Communities and Local Government

Collation of the results of the 2005 Aggregate Minerals Survey for England and Wales

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British Geological Survey

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COLLATION OF THE AM2005 SURVEY

1. INTRODUCTION

1.1 Aggregate Minerals (AM) surveys, based at four-yearly intervals since 1973, provide an in-depth and up-to-date understanding of regional and national sales, inter-regional flows, transportation, consumption and permitted reserves of primary aggregates. More recently, complementary surveys (also undertaken for 2005) have provided information on the arisings and use of alternatives to primary aggregates such as selected mineral wastes, construction, demolition and extraction wastes, and industrial by-products. All these surveys are used to inform Government on the production, movement and consumption of aggregates in order to monitor and revise, as necessary, the *Aggregate Guidelines*, which support Minerals Policy Statement 1: *Planning and Minerals*. The survey data are made publicly available.

1.2 This report is the collation of the data for primary aggregates for 2005. Surveys of selected alternative materials have also been undertaken for England, and separately for Wales, for the same year (see Appendix G). In addition to presenting information on regional and national sales, consumption, and permitted reserves of primary aggregates, the AM2005 report also presents, for the first time, data on the movement and consumption of primary aggregates by sub-region. Information is also presented on the quantity of aggregate minerals granted and refused planning permission between 2002 and 2005, by site type and environmental designation.

1.3 The information is presented for England and Wales and for individual regions, and was collected from aggregate producers by Mineral Planning Authorities (MPAs) using a standard form (Appendix E). It was subsequently collated at regional level by the relevant Regional Aggregate Working Party (RAWP) Secretary (see Appendix H) and at national level by the British Geological Survey (BGS) on behalf of the Communities and Local Government and the Welsh Assembly Government. Similar information was published by the then Department of the Environment for 1973, 1977, 1985, 1989 and 1993, the Department of the Environment, Transport and the Regions for 1997 (British Geological Survey, 2000) and the Office of the Deputy Prime Minister for 2001 (British Geological Survey, 2003). Comparisons of sales, consumption and permitted reserves for these years and 2005 are provided in Tables D1 to D3.

1.4 The BGS was commissioned in March 2006 by the Communities and Local Government to design and implement the AM2005 survey and to collate, interpret and report the results. The study was overseen by a Steering Group, which included representatives of Communities and Local Government, the Welsh Assembly Government, RAWPs, the Planning Officers' Society, the aggregates industry and environmental bodies (Appendix I).

Policy Background

1.5 The key Government objectives and planning policies on minerals in England are set out in Minerals Policy Statement 1: *Planning and Minerals* (MPSI) (2006) and in Annex 1: *Aggregates* (of MPSI). The revised *National and Regional Guidelines for Aggregates Provision in England, 2001 to 2016* were published by the former ODPM in 2003. They indicate how provision for the supply of aggregates should be made to meet anticipated

need to 2016. Communities and Local Government is committed to keeping these guidelines under review. The Department monitors them on an annual basis and they will be revised when necessary. *Mineral Planning Policy Wales* (2000) sets out the land-use planning policy guidance of the Welsh Assembly Government in relation to minerals, extraction and development in Wales. It includes all minerals, except marine aggregates. Minerals Technical Advice Note 1: *Aggregates* (2004) sets out detailed advice on the mechanisms for delivering policy for land-based aggregates extraction by MPA and the aggregates industry.

1.6 The results of the AM2005 Survey will be used to:

- monitor and develop planning policies for the managed supply of aggregates in both England and Wales;
- assist in monitoring and any review of the aggregates guidelines, the regional and sub-regional apportionment, which will be reflected in regional spatial strategies and development plan documents, respectively; and
- inform all stakeholders of the current state of aggregates supply.

1.7 The results will also be used as a source of contextual data with respect of planning applications for the extraction of aggregates.

AM2005 Survey

1.8 The AM2005 results were collected using two standard inquiry forms (Forms A and B) (Appendix E). Form A relates to sales by end use, sales by destination (sub-region) and transport method, and permitted reserves of primary aggregates. This form was forwarded to the following sites by MPAs in England and Wales for completion and return by quarry operators/owners:

- all active quarries producing land-won primary aggregates at some time during 2005, either as a principal activity or as a subsidiary activity, such as a by-product of building stone or silica sand extraction;
- inactive sites, either worked in the past or yet to be worked (greenfield), that contain permitted reserves of aggregates;
- marine wharves at which marine-dredged sand and gravel was landed and processed in 2005; and
- marine wharves at which crushed rock from outside England and Wales was landed in 2005.

1.9 There are 158 authorities in England and 25 in Wales designated as MPAs. However, a number of unitary authorities (London boroughs, metropolitan districts and a few rural authorities) are either totally urban or have no mineral workings for aggregates. Excluding MPAs with no aggregate mineral workings, data were collected for all of the remaining authorities (some 108).

1.10 Both the Quarry Products Association (QPA) and the British Aggregates Association (BAA) supported the survey. The rate of return of Form A was very high for this voluntary survey and was over 90% in all regions. Where figures were not forthcoming, and where feasible, estimates may have been made by the MPAs or RAWP Secretaries. The regional reports contain further details of these estimates. Included in the survey were 1,183 quarries, of which 290 were inactive but worked in the past and a further 45 sites which have yet to be worked. Of the 848 active quarries surveyed, 403 were for crushed rock and 445 for land-won sand and gravel. The survey also included 67 wharves at which marine sand and gravel was landed and 21 wharves landing crushed rock. Some wharves landed both sand and gravel and crushed rock.

1.11 Sales and distribution data relate to 2005 and the permitted reserves were estimated at 31st December 2005. The information is presented by Regional Aggregate Working Party Area (Maps 1 and 2) using the boundaries that were applicable as at 31st December 2001. Some regional boundaries have changed significantly from AM surveys prior to 2001. This makes regional comparisons with older surveys more difficult. In England, the former Northern Region has been disbanded with Cumbria now added to, and forming part of, a larger North West Region. The remaining part of the former Northern Region has been renamed the North East. In the former South East Region, Essex, Bedfordshire and Hertfordshire, together with the whole of the former East Anglia Region now form part of the East of England Region. London, which was formerly in the South East Region, is now a separate Region on its own. There have been no changes in Wales. The MPAs comprising the separate regions of England and Wales are shown on Maps 1 and 2 respectively and are also listed in Appendix K.

1.12 In all previous AM Surveys data on the movement of aggregates was collected on the basis of inter-regional flows. For AM2005 the BGS was, additionally, asked to consider the movement of aggregates on a sub-regional basis. The sub-regions (except for London) are based on NUTS2 units, which stand for Nomenclature of Units for Territorial Statistics. The NUTS2 boundaries are consistent with RAWP boundaries allowing inter-regional flows to be calculated, as well as more detailed destination information. The sub-regions used for AM2005 are shown on Map 3 and are consistent with those used by Capita Symonds for their 2005 *Survey of Arisings and Use of Alternatives to Primary Aggregates in England* on behalf of Communities and Local Government (this report is available at the Communities and Local Government web-site at http://www.communities.gov.uk/index.asp?id=1145607). The sub-regional survey of sales by destination has enabled a large amount of additional information to be collected. However, this has created some problems in clearly summarising this new data within the limits of confidentiality considerations. Nevertheless, valuable additional information has been collected, including a more detailed analysis of primary aggregates consumption by sub-region. This new information is summarised in Tables 9, 10 and 11.

1.13 Data are presented on sand and gravel, both land-won and marine dredged, and crushed rock aggregate. The latter includes limestone (including dolomite), igneous rock (including metamorphic rock), sandstone (including gritstone, greywacke and quartzite), chalk and ironstone. Both chalk and ironstone are used in some regions for less demanding aggregate applications. However, they contribute less than 1% to total supply. As in conventional practice, landings of marine sand and gravel are assigned to the MPA in which the wharf is located.

1.14 Form B sought information on both the numbers of sites granted (or refused) planning permission to supply wholly, or in part, aggregate minerals, and the quantity of mineral that these contained for the period 2002 to 2005. Form B was completed by individual MPAs and compiled into a database by BGS. This survey provides valuable information on the extent that permitted reserves of primary aggregates are being supplemented by new permissions and, with the sales data, the extent that they are being depleted.

1.15 In preparing this report, the data has been presented in a style that is, as far as possible, consistent with previous surveys and comparisons with earlier surveys are made, where appropriate. Whereas every effort has been made to ensure the accuracy of the figures presented, neither the Communities and Local Government and Welsh Assembly Government, nor the BGS can be held responsible for any errors contained therein.

1.16 Regional collations of the 2005 survey data will also be published in the RAWP Annual Reports. These are available from the RAWP Secretaries (see Appendix H). These contain more detailed information, generally at MPA (often County) level.

Confidentiality

1.17 Data on an individual quarry are normally considered to be confidential. Any figure disclosed must include at least three companies' interests, unless all the parties involved have been contacted and their prior approval obtained in writing, permitting the release of the information. For the purposes of the AM2005 survey, the QPA, members of which account for a major proportion of total sales, relaxed these confidentiality restrictions. This has allowed additional data to be disclosed, particularly for environmental designations. Whilst strongly advising all its members to fully cooperate, the BAA was unable to relax the three company rule. Neither association was able to compel its member companies to complete the survey. For non-QPA members the normal three company rule has been applied.

Survey Coverage

1.18 The AM2005 collation has mainly been carried out electronically. Forms A and B were prepared in Microsoft Excel and whilst often completed manually, all the data were input electronically so that collation at MPA, regional and national level was greatly simplified. Customised Microsoft Excel workbooks were designed and created specifically for the survey to assist the MPAs and RAWP Secretaries in undertaking their collations. However, the requirement to collect and collate data on sales destination by sub-region precluded the use of Excel and required the design and development of a separate Microsoft Access database for the collation of this information by MPAs. The regionally collated data provided to the BGS were input into an AM2005 Access database to undertake the National Collation.

1.19 Data on the arisings and use of construction, demolition and extraction wastes, and secondary aggregates in England for 2005 were the subject of separate surveys carried out by Capita Symonds on behalf of Communities and Local Government. The results were published in February 2007. In Wales, Faber Maunsell are carrying out a survey of construction, demolition and extraction wastes, and quarry waste for 2005, on behalf of the Welsh Assembly Government. The results will be published in Spring 2007.

1.20 The AM2005 survey refers to 'sales' of aggregates. The term relates to material leaving a quarry/wharf as measured at a weighbridge. The term 'sales' is more accurate than 'production' as used in some previous surveys. However, as weighbridge sales were the principle source of statistics on 'production' in previous surveys readers should not draw any statistical inferences from the change in terminology.

1.21 The main constraints on the data continue to be confidentiality considerations and 'unallocated sales' of unknown destination. Unallocated sales are larger than for AM2001 (Table 3). This is due to a number of factors, including the more complex requirement for sub-regional flows and also stricter confidentiality rules in carrying out the survey that did not allow unallocated sales to be followed up directly with companies.

1.22 The Office for National Statistics (ONS), through the Annual Minerals Raised Inquiry (AMRI), also collects and publishes information on extractors' sales of aggregates within Great Britain on behalf of Communities and Local Government. Unlike AM surveys, this is a statutory survey carried out under the Statistics of Trade Act 1947. The results are published annually in the Business Monitor PA 1007 *Minerals Extraction in Great Britain*. To simplify the AM2005 survey, the questions were generally harmonised with those in AMRI.

1.23 The prime purpose of the two surveys is different. AMRI, which also covers minerals other than aggregates, is designed to provide a consistent time series of commodity data for economic/market analysis mainly by central government, but also industry and market analysts. The AM survey aims to provide comprehensive data for monitoring and facilitating aggregates provision at local, regional and national level. The output is used mainly by Government (Communities and Local Government and the Welsh Assembly Government), MPAs, industry and environmental interest groups. Only AMRI collects information on employment and the value of sales and only AM collects data on the destination of sales, consumption, permitted reserves and information for environmentally designated areas.

1.24 A historical comparison of the data presented in both the AMRI and AM surveys indicates that AM surveys show somewhat larger totals for aggregate sales. This is believed to be due to a better coverage of sites. For 2005 the respective totals for England and Wales were; AMRI 170.7 million tonnes (Mt) against 172.7 Mt for AM2005.

Acknowledgements

1.25 The authors wish to record their thanks to the aggregates industry, the QPA and the BAA for their co-operation at all stages in the execution of the survey and the collation of its results. Special mention is due to the officers of MPAs and the Secretaries of the RAWPs for their collation of the data at local and regional level, respectively. The Secretaries' names and contact addresses are given in Appendix H. Particular thanks are also due to Peter Bide (the Chairman of the Steering Group) and Bill MacKenzie (the Contract Manager) at the Communities and Local Government, and the members of the Steering Group for their support and guidance.

2 COMMENTARY

National Overview

2.1 Sales, consumption, and inter-regional flows of primary aggregates in England and Wales and by region are summarised in Tables 1 to 8. Tables 9 to 11 provide, respectively, an overview of sales by MPA and sub-region, imports by sub-region and consumption by sub-region. Permitted reserves of aggregates at 31st December 2005 by region and by environmental designation are summarised in Tables 12 and 13. The numbers of sites granted and refused planning permission to supply wholly, or in part, aggregate minerals, and the amount of mineral that these contained are summarised in Tables 14 and 15. More detailed information on sales, reserves, and planning permissions/refusals are presented in Appendices A to C, respectively. A comparison of sales, consumption and permitted reserves of primary aggregates with all previous AM surveys is given in Appendix D.

Sales

2.2 **Total sales of primary aggregates** produced in England and Wales, including marine-dredged sand and gravel, but not imports of crushed rock from outside England and Wales, were **172.7 Mt** in 2005 of which **89%** was produced in England. **Total sales declined by about 11% between 2001 (192.9 Mt) and 2005 (172.7 Mt)**, with crushed rock showing the largest fall from **112.9 Mt** in 2001 to **100 Mt** in 2005. Land-won sand and gravel sales also declined from **64.1 Mt** in 2001 to **58.2 Mt** in 2005 and marine dredged from **15.9 Mt** in 2001 to **14.4 Mt** in 2005. Total sand and gravel sales declined most in England from **77.3 Mt** in 2001 to **69.8 Mt** in 2005, but increased marginally in Wales. In 2005 total sales of primary aggregates were down almost **100 Mt** on the largest output in previous AM surveys in **1989** when total primary aggregate sales were **269.6 Mt**.

2.3 **Primary aggregates sales** in England and Wales, comprised **34% land-won and 8% marine-dredged sand and gravel, with crushed rock making up the remaining 58%**. Limestone/dolomite was by far the most important source of crushed rock aggregate, accounting for 66% of the total, followed by igneous rock (22%), sandstone (11%), and minor chalk and ironstone (<1%). **Marine sand and gravel supplied about 19% of total sand and gravel output in England, compared with 46% in Wales.**

2.4 **National Parks and Areas of Outstanding Natural Beauty (AONBs) cover 23.8% of the land area of England and 23.4% of Wales. In England and Wales 15.4% and 6.5% of total crushed rock sales were supplied from National Parks and AONBs respectively, and 0.3% and 3.4%, respectively for land-won sand and gravel.**

Consumption

2.5 The AM surveys are the only comprehensive measurement of apparent consumption of primary aggregates by region (and now sub-region). **Total apparent consumption** of primary aggregates was **173.4 Mt** in 2005, of which **160 Mt** was used in England and **13.5 Mt** in Wales. Total consumption is somewhat higher than total sales (172.7 Mt) because it includes imports from outside England and Wales, mainly from Scotland. However, total **unallocated sales** of unknown destination were just over **3 Mt in 2005**, somewhat greater than in 2001 (1 Mt). This is mainly due to confidentiality constraints, which prevented back checking. Taking into account unallocated sales, the total consumption of primary aggregates in England and Wales was about **176.5 Mt** in 2005.

National Flows

2.6 **England was a net importer of primary aggregates (8.4 Mt) and Wales a net exporter (5.8 Mt).** Total exports from Wales comprised 5.9 Mt of crushed rock and 0.5 Mt of sand and gravel. Imports were 0.4 Mt of crushed rock and 0.2 Mt sand and gravel. **Some 3.0 Mt (or 1.7% of total aggregates consumption) were imported into England and Wales from Scotland and Europe.** Almost all of this was crushed rock (mainly igneous rock) imported into the South East and London principally from Scotland and Norway, but with small quantities from Northern Ireland, Ireland and France. Total imports from outside England and Wales were less than in 2001 (4 Mt). Imports from outside the UK were 1.3 Mt in 2005.

2.7 Total exports of primary aggregates were insignificant. Substantial quantities (about 6 Mt) of marine sand and gravel dredged from the UK Continental Shelf were landed at foreign ports in 2005. A further 1.8 Mt of marine sand and gravel were used for contract fill and beach nourishment (Source: The Crown Estate). These flows are not covered by AM surveys. The UK is, however, a net exporter of aggregates.

Reserves

2.8 **Total permitted reserves for aggregate use in active and inactive sites in England and Wales,** including sites worked in the past but still containing reserves (but not dormant sites) and sites that have yet to be opened, at the end of 2005 were **4,882 Mt**. Crushed rock accounted for **87% (4,260 Mt)** and sand and gravel the remaining **13% (622 Mt)**. Of total permitted reserves, 79% were in active sites and 85% in England. Sites classified as 'Dormant' under the terms of the Planning & Compensation Act 1991 and the Environment Act 1995 contained **444 Mt**. These tonnages are separately identified in Table 12, but are excluded from the totals. Dormant sites cannot be worked until new schemes of conditions have been determined and, therefore, do not contain 'permitted reserves'. Total permitted reserves of sand and gravel for non-aggregate use (mainly silica sand) was **25.2 Mt** in 2005. Total permitted reserves of crushed rock for non-aggregate use were **606.5 Mt** of which 93% was limestone/dolomite.

3. SALES OF PRIMARY AGGREGATES

3.1 Table 2a summarises sales by region and country of origin, and by the major types of primary aggregate, i.e. land-won/marine sand and gravel and crushed rock. Table A4 summarises sales by mineral type for crushed rock aggregate. Table D1 compares primary aggregate sales for each AM survey since 1973. National and regional sales are also shown on Map 4.

Regional Sales

3.2 The **East Midlands** continued to be by far the largest producing region at **38.8 Mt, equivalent to 25%** of total primary **land-won** aggregate sales in England and Wales. The **South West (26.8 Mt)** was the second largest source of land-won primary aggregates. Excluding London, North Wales (6.9 Mt) and the North East (7 Mt) were the smallest producing regions of land-won primary aggregates.

3.3 Within these totals, the sand and gravel, and crushed rock balance differs significantly. The **East Midlands** accounted for the largest volume of **crushed rock aggregate sales (29%)** and the **South East** for the highest proportion of **sand and gravel (including marine-dredged) sales (21%).**

3.4 The North East **(1.4 Mt)**, the North West **(2.9 Mt),** North Wales **(1.2 Mt)** and South Wales **(0.3 Mt)** produced the smallest amounts of land-won sand and gravel. Conversely, the South East **(1.2 Mt)** and East of England **(0.49 Mt)** were the smallest crushed rock producers. There is no crushed rock production in London. The balance between sand and gravel, and crushed rock production very largely reflects the underlying geology and, hence, the aggregate resources within these areas. Regions with large crushed rock resources and permitted reserves (East Midlands and South West) and which are relatively close to major markets, continue to contribute substantially to the high levels of demand in more populated regions, notably London and the South East (where sand and gravel dominates and hard rock is scarce), and also the North West.

3.5 The South West was the largest producer of limestone for aggregate use at **18.9 Mt** followed by the East Midlands with **14.5 Mt**. The East Midlands accounted for 62% **(13.9 Mt)** of total igneous rock aggregates sales, with the South West and Wales accounting for a further 10% each.

Comparison with 2001

3.6 Almost all regions showed a **fall in total primary aggregate sales between 2001 and 2005** across all sectors of land-won sand and gravel and crushed rock. The minor exceptions were London with increases in land-won sand and gravel, and South Wales with modest increases in sand and gravel and crushed rock. Several regions had increased marine sand and gravel sales even though the overall total for 2005 was somewhat lower than in 2001.

4. END USES

4.1 Two main categories of end use data were collected namely for the various types of aggregates and for non-aggregate ('industrial') uses, where the latter were associated with aggregates extraction. The AM2005 survey covered only those sites that produced aggregates for sale, either as the principal or as an ancillary activity. Quarries extracting aggregate minerals solely for non-aggregate applications were not covered. The rationale for collecting some information on non-aggregate uses is that in certain circumstances the associated permitted reserves could alternatively be deployed to meet demand for aggregates

4.2 Table 6 shows sales of primary aggregates (both crushed rock, and sand and gravel) grouped into broad end use product categories. Table A1, A2 and A3 in Appendix A provide sales by product for land-won sand and gravel, marine-dredged sand and gravel and crushed rock, respectively. End use figures should be treated with some caution. Although quarry operators will know what products they sell, they cannot always be sure what a product will ultimately be used for.

All Primary Aggregates

4.3 **Of total aggregate sales in 2005, 36.2% were used as concreting aggregate, 22.3% as roadstone (coated as asphalt and uncoated), and 16.3% for other construction uses, including fill.**

Sand & Gravel

4.4 **Concreting aggregate** again proved to be the largest product for both land-won and marine-dredged **sand and gravel,** accounting for some **60%** and **79%** of the respective totals for aggregate use. The other main products were, other screened and graded gravels, construction fill and sand suitable for use in mortar.

