq km. This reduction is primarily a result of improved resource and operational management by the industry.

Tony Murray, offshore asset manager for the Crown Estate, said; 'It is in everybody's interest to be open and transparent about the activities of the marine aggregate industry. Future decisions on the wise use of the marine environment can only be taken with a comprehensive picture of the myriad of demands placed upon it.'



Martin Drury

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plan ahead in order to develop and sustain our fleet at the right level.'

Martin Drury would, however, be the first to agree that the industry must continue to develop and demonstrate that its promises on responsible resource management and environmental and conservation performance continue to be translated into resolute long-term action. To achieve this, he is also keen for BMAPA to be an active contributor to the concepts and framework of the Government's proposed Marine Bill which will, he believes, be the only practical way to provide long-awaited and coordinated governance of the marine environment and its resources.

'I have no doubt that it is the right approach and I very much want the industry to work alongside all the other stakeholders and particularly English Nature and confederations such as the Wildlife and Countryside Link,' he says. 'Our industry is widely recognised as a responsible steward on land – we will demonstrate and develop the same approach at sea'.

Spatial planning is another area in which he believes partnership is essential. The industry has much to offer in terms of expertise and data it has developed from years of prospecting the marine environment. From good science and combined knowledge, he says, will come informed decisions.

'We can be proud of what we have achieved in the past ten years, but it is crucial that we now set our horizons some ten years further into the future and build upon a long-term strategic agenda. We need a spirit of cooperation and pragmatism to succeed.'



The Ebbsfleet valley today, dominated by Eastern quarry

... and how it could look in 20 – years a community built using marine aggregates

photos courtesy Land Securities

Brown fields chase gold

Today, it may look anything but vibrant – but the 40-mile long wedge of land that runs either side of the Thames into Kent and Essex is set to become one of the powerhouses of the UK economy

THERE is no larger area of brownfield industrial wasteland in the UK than the Thames Gateway. Dominated by 3,800 acres of former docks, warehousing, disused industrial sites and old quarries, Thames Gateway is a national priority for regeneration. Deputy Prime Minister, John Prescott, has earmarked it for 128,000 new homes and 232,000 additional jobs by 2016.

His plans can, however, only come to life on the back of a massive injection of new infrastructure – and that demands large quantities of aggregates from both land and marine sources. Given that the wharves along the Thames already land some six to seven million tonnes of sand and gravel every year, the seabed is certain to supply the lion's share.

The hopes of bringing the 2012 Olympics to London rest initially on the bid decision that will be made in July. If it is successful, the final realisation of London's bid for gold will then rest very heavily on the construction industry and on the aggregates from which the 500-acre Olympic Park at Stratford would be built.

Marine aggregates can already claim the credit for the QE2 Bridge at Dartford, the Bluewater regional shopping centre and for much of the Canary Wharf development and Channel Tunnel Rail Link. But all that becomes of modest scale when compared with the contribution it will make to the Thames Gateway

In 2001 the Gateway sub-region had a population of 1.5 million and supported 500,000 jobs. It is made up of three parts: residential and industrial areas in east London and two corridors of settlements of varied size and character in south Essex and north Kent.

The Gateway extends along both sides of the Thames from the London Docklands to Southend and Sheerness. On one hand, it will revitalise existing communities like those at Southend, Medway, Darford, Gravesham and Thurrock. But it will also open the way to new communities at Stratford City, Greenwich Peninsula, Barking Reach and in the huge chalk void currently known as Eastern Quarry which is next door to Bluewater, previously Western Quarry.



Keeping track of marine resources

Nearby is the new Ebbsfleet international rail station which is due to open in 2007 and will speed commuters into London and Europe.

Several of the major developments are already underway or at advanced stages of planning, notably Stratford City, Greenwich Peninsula, Woolwich and Barking Reach.

Implicit in the plans is a Department of Health funding package for new and better hospitals, and Department of Education and Skills allocation for new schools and for university campuses in east London, Medway and Southend.

The marine aggregate industry will play its part via a network of wharves along both sides of the river. Nowhere is the concentration greater than at Greenwich where wharves also have the benefit of a rail link to speed aggregate around London.