Crushed Rock

4.5 Crushed rock has a wider range of uses including as a source of both coarse and fine **concrete aggregate (16%),** and for **other construction uses, including fill (24%).** However, its main use is in road construction, both unbound ('dry stone'), primarily for the foundations of roads and bound with either bitumen (to produce 'coated roadstone') or cement in the upper layers. Rocks with high skid resistant properties are required for the wearing course. **Coated roadstone and dry stone** represented the **largest crushed rock aggregate use at 38 Mt or 38%** of total aggregate sales. Of this total 17 Mt was sold as coated roadstone. Other smaller specialist uses, include railway track ballast (2 Mt) and armourstone (0.5 Mt).

Non-aggregate Uses

4.6 Although the data for non-aggregates uses (mainly limestone/dolomite and, to a lesser extent, chalk) are incomplete (see above), the most important uses were cement manufacture, a flux in iron/steel making, other unspecified industrial uses and agricultural use (Table A3 and A5). Recorded **non-aggregate uses of crushed rock** were **15.2 Mt** in 2005, of which 85% (13 Mt) was limestone/dolomite. The **East Midlands** accounted for **9.3 Mt** of the limestone/dolomite total.

4.7 **Sales of sand and gravel (mainly silica sand) for non-aggregate (industrial) uses were 3.98 Mt**, almost all of which was produced in England. The North West and the East of England were the major producing regions, contributing 1.6 Mt and 1.2 Mt, respectively.

5. INTER-REGIONAL FLOWS

5.1 The four yearly AM surveys are the only published source of information on aggregate sales by destination (region). In 2005 information on sub-regional flows was also collected for the first time. The sub-regions are shown on Map 3. Quarry operators cannot always be sure of where their products will be sold, particularly for 'collect' sales. Consequently, it has not been possible to allocate all sales of primary aggregates to definite destinations by either region or sub-region. 'Unallocated' sales of unknown destination were just over 3 Mt in 2005 (<2% of total sales). The inter-regional and sub-regional flow information is used to calculate consumption data and unallocated sales, thus, have the effect of reducing total consumption.

5.2 Maps 6 and 7 illustrate the pattern of inter-regional flows for sand and gravel, and crushed rock aggregate, respectively. The statistical results of the destination survey are presented in Tables 3, 4a-k and 5a-k for regions and Tables 9a-k and 10 for sub-regions. Inter-regional

flows of crushed rock are significantly larger than for sand and gravel because of the overall larger demand for crushed rock, particularly for roadstone, and because regions such as the South East, London and the East of England, and parts of the North West have only minor, or inferior quality, crushed rock resources. In addition, the consistency and extent of some hard rock deposits permits their working on a very large scale, enabling much wider geographical areas to be served economically by rail. The transfer of crushed rock between regions is, therefore, more complex and uneven than for sand and gravel. It reflects the combined pattern of the extent of crushed rock resources and markets/population (demand).

Crushed Rock

5.3 **Total exports** of crushed rock from **Wales to England were 5.7 Mt** compared with **0.24 Mt** in the opposite direction. The traditionally large crushed rock producers, the **East Midlands, South West and North Wales**, have the largest exports representing **56% (16.1 Mt), 28% (6.2 Mt) and 59% (3.3 Mt)** of their respective total crushed rock sales. The main importing regions were **North West (8.9 Mt),** mainly from East Midlands and North Wales, and the **South East (6.8 Mt), London (3.9 Mt) and East of England (5.2 Mt),** mainly from East Midlands.

Sand & Gravel

5.4 In contrast, regional flows of sand and gravel were less than a third of crushed rock. **Total exports of sand and gravel** from **Wales to England** were **0.5 Mt** compared with Welsh imports from England of **0.2 Mt**. The **leading exporters of sand and gravel were South East (2.7 Mt), the East Midlands (2.3 Mt) and East of England (1.5 Mt),** and the **leading importing regions were Yorkshire & the Humber (2.1 Mt), London (1.9 Mt) and the East Midlands (1.5 Mt).**

5.5 In all cases marine sand and gravel was used within the region where it was landed. The **South East dominates marine-dredged sales at 5.9 Mt**, with London at 4 Mt the second largest, followed by South Wales 1.2 Mt.

5.6 In addition to inter-regional flows and material from conventional offshore dredging, **a significant amount of crushed rock (2.8 Mt)** was imported from outside England and Wales, from Scotland (1.5 Mt) and 1.3 Mt from outside the UK. The largest proportion (2.2 Mt) was landed in the South East.

Comparison with 2001

5.7 Net imports of primary aggregates into England from Wales increased from **5 Mt** in **2001** to **5.7 Mt** in **2005**. Imports of crushed rock from outside England and Wales, mainly Scotland, have decreased from **4 Mt to 2.8 Mt**. Sales of marine-dredged sand and gravel also decreased from **15.6 Mt to 14.4 Mt**. Some of this may be due to no returns from selected wharves.

6. CONSUMPTION

6.1 The AM surveys are the only comprehensive measurement of apparent consumption of primary aggregates at regional level and now sub-regional level. Apparent consumption figures (Tables 2b and 5a-k, and Map 5 for regions, and Table 11 for sub-regions) are calculated from data on sales within each home region (or sub-region), plus imports from

other regions (or sub-regions) and, where appropriate, imports from outside England and Wales (Scotland, Northern Ireland and Europe). The difference between the data for total sales and consumption (Table 1 and Map 9) is partly due to imports from outside England and Wales, but also unallocated sales. Table D2 makes a comparison of consumption with all the previous AM surveys.

6.2 **Total recorded apparent consumption of primary aggregates was 173.4 Mt in England and Wales**, to which should be added just over **3 Mt** of unallocated sales to give **176.5 Mt**. Four regions, East Midlands, South West, North Wales and South Wales were net exporters of aggregates and the remaining seven regions were net importers, to varying degrees. The **South West at 23 Mt** was the **largest consuming region,** with the East Midlands (22.3 Mt), the South East (21.2 Mt) and the North West (20.2 Mt) all very close behind. London, the North West and the South East are the regions **most heavily dependent upon imports**. However, some caution should be used in interpreting these figures as they are calculated from the principal destination of aggregate flows. Final sales, particularly for rail-borne aggregates, may be to other regions. For example, some material transported to the East of England may be finally consumed in London and the South East.

Comparison with 2001

6.3 Compared with 2001 there has been a significant decrease in consumption of primary aggregates from **196.4 Mt to about 176.5 Mt**, including unallocated sales of 3 Mt.

7. MODE OF TRANSPORT

7.1 Table 8 shows the principal mode of transport employed for the distribution of aggregate sales from quarries and wharves. Overall, **road** accounted for **89.8 %** of all aggregates moved, **rail transport 9.2%** and shipment by **water 1%.** The comparable proportions for 2001 were **90.8%, 8.1 % and 1.1%**, respectively.

7.2 For crushed rock the proportion of rail deliveries increased to **14.7% (15.3 Mt)**. The use of rail transport in the East Midlands and the South West accounted for **7 Mt and 5 Mt** of all aggregate rail forwardings respectively, the main destinations being the South East, London and East of England. Rail was also used for transporting crushed rock in Yorkshire and the Humber, the South East (from wharves), the North East, and North and South Wales. The principal transfers of crushed rock by water (sea) were from North Wales and the South West to the South East, and in the South East up the River Thames. About **0.4 Mt** of sand and gravel were moved by inland waterways in the East Midlands.

8. RESERVES

8.1 Table 12 and Map 8 summarise reserves of primary aggregates with valid planning permissions at 31st December 2005 in active and inactive sites (i.e. 'permitted reserves'). Data for **inactive sites distinguishes between sites worked in the past, but still containing valid reserves, and sites where planning permission has been granted but extraction has not yet begun.** Reserves in sites classified as **'Dormant'** under the terms of the Planning & Compensation Act 1991 and the Environment Act 1995, are reported but excluded from the totals. Table D3 provides a comparison with all previous AM surveys.

8.2 A large proportion of the reserves data are based on information supplied by mineral operators (calculated by them using a variety of methods). The remaining reserve data were estimated by MPAs in the absence of returns (particularly in the case of inactive sites). Wherever possible estimates were based on earlier records (depleted for sales), or upon more general knowledge of the site.

8.3 **Total permitted reserves in active and inactive sites** for aggregate use at the end of 2005 were **4,882 Mt** of which crushed rock accounted for **87% (4,260 Mt)** and sand and gravel the remaining **13% (622 Mt)**. Permitted reserves show a **decrease of 512 Mt** on 2001 when total reserves for aggregate use were **5,394 Mt**, comprising **4,688 Mt** of crushed rock and **706 Mt** of sand and gravel (excluding reserves for non-aggregate use and tonnages in dormant sites). Sand and gravel reserves are much smaller in relation to average annual land-won sales (equivalent to about 11 years output in 2005) than crushed rock reserves, which are usually measured in terms of a few decades (43 years in 2005).

8.4 **Total permitted reserves in active sites** at the end of 2005 were **3,862 Mt**, a decrease from **4,646 Mt** in **2001**. In 2005 crushed rock accounted for **87%** and sand and gravel the remaining **13%** of reserves in active sites.

8.5 **Total permitted reserves in inactive sites were 1,020 Mt,** of which 971 Mt were in sites worked in the past and only 48 Mt in sites yet to be worked (greenfield sites). The latter consisted mainly of sand and gravel. Reserves contained in inactive sites classified as 'Dormant' were **444 Mt**, of which **430 Mt** consisted of crushed rock and **14 Mt** sand and gravel.

Distribution

8.6 The distribution of reserves is very uneven reflecting broadly both geology and demand (Map 8). Of total reserves, **85% were in England**. Some **29.7% of all permitted reserves** were located in the **East Midlands** (compared with 24% of total sales), and **19.9%** in the **South West** (18% of total sales). These two regions also accounted for a significant proportion of total crushed rock reserves **(1,375 Mt or 32%, and 920 Mt or 21.5%** respectively). Excluding London, the regions with the smallest crushed rock reserves were East of England **(8 Mt)** and the South East **(54 Mt).** This reflects the extent of crushed rock resources in the respective regions.

8.7 **East of England** was the region with the highest level of sand and gravel reserves **(166 Mt)** equivalent to **27%** of the sand and gravel total. Other English regions with significant sand and gravel reserves were the West Midlands **(127 Mt),** South East **(81 Mt)** and the East Midlands **(77 Mt)**. Only **3%** (18 Mt) of total sand and gravel reserves were in Wales.

9. ENVIRONMENTALLY DESIGNATED AREAS

9.1 As in the AM97 and AM2001 surveys, systematic information on aggregates sales and reserves in statutorily designated areas were collected and are presented in Tables 7 and 13 respectively. In 2005 data for Green Belts was not collected. Apart from National Parks and AONBs, data for **designated areas are not mutually exclusive**. For example, most Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are also Sites of Special Scientific Interest (SSSIs) and all may occur in National Parks and AONBs.

Consequently the different categories cannot be totalled. However, corresponding figures for 'All Sites' (land-won sites both in and outside such areas) are given to allow the figures to be placed in context.

9.2 **Some designations, notably SSSIs, may only coincide with a small part of an extant mineral permission, which may, or may not, be active. The degree of overlap, and the actual or potential impacts of mineral extraction on the conservation interest, whether geological or biological, will vary and cannot be calculated or assumed from the figures presented. In addition, legal agreements may already exist which protect these designations from quarrying. The information, therefore, needs to be treated with caution**.

Sales

9.3 **Total sales of crushed rock in England and Wales in sites within National Parks and AONBs were 15.4 Mt and 6.5 Mt respectively. Comparable figures for land-won sand and gravel were 0.2 Mt and 2 Mt**. Some **34.6 Mt total primary land-won aggregates** were produced from sites associated with **SSSIs.** Such sites accounted for 31% of crushed rock aggregate sales and 6% of total sand and gravel sales.

9.4 At regional level, **55.5% (8.6 Mt) of crushed rock quarried in National Parks was produced in the East Midlands,** i.e. in the Peak District National Park (mainly limestone). Elsewhere, National Parks in Yorkshire & the Humber accounted for a further **26% (4.1 Mt)**. The largest sales of crushed rock aggregates from AONBs (3.1 Mt) came from the South West.

Reserves

9.5 **Total reserves of aggregates** in sites within **National Parks (711 Mt)** and **AONBs (384.5 Mt)** were **14.6%** and **7.9%** respectively of total permitted reserves. Of total reserves in National Parks and AONBs (1,096 Mt), crushed rock reserves accounted for some 96%, reflecting the upland nature of these designations due to the presence of more resistant rock types. Total reserves of sand and gravel, and crushed rock in National Parks and AONBs for non-aggregate use were **224 Mt** in 2005.

9.6 **Total aggregate reserves** in sites in part associated with **SSSIs** were **1,231 Mt or 25%** of the total for England and Wales. They consist almost entirely (97%) of crushed rock. However, in many cases only a small part of a mineral permission may occur within an SSSI, whilst reserves relate to the whole site permitted for extraction. These figures should, therefore, be treated with caution. A significant proportion of permitted reserves associated with SSSIs is in those designated for their geological or geomorphological importance (Geological SSSIs).

10. ALTERNATIVE AGGREGATES

10.1 The AM2005 survey was confined to primary aggregates. Alternative aggregates in England, including china clay and slate waste, were the subject of separate surveys by Capita Symonds on behalf of Communities and Local Government.

10.2 Information on slate used for aggregate in Wales was collected in AM2005. Output was confined to North Wales (Gwynedd) and total sales for aggregate use were 548,835 tonnes with permitted reserves of 42.5 Mt.

11. PLANNING PERMISSIONS AND REFUSALS

11.1 Information has been collected on the numbers of sites granted and refused planning permission to supply wholly, or in part, aggregate minerals, and the amounts of mineral that these contained. Data are presented by site type, e.g. new quarry, borrow pit or extension, and by environmental designation for the period 2002 to 2005.

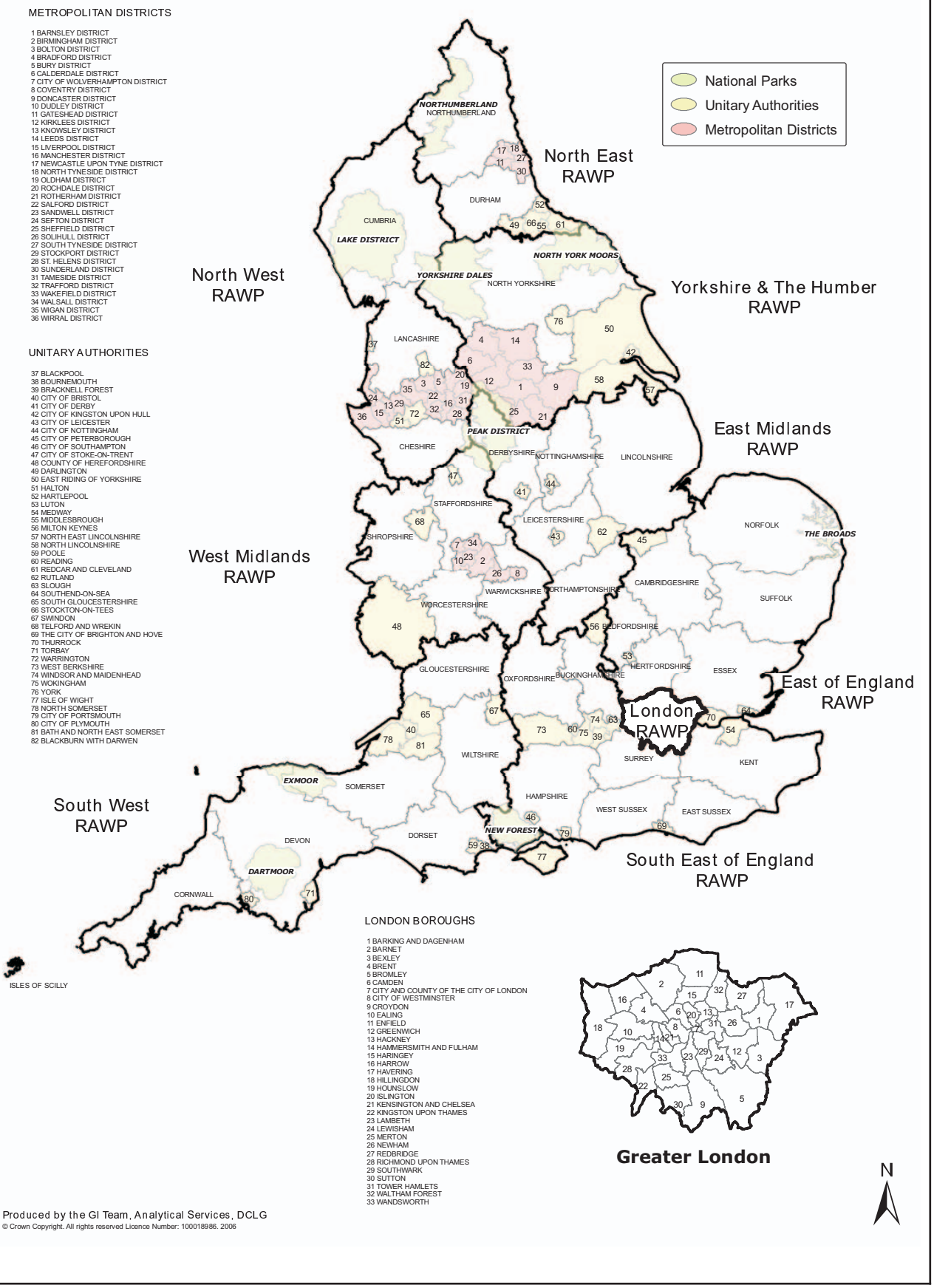
11.2 'Permissions' issued under the terms of the Planning & Compensation Act 1991 and the Environment Act 1995 (Review of Old Mineral Permissions (ROMPs)) have not been included. Similarly 'permissions' given by way of an amendment to a condition, for example extending the time limit of an existing valid permission or an increase in output, are also not included. This is because in these cases the permission did not provide additional reserves. Refusals of the above sites are also not included as the loss of the reserves, and also any reduction in reserves flowing from any modification of permission granted, are already incorporated in the reserve figure.

11.3 Tables 14 and 15 show the total number of **sites granted and refused planning permission by region between 2002 and 2005, inclusive**, and the amounts of mineral they contained. **Permissions (276) greatly exceeded refusals (40). Total reserves of crushed rock granted planning permission between 2002 to 2005 were 175 Mt, of which 155 Mt were in England and 20 Mt in Wales.** Total crushed rock reserves granted permission were significantly lower than in the period 1998 to 2001 (406 Mt). The largest increases in crushed rock reserves were in the East Midlands (52 Mt) and South West (35 Mt). **Comparable figures for sand and gravel permissions were 149 Mt in England and only 1.4 Mt in Wales.** The largest additions were in East of England (38 Mt), West Midlands (29 Mt) and East Midlands (25 Mt).

11.4 The quantity of sand and gravel and crushed rock granted and refused planning permission by site type and designated area is shown in Tables C1 to C8 in Appendix C. The quantity of aggregate minerals granted planning permission in National Parks and AONBs for the period 2002 to 2005 was 3.8 Mt and 1.2 Mt, respectively for crushed rock and 0.6 Mt and 16.5 Mt respectively for sand and gravel. The quantity of mineral granted permission in relation to SSSIs was 3.5 Mt for crushed rock and 6.4 Mt for sand and gravel.

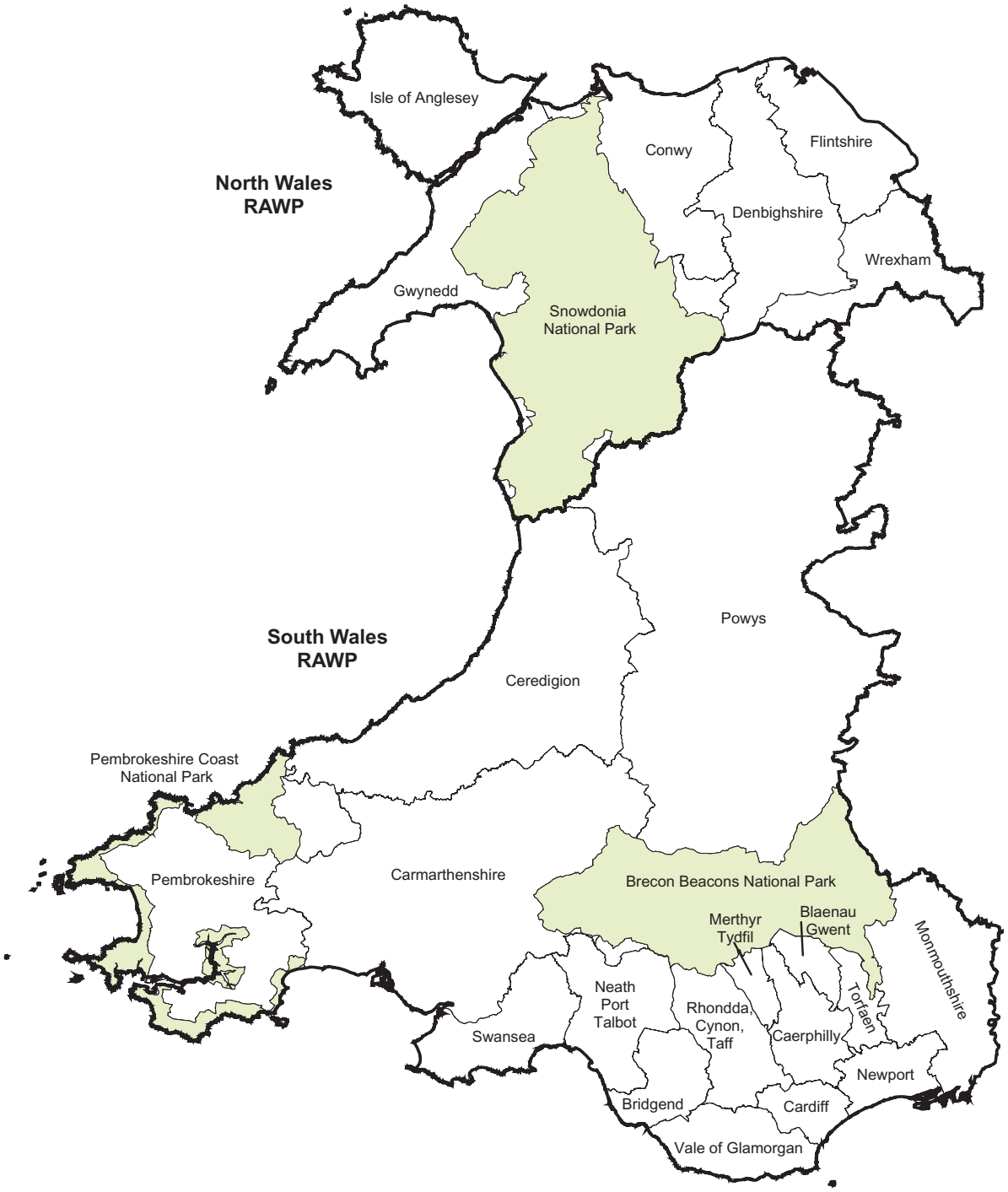
MAPS

Map 1: **Mineral Planning Authorities and RAWP regions in England, 2005**

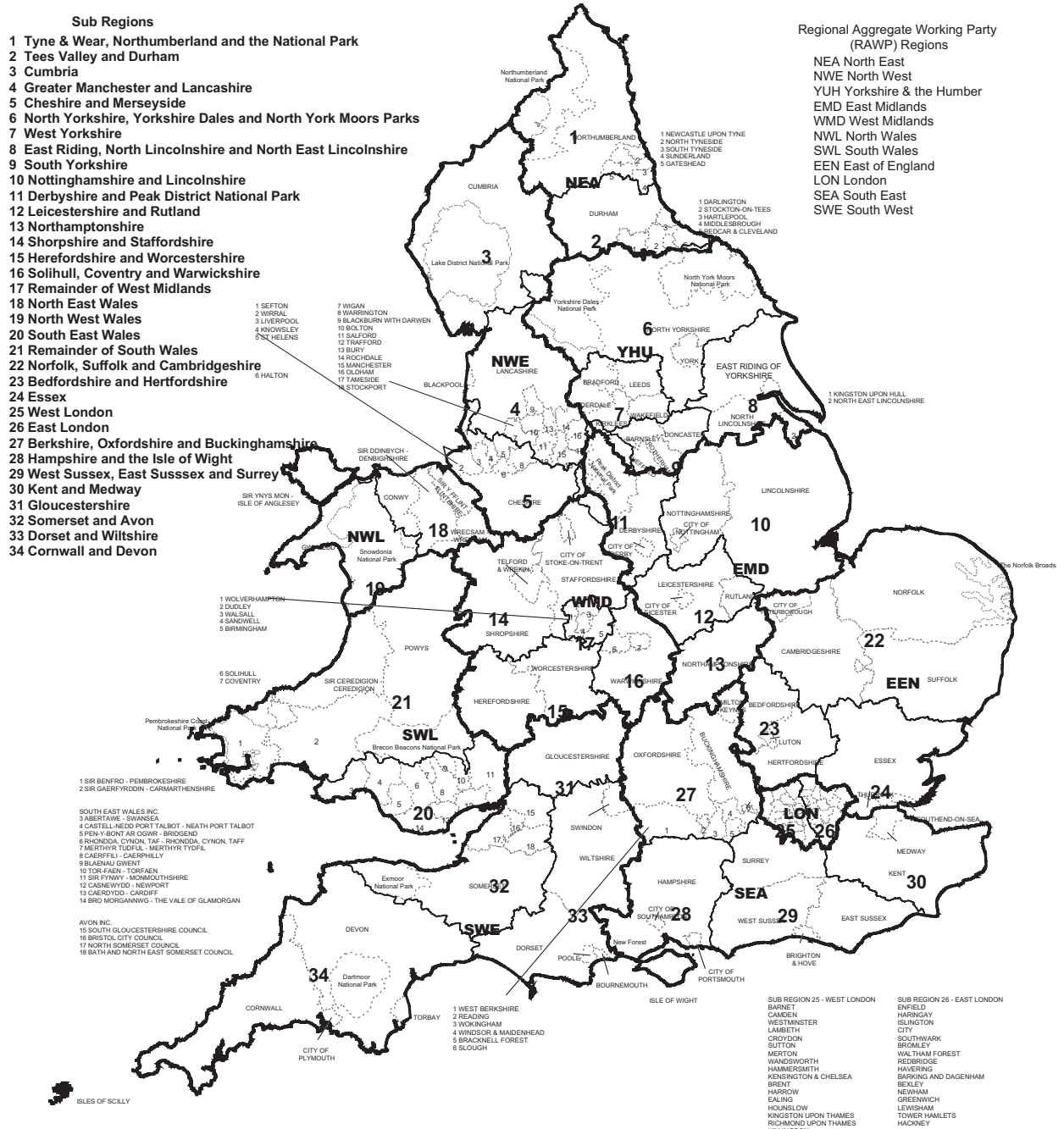


Produced by the GI Team, Analytical Services, DCLG

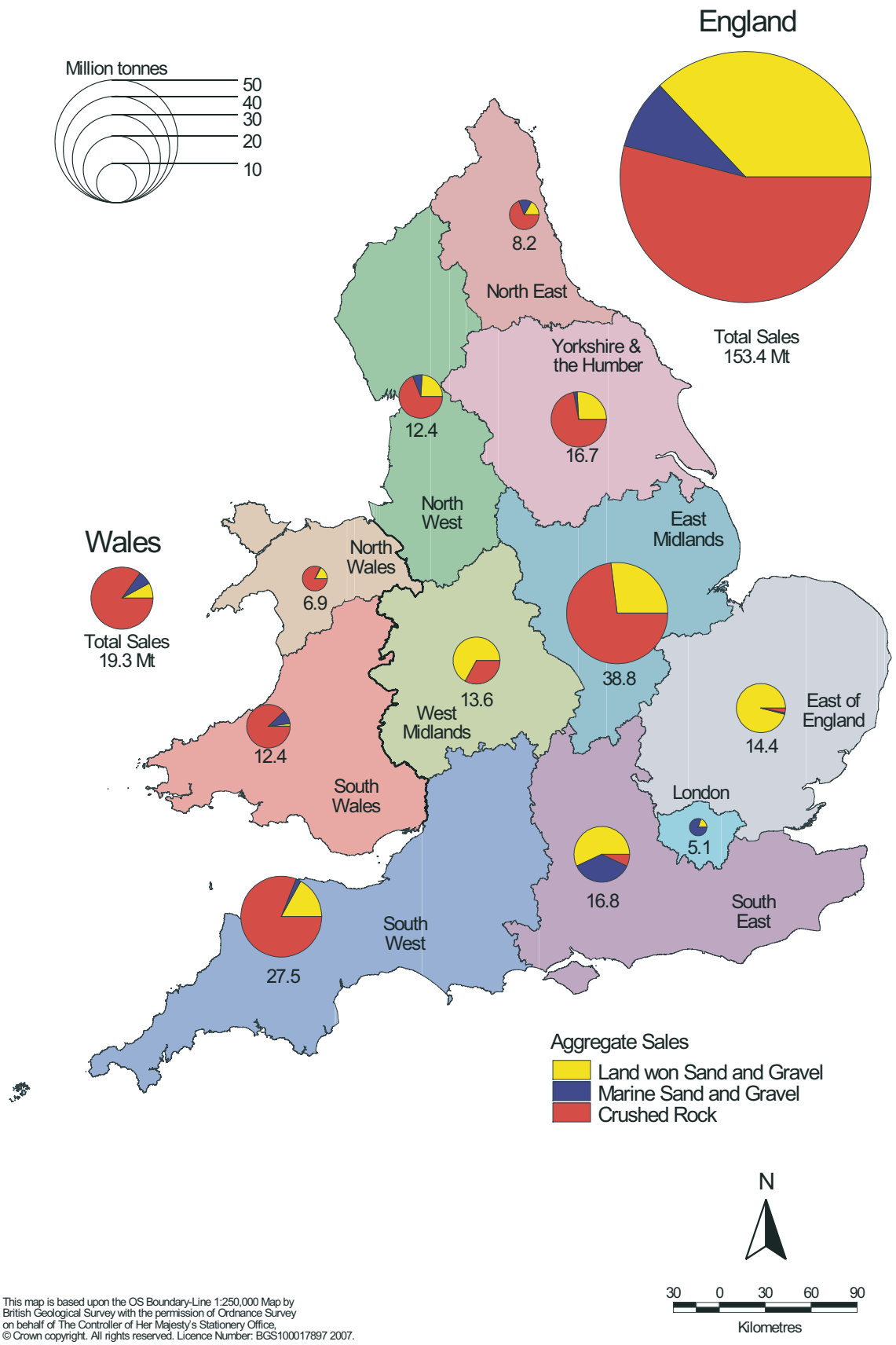
Map 2: **Mineral Planning Authorities and RAWP regions in Wales, 2005**



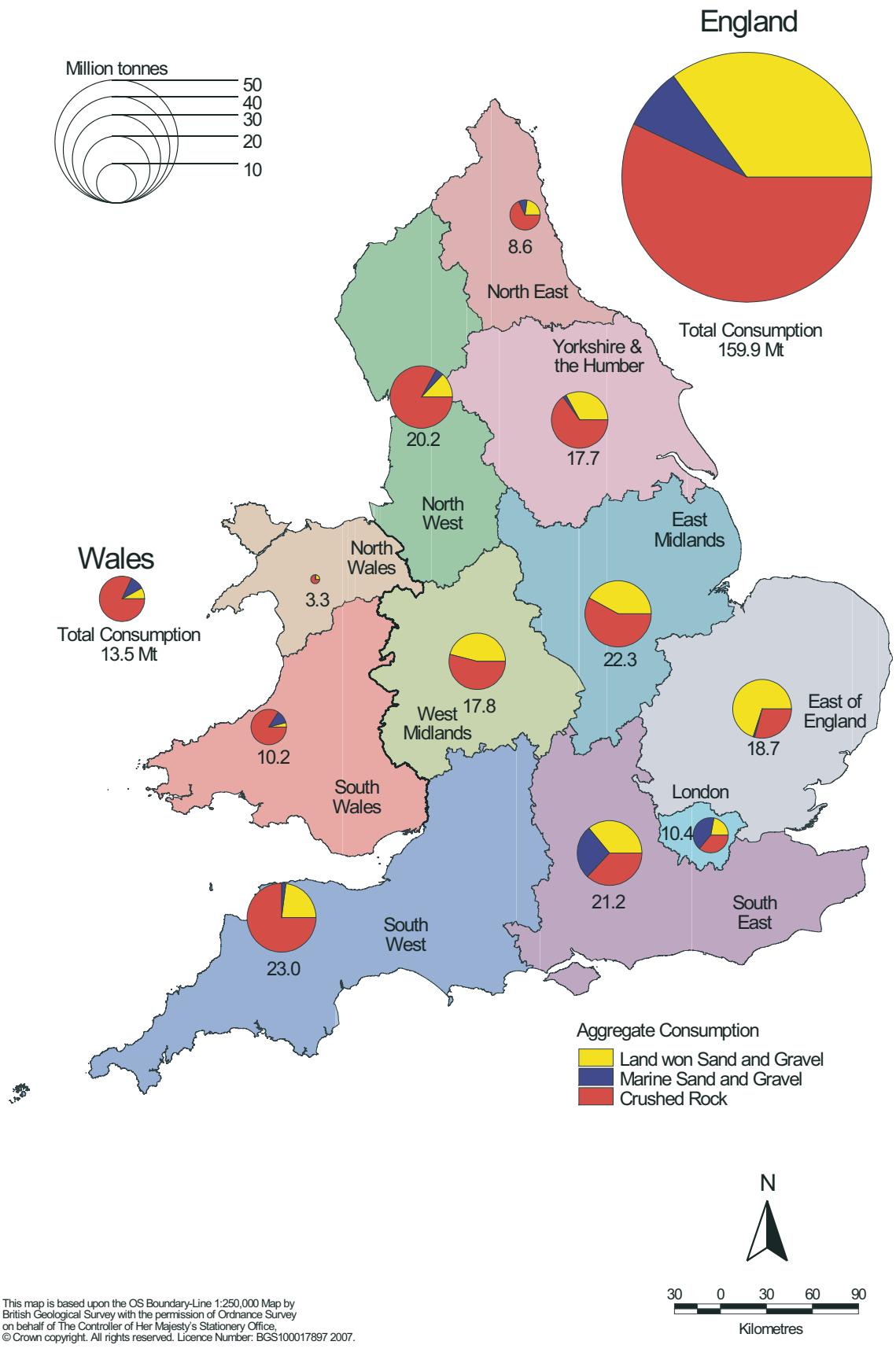
Map 3: **Sub-regions used for AM2005**



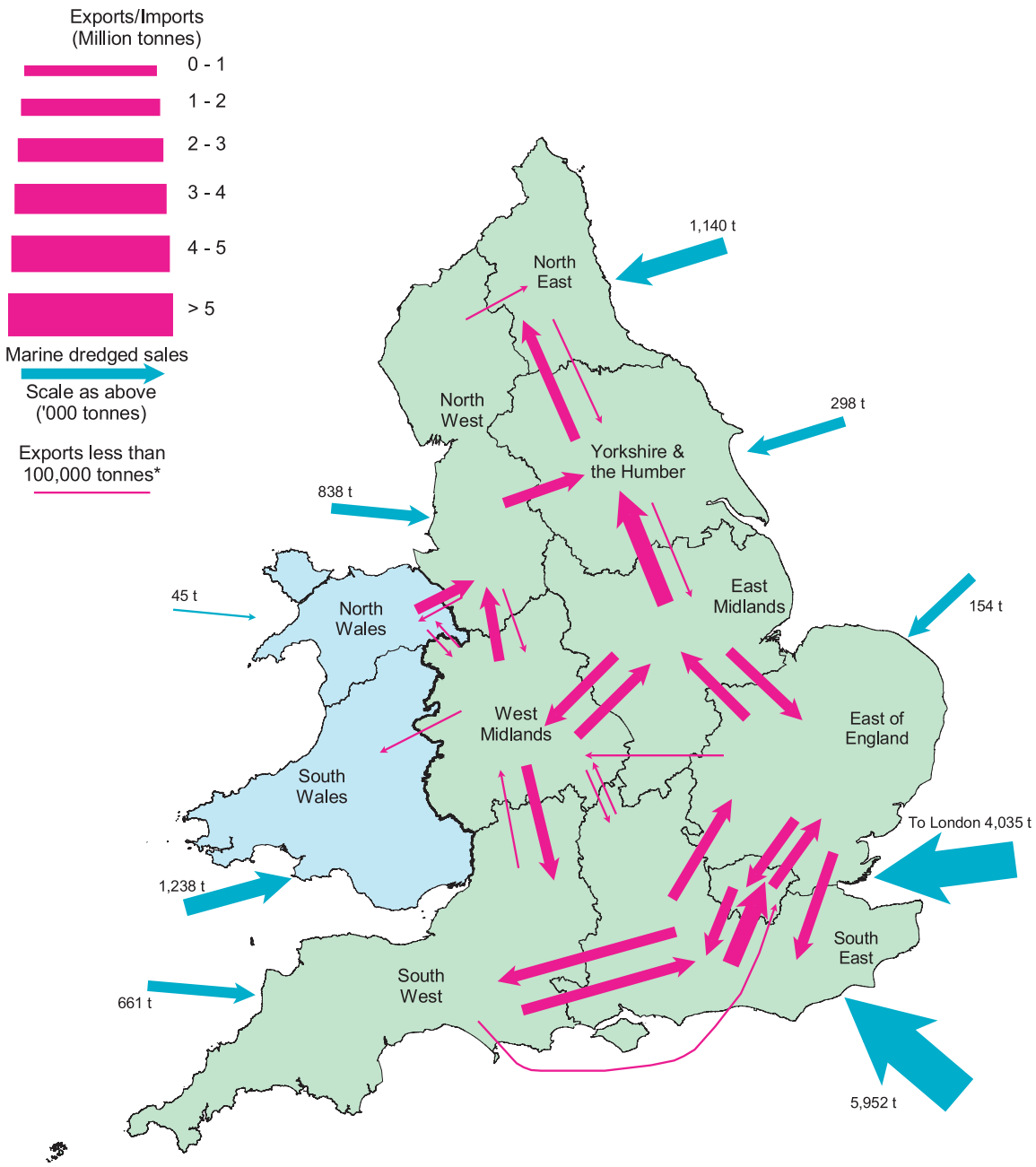
Map 4: **Sales of sand and gravel and crushed rock for aggregates, 2005**



Map 5: **Consumption of sand and gravel and crushed rock for aggregates, 2005**



Map 6: **Sand and gravel inter-regional flows, 2005**



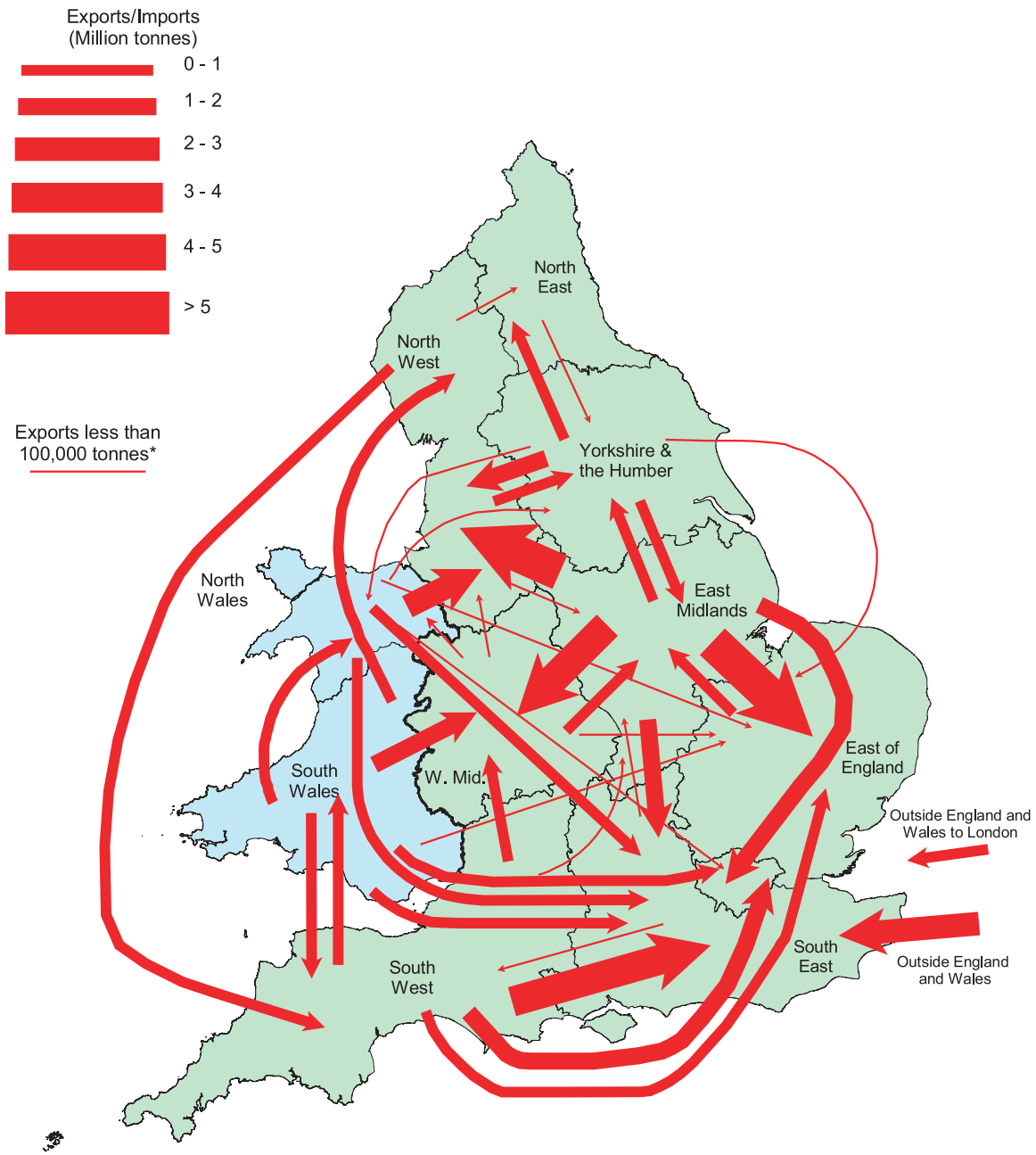
*For clarity, exports less than 25,000 tonnes are not shown.