Full ahead port engine

Former Port of London Authority chief Steve Cuthbert recognises the importance of the marine aggregate industry to the river – and to London.



Steve Cuthbert: 'a responsible approach'

THIRTY years ago, the Thames was seen by many as a waterway in decline – a shadow of the bustling port that had reached record trading levels in the 60s.

Today, the engines of the grand old river have shifted back to 'full ahead' as it makes a near £3.5 billion contribution to the regional economy of London and the south east and supports some 35,000 jobs. Such is current faith in this vital artery that £1.3 billion will be invested in its continued development over the next ten years.

The activities that keep the port busy are headed by oil and by containers / trailers. But tucked away in third place is an often unseen and relative newcomer – marine aggregates which, in 2004, delivered some 7.5 million tonnes of sand and gravel into the capital.

As the recently retired chief executive of the Port of London Authority (PLA), Steve Cuthbert is in a better position than most to judge what marine aggregates mean for London. 'It is a great city that

is constantly regenerating itself and it couldn't do that without the aggregates that are brought into the Thames' he says. 'We certainly could not be contemplating the new beginning for the Thames Gateway without the raw materials that must come from the seabed.'

'The marine aggregate industry has contributed a great deal to the re-birth of the river as a trading waterway and I think it has established a reputation for taking a thoroughly responsible approach to its work.'

'I know that it takes the whole question of environmental impacts very seriously. Those who question it on that front need to remember that bringing aggregates into London by river is itself environmentally friendly, saving many thousands of lorry movements every year.'

Crucial to the Port of London's wider future, believes Mr Cuthbert, is permission to build P & O's London Gateway Port, which would bring with it massive new deep sea container capacity. Another important facet of the PLA's policy is the safeguarding of upstream wharves, a valuable asset for the future in transferring traffic from road to river.

"We all have to be mindful of the implications that any new projects have on the river environment, but it is so easy for opponents to wrap themselves in a 'do nothing' sustainability flag," says Mr Cuthbert. "If we fail to respond to the need for some development, then we will have nothing to sustain."



Understanding the impact

SINCE 2003, some £6 million of the Aggregates Levy Sustainability Fund has been distributed on behalf of the Department for the Environment, Food and Rural Affairs (DEFRA) for marine-based research. Part of the fund is being devoted to projects that assess the impacts of dredging on the marine environment, seek ways to minimise environmental impacts and enhance the recovery after dredging has ceased.

To ensure that the schemes are carefully managed and relevant to the dredging industry, DEFRA has employed a marine ALSF science co-ordinator – Dr Richard Newell, assisted by Kate Reeds of Marine Ecological Surveys Ltd.

For Dr Newell, some of the most exciting developments have been in our understanding of the impacts of aggregate extraction on marine life: 'One project was

Levy makes mark

Projects funded by aggregates tax to benefit the marine environment have reached an exciting stage with a raft of new initiatives emerging from first-stage studies

designed to investigate the impacts of dredging, both within dredge sites and beyond,' says Dr Newell.

'It was found that, even in areas with strong currents, the fine material rejected in the screening process was only carried for approximately two kilometres outside the boundaries of the dredge site, which is relatively small. In areas with weaker currents, the impact did not extend beyond the dredging site at all.'

Among the 24 projects approved for funding from 2004 onwards is one that aims to develop a model that may be used to both predict the scale of impact of aggregate dredging and the recovery time of a dredged area.

There are also several projects relevant to the eastern English Channel, where new licences are

being considered. Dr Newell explains: 'One important project is a broad-scale habitat map of the eastern English Channel.

Although we now know more about the impact of dredging on a specific site, we do not always know how significant this is in terms of biodiversity. Are we removing organisms from a relatively narrow area that represents a common community type, or are we having a significant impact on a unique habitat?

'My job is partly to ensure that DEFRA knows that the money is being spent on projects that are relevant to policy decisions and are based on sound science. It is also important that all other stakeholders are well-informed of the relevance of work carried out under the ALSF for responsible management of marine aggregate dredging.'