N

30 0 30 60 90

Kilometres

Map 7: **Crushed rock inter-regional flows, 2005**



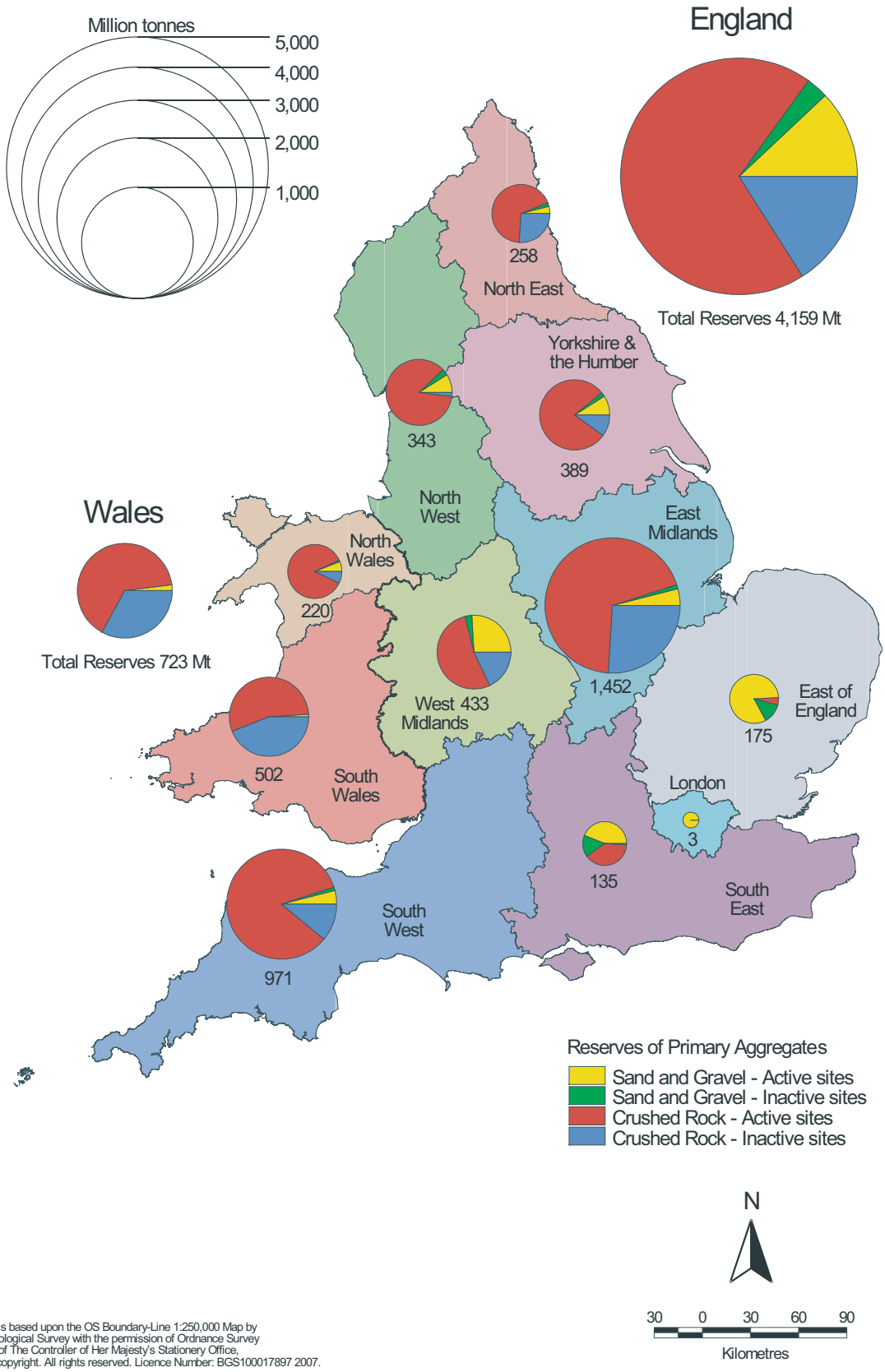
*For clarity, exports less than 25,000 tonnes are not shown.

N

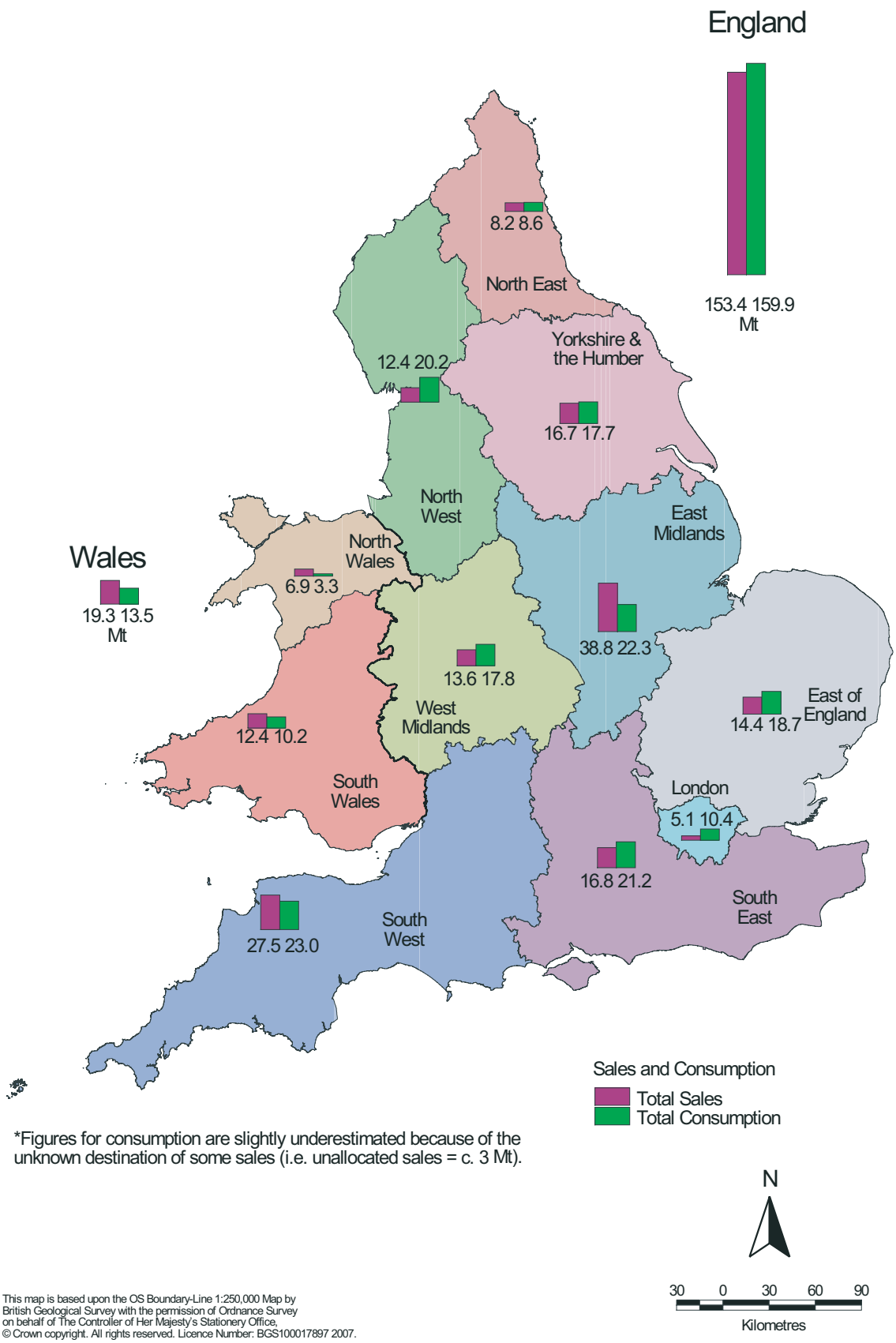
30 0 30 60 90

Kilometres

Map 8: **Permitted reserves of primary aggregates in England and Wales – active and inactive sites, 2005**



Map 9: **Sales and consumption of primary aggregates, 2005**



*Figures for consumption are slightly underestimated because of the unknown destination of some sales (i.e. unallocated sales = c. 3 Mt).

TABLES

GENERAL NOTES ON THE TABLES

A glossary of terms and abbreviations is provided as Appendix F. The following conventions have been used in the tables:

'0' Figure is less than 500 tonnes for all sales and consumption information and less than 0.5 Mt for reserves data.

' ' A blank entry denotes a nil figure.

'c' Indicates a confidential figure. Totals include concealed confidential figures wherever possible.

Figures in the tables may not total fully due to rounding.

The rationale behind the presentation of tables is as follows:

Tables 1 to 3 provide a summary of the main findings of the survey in respect of primary aggregate sales, consumption, and exports and imports, by region.

Tables 4 and 5 present details by mineral type of sales (within and outside the Home region) and consumption and import data for each region.

Tables 6 to 8 present sales by major end use, environmental designation and transport method.

Table 9 provides details of aggregate flows from each Mineral Planning Authority to principal destination sub-region.

Tables 10 and 11 show imports and consumption of aggregates, by sub-region.

Tables 12 and 13 show permitted reserves by site type (active/inactive) and environmental designation.

Tables 14 and 15 show total tonnages granted and refused planning permission between 2002 and 2005 inclusive.

Table 16 shows the number of active land-based quarries and marine wharves that contributed to the survey.

Tables A1 to A5 provide more detailed information on sales by product (end use) and mineral type.

Tables B1 to B3 provide more comprehensive data on permitted reserves by mineral type and environmental designation.

Tables C1 to C8 provide details of planning permissions and refusals by site type and environmental designation.

Tables D1 to D3 provide comparison of sales, consumption and reserves for 1973, 1977, 1985, 1989, 1993, 1997, 2001 and 2005.

1. Sales, consumption and inter-regional flows

Table 1: **Comparison of sales and consumption of primary aggregates in 2005**

Thousand tonnes

Region	Sales Total primary aggregates (thousand tonnes)	Consumption Total primary aggregates (thousand tonnes)	Sales as % of consumption	Net imports as % of consumption	Net exports as % of sales
South West	27,501	22,999	120%	-	16%
South East	16,763	21,176	79%	23%	-
London	5,073	10,355	49%	51%	-
East of England	14,361	18,732	77%	23%	-
East Midlands	38,807	22,277	174%	-	42%
West Midlands	13,621	17,827	76%	24%	-
North West	12,413	20,171	62%	40%	-
Yorkshire & the Humber	16,659	17,749	94%	6%	-
North East	8,157	8,575	95%	11%	-
England	**153,356**	**159,860**	**96%**		
South Wales	12,416	10,165	122%	-	18%
North Wales	6,899	3,331	207%	-	52%
Wales	**19,315**	**13,496**	**143%**		
England and Wales	**172,671**	**173,356**	**99%**		

1. Sales of primary aggregates include sales from land-based quarries and sales of marine-dredged sand and gravel, but not imports of aggregates from outside of England and Wales.
2. Consumption includes sales within the home region, imports from other regions and imports from outside of England and Wales.

Table 2a: **Summary of sales of primary aggregates in 2005**

Thousand tonnes

Region	Land-won sand and gravel	Marine sand and gravel	Total sand and gravel	Crushed rock	Total primary aggregate
South West	4,603	661	5,264	22,238	27,501
South East	9,573	5,952	15,526	1,238	16,763
London	1,038	4,035	5,073		5,073
East of England	13,720	154	13,875	486	14,361
East Midlands	10,014		10,014	28,793	38,807
West Midlands	9,105		9,105	4,516	13,621
North West	2,932	838	3,770	8,644	12,413
Yorkshire & the Humber	4,398	298	4,695	11,964	16,659
North East	1,360	1,140	2,500	5,657	8,157
England	**56,743**	**13,078**	**69,821**	**83,535**	**153,356**
(%)	*97%*	*91%*	*96%*	*83%*	*89%*
South Wales	304	1,238	1,542	10,873	12,416
North Wales	1,192	45	1,237	5,663	6,899
Wales	**1,496**	**1,283**	**2,779**	**16,536**	**19,315**
(%)	*3%*	*9%*	*4%*	*17%*	*11%*
England and Wales	**58,239**	**14,361**	**72,599**	**100,071**	**172,671**

1. For aggregate use only.
2. Sales of primary aggregates include sales from land-based quarries and sales of marine-dredged sand and gravel, but not imports of aggregates from outside of England and Wales.
3. These figures do not include the use of alternative, but still mineral-based, sources of aggregates. In England in 2005, 2.6 million tonnes of china clay waste (sand and rock), 0.15 million tonnes of slate waste and 1 million tonnes of colliery spoil were also used for aggregate purposes. In Wales 0.55 million tonnes of slate was sold for aggregate use.

Table 2b: **Summary of consumption of primary aggregates in 2005**

Thousand tonnes

Region	Land-won sand and gravel	Marine sand and gravel	Total sand and gravel	Crushed rock	Total primary aggregate
South West	5,236	567	5,803	17,197	22,999
South East	7,551	5,691	13,241	7,935	21,176
London	2,185	4,278	6,463	3,892	10,355
East of England	12,987	167	13,154	5,577	18,732
East Midlands	9,275		9,275	13,002	22,277
West Midlands	8,138	12	8,149	9,677	17,827
North West	2,720	820	3,540	16,631	20,171
Yorkshire & the Humber	5,917	322	6,238	11,511	17,749
North East	1,949	758	2,707	5,868	8,575
England	**55,958**	**12,613**	**68,571**	**91,289**	**159,860**
(%)	*98%*	*91%*	*97%*	*89%*	*92%*
South Wales	390	1,238	1,628	8,537	10,165
North Wales	748	63	811	2,520	3,331
Wales	**1,138**	**1,301**	**2,439**	**11,057**	**13,496**
(%)	*2%*	*9%*	*3%*	*11%*	*8%*
England and Wales	**57,096**	**13,914**	**71,010**	**102,346**	**173,356**

1. For aggregate use only.

2. Consumption data includes sales within the home region, imports from other regions and imports from outside of England and Wales. The figure for total consumption slightly underestimates true consumption because for some regions unallocated sales have an unknown destination.

3. Total unallocated sales = Sand and gravel 1,757,480 tonnes
Crushed rock 1,360,672 tonnes

Table 3: **Summary of exports and imports of primary aggregates (land-won and marine) in 2005**

Thousand tonnes

	Exports		Imports	
Region	**Sand and gravel**	**Crushed rock**	**Sand and gravel**	**Crushed rock**
South West	378	6,248	1,036	1,265
South East	2,688	153	939	6,850
London	529		1,919	3,892
East of England	1,458	115	738	5,206
East Midlands	2,349	16,084	1,491	644
West Midlands	1,204	377	375	5,538
North West	443	1,151	741	8,903
Yorkshire & the Humber	607	2,029	2,149	1,582
North East	67	108	626	508
England	**9,723**	**26,264**	**10,015**	**34,389**
South Wales	11	2,526	98	161
North Wales	509	3,343	83	199
Wales	**520**	**5,869**	**181**	**360**
England and Wales	**10,242**	**32,133**	**10,196**	**34,749**

1. Sand and gravel includes marine-dredged sales.

2. Exports and imports do not include quantities of unallocated sales to unknown destinations.

3. Exports include minor quantities to areas outside of England & Wales (37,000 tonnes).

4. Imports include aggregates imported from outside of England and Wales (3.0 million tonnes), principally crushed rock.

Table 4a: **Sales of aggregates and aggregate minerals by region in 2005: South West**

Thousand tonnes

	Aggregate mineral	Aggregates	Non-aggregates	Total
Sand and gravel	Land won	4,603	33	4,636
	Marine dredged	661	0	661
	Total	**5,264**	**33**	**5,297**
Crushed rock	Limestone / dolomite	18,945	402	19,347
	Igneous rock	2,345	0	2,345
	Sandstone	948	36	983
	Chalk	c	c	c
	Ironstone			
	Total	**22,238**	**438**	**22,675**
	Total Aggregates	**27,501**	**471**	**27,972**
	Percent	*98%*	*2%*	*100%*

Sales of aggregates within and outside home region

Thousand tonnes

	Aggregate mineral	Sales of aggregates within home region	Un-allocated sales	Sales of aggregates outside home region											
				Total sales	South East	London	East of England	East Midlands	West Midlands	North West	Yorkshire & Humber	North East	South Wales	North Wales	Scotland	Europe
Sand and gravel	Land won	4,204	33	366	206	84	9	0	62	0			3	2		
	Marine dredged	562	86	13	1		0		12				0			
	Total	**4,767**	**119**	**378**	**206**	**84**	**9**	**0**	**74**	**0**			**3**	**2**		
Crushed rock	Limestone / dolomite	12,838	35	6,073	3,702	1,443	433	9	333	0	0		153	0		
	Igneous rock	2,157	22	163	c		47	c								
	Sandstone	937	1	10	10											
	Chalk															
	Ironstone															
	Total	**15,932**	**57**	**6,245**	**3,810**	**1,443**	**480**	**c**	**333**	**0**	**0**		**153**	**0**		
	Total Aggregates	**20,698**	**177**	**6,622**	**4,016**	**1,526**	**489**	**c**	**407**	**0**	**0**		**156**	**2**		

1. Sandstone in the South West includes small amounts of chalk to maintain confidentiality.
2. In addition about 2.6 million tonnes of china clay waste (sand and rock) were used as aggregate in the South West.

Table 4b: Sales of aggregates and aggregate minerals by region in 2005: South East

Thousand tonnes

	Aggregate mineral	Aggregates	Non-aggregates	Total
Sand and gravel	Land won	9,573	621	10,195
	Marine dredged	5,952		5,952
	Total	**15,526**	**621**	**16,147**
Crushed rock	Limestone / dolomite	1,025	13	1,038
	Igneous rock			
	Sandstone	33	1	34
	Chalk	1	21	22
	Ironstone	179		179
	Total	**1,238**	**35**	**1,273**
	Total Aggregates	**16,763**	**657**	**17,420**
	Percent	*96%*	*4%*	*100%*

Sales of aggregates within and outside home region

Thousand tonnes

	Aggregate mineral	Sales of aggregates within home region	Un-allocated sales	Sales of aggregates outside home region											
				Total sales	South West	London	East of England	East Midlands	West Midlands	North West	Yorkshire & Humber	North East	South Wales	North Wales	Scotland	Europe
Sand and gravel	Land won	6,854	536	2,183	878	1,042	226	0	25	9	1		2	0		
	Marine dredged	5,448		503	4	498	0		0				1			
	Total	**12,302**	**536**	**2,686**	**882**	**1,540**	**226**	**0**	**25**	**9**	**1**		**3**	**0**		
Crushed rock	Limestone / dolomite	976		49	49	0										
	Igneous rock		417													
	Sandstone	33		0	0	0										
	Chalk	1		0												
	Ironstone	75		103	31		7	42	23							
	Total	**1,085**	**417**	**152**	**80**	**0**	**7**	**42**	**23**							
	Total Aggregates	**13,387**	**953**	**2,839**	**962**	**1,540**	**234**	**42**	**48**	**9**	**1**		**3**	**0**		

Table 4c: **Sales of aggregates and aggregate minerals by region in 2005: London**

Thousand tonnes

	Aggregate mineral	Aggregates	Non-aggregates	Total
Sand and gravel	Land won	1,038		1,038
	Marine dredged	4,035		4,035
	Total	**5,073**		**5,073**
Crushed rock	Limestone / dolomite			
	Igneous rock			
	Sandstone			
	Chalk			
	Ironstone			
	Total			
	Total Aggregates	**5,073**		**5,073**
	Percent	*100%*		*100%*

Sales of aggregates within and outside home region

Thousand tonnes

	Aggregate mineral	Sales of aggregates within home region	Un-allocated sales	Sales of aggregates outside home region												
				Total sales	South West	South East	East of England	East Midlands	West Midlands	North West	Yorkshire & Humber	North East	South Wales	North Wales	Scotland	Europe
Sand and gravel	Land won	789		249		139	110									
	Marine dredged	3,755		279		242	37									
	Total	**4,544**		**528**		**381**	**147**									
Crushed rock	Limestone / dolomite															
	Igneous rock															
	Sandstone															
	Chalk															
	Ironstone															
	Total															
	Total Aggregates	**4,544**		**528**		**381**	**147**									

Table 4d: Sales of aggregates and aggregate minerals by region in 2005: East of England

Thousand tonnes

	Aggregate mineral	Aggregates	Non-aggregates	Total
Sand and gravel	Land won	13,720	1,227	14,948
	Marine dredged	154		154
	Total	**13,875**	**1,227**	**15,102**
Crushed rock	Limestone / dolomite	328		328
	Igneous rock			
	Sandstone	158	1	159
	Chalk		761	761
	Ironstone			
	Total	**486**	**762**	**1,249**
	Total Aggregates	**14,361**	**1,990**	**16,351**
	Percent	*88%*	*12%*	*100%*

Sales of aggregates within and outside home region

Thousand tonnes

	Aggregate mineral	Sales of aggregates within home region	Un-allocated sales	Sales of aggregates outside home region											
				Total sales	South West	South East	East of England	East Midlands	West Midlands	North West	Yorkshire & Humber	North East	South Wales	North Wales	Scotland	Europe
Sand and gravel	Land won	12,287		1,428	1	312	265	810	36	3	0	0	0	1		
	Marine dredged	129		25			25									
	Total	**12,416**		**1,452**	**1**	**312**	**289**	**810**	**36**	**3**	**0**	**0**	**0**	**1**		
Crushed rock	Limestone / dolomite	217		110			0	110								
	Igneous rock			0												
	Sandstone	154		4				4								
	Chalk			0												
	Ironstone			0												
	Total	**371**		**115**			**0**	**115**								
	Total Aggregates	**12,788**		**1,568**	**1**	**312**	**290**	**925**	**36**	**3**	**0**	**0**	**0**	**1**		

1. No information was received on sales of marine sand and gravel in Thurrock. Crown Estate landings were 631,893 tonnes. This figure is not included in this, or any other table.

Table 4e: **Sales of aggregates and aggregate minerals by region in 2005: East Midlands**

Thousand tonnes

	Aggregate mineral	Aggregates	Non-aggregates	Total
Sand and gravel	Land won	10,014	67	10,081
	Marine dredged			
	Total	**10,014**	**67**	**10,081**
Crushed rock	Limestone / dolomite	14,545	9,281	23,826
	Igneous rock	13,913	12	13,924
	Sandstone	233	105	338
	Chalk	102	15	117
	Ironstone			
	Total	**28,793**	**9,413**	**38,206**
	Total Aggregates	**38,807**	**9,480**	**48,287**
	Percent	*80%*	*20%*	*100%*

Sales of aggregates within and outside home region

Thousand tonnes

	Aggregate mineral	Sales of aggregates within home region	Un-allocated sales	Sales of aggregates outside home region												
				Total sales	South West	South East	London	East of England	West Midlands	North West	Yorkshire & Humber	North East	South Wales	North Wales	Scotland	Europe
Sand and gravel	Land won	7,784		2,350	1	1	7	346	155	2	1,835	3		0		
	Marine dredged	0														
	Total	**7,784**		**2,350**	**1**	**1**	**7**	**346**	**155**	**2**	**1,835**	**3**		**0**		
Crushed rock	Limestone / dolomite	6,373	129	8,041	4	293	91	737	1,787	4,281	847	0	0	1		
	Igneous rock	5,873	223	7,817	12	794	1,580	3,452	1,838	11	128		2	0		
	Sandstone	9		224						224						
	Chalk	102		0							0					
	Ironstone															
	Total	**12,357**	**352**	**16,084**	**17**	**1,087**	**1,670**	**4,189**	**3,625**	**4,517**	**975**	**0**	**2**	**1**		
	Total Aggregates	**20,142**	**352**	**18,432**	**18**	**1,087**	**1,677**	**4,535**	**3,780**	**4,519**	**2,810**	**4**	**2**	**2**		

1. In addition, 0.36 million tonnes of colliery spoil were used for aggregate.

Table 4f: **Sales of aggregates and aggregate minerals by region in 2005: West Midlands**

Thousand tonnes

	Aggregate mineral	Aggregates	Non-aggregates	Total
Sand and gravel	Land won	9,105	356	9,460
	Marine dredged			
	Total	**9,105**	**356**	**9,460**
Crushed rock	Limestone / dolomite	1,690	67	1,758
	Igneous rock	1,470	0	1,470
	Sandstone	1,356	2	1,358
	Chalk			
	Ironstone			
	Total	**4,516**	**69**	**4,585**
	Total Aggregates	**13,621**	**425**	**14,046**
	Percent	*97%*	*3%*	*100%*

Sales of aggregates within and outside home region

Thousand tonnes

	Aggregate mineral	Sales of aggregates within home region	Un-allocated sales	Sales of aggregates outside home region											
				Total sales	South West	South East	London	East of England	East Midlands	North West	Yorkshire & Humber	North East	South Wales	North Wales	Scotland	Europe
Sand and gravel	Land won	7,774	127	1,201	152	39		9	605	262	7	0	92	35		
	Marine dredged															
	Total	**7,774**	**127**	**1,201**	**152**	**39**		**9**	**605**	**262**	**7**	**0**	**92**	**35**		
Crushed rock	Limestone / dolomite	1,627		62	6	16			17	3	15			5		
	Igneous rock	1,404		65	0	0			62	0	3			0		
	Sandstone	1,108		247	0	6		58	65	83	2		4	29		
	Chalk															
	Ironstone															
	Total	**4,139**		**376**	**7**	**22**		**58**	**144**	**87**	**20**		**4**	**34**		
	Total Aggregates	**11,913**	**127**	**1,577**	**159**	**61**		**67**	**749**	**348**	**27**	**0**	**97**	**69**		

1. In addition, 0.23 million tonnes of colliery spoil were used for aggregate.

Table 4g: **Sales of aggregates and aggregate minerals by region in 2005: North West**

Thousand tonnes

	Aggregate mineral	Aggregates	Non-aggregates	Total
Sand and gravel	Land won	2,932	1,608	4,540
	Marine dredged	838		838
	Total	**3,770**	**1,608**	**5,378**
Crushed rock	Limestone / dolomite	5,059	476	5,535
	Igneous rock	841		841
	Sandstone	2,744	18	2,763
	Chalk			
	Ironstone			
	Total	**8,644**	**494**	**9,138**
	Total Aggregates	**12,413**	**2,102**	**14,516**
	Percent	*86%*	*14%*	*100%*

Sales of aggregates within and outside home region

Thousand tonnes

	Aggregate mineral	Sales of aggregates within home region	Un-allocated sales	Sales of aggregates outside home region												
				Total sales	South West	South East	London	East of England	East Midlands	West Midlands	Yorkshire & Humber	North East	South Wales	North Wales	Scotland	Europe
Sand and gravel	Land won	1,979	528	403					6	31	255	86		25		
	Marine dredged	820		18										18		
	Total	**2,799**	**528**	**422**					**6**	**31**	**255**	**86**		**44**		
Crushed rock	Limestone / dolomite	4,474		842	702		0		2	0	120	18				
	Igneous rock	656		180	0	2	0	0	12	12	116	29		9		
	Sandstone	2,598	31	115					19	0	95	0		1		
	Chalk			0												
	Ironstone			0												
	Total	**7,728**	**31**	**1,138**	**702**	**2**	**0**	**0**	**33**	**13**	**331**	**47**		**10**		
	Total Aggregates	**10,526**	**559**	**1,560**	**702**	**2**	**0**	**0**	**39**	**44**	**586**	**133**		**54**		

1. In addition, 0.15 million tonnes of slate waste were used for aggregate.

Table 4h: **Sales of aggregates and aggregate minerals by region in 2005: Yorkshire & the Humber**

Thousand tonnes

	Aggregate mineral	Aggregates	Non-aggregates	Total
Sand and gravel	Land won	4,398	c	c
	Marine dredged	298		298
	Total	**4,695**	**c**	**c**
Crushed rock	Limestone / dolomite	9,798	547	10,345
	Igneous rock			
	Sandstone	1,776	160	1,936
	Chalk	390	23	413
	Ironstone			
	Total	**11,964**	**731**	**12,695**
	Total Aggregates	**16,659**	**c**	**c**
	Percent	*c*	*c*	*100%*

Sales of aggregates within and outside home region

Thousand tonnes

	Aggregate mineral	Sales of aggregates within home region	Un-allocated sales	Sales of aggregates outside home region											
				Total sales	South West	South East	London	East of England	East Midlands	West Midlands	North West	North East	South Wales	North Wales	Scotland	Europe
Sand and gravel	Land won	3,791		607					69		1	537				
	Marine dredged	298														
	Total	**4,089**		**607**					**69**		**1**	**537**				
Crushed rock	Limestone / dolomite	8,273	7	1,517	0	3		0	211	0	860	443				
	Igneous rock	0														
	Sandstone	1,265		507		0		33	46	11	365	15		37		
	Chalk	390														
	Ironstone															
	Total	**9,929**	**7**	**2,026**	**0**	**3**		**33**	**258**	**12**	**1,225**	**458**		**37**		
	Total Aggregates	**14,018**	**7**	**2,632**	**0**	**3**		**33**	**327**	**12**	**1,225**	**995**		**37**		

1. In addition, 0.41 million tonnes of colliery spoil were used for aggregate.

Table 4i: **Sales of aggregates and aggregate minerals by region in 2005: North East**

Thousand tonnes

	Aggregate mineral	Aggregates	Non-aggregates	Total
Sand and gravel	Land won	1,360	c	c
	Marine dredged	1,140		1,140
	Total	**2,500**	**c**	**c**
Crushed rock	Limestone / dolomite	4,204	313	4,518
	Igneous rock	1,453	29	1,481
	Sandstone	c	c	c
	Chalk			
	Ironstone			
	Total	**5,657**	**342**	**5,999**
	Total Aggregates	**8,157**	**c**	**c**
	Percent	*c*	*c*	*100%*

Sales of aggregates within and outside home region

Thousand tonnes

	Aggregate mineral	Sales of aggregates within home region	Un-allocated sales	Sales of aggregates outside home region												
				Total sales	South West	South East	London	East of England	East Midlands	West Midlands	North West	Yorkshire & Humber	South Wales	North Wales	Scotland	Europe
Sand and gravel	Land won	1,323	89	28		0			0		1	27				
	Marine dredged	758	358	24								24				
	Total	**2,081**	**447**	**52**		**0**			**0**		**1**	**51**				
Crushed rock	Limestone / dolomite	4,049	405	7		0				0	0	7				
	Igneous rock	1,310	43	92	1	1	7	0	3	3	21	18	1	0		37
	Sandstone	c														
	Chalk															
	Ironstone															
	Total	**5,359**	**448**	**99**	**1**	**1**	**7**	**0**	**3**	**3**	**21**	**25**	**1**	**0**		**37**
	Total Aggregates	**7,440**	**895**	**152**	**1**	**1**	**7**	**0**	**3**	**3**	**22**	**77**	**1**	**0**		**37**

1. Igneous rock in the North East includes small quantities of sandstone to maintain confidentiality.

Table 4j: Sales of aggregates and aggregate minerals by region in 2005: South Wales

Thousand tonnes

	Aggregate mineral	Aggregates	Non-aggregates	Total
Sand and gravel	Land won	304	53	357
	Marine dredged	1,238		1,238
	Total	**1,542**	**53**	**1,595**
Crushed rock	Limestone / dolomite	6,137	1,328	7,464
	Igneous rock	1,238	1	1,239
	Sandstone	3,498	8	3,506
	Chalk			
	Ironstone			
	Total	**10,873**	**1,336**	**12,209**
	Total Aggregates	**12,416**	**1,389**	**13,805**
	Percent	*90%*	*10%*	*100%*

Sales of aggregates within and outside home region

Thousand tonnes

	Aggregate mineral	Sales of aggregates within home region	Un-allocated sales	Sales of aggregates outside home region											
				Total sales	South West	South East	London	East of England	East Midlands	West Midlands	North West	Yorkshire & Humber	North East	North Wales	Scotland	Europe
Sand and gravel	Land won	293		11						9				2		
	Marine dredged	1,236	2	0	0											
	Total	**1,530**	**2**	**11**	**0**					**9**				**2**		
Crushed rock	Limestone / dolomite	5,982		154	25	48				81				0		
	Igneous rock	808		430	30	3	1	24	12	145	106	1		108		
	Sandstone	1,586	48	1,941	361	88	126	40	11	1,299	4	2	3	7		
	Chalk															
	Ironstone															
	Total	**8,376**	**48**	**2,527**	**416**	**140**	**127**	**64**	**23**	**1,524**	**111**	**3**	**3**	**116**		
	Total Aggregates	**9,906**	**50**	**2,538**	**416**	**140**	**127**	**64**	**23**	**1,533**	**111**	**3**	**3**	**118**		

1. No information was received on sales of marine sand and gravel in the Vale of Glamorgan. Crown Estate landings were 16,345 tonnes. This figure is not included in this, or any other table.
2. No information was received on sites of marine sand and gravel in Pembrokeshire. Crown Estate Landings were 66,607 tonnes. This figure is not included in this or any other table.

Table 4k: **Sales of aggregates and aggregate minerals by region in 2005: North Wales**

Thousand tonnes

	Aggregate mineral	Aggregates	Non-aggregates	Total
Sand and gravel	Land won	1,192		1,192
	Marine dredged	45		45
	Total	**1,237**		**1,237**
Crushed rock	Limestone / dolomite	4,641	536	5,177
	Igneous rock	1,022	0	1,022
	Sandstone			
	Chalk			
	Ironstone			
	Total	**5,663**	**536**	**6,199**
	Total Aggregates	**6,899**	**536**	**7,435**
	Percent	*93%*	*7%*	*100%*

Sales of aggregates within and outside home region

Thousand tonnes

	Aggregate mineral	Sales of aggregates within home region	Un-allocated sales	Sales of aggregates outside home region											
				Total sales	South West	South East	London	East of England	East Midlands	West Midlands	North West	Yorkshire & Humber	North East	South Wales	Scotland	Europe
Sand and gravel	Land won	683		508					0	44	464			0		
	Marine dredged	45		0												
	Total	**728**		**508**					**0**	**44**	**464**			**0**		
Crushed rock	Limestone / dolomite	1,576		2,973		153	79	47	0	5	2,689		0	0		
	Igneous rock	745		277		15		8		0	254			0		
	Sandstone															
	Chalk															
	Ironstone															
	Total	**2,320**		**3,251**		**168**	**79**	**55**	**0**	**5**	**2,943**		**0**	**1**		
	Total Aggregates	**3,048**		**3,760**		**168**	**79**	**55**	**0**	**50**	**3,407**		**0**	**1**		

1. In addition, 0.55 million tonnes of slate were used for aggregate.

Table 5a: **Consumption of primary aggregates by region in 2005: South West**

Thousand tonnes

	Aggregate mineral	Imports	Sales within Region	Total consumption
Sand and gravel	Land won	1,032	4,204	5,236
	Marine dredged	4	562	567
	Total	**1,036**	**4,767**	**5,803**
Crushed rock	Limestone / dolomite	787	12,838	13,625
	Igneous rock	86	2,157	2,243
	Sandstone	361	937	1,298
	Chalk			
	Ironstone	31		31
	Total	**1,265**	**15,932**	**17,197**
	Total Aggregates	**2,301**	**20,698**	**22,999**
	Percent	*10%*	*90%*	*100%*

Imports of primary aggregates by region: South West

Thousand tonnes

	Aggregate mineral	Total	South East	London	East of England	East Midlands	West Midlands	North West	Yorkshire & Humber	North East	South Wales	North Wales	Outside England & Wales
Sand and gravel	Land won	1,032	878		1	1	152						
	Marine dredged	4	4	0							0		
	Total	**1,036**	**882**	**0**	**1**	**1**	**152**				**0**		
Crushed rock	Limestone / dolomite	787	49			4	6	702	0		25		
	Igneous rock	86				12	0	0		1	30		43
	Sandstone	361	0				0				361		
	Chalk												
	Ironstone	31	31										
	Total	**1,265**	**80**			**17**	**7**	**702**	**0**	**1**	**416**		**43**
	Total Aggregates	**2,301**	**962**	**0**	**1**	**18**	**159**	**702**	**0**	**1**	**416**		**43**

Table 5b: **Consumption of primary aggregates by region in 2005: South East**

Thousand tonnes

	Aggregate mineral	Imports	Sales within Region	Total consumption
Sand and gravel	Land won	696	6,854	7,551
	Marine dredged	243	5,448	5,691
	Total	**939**	**12,302**	**13,241**
Crushed rock	Limestone / dolomite	4,357	976	5,333
	Igneous rock	2,388		2,388
	Sandstone	104	33	137
	Chalk		1	1
	Ironstone		75	75
	Total	**6,850**	**1,085**	**7,935**
	Total Aggregates	**7,789**	**13,387**	**21,176**
	Percent	*37%*	*63%*	*100%*

Imports of primary aggregates by region: South East

Thousand tonnes

	Aggregate mineral	Total	South West	London	East of England	East Midlands	West Midlands	North West	Yorkshire & Humber	North East	South Wales	North Wales	Outside England & Wales
Sand and gravel	Land won	696	206	139	312	1	39			0			
	Marine dredged	243	1	242									
	Total	**939**	**206**	**381**	**312**	**1**	**39**			**0**			
Crushed rock	Limestone / dolomite	4,357	3,702			293	16		3	0	48	153	143
	Igneous rock	2,388				794	0	2		1	3	15	1,476
	Sandstone	104	10				6		0		88		
	Chalk												
	Ironstone												
	Total	**6,850**	**3,810**			**1,087**	**22**	**2**	**3**	**1**	**140**	**168**	**1,618**
	Total Aggregates	**7,789**	**4,016**	**381**	**312**	**1,087**	**61**	**2**	**3**	**1**	**140**	**168**	**1,618**

Table 5c: **Consumption of primary aggregates by region in 2005: London**

Thousand tonnes

	Aggregate mineral	Imports	Sales within Region	Total consumption
Sand and gravel	Land won	1,396	789	2,185
	Marine dredged	523	3,755	4,278
	Total	**1,919**	**4,544**	**6,463**
Crushed rock	Limestone / dolomite	1,613		1,613
	Igneous rock	2,150		2,150
	Sandstone	129		129
	Chalk			
	Ironstone			
	Total	**3,892**		**3,892**
	Total Aggregates	**5,811**	**4,544**	**10,355**
	Percent	*56%*	*44%*	*100%*

Imports of primary aggregates by region: London

Thousand tonnes

	Aggregate mineral	Total	South West	South East	East of England	East Midlands	West Midlands	North West	Yorkshire & Humber	North East	South Wales	North Wales	Outside England & Wales
Sand and gravel	Land won	1,396	84	1,042	265	7							
	Marine dredged	523		498	25								
	Total	**1,919**	**84**	**1,540**	**289**	**7**							
Crushed rock	Limestone / dolomite	1,613	1,443	0	0	91		0				79	
	Igneous rock	2,150				1,580		0		7	1		563
	Sandstone	129		0							126		2
	Chalk												
	Ironstone												
	Total	**3,892**	**1,443**	**0**	**0**	**1,670**		**0**		**7**	**127**	**79**	**565**
	Total Aggregates	**5,811**	**1,526**	**1,540**	**290**	**1,677**		**0**		**7**	**127**	**79**	**565**

Table 5d: **Consumption of primary aggregates by region in 2005: East of England**

Thousand tonnes

	Aggregate mineral	Imports	Sales within Region	Total consumption
Sand and gravel	Land won	701	12,287	12,987
	Marine dredged	38	129	167
	Total	**738**	**12,416**	**13,154**
Crushed rock	Limestone / dolomite	1,252	217	1,469
	Igneous rock	3,815		3,815
	Sandstone	131	154	285
	Chalk			
	Ironstone	7		7
	Total	**5,206**	**371**	**5,577**
	Total Aggregates	**5,944**	**12,788**	**18,732**
	Percent	*32%*	*68%*	*100%*

Imports of primary aggregates by region: East of England

Thousand tonnes

	Aggregate mineral	Total	South West	South East	London	East Midlands	West Midlands	North West	Yorkshire & Humber	North East	South Wales	North Wales	Outside England & Wales
Sand and gravel	Land won	701	9	226	110	346	9						
	Marine dredged	38	0	0	37								
	Total	**738**	**9**	**226**	**147**	**346**	**9**						
Crushed rock	Limestone / dolomite	1,252	433			737			0			47	35
	Igneous rock	3,815	47			3,452		0		0	24	8	283
	Sandstone	131					58		33		40		
	Chalk												
	Ironstone	7		7									
	Total	**5,206**	**480**	**7**		**4,189**	**58**	**0**	**33**	**0**	**64**	**55**	**319**
	Total Aggregates	**5,944**	**489**	**234**	**147**	**4,535**	**67**	**0**	**33**	**0**	**64**	**55**	**319**

Table 5e: **Consumption of primary aggregates by region in 2005: East Midlands**

Thousand tonnes

	Aggregate mineral	Imports	Sales within Region	Total consumption
Sand and gravel	Land won	1,491	7,784	9,275
	Marine dredged			
	Total	**1,491**	**7,784**	**9,275**
Crushed rock	Limestone / dolomite	349	6,373	6,722
	Igneous rock	108	5,873	5,980
	Sandstone	145	9	155
	Chalk		102	102
	Ironstone	42		42
	Total	**644**	**12,357**	**13,002**
	Total Aggregates	**2,135**	**20,142**	**22,277**
	Percent	*10%*	*90%*	*100%*

Imports of primary aggregates by region: East Midlands

Thousand tonnes

	Aggregate mineral	Total	South West	South East	London	East of England	West Midlands	North West	Yorkshire & Humber	North East	South Wales	North Wales	Outside England & Wales
Sand and gravel	Land won	1,491	0	0		810	605	6	69	0		0	
	Marine dredged												
	Total	**1,491**	**0**	**0**		**810**	**605**	**6**	**69**	**0**		**0**	
Crushed rock	Limestone / dolomite	349	9			110	17	2	211			0	
	Igneous rock	108	c				62	12		3	12		0
	Sandstone	145				4	65	19	46		11		
	Chalk												
	Ironstone	42		42									
	Total	**644**	**c**	**42**		**115**	**144**	**33**	**258**	**3**	**23**	**0**	**0**
	Total Aggregates	**2,135**	**c**	**42**		**925**	**749**	**39**	**327**	**3**	**23**	**0**	**0**