Seabed history

MOST of us know Sussex as being at the southernmost end of Britain. But there was a time when what is now the English Channel was land and Britain itself was a peninsula of northern Europe.

Now, thanks to marine aggregate dredging and the funding that is flowing from it, the story of this important transitional period in our history is starting to unfold.

A team from Wessex Archaeology has focused its attention on the Owers licence area some six miles off the coast. The Owers is a long-standing licensed dredging area which has supplied millions of tonnes of aggregate for construction over a wide area of the south. It has also been a

vital source of material from which beaches ravaged by the sea have been restored.

Funded by the Aggregates Levy Sustainability Fund, the archaeologists have analysed sediment from Owers and used pollen and fossilised micro-organisms to reconstruct the original environment and identify the plants and animals that lived upon it. This, combined with a study of the topography of the land surface, has made it possible to assess where and how people lived.

'We have learned a great deal, but the study of submerged prehistoric landscapes and associated archaeological deposits is still in its infancy,' says Antony Firth of Wessex Archaeology.'



Flint hand axes often survive in aggregates deposits

Across the Mersey



The £800m Paradise Project – built with sand from Liverpool Bay

IT may be one of Britain's smallest and least known dredging areas, but Liverpool Bay is far from unimportant. With few land-based quarries in neighbouring Lancashire, marine aggregates are increasingly essential.

There are three main dredging areas in the bay off the north west coast – Hilbre Swash, the River Mersey, and Morecambe Bay, which are worked chiefly by United Marine Dredging (UMD) and Norwest Sand & Ballast. In 2003, the total area dredged covered just 2.66 square kilometres.

For Norwest Sand & Ballast, a joint venture between RMC and Tarmac, each license is important for different reasons: 'The Hilbre Swash area provides some good coarse sand for concreting', says Norwest's Nick Brown. 'The River Mersey is quite different: it has far finer sand for general building purposes. We have one ship, the Sand Swan, which has recently had a major refit at a cost of about £250,000, so it can continue working the area for at least five more years.'

Investment has also been important for UMD in order to make the most of the resources in Liverpool Bay. The company has developed a

berth at a wharf in the port of Heysham on the Lancashire coast which had not received dredgers for more than ten years. It means that UMD can now supply around 150,000 tonnes of material a year through Heysham.

In addition, UMD began supplying a wharf at Garston on the River Mersey in 2004. The wharf opened with a decrease in the amount of sand available from local quarries and is leading to a substantial increase in the volume of marine sand used in the north-west.

As well as meeting the more general needs of Lancashire, some of the aggregate dredged in the north west is being channelled into a major development in Liverpool – the £800 million Paradise Project. More than 42 acres of land in the heart of the city is being regenerated to create 30 individually designed buildings, including homes, restaurants and hotels; six districts; and over 1.6 million square feet of shopping. Some 4,400 permanent jobs will be created, as well as 3,300 more for the construction work.

Helping hand?

RESTORATION is one of the great successes of the land-based quarrying industry. But now operators are starting to turn their skills to areas that have been "borrowed" for marine dredging.

While the marine environment is an area that largely restores itself naturally over periods as short as two years, experts believe that there are occasions when it may be ecologically beneficial to provide a helping hand.

An initial study funded by BMAPA, The Crown Estate (the land owner) and English Nature (the nature conservation advisor), has begun to explore the potential issues associated with marine site restoration and enhancement at aggregate licence areas.

The report suggests that the non-intervention approach may well be most appropriate where the seabed recovers fairly quickly. But in other cases, the establishment of non-disturbances zones may well assist providing the stability that is needed to speed the process.

The study also suggests that in certain circumstances change as a result of dredging could even be beneficial, with static dredging in particular creating distinctly different habitats that include micro-niches for certain species.

As part of the project, a small workshop hosted by The Crown Estate was used to engage with a range of stakeholders including the project funders, but also including government regulators/advisors, fisheries interests and non-governmental organisations.

The final report and resultant workshop discussions have highlighted marine site restoration and enhancement as a particularly complex issue. Further work will be needed to explore the policy requirements, together with the practicality of techniques that could be employed.