Table 5f: **Consumption of primary aggregates by region in 2005: West Midlands**

Thousand tonnes

	Aggregate mineral	Imports	Sales within Region	Total consumption
Sand and gravel	Land won	364	7,774	8,138
	Marine dredged	12		12
	Total	**375**	**7,774**	**8,149**
Crushed rock	Limestone / dolomite	2,206	1,627	3,833
	Igneous rock	1,998	1,404	3,402
	Sandstone	1,311	1,108	2,418
	Chalk			
	Ironstone	23		23
	Total	**5,538**	**4,139**	**9,677**
	Total Aggregates	**5,913**	**11,913**	**17,827**
	Percent	*33%*	*67%*	*100%*

Imports of primary aggregates by region: West Midlands

Thousand tonnes

	Aggregate mineral	Total	South West	South East	London	East of England	East Midlands	North West	Yorkshire & Humber	North East	South Wales	North Wales	Outside England & Wales
Sand and gravel	Land won	364	62	25		36	155	31			9	44	
	Marine dredged	12	12	0									
	Total	**375**	**74**	**25**		**36**	**155**	**31**			**9**	**44**	
Crushed rock	Limestone / dolomite	2,206	333				1,787	0	0	0	81	5	
	Igneous rock	1,998					1,838	12		3	145	0	0
	Sandstone	1,311						0	11		1,299		
	Chalk												
	Ironstone	23		23									
	Total	**5,538**	**333**	**23**			**3,625**	**13**	**12**	**3**	**1,524**	**5**	**0**
	Total Aggregates	**5,913**	**407**	**48**		**36**	**3,780**	**44**	**12**	**3**	**1,533**	**50**	**0**

Table 5g: **Consumption of primary aggregates by region in 2005: North West**

Thousand tonnes

	Aggregate mineral	Imports	Sales within Region	Total consumption
Sand and gravel	Land won	741	1,979	2,720
	Marine dredged		820	820
	Total	**741**	**2,799**	**3,540**
Crushed rock	Limestone / dolomite	7,835	4,474	12,309
	Igneous rock	392	656	1,048
	Sandstone	677	2,598	3,274
	Chalk			
	Ironstone			
	Total	**8,903**	**7,728**	**16,631**
	Total Aggregates	**9,644**	**10,526**	**20,171**
	Percent	*48%*	*52%*	*100%*

Imports of primary aggregates by region: North West

Thousand tonnes

	Aggregate mineral	Total	South West	South East	London	East of England	East Midlands	West Midlands	Yorkshire & Humber	North East	South Wales	North Wales	Outside England & Wales
Sand and gravel	Land won	741	0	9		3	2	262	1	1		464	
	Marine dredged												
	Total	**741**	**0**	**9**		**3**	**2**	**262**	**1**	**1**		**464**	
Crushed rock	Limestone / dolomite	7,835	0				4,281	3	860	0		2,689	
	Igneous rock	392					11	0		21	106	254	0
	Sandstone	677					224	83	365		4		
	Chalk												
	Ironstone												
	Total	**8,903**	**0**				**4,517**	**87**	**1,225**	**21**	**111**	**2,943**	**0**
	Total Aggregates	**9,644**	**0**	**9**		**3**	**4,519**	**348**	**1,225**	**22**	**111**	**3,407**	**0**

Table 5h: **Consumption of primary aggregates by region in 2005: Yorkshire & the Humber**

Thousand tonnes

	Aggregate mineral	Imports	Sales within Region	Total consumption
Sand and gravel	Land won	2,125	3,791	5,917
	Marine dredged	24	298	322
	Total	**2,149**	**4,089**	**6,238**
Crushed rock	Limestone / dolomite	989	8,273	9,262
	Igneous rock	494		494
	Sandstone	99	1,265	1,365
	Chalk		390	391
	Ironstone			
	Total	**1,582**	**9,929**	**11,511**
	Total Aggregates	**3,731**	**14,018**	**17,749**
	Percent	*21%*	*79%*	*100%*

Imports of primary aggregates by region: Yorkshire & the Humber

Thousand tonnes

	Aggregate mineral	Total	South West	South East	London	East of England	East Midlands	West Midlands	North West	North East	South Wales	North Wales	Outside England & Wales
Sand and gravel	Land won	2,125		1			1,835	7	255	27			
	Marine dredged	24								24			
	Total	**2,149**		**1**			**1,835**	**7**	**255**	**51**			
Crushed rock	Limestone / dolomite	989	0				847	15	120	7			
	Igneous rock	494					128	3	116	18	1		228
	Sandstone	99						2	95		2		
	Chalk						0						
	Ironstone												
	Total	**1,582**	**0**				**975**	**20**	**331**	**25**	**3**		**228**
	Total Aggregates	**3,731**	**0**	**1**			**2,810**	**27**	**586**	**77**	**3**		**228**

Table 5i: **Consumption of primary aggregates by region in 2005: North East**

Thousand tonnes

	Aggregate mineral	Imports	Sales within Region	Total consumption
Sand and gravel	Land won	626	1,323	1,949
	Marine dredged		758	758
	Total	**626**	**2,081**	**2,707**
Crushed rock	Limestone / dolomite	462	4,049	4,511
	Igneous rock	29	1,308	1,337
	Sandstone	17	2	19
	Chalk			
	Ironstone			
	Total	**508**	**5,359**	**5,868**
	Total Aggregates	**1,135**	**7,440**	**8,575**
	Percent	*13%*	*87%*	*100%*

Imports of primary aggregates by region: North East

Thousand tonnes

	Aggregate mineral	Total	South West	South East	London	East of England	East Midlands	West Midlands	North West	Yorkshire & Humber	South Wales	North Wales	Outside England & Wales
Sand and gravel	Land won	626				0	3	0	86	537			
	Marine dredged												
	Total	**626**				**0**	**3**	**0**	**86**	**537**			
Crushed rock	Limestone / dolomite	462					0		18	443		0	
	Igneous rock	29							29				
	Sandstone	17							0	15	3		
	Chalk												
	Ironstone												
	Total	**508**					**0**		**47**	**458**	**3**	**0**	
	Total Aggregates	**1,135**				**0**	**4**	**0**	**133**	**995**	**3**	**0**	

Table 5j: **Consumption of primary aggregates by region in 2005: South Wales**

Thousand tonnes

	Aggregate mineral	Imports	Sales within Region	Total consumption
Sand and gravel	Land won	97	293	390
	Marine dredged	1	1,236	1,238
	Total	**98**	**1,530**	**1,628**
Crushed rock	Limestone / dolomite	154	5,982	6,136
	Igneous rock	3	808	811
	Sandstone	4	1,586	1,590
	Chalk			
	Ironstone			
	Total	**161**	**8,376**	**8,537**
	Total Aggregates	**259**	**9,906**	**10,165**
	Percent	*3%*	*97%*	*100%*

Imports of primary aggregates by region: South Wales

Thousand tonnes

	Aggregate mineral	Total	South West	South East	London	East of England	East Midlands	West Midlands	North West	Yorkshire & Humber	North East	North Wales	Outside England & Wales
Sand and gravel	Land won	97	3	2		0		92				0	
	Marine dredged	1	0	1									
	Total	**98**	**3**	**3**		**0**		**92**				**0**	
Crushed rock	Limestone / dolomite	154	153				0					0	
	Igneous rock	3					2				1	0	
	Sandstone	4						4					
	Chalk												
	Ironstone												
	Total	**161**	**153**				**2**	**4**			**1**	**1**	
	Total Aggregates	**259**	**156**	**3**		**0**	**2**	**97**			**1**	**1**	

Table 5k: **Consumption of primary aggregates by region in 2005: North Wales**

Thousand tonnes

	Aggregate mineral	Imports	Sales within Region	Total consumption
Sand and gravel	Land won	65	683	748
	Marine dredged	18	45	63
	Total	**83**	**728**	**811**
Crushed rock	Limestone / dolomite	7	1,576	1,583
	Igneous rock	118	745	862
	Sandstone	75		75
	Chalk			
	Ironstone			
	Total	**199**	**2,320**	**2,520**
	Total Aggregates	**282**	**3,048**	**3,331**
	Percent	*8%*	*92%*	*100%*

Imports of primary aggregates by region: North Wales

Thousand tonnes

	Aggregate mineral	Total	South West	South East	London	East of England	East Midlands	West Midlands	North West	Yorkshire & Humber	North East	North Wales	Outside England & Wales
Sand and gravel	Land won	65	2	0		1	0	35	25			2	
	Marine dredged	18							18				
	Total	**83**	**2**	**0**		**1**	**0**	**35**	**44**			**2**	
Crushed rock	Limestone / dolomite	7	0				1	5				0	
	Igneous rock	118					0	0	9		0	108	
	Sandstone	75						29	1	37		7	
	Chalk	0											
	Ironstone	0											
	Total	**199**	**0**				**1**	**34**	**10**	**37**	**0**	**116**	
	Total Aggregates	**282**	**2**	**0**		**1**	**2**	**69**	**54**	**37**	**0**	**118**	

Table 6: **Summary of sales of primary aggregates (sand & gravel and crushed rock) by major end use in 2005**

Thousand tonnes

Aggregate Use	South West	South East	London	East of England	East Midlands	West Midlands	North West	Yorkshire & Humber	North East	England Total	South Wales	North Wales	Wales Total	England & Wales Total
Coarse/fine concrete aggregate	6,727	10,798	4,478	8,430	9,920	7,449	3,534	5,917	1,508	**58,762**	2,165	1,566	**3,731**	**62,493**
Building/asphalting sand	752	1,858	143	1,478	1,015	1,316	1,491	493	366	**8,912**	881	216	**1,097**	**10,010**
Roadstone/gravel, coated for asphalt	3,804	124		55	4,795	1,649	1,066	1,942	508	**13,945**	2,495	980	**3,476**	**17,421**
Roadstone, uncoated	5,298	142			5,842	1,204	1,794	3,161	1,103	**18,545**	1,651	860	**2,511**	**21,056**
Other screened and graded aggregates	3,709	1,239	119	1,356	4,359	765	1,762	2,592	1,483	**17,384**	1,627	778	**2,405**	**19,789**
Railway ballast	98				1,416		203			**1,730**	142	228	**370**	**2,100**
Armourstone and gabion stone	47				118	7	120	46	87	**426**	75	15	**90**	**515**
Other construction uses, including fill	6,416	1,065	63	1,864	7,968	1,231	2,342	2,508	718	**24,175**	1,935	2,080	**4,016**	**28,191**
Undifferentiated aggregate use	652	1,536	270	1,178	3,374		100		2,369	**9,478**	1,444	175	**1,619**	**11,097**
Total Sales	**27,501**	**16,763**	**5,073**	**14,361**	**38,807**	**13,621**	**12,413**	**16,659**	**8,157**	**153,356**	**12,416**	**6,899**	**19,315**	**172,671**

1. Sales include from land-based quarries and landings of marine-dredged sand & gravel, but not imports of aggregates from outside of England and Wales.
2. Coated roadstone also includes material exported from the quarry site for coating with bituminous binder.
3. Roadstone uncoated includes rock chippings for surfacing dressing.

Table 7: **Summary of sales of land-won primary aggregates by selected environmental designation in 2005**

Thousand tonnes

	South West	South East	London	East of England	East Midlands	West Midlands	North West	Yorkshire & Humber	North East	England Total	South Wales	North Wales	Wales Total	England & Wales Total
Sand and gravel														
All sites	4,603	9,573	1,038	13,720	10,014	9,105	2,932	4,398	1,360	**56,743**	304	1,192	**1,496**	**58,239**
National Park		49		111						**160**				**160**
AONB		593		239		658				**1,907**		45	**45**	**1,953**
SSSI	522	772		385	1,111	305	171	239		**3,572**	2	150	**152**	**3,723**
Geological SSSI		349		194	99					**937**				**937**
Biological SSSI	1,027	267		191		305	171	358		**2,384**	2	150	**152**	**2,536**
SPA and SAC	1,276	267		191			171		0	**1,904**	2	150	**152**	**2,056**
Crushed rock														
All sites	22,238	1,238		486	28,793	4,516	8,644	11,964	5,657	**83,535**	10,873	5,663	**16,536**	**100,071**
National Park	c				8,570		1,002	4,082	c	**14,601**	835		**835**	**15,436**
AONB	3,077	70		38		581	477	1,083	542	**5,918**	162	458	**620**	**6,537**
SSSI	4,867	134		38	16,370	1,401	1,457	3,445		**27,713**	529	2,631	**3,160**	**30,873**
Geological SSSI	3,706	167		23	10,700	1,458	1,457	2,897		**20,409**	529		**529**	**20,938**
Biological SSSI	1,311			56	5,670	1,185	1,457	837		**10,516**			**282**	**10,798**
SPA and SAC					946		823	837		**2,669**	220	1,393	**1,613**	**4,282**

1. From land-based aggregate quarries only.
2. 'All sites' includes sales from all land-based mineral workings producing primary aggregates in 2005.
3. National Parks include the New Forest and The Broads.
4. Designations are not mutually exclusive, e.g. SSSIs may overlap with others, such as National Parks and AONBs. SSSIs are designated for their Biological and/or Geological importance. Special Areas of Conservation (SAC) and Special Protection Areas (SPA) are also SSSIs. They are all sub-sets of SSSIs but are not mutually exclusive and cannot be added together. Some designations, notably SSSIs, may only coincide with a small part of an extant planning permission. However, the total sales for the mineral working are recorded even though there may be no extraction within the designation. The degree of overlap, and the actual or potential impacts of mineral extraction on the conservation interest of the site, whether biological or geological, will vary and are not reflected in the figures.
5. To maintain confidentiality some regional figures have been left blank. The totals remain correct.

Table 8: **Sales of primary aggregates by principal transport method in 2005**

Thousand tonnes

Region	Road			Rail			Water			Total
	Sand and gravel	Crushed rock	Total	Sand and gravel	Crushed rock	Total	Sand and gravel	Crushed rock	Total	
South West	5,181	17,128	22,309	83	5,000	5,083		109	109	**27,501**
South East	15,414	2,410	17,824	77	560	637	35	680	715	**19,176**
London	4,218	413	4,631	854		854				**5,486**
East of England	13,664	625	14,289				210		210	**14,500**
East Midlands	9,706	21,456	31,162		7,337	7,337	428		428	**38,927**
West Midlands	9,105	4,516	13,621							**13,621**
North West	3,770	8,910	12,679							**12,679**
Yorkshire & the Humber	4,695	11,098	15,793		c	c				**c**
North East	2,595	5,522	8,117		c	c				**c**
England	**68,347**	**72,077**	**140,425**	**1,014**	**14,385**	**15,399**	**673**	**789**	**1,462**	**157,286**
South Wales	1,542	10,379	11,921		572	572				**12,493**
North Wales	1,237	5,042	6,278		342	342		279	279	**6,899**
Wales	**2,779**	**15,420**	**18,199**		**915**	**915**		**279**	**279**	**19,392**
England and Wales	**71,126**	**87,498**	**158,624**	**1,014**	**15,299**	**16,314**	**673**	**1,068**	**1,741**	**176,679**

1. Crushed rock imported from outside of England and Wales as distributed from wharves is included.
2. Marine sand and gravel as distributed from wharves is included.
3. Figures are based on sales by destination. Because of unallocated sales of unknown destination, there will by small differences in some regions with product sales. Total sales by transport method (176.7 million tonnes) provides a good indication of total consumption of primary aggregates because it includes just over 3 million tonnes of unallocated sales not shown in the total in Table 2b.

2. Sub-regional sales, flows and consumption

Table 9a: **Sales of primary aggregates by MPA and principal destination sub-region in 2005: South West**

Thousand tonnes

Source Region	Source MPA	Destination	Land-won sand and gravel	MPA %	RAWP %	Marine sand and gravel	MPA %	RAWP %	Crushed rock	MPA %	RAWP %
South West	Bristol City Council	Somerset and Avon				423	90%				
		South West				10	2%				
		Elsewhere				13	3%				
		Unallocated				26	5%				
	MPA Total					*471*	*100%*	*71%*			
	Cornwall County Council[a]	Cornwall, Devon							595	43%	
		South West	c	100%					648	47%	
		Elsewhere and Unallocated							150	11%	
	MPA Total		*c*	*100%*	*c*				*1,392*	*100%*	*6%*
	Dartmoor National Park	Cornwall, Devon							800	100%	
		South West							0	0%	
	MPA Total								*800*	*100%*	*4%*
	Devon County Council(a)	Cornwall, Devon	561	67%					1,383	66%	
		South West	273	33%		35	100%		715	34%	
		Elsewhere	1	0%					0	0%	
	MPA Total		*835*	*100%*	*18%*	*35*	*5%*		*2,099*	*100%*	*9%*
	Dorset County Council	Dorset and Wiltshire	646	38%					190	96%	
		South West	767	46%					0	0%	
		Elsewhere	238	14%							
		Unallocated	33	2%					8	4%	
	MPA Total		*1,684*	*100%*	*37%*				*198*	*100%*	*1%*
	Gloucestershire County Council	Gloucestershire	198	19%					903	46%	
		South West	745	72%					525	27%	
		Elsewhere	84	8%					523	27%	
	MPA Total		*1,028*	*100%*	*22%*				*1,951*	*100%*	*9%*
	North Somerset Council	Somerset and Avon							1,491	86%	
	South West								92	5%	
	Elsewhere								113	7%	
	Unallocated								35	2%	
	MPA Total								*1,730*	*100%*	*8%*

a. Devon also includes land-won sand and gravel for Cornwall.

Continued

Table 9a: **Sales of primary aggregates by MPA and principal destination sub-region in 2005: South West** (continued)

Thousand tonnes

Source Region	Source MPA	Destination	Land-won sand and gravel	MPA %	RAWP %	Marine sand and gravel	MPA %	RAWP %	Crushed rock	MPA %	RAWP %
South West continued	Plymouth City Council	Cornwall, Devon							502	100%	
		South West							0	0%	
		Elsewhere							0	0%	
	MPA Total								*502*	*100%*	*2%*
	Poole Borough Council	Dorset and Wiltshire				20	25%				
		Unallocated				60	75%				
	MPA Total					*81*	*100%*	*12%*			
	Somerset County Council	Somerset and Avon							2,777	25%	
		South West				74	100%		3,051	27%	
		South East							3,514	31%	
		London							1,429	12%	
		East of England							427	4%	
		Elsewhere							22	1%	
	MPA Total					*74*	*100%*	*11%*	*11,219*	*100%*	*50%*
	South Gloucestershire Council	Somerset and Avon							452	19%	
		South West							1,808	77%	
		Elsewhere							84	4%	
		Unallocated							1	0%	
	MPA Total								*2,346*	*100%*	*11%*
	Wiltshire County Council	Dorset and Wiltshire	514	49%							
		South West	500	47%							
		Elsewhere	42	4%							
	MPA Total		*1,056*	*100%*	*23%*						
RAWP Total			**4,603**		**100%**	**661**		**100%**	**22,238**		**100%**

1. For aggregate use only. Regional totals may not agree with those in Table 2a and Table 4 because small amounts for non-aggregate use have been included for a few MPAs.
2. Sales of primary aggregates include sales from land-based quarries and sales of marine-dredged sand and gravel, but not imports of crushed rock from outside of England and Wales.
3. In order to summarise the large amount of data available, this table only shows, for every MPA, sales by home sub-region and remaining sales in home region (excluding home sub-region). Unless otherwise stated, all **other** allocated sales to other regions are included under 'Elsewhere.' For those MPAs where this figure exceeds 1 million tonnes, the main destination regions are also listed. Unallocated sales of unknown destination are also shown.

Table 9b: **Sales of primary aggregates by MPA and principal destination sub-region in 2005: South East**

Thousand tonnes

Source Region	Source MPA	Destination	Land-won sand and gravel	MPA %	RAWP %	Marine sand and gravel	MPA %	RAWP %	Crushed rock	MPA %	RAWP %
South East	Berkshire	Berkshire, Oxfordshire, Buckinghamshire	358	34%							
		South East	313	30%							
		Elsewhere	9	1%							
		Unallocated	375	36%							
	MPA Total		*1,055*	*100%*	*11%*						
	Buckinghamshire County Council and Milton Keynes	Berkshire, Oxfordshire, Buckinghamshire	869	75%							
		South East	3	0%							
		Elsewhere	283	24%							
	MPA Total		*1,155*	*100%*	*12%*						
	East Sussex C. Council	West Sussex, East Sussex and Surrey				229	100%				
	MPA Total					*229*	*100%*	*4%*			
	Hampshire County Council[a]	Hampshire and the Isle of Wight	903	54%		575	97%				
		South East	406	24%		16	3%				
		Elsewhere	378	22%		0	0%				
	MPA Total		*1,687*	*100%*	*18%*	*591*	*100%*	*10%*			
	Isle of Wight Council[a]	Hampshire and the Isle of Wight	c	100%		c	100%				
	MPA Total		*c*	*100%*	*c*	*c*	*100%*	*c*			
	Kent County Council[b]	Kent and Medway	1,021	58%		1,551	79%		17	3%	
		South East	506	30%		185	9%		657	97%	
		Elsewhere	217	13%		229	12%		0	0%	
	MPA Total		*1,745*	*100%*	*18%*	*1,965*	*100%*	*33%*	*674*	*100%*	*54%*
	Medway Council[b]	Kent and Medway	c	100%		979	74%				
		South East				79	6%				
		Elsewhere				268	20%				
	MPA Total		*c*	*100%*	*c*	*1,326*	*100%*	*22%*			

a. Hampshire also includes marine and land-won sand and gravel for the Isle of Wight.

b. Kent also includes land-won sand and gravel for Medway and crushed rock for Surrey and West Sussex

Continued

Table 9b: **Sales of primary aggregates by MPA and principal destination sub-region in 2005: South East** (continued)

Thousand tonnes

Source Region	Source MPA	Destination	Land-won sand and gravel	MPA %	RAWP %	Marine sand and gravel	MPA %	RAWP %	Crushed rock	MPA %	RAWP %
South East continued	Oxfordshire County Council	Berkshire, Oxfordshire, Buckinghamshire	304	24%					277	49%	
		South East	418	32%					134	24%	
		Elsewhere	550	43%					152	27%	
		Unallocated	17	1%							
	MPA Total		*1,289*	*100%*	*13%*				*564*	*100%*	*46%*
	Portsmouth City Council[a]	Hampshire and the Isle of Wight				c	87%				
		South East				c	13%				
	MPA Total					*c*	*100%*	*c*			
	Southampton City Council[a]	Hampshire and the Isle of Wight				994	91%				
		South East				94	8%				
		Elsewhere				6	1%				
	MPA Total					*1094*	*100%*	*18%*			
	Surrey County Council[b]	West Sussex, East Sussex and Surrey	645	33%					c	26%	
		South East	515	26%					c	74%	
		Elsewhere	745	38%							
		Unallocated	73	4%							
	MPA Total		*1,979*	*100%*	*21%*				*c*	*100%*	*c*
	West Sussex County Council[b]	West Sussex, East Sussex and Surrey	572	87%		747	100%		c	99%	
		South East	16	2%		0	0%		c	1%	
		Elsewhere	1	0%		0	0%		c	0%	
		Unallocated	71	11%							
	MPA Total		*660*	*100%*	*7%*	*748*	*100%*	*13%*	*c*	*100%*	*c*
RAWP Total			**9,573**		**100%**	**5,952**		**100%**	**1,238**		**100%**

a. Southampton also includes marine sand and gravel for Portsmouth.

b. Kent also includes land-won sand and gravel for Medway and crushed rock for Surrey and West Sussex

1. For aggregate use only. Regional totals may not agree with those in Table 2a and Table 4 because small amounts for non-aggregate use have been included for a few MPAs.

2. Sales of primary aggregates include sales from land-based quarries and sales of marine-dredged sand and gravel, but not imports of crushed rock from outside of England and Wales.

3. In order to summarise the large amount of data available, this table only shows, for every MPA, sales by home sub-region and remaining sales in home region (excluding home sub-region). Unless otherwise stated, all other allocated sales to **other** regions are included under 'Elsewhere.' For those MPAs where this figure exceeds 1 million tonnes, the main destination regions are also listed. Unallocated sales of unknown destination are also shown.

Table 9c: **Sales of primary aggregates by MPA and principal destination sub-region in 2005: London**

Thousand tonnes

Source Region	Source MPA	Destination	Land-won sand and gravel	MPA %	RAWP %	Marine sand and gravel	MPA %	RAWP %	Crushed rock	MPA %	RAWP %
London	London[a]	London	789	76%		3,755	93%				
		Elsewhere	249	24%		280	7%				
	MPA Total		*1,038*	*100%*		*4,035*	*100%*				
RAWP Total			**1,038**		**100%**	**4,035**		**100%**			

a. East and West London have been combined to maintain confidentiality.

1. For aggregate use only. Regional totals may not agree with those in Table 2a and Table 4 because small amounts for non-aggregate use have been included for a few MPAs.
2. Sales of primary aggregates include sales from land-based quarries and sales of marine-dredged sand and gravel, but not imports of crushed rock from outside of England and Wales.
3. In order to summarise the large amount of data available, this table only shows, for every MPA, sales by home sub-region and remaining sales in home region (excluding home sub-region). Unless otherwise stated, all other allocated sales to **other** regions are included under 'Elsewhere.' For those MPAs where this figure exceeds 1 million tonnes, the main destination regions are also listed. Unallocated sales of unknown destination are also shown.

Table 9d: **Sales of primary aggregates by MPA and principal destination sub-region in 2005: East of England**

Thousand tonnes

Source Region	Source MPA	Destination	Land-won sand and gravel	MPA %	RAWP %	Marine sand and gravel	MPA %	RAWP %	Crushed rock	MPA %	RAWP %
East of England	Bedfordshire County Council	Bedfordshire and Hertfordshire	1,120	67%							
		East of England	269	16%							
		Elsewhere	294	17%							
	MPA Total		*1,683*	*100%*	*12%*						
	Cambridgeshire County Council	Norfolk, Suffolk and Cambridgeshire	547	23%					5	77%	
		East of England	1,268	53%					1	12%	
		Elsewhere	578	24%					1	11%	
	MPA Total		*2,393*	*100%*	*17%*				*6*	*100%*	*1%*
	Essex County Council	Essex	3,601	87%							
		East of England	284	7%							
		Elsewhere	260	6%							
	MPA Total		*4,144*	*100%*	*30%*						
	Hertfordshire C. Council	Bedfordshire and Hertfordshire	790	100%							
	MPA Total		*790*	*100%*	*6%*						
	Norfolk County Council	Norfolk, Suffolk and Cambridgeshire	2,354	99%					154	97%	
		East of England	10	0%					0	0%	
		Elsewhere	17	1%					4	3%	
	MPA Total		*2,382*	*100%*	*17%*				*158*	*100%*	*33%*
	Peterborough	Norfolk, Suffolk and Cambridgeshire	376	45%					200	62%	
		East of England	168	20%					12	4%	
		Elsewhere	284	34%					110	34%	
	MPA Total		*828*	*100%*	*6%*				*322*	*100%*	*66%*

Continued

Table 9d: **Sales of primary aggregates by MPA and principal destination sub-region in 2005: East of England** (continued)

Thousand tonnes

Source Region	Source MPA	Destination	Land-won sand and gravel	MPA %	RAWP %	Marine sand and gravel	MPA %	RAWP %	Crushed rock	MPA %	RAWP %
East of England	Suffolk County Council	Norfolk, Suffolk and Cambridgeshire	1,449	98%		75	48%				
continued		East of England	25	2%		55	35%				
		Elsewhere				25	16%				
	MPA Total		*1,475*	*100%*	*11%*	*154*	*100%*	*100%*			
	Thurrock Borough Council	East of England	26	100%							
	MPA Total		*26*	*100%*	*0%*						
RAWP Total			**13,720**		**100%**	**154**		**100%**	**486**		**100%**

1. For aggregate use only. Regional totals may not agree with those in Table 2a and Table 4 because small amounts for non-aggregate use have been included for a few MPAs.
2. Sales of primary aggregates include sales from land-based quarries and sales of marine-dredged sand and gravel, but not imports of crushed rock from outside of England and Wales.
3. In order to summarise the large amount of data available, this table only shows, for every MPA, sales by home sub-region and remaining sales in home region (excluding home sub-region). Unless otherwise stated, all other allocated sales to **other** regions are included under 'Elsewhere.' For those MPAs where this figure exceeds 1 million tonnes, the main destination regions are also listed. Unallocated sales of unknown destination are also shown.

Table 9e: **Sales of primary aggregates by MPA and principal destination sub-region in 2005: East Midlands**

Thousand tonnes

Source Region	Source MPA	Destination	Land-won sand and gravel	MPA %	RAWP %	Marine sand and gravel	MPA %	RAWP %	Crushed rock	MPA %	RAWP %
East Midlands	Derbyshire County Council	Derbyshire & Peak District National Park	286	21%					1,564	22%	
		East Midlands	973	73%					1,058	15%	
		East of England							429	6%	
		West Midlands							524	7%	
		North West							2,494	35%	
		Yorkshire & the Humber							564	8%	
		Elsewhere	77	6%					363	5%	
		Unallocated							120	2%	
	MPA Total		*1,336*	*100%*	*13%*				*7,115*	*100%*	*25%*
	Leicestershire County Council	Leicestershire, Rutland	340	25%					3,891	26%	
		East Midlands	922	68%					2,285	15%	
		South East							799	5%	
		London							1,584	10%	
		East of England							3,452	23%	
		West Midlands							2,801	19%	
		Elsewhere	97	7%					168	1%	
		Unallocated							223	1%	
	MPA Total		*1,359*	*100%*	*13%*				*15,203*	*100%*	*53%*
	Lincolnshire County Council	Nottinghamshire and Lincolnshire	1,897	59%					591	73%	
		East Midlands	227	7%					221	27%	
		Elsewhere	1,072	34%					0	0%	
	MPA Total		*3,196*	*100%*	*32%*				*812*	*100%*	*3%*
	Northamptonshire County Council	Northamptonshire	33	6%					157	41%	
		East Midlands	460	79%							
		Elsewhere	89	15%							
		East Midlands and elsewhere							230	59%	
	MPA Total		*581*	*100%*	*6%*				*386*	*100%*	*1%*

Continued

Table 9e: **Sales of primary aggregates by MPA and principal destination sub-region in 2005: East Midlands** (continued)

Thousand tonnes

Source Region	Source MPA	Destination	Land-won sand and gravel	MPA %	RAWP %	Marine sand and gravel	MPA %	RAWP %	Crushed rock	MPA %	RAWP %
East Midlands continued	Nottinghamshire County Council	Nottinghamshire and Lincolnshire	977	27%							
		East Midlands	1,670	46%					142	100%	
		Elsewhere	1,015	28%							
	MPA Total		*3,661*	*100%*	*36%*				*142*	*100%*	*0%*
	Peak District National Park	Derbyshire & Peak District National Park							1,444	30%	
		East Midlands							807	17%	
		West Midlands							300	6%	
		North West							2,000	41%	
		Yorkshire & the Humber							283	6%	
		Elsewhere							15	0%	
	MPA Total								*4,849*	*100%*	*17%*
	Rutland CC DC	Leicestershire, Rutland							67	24%	
		East Midlands							80	28%	
		Elsewhere							138	48%	
	MPA Total								*286*	*100%*	*1%*
RAWP Total			**10,134**		**100%**				**28,793**		**100%**

1. For aggregate use only. Regional totals may not agree with those in Table 2a and Table 4 because small amounts for non-aggregate use have been included for a few MPAs.
2. Sales of primary aggregates include sales from land-based quarries and sales of marine-dredged sand and gravel, but not imports of crushed rock from outside of England and Wales.
3. In order to summarise the large amount of data available, this table only shows, for every MPA, sales by home sub-region and remaining sales in home region (excluding home sub-region). Unless otherwise stated, all other allocated sales to **other** regions are included under 'Elsewhere.' For those MPAs where this figure exceeds 1 million tonnes, the main destination regions are also listed. Unallocated sales of unknown destination are also shown.

Table 9f: **Sales of primary aggregates by MPA and principal destination sub-region in 2005: West Midlands**

Thousand tonnes

Source Region	Source MPA	Destination	Land-won sand and gravel	MPA %	RAWP %	Marine sand and gravel	MPA %	RAWP %	Crushed rock	MPA %	RAWP %
West Midlands	Herefordshire Council	Herefordshire, Worcestershire	156	66%					c	63%	
		West Midlands	49	21%					c	37%	
		Elsewhere	11	4%							
		Unallocated	19	8%							
	MPA Total		*235*	*100%*	*3%*				*c*	*100%*	*c*
	Sandwell Metropolitan	Remainder of West Midlands							c	89%	
	Borough Council	West Midlands							c	11%	
		Elsewhere							c	0%	
	MPA Total								*c*	*100%*	*c*
	Shropshire County Council	Shropshire and Staffordshire	444	54%					1,543	62%	
		West Midlands	240	29%					707	28%	
		Elsewhere	145	17%					255	10%	
	MPA Total		*829*	*100%*	*9%*				*2,506*	*100%*	*55%*
	Solihull Metropolitan	Solihull, Coventry and Warwickshire	208	40%							
	Borough Council	West Midlands	299	57%							
		Elsewhere	1	0%							
		Unallocated	15	3%							
	MPA Total		*523*	*100%*	*6%*						
	Staffordshire County Council	Shropshire and Staffordshire	2,676	46%					c	87%	
		West Midlands	2,256	39%					c	9%	
		Elsewhere	849	15%					c	5%	
		Unallocated	3	0%							
	MPA Total		*5,784*	*100%*	*64%*				*c*	*100%*	*c*
	Walsall Metropolitan	Remainder of West Midlands	c	10%							
	Borough Council	West Midlands	c	88%							
		Elsewhere	c	1%							
		Unallocated	c	2%							
	MPA Total		*c*	*100%*	*c*						

Continued

Table 9f: **Sales of primary aggregates by MPA and principal destination sub-region in 2005: West Midlands** (continued)

Thousand tonnes

Source Region	Source MPA	Destination	Land-won sand and gravel	MPA %	RAWP %	Marine sand and gravel	MPA %	RAWP %	Crushed rock	MPA %	RAWP %
West Midlands continued	Warwickshire County Council	Solihull, Coventry and Warwickshire	503	55%					431	81%	
		West Midlands	311	34%					40	7%	
		Elsewhere	40	4%					64	12%	
		Unallocated	70	8%							
	MPA Total		*923*	*100%*	*10%*				*534*	*100%*	*12%*
	Worcestershire County Council	Herefordshire, Worcestershire	326	43%					c	34%	
		West Midlands	251	33%					c	33%	
		Elsewhere	158	21%					c	33%	
		Unallocated	19	2%							
	MPA Total		*754*	*100%*	*8%*				*c*	*100%*	*c*
RAWP Total			**9,105**		**100%**				**4,516**		**100%**

1. For aggregate use only. Regional totals may not agree with those in Table 2a and Table 4 because small amounts for non-aggregate use have been included for a few MPAs.
2. Sales of primary aggregates include sales from land-based quarries and sales of marine-dredged sand and gravel, but not imports of crushed rock from outside of England and Wales.
3. In order to summarise the large amount of data available, this table only shows, for every MPA, sales by home sub-region and remaining sales in home region (excluding home sub-region). Unless otherwise stated, all **other** allocated sales to other regions are included under 'Elsewhere.' For those MPAs where this figure exceeds 1 million tonnes, the main destination regions are also listed. Unallocated sales of unknown destination are also shown.

Table 9g: **Sales of primary aggregates by MPA and principal destination sub-region in 2005: North West**

Thousand tonnes

Source Region	Source MPA	Destination	Land-won sand and gravel	MPA %	RAWP %	Marine sand and gravel	MPA %	RAWP %	Crushed rock	MPA %	RAWP %
North West	Bolton Metropolitan Borough Council	North West							c	100%	
		Elsewhere							c	0%	
	MPA Total								*c*	*100%*	*c*
	Bury Metropolitan Borough Council	Greater Manchester and Lancashire	c	78%					c	100%	
		North West	c	18%							
		Elsewhere	c	4%							
	MPA Total		*c*	*100%*	*c*				*c*	*100%*	*c*
	Cheshire County Council	Cheshire and Merseyside	373	24%							
		North West	556	35%							
		Elsewhere	126	8%							
		Unallocated	528	33%					31	100%	
	MPA Total		*1,583*	*100%*	*54%*				*31*	*100%*	*0%*
	Cumbria County Council	Cumbria	374	55%		c	100%		1,745	43%	
		North West	185	27%					1,263	31%	
		South West							702	17%	
		Yorkshire & the Humber							209	5%	
		Elsewhere	118	17%					101	3%	
	MPA Total		*677*	*100%*	*23%*	*c*	*100%*	*c*	*4,020*	*100%*	*45%*
	Lancashire County Council	Greater Manchester and Lancashire				c	99%		2,981	79%	
		North West	257	99%		c	1%		659	18%	
		Elsewhere	2	1%					115	3%	
	MPA Total		*259*	*100%*	*9%*	*c*	*100%*	*c*	*3,755*	*100%*	*42%*
	Liverpool City Council	Cheshire and Merseyside				c	0%				
		North West				c	96%				
		Elsewhere				c	4%				
	MPA Total					*c*	*100%*	*c*			

Continued

Table 9g: **Sales of primary aggregates by MPA and principal destination sub-region in 2005: North West** (continued)

Thousand tonnes

Source Region	Source MPA	Destination	Land-won sand and gravel	MPA %	RAWP %	Marine sand and gravel	MPA %	RAWP %	Crushed rock	MPA %	RAWP %
North West continued	Oldham Metropolitan Borough Council	Greater Manchester and Lancashire							26	80%	
		North West							0	0%	
		Elsewhere							7	20%	
	MPA Total								*33*	*100%*	*0%*
	Sefton M. B. Council	Elsewhere	c	100%							
	MPA Total		*c*	*100%*	*c*						
	St. Helens M. B. Council	North West							280	100%	
	MPA Total								*280*	*100%*	*3%*
	Stockport Metropolitan Borough Council	Greater Manchester and Lancashire	c	100%							
	MPA Total		*c*	*100%*	*c*						
	Tameside Metropolitan Borough Council	Greater Manchester and Lancashire							c	85%	
		North West							c	4%	
		Elsewhere							c	11%	
	MPA Total								*c*	*100%*	*c*
	Warrington Borough Council	Cheshire and Merseyside							c	50%	
		North West							c	50%	
	MPA Total								*c*	*100%*	*c*
	Wirral M. B. Council	North West				c	100%				
	MPA Total					*c*	*100%*	*c*			
RAWP TOTAL			**2,932**		**100%**	**838**		**100%**	**8,910**		**100%**

1. For aggregate use only. Regional totals may not agree with those in Table 2a and Table 4 because small amounts for non-aggregate use have been included for a few MPAs.
2. Sales of primary aggregates include sales from land-based quarries and sales of marine-dredged sand and gravel, but not imports of crushed rock from outside of England and Wales.
3. In order to summarise the large amount of data available, this table only shows, for every MPA, sales by home sub-region and remaining sales in home region (excluding home sub-region). Unless otherwise stated, all other allocated sales to **other** regions are included under 'Elsewhere.' For those MPAs where this figure exceeds 1 million tonnes, the main destination regions are also listed. Unallocated sales of unknown destination are also shown.

Table 9h: **Sales of primary aggregates by MPA and principal destination sub-region in 2005: Yorkshire & the Humber**

Thousand tonnes

Source Region	Source MPA	Destination	Land-won sand and gravel	MPA %	RAWP %	Marine sand and gravel	MPA %	RAWP %	Crushed rock	MPA %	RAWP %
Yorkshire & the Humber	Bradford M. B. Council	Yorkshire & the Humber							236	100%	
	MPA Total								*236*	*100%*	*2%*
	Calderdale Metropolitan Borough Council	West Yorkshire							38	95%	
		Yorkshire & the Humber							2	5%	
	MPA Total								*40*	*100%*	*0%*
	Doncaster Metropolitan Borough Council	South Yorkshire	148	72%					1,854	68%	
		Yorkshire & the Humber	57	28%					654	24%	
		Elsewhere							216	8%	
	MPA Total		*205*	*100%*	*5%*				*2,725*	*100%*	*23%*
	East Riding of Yorkshire Council	East Riding, North Lincolnshire and North East Lincolnshire	241	31%					224	68%	
		Yorkshire & the Humber	538	69%					106	32%	
	MPA Total		*780*	*100%*	*18%*				*330*	*100%*	*3%*
	Kingston upon Hull City Council	East Riding, North Lincolnshire and North East Lincolnshire				298	100%				
	MPA Total					*298*	*100%*	*100%*			
	Kirklees Metropolitan Borough Council[a]	West Yorkshire	c	c					168	90%	
		Yorkshire & the Humber	c	c					18	10%	
	MPA Total		*c*	*c*	*c*				*187*	*100%*	*2%*
	Leeds City Council[a]	West Yorkshire	292	97%					251	45%	
		Yorkshire & the Humber	10	3%					305	55%	
	MPA Total		*302*	*100%*	*7%*				*556*	*100%*	*5%*
	North Lincolnshire Council	East Riding, North Lincolnshire and North East Lincolnshire	236	77%					c	100%	
		Elsewhere	69	23%							
	MPA Total		*305*	*100%*	*7%*				*c*	*100%*	*c*

a. Leeds also includes land-won sand and gravel for Kirklees.

Continued

Table 9h: **Sales of primary aggregates by MPA and principal destination sub-region in 2005: Yorkshire & the Humber** (continued)

Thousand tonnes

Source Region	Source MPA	Destination	Land-won sand and gravel	MPA %	RAWP %	Marine sand and gravel	MPA %	RAWP %	Crushed rock	MPA %	RAWP %
Yorkshire & the Humber continued	North York Moors National Park	North Yorks, Yorkshire Dales and North York Moors National Parks							64	56%	
		Yorkshire & the Humber							43	38%	
		Elsewhere							0	0%	
		Unallocated							7	6%	
	MPA Total								*114*	*100%*	*1%*
	North Yorkshire County Council	North Yorks, Yorkshire Dales and North York Moors National Parks	546	19%					694	19%	
		Yorkshire & the Humber	1,722	61%					2,618	70%	
		Elsewhere	537	19%					427	11%	
	MPA Total		*2,806*	*100%*	*64%*				*3,739*	*100%*	*31%*
	Wakefield M. B. Council	West Yorkshire							c	100%	
	MPA Total								*c*	*100%*	*c*
	Yorkshire Dales National Park	North Yorks, Yorkshire Dales and North York Moors National Parks							704	18%	
		Yorkshire & the Humber							1,888	47%	
		North West							1,224	31%	
		Elsewhere							161	4%	
	MPA Total								*3,978*	*100%*	*33%*
RAWP Total			**4,398**		**100%**	**298**		**100%**	**11,964**		**100%**

1. For aggregate use only. Regional totals may not agree with those in Table 2a and Table 4 because small amounts for non-aggregate use have been included for a few MPAs.
2. Sales of primary aggregates include sales from land-based quarries and sales of marine-dredged sand and gravel, but not imports of crushed rock from outside of England and Wales.
3. In order to summarise the large amount of data available, this table only shows, for every MPA, sales by home sub-region and remaining sales in home region (excluding home sub-region). Unless otherwise stated, all other allocated sales to **other** regions are included under 'Elsewhere.' For those MPAs where this figure exceeds 1 million tonnes, the main destination regions are also listed. Unallocated sales of unknown destination are also shown.

Table 9i: **Sales of primary aggregates by MPA and principal destination sub-region in 2005: North East**

Thousand tonnes

Source Region	Source MPA	Destination	Land-won sand and gravel	MPA %	RAWP %	Marine sand and gravel	MPA %	RAWP %	Crushed rock	MPA %	RAWP %
North East	Durham County Council	Tees Valley and Durham	17	4%					596	16%	
		All other areas	369	96%					3,181	84%	
	MPA Total		*386*	*100%*	*27%*				*3,777*	*100%*	*64%*
	Tyne & Wear	North East	428	97%		410	59%		442	100%	
		Unallocated	13	3%		286	41%				
	MPA Total		*441*	*100%*	*30%*	*696*	*100%*	*61%*	*442*	*100%*	*7%*
	Hartlepool Borough Council	Tees Valley and Durham	c	15%							
		North East	c	57%							
		Elsewhere	c	24%							
		Unallocated	c	4%							
	MPA Total		*c*	*100%*	*c*						
	Middlesbrough Borough Council	Tees Valley and Durham				c	52%				
		North East				c	42%				
		Elsewhere				c	6%				
	MPA Total					*c*	*100%*	*c*			
	Northumberland County Council	Tyne & Wear, Northumberland and the National Park	c	c					1,255	74%	
		North East	141	24%					298	18%	
		Elsewhere	c	c					99	6%	
		Unallocated	c	c					43	3%	
	MPA Total		*576*	*100%*	*40%*				*1,696*	*100%*	*29%*
	Stockton-on-Tees Metropolitan	Tees Valley and Durham	c	13%		c	21%				
	Borough Council	North East	c	29%		c	44%				
		Elsewhere	c	9%		c	5%				
		Unallocated	c	50%		c	30%				
	MPA Total		*c*	*100%*	*c*	*c*	*100%*	*c*			
RAWP Total			**1,455**		**100%**	**1,140**		**100%**	**5,915**		**100%**

1. For aggregate use only. Regional totals may not agree with those in Table 2a and Table 4 because small amounts for non-aggregate use have been included for a few MPAs.
2. Sales of primary aggregates include sales from land-based quarries and sales of marine-dredged sand and gravel, but not imports of crushed rock from outside of England and Wales.
3. In order to summarise the large amount of data available, this table only shows, for every MPA, sales by home sub-region and remaining sales in home region (excluding home sub-region). Unless otherwise stated, all other allocated sales to **other** regions are included under 'Elsewhere.' For those MPAs where this figure exceeds 1 million tonnes, the main destination regions are also listed. Unallocated sales of unknown destination are also shown.

Table 9j: **Sales of primary aggregates by MPA and principal destination sub-region in 2005: South Wales**

Thousand tonnes

Source Region	Source MPA	Destination	Land-won sand and gravel	MPA %	RAWP %	Marine sand and gravel	MPA %	RAWP %	Crushed rock	MPA %	RAWP %
South Wales	Blaenau Gwent	South East Wales							c	100%	
	MPA								*c*	*100%*	*c*
	Brecon Beacons National Park	Remainder of South Wales							141	23%	
		South Wales							469	77%	
		Elsewhere							1	0%	
	MPA								*611*	*100%*	*6%*
	Bridgend	South East Wales							c	25%	
		South Wales							c	73%	
		Elsewhere							c	2%	
	MPA								*c*	*100%*	*c*
	Caerphilly	South East Wales							506	65%	
		South Wales							96	12%	
		Elsewhere							176	23%	
	MPA								*777*	*100%*	*7%*
	Cardiff County Council	South East Wales				265	100%		874	97%	
		South Wales				0	0%		26	3%	
		Elsewhere				0	0%				
		Unallocated				1	0%				
	MPA					*266*	*100%*	*22%*	*900*	*100%*	*8%*
	Carmarthenshire	Remainder of South Wales				80	65%		942	78%	
		South Wales	2	100%		43	35%		235	19%	
		Elsewhere							31	3%	
		Unallocated							5	0%	
	MPA		*2*	*100%*	*1%*	*123*	*100%*	*10%*	*1,213*	*100%*	*11%*
	Ceredigion	Remainder of South Wales	143	98%					24	11%	
		South Wales	2	1%					179	84%	
		Elsewhere	2	1%					11	5%	
	MPA		*147*	*100%*	*48%*				*214*	*100%*	*2%*

Continued

Table 9j: **Sales of primary aggregates by MPA and principal destination sub-region in 2005: South Wales** (continued)

Thousand tonnes

Source Region	Source MPA	Destination	Land-won sand and gravel	MPA %	RAWP %	Marine sand and gravel	MPA %	RAWP %	Crushed rock	MPA %	RAWP %
South Wales continued	Merthyr Tydfil	South East Wales							c	82%	
		South Wales							c	1%	
		Elsewhere							c	17%	
	MPA								*c*	*100%*	*c*
	Monmouthshire[a]	South East Wales				c	100%		c	89%	
		South Wales							c	0%	
		Elsewhere							c	11%	
	MPA					*c*	*100%*	*c*	*c*	*100%*	*c*
	Neath Port Talbot	South East Wales				200	92%		274	36%	
		South Wales	14	60%		16	8%		198	26%	
		Elsewhere	9	40%					249	33%	
		Unallocated				0	0%		43	6%	
	MPA		*23*	*100%*	*7%*	*216*	*100%*	*17%*	*764*	*100%*	*7%*
	Newport[a]	South Wales				567	100%				
	MPA					*567*	*100%*	*46%*			
	Pembrokeshire	Remainder of South Wales							489	87%	
		South Wales	70	100%					76	13%	
	MPA		*70*	*100%*	*23%*				*565*	*100%*	*5%*
	Pembrokeshire Coast National Park	South Wales	63	100%					224	100%	
	MPA		*63*	*100%*	*21%*				*224*	*100%*	*2%*
	Powys	Remainder of South Wales							567	23%	
		South Wales							24	1%	
		West Midlands							1,252	51%	
		North West							110	5%	
		North Wales							109	4%	
		Elsewhere							406	16%	
	MPA								*2,467*	*100%*	*23%*

a. Newport includes marine sand and gravel for Monmouthshire

Continued

Table 9j: **Sales of primary aggregates by MPA and principal destination sub-region in 2005: South Wales** (continued)

Thousand tonnes

Source Region	Source MPA	Destination	Land-won sand and gravel	MPA %	RAWP %	Marine sand and gravel	MPA %	RAWP %	Crushed rock	MPA %	RAWP %
South Wales continued	Rhondda, Cynon, Taf (Taff)	South East Wales							588	83%	
		South Wales							2	0%	
		Elsewhere							114	16%	
	MPA								*704*	*100%*	*6%*
	Swansea (City of)	South Wales				66	100%				
	MPA					*66*	*100%*	*5%*			
	Vale of Glamorgan	South East Wales							491	39%	
		South Wales							752	60%	
		Elsewhere							4	0%	
	MPA								*1,246*	*100%*	*11%*
RAWP Total			**304**		**100%**	**1,238**		**100%**	**10,951**		**100%**

1. For aggregate use only. Regional totals may not agree with those in Table 2a and Table 4 because small amounts for non-aggregate use have been included for a few MPAs.
2. Sales of primary aggregates include sales from land-based quarries and sales of marine-dredged sand and gravel, but not imports of crushed rock from outside of England and Wales.
3. In order to summarise the large amount of data available, this table only shows, for every MPA, sales by home sub-region and remaining sales in home region (excluding home sub-region). Unless otherwise stated, all other allocated sales to **other** regions are included under 'Elsewhere.' For those MPAs where this figure exceeds 1 million tonnes, the main destination regions are also listed. Unallocated sales of unknown destination are also shown.

Table 9k: **Sales of primary aggregates by MPA and principal destination sub-region in 2005: North Wales**

Thousand tonnes

Source Region	Source MPA	Destination	Land-won sand and gravel	MPA %	RAWP %	Marine sand and gravel	MPA %	RAWP %	Crushed rock	MPA %	RAWP %
North Wales	Conwy (Aberconwy & Colwyn)	North East Wales							471	34%	
		North Wales							94	7%	
		Elsewhere							805	59%	
	MPA								*1,370*	*100%*	*24%*
	Denbighshire	North East Wales	15	34%					238	50%	
		North Wales	1	1%					0	0%	
		Elsewhere	30	65%					235	50%	
	MPA		*45*	*100%*	*4%*				*473*	*100%*	*8%*
	Flintshire	North East Wales	c	71%					692	21%	
		North Wales							259	8%	
		North West							2,298	71%	
		Elsewhere	c	29%					5	0%	
	MPA		*c*	*100%*	*c*				*3,254*	*100%*	*57%*
	Gwynedd[a]	North West Wales	165	79%		45	100%		c	94%	
		North Wales	1	0%		0	0%		c	6%	
		Elsewhere	42	20%					c	0%	
	MPA		*207*	*100%*	*17%*	*45*	*100%*	*100%*	*c*	*100%*	*c*
	Isle of Anglesey[b]	North Wales	c	100%					565	100%	
	MPA		*c*	*100%*	*c*				*565*	*100%*	*10%*
	Wrexham[c]	North East Wales	486	52%							
		North Wales	17	2%							
		Elsewhere	438	46%							
	MPA		*941*	*100%*	*79%*						
RAWP Total			**1,192**		**100%**	**45**		**100%**	**5,663**		**100%**

a. Gwynedd also includes land-won sand and gravel for the Isle of Anglesey.

b. Isle of Anglesey includes crushed rock for Gwynedd.

c. Wrexham includes land-won sand and gravel for Flintshire.

1. For aggregate use only. Regional totals may not agree with those in Table 2a and Table 4 because small amounts for non-aggregate use have been included for a few MPAs.
2. Sales of primary aggregates include sales from land-based quarries and sales of marine-dredged sand and gravel, but not imports of crushed rock from outside of England and Wales.
3. In order to summarise the large amount of data available, this table only shows, for every MPA, sales by home sub-region and remaining sales in home region (excluding home sub-region). Unless otherwise stated, all **other** allocated sales to other regions are included under 'Elsewhere.' For those MPAs where this figure exceeds 1 million tonnes, the main destination regions are also listed. Unallocated sales of unknown destination are also shown.

Table 10: **Imports of primary aggregates by sub-region in 2005**

Thousand tonnes

Region	Sub-region	Land-won sand and gravel	Marine sand and gravel	Total sand and gravel	Crushed rock	Total primary aggregates
South West	Cornwall, Devon	73		73	159	232
	Dorset and Wiltshire	688	6	694	1,206	1,901
	Gloucestershire	493	8	500	313	813
	Somerset and Avon	417	0	417	383	800
	Unknown in the South West	1,646	109	1,755	6,043	7,798
	Total	**3,317**	**123**	**3,439**	**8,104**	**11,544**
South East	Berkshire, Oxfordshire, Buckinghamshire	640	1	640	2,185	2,825
	Hampshire and the Isle of Wight	266		266	803	1,069
	Kent and Medway	97	241	338	1,368	1,705
	West Sussex, East Sussex and Surrey	473	242	715	610	1,325
	Unknown in the South East	1,398	133	1,531	2,642	4,174
	Total	**2,874**	**617**	**3,490**	**7,608**	**11,098**
London	East London	252	74	326	612	938
	West London	420	1,128	1,548	1,210	2,758
	Unknown in Greater London	984	1,085	2,069	2,070	4,139
	Total	**1,656**	**2,287**	**3,943**	**3,892**	**7,835**
East of England	Bedfordshire and Hertfordshire	291	28	319	1,487	1,806
	Essex	301	10	311	1,199	1,510
	Norfolk, Suffolk and Cambridgeshire	396	0	396	2,197	2,592
	Unknown in the East of England	1,762	55	1,817	335	2,152
	Total	**2,750**	**93**	**2,843**	**5,218**	**8,060**
East Midlands	Derbyshire and Peak District National Park	715		715	451	1,166
	Leicestershire, Rutland	309		309	63	371
	Northamptonshire	286		286	1,407	1,693
	Nottinghamshire and Lincolnshire	236		236	1,461	1,697
	Unknown in the East Midlands	4,197		4,197	1,907	6,104
	Total	**5,743**		**5,743**	**5,289**	**11,031**
West Midlands	Herefordshire, Worcestershire	121	12	132	1,522	1,655
	Remainder of West Midlands	1,035		1,035	1,451	2,485
	Shropshire and Staffordshire	360		360	1,048	1,408
	Solihull, Coventry and Warwickshire	202		202	875	1,077
	Unknown in the West Midlands	2,102		2,102	1,603	3,705
	Total	**3,820**	**12**	**3,831**	**6,499**	**10,330**

Continued

Table 10: **Imports of primary aggregates by sub-region in 2005** (continued)

Thousand tonnes

Region	Sub-region	Land-won sand and gravel	Marine sand and gravel	Total sand and gravel	Crushed rock	Total primary aggregates
North West	Cheshire and Merseyside	544	2	547	3,857	4,403
	Cumbria	1		1	60	60
	Greater Manchester and Lancashire	559		559	4,393	3,952
	Unknown in the North West	668	564	1,232	3,058	4,290
	Total	**1,772**	**566**	**2,339**	**11,368**	**13,705**
Yorkshire & the Humber	East Riding, North Lincolnshire and North East Lincolnshire	908		908	594	1,502
	North Yorks, Yorkshire Dales and North York Moors National Parks	136	23	159	423	582
	South Yorkshire	794		794	430	1,224
	West Yorkshire	715	0	715	2,003	2,719
	Unknown in Yorkshire & the Humber	1,900	1	1,901	4,004	5,905
	Total	**4,453**	**24**	**4,477**	**7,454**	**11,932**
North East	Tees Valley and Durham	255	76	331	334	665
	Tyne & Wear, Northumberland and the National Park	230	108	339	552	890
	Unknown in the North East	896	83	978	3,042	4,020
	Total	**1,381**	**267**	**1,648**	**3,928**	**5,575**
England		**22,762**	**3,988**	**31,750**	**58,826**	**90,576**
South Wales	South East Wales	27	44	71	765	836
	Remainder of South Wales	86	82	168	1,003	1,171
	Unknown in South Wales	135	417	552	1,199	1,750
	Total	**248**	**543**	**791**	**2,967**	**3,757**
North Wales	North East Wales	24	9	33	156	189
	North West Wales	58	9	67	417	484
	Unknown in North Wales					
	Total	**82**	**18**	**100**	**573**	**673**
Wales		**330**	**561**	**891**	**3,539**	**4,430**
England and Wales		**28,092**	**4,549**	**32,641**	**62,898**	**95,539**

1. Figures for imports by sub-region cannot be compared with imports by region (Tables 3 and 5). The latter show only inter-regional flows of primary aggregates. This table of imports by sub-region includes not only imports from other regions (inter-regional flows) but also flows from sub-region to sub-region within the same region.
2. In the case of sales of marine sand and gravel and crushed rock, imports are only shown where material has been moved outside the home sub-region were the wharf is located.

Table 11: **Consumption of primary aggregates by sub-region in 2005**

Thousand tonnes

Region	Sub-region	Land-won sand and gravel	Marine sand and gravel	Total sand and gravel	Crushed rock	Total primary aggregates
South West	Cornwall, Devon	634		634	3,439	4,073
	Dorset and Wiltshire	1,848	27	1,875	1,396	3,271
	Gloucestershire	691	8	699	1,216	1,914
	Somerset and Avon	417	423	840	5,103	5,943
	Unknown in the South West	1,646	109	1,755	6,043	7,798
	Total	**5,236**	**567**	**5,803**	**17,197**	**22,999**
South East	Berkshire, Oxfordshire, Buckinghamshire	2,170	1	2,171	2,462	4,633
	Hampshire and the Isle of Wight	1,169	1,569	2,738	803	3,541
	Kent and Medway	1,123	2,770	3,893	1,385	5,278
	West Sussex, East Sussex and Surrey	1,690	1,218	2,908	643	3,551
	Unknown in the South East	1,398	133	1,531	2,642	4,174
	Total	**7,551**	**5,691**	**13,241**	**7,935**	**21,176**
London	East London	632	2,064	2,696	612	3,308
	West London	570	1,128	1,698	1,210	2,908
	Unknown in Greater London	984	1,085	2,069	2,070	4,139
	Total	**2,185**	**4,278**	**6,463**	**3,892**	**10,355**
East of England	Bedfordshire and Hertfordshire	2,202	28	2,230	1,487	3,717
	Essex	3,902	10	3,911	1,199	5,111
	Norfolk, Suffolk and Cambridgeshire	5,122	75	5,197	2,556	7,753
	Unknown in the East of England	1,762	55	1,817	335	2,152
	Total	**12,987**	**167**	**13,154**	**5,577**	**18,732**
East Midlands	Derbyshire and Peak District National Park	1,001		1,001	3,458	4,459
	Leicestershire, Rutland	649		649	4,021	4,670
	Northamptonshire	318		318	1,564	1,882
	Nottinghamshire and Lincolnshire	3,110		3,110	2,052	5,162
	Unknown in the East Midlands	4,197		4,197	1,907	6,104
	Total	**9,275**		**9,275**	**13,002**	**22,277**
West Midlands	Herefordshire, Worcestershire	603	12	614	1,691	2,306
	Remainder of West Midlands	1,040		1,040	1,726	2,766
	Shropshire and Staffordshire	3,479		3,479	3,351	6,831
	Solihull, Coventry and Warwickshire	914		914	1,306	2,219
	Unknown in the West Midlands	2,102		2,102	1,603	3,705
	Total	**8,138**	**12**	**8,149**	**9,677**	**17,827**
North West	Cheshire and Merseyside	917	2	920	3,886	4,806
	Cumbria	375	47	422	1,805	2,227
	Greater Manchester and Lancashire	760	207	967	7,882	8,848
	Unknown in the North West	668	564	1,232	3,058	4,290
	Total	**2,720**	**820**	**3,540**	**16,631**	**20,171**

Continued

Table 11: **Consumption of primary aggregates by sub-region in 2005** (continued)

Thousand tonnes

Region	Sub-region	Land-won sand and gravel	Marine sand and gravel	Total sand and gravel	Crushed rock	Total primary aggregates
Yorkshire & the Humber	East Riding, North Lincolnshire and North East Lincolnshire	1,385	298	1,683	857	2,540
	North Yorks, Yorkshire Dales and North York Moors National Parks	683	23	706	1,885	2,591
	South Yorkshire	942		942	2,284	3,226
	West Yorkshire	1,007	0	1,007	2,481	3,488
	Unknown in Yorkshire & the Humber	1,900	1	1,901	4,004	5,905
	Total	**5,917**	**322**	**6,238**	**11,511**	**17,749**
North East	Tees Valley and Durham	279	234	513	931	1,444
	Tyne & Wear, Northumberland and the National Park	774	442	1,216	1,895	3,111
	Unknown in the North East	896	83	978	3,042	4,020
	Total	**1,949**	**758**	**2,707**	**5,868**	**8,575**
England		**55,958**	**12,613**	**68,571**	**90,432**	**159,003**
South Wales	South East Wales	27	659	686	4,173	4,859
	Remainder of South Wales	229	162	391	3,165	3,556
	Unknown in South Wales	135	417	552	1,199	1,750
	Total	**390**	**1,238**	**1,628**	**8,537**	**10,165**
North Wales	North East Wales	525	9	534	1,557	2,091
	North West Wales	223	54	277	963	1,240
	Unknown in North Wales					
	Total	**748**	**63**	**811**	**2,520**	**3,331**
Wales		**1,138**	**1,301**	**2,439**	**11,057**	**13,496**
England and Wales		**57,096**	**13,914**	**71,010**	**102,346**	**173,356**

1. These figures are the same as the consumption totals by region in Tables 2b and 5. Very small amounts for non-aggregate use are included for a few MPAs.

3. Permitted reserves

Table 12: **Permitted reserves of land-won primary aggregates in active and inactive sites at 31st December 2005**

Thousand tonnes

Region	Sand and Gravel					Crushed Rock					Grand total (Excluding dormant)
	Active sites	Inactive: worked in past	Inactive: yet to be worked	Total	*(Dormant sites)*	Active sites	Inactive: worked in past	Inactive: yet to be worked	Total	*(Dormant sites)*	
South West	42,633	5,120	3,484	51,237	1,365	817,517	101,676	901	920,094	285,742	971,331
South East	59,601	11,103	10,225	80,929	980	52,873	1,035		53,908	5	134,836
London	2,866			2,866							2,866
East of England	143,894	16,566	5,790	166,250	1,708	8,255	3		8,258	1,780	174,508
East Midlands	60,290	6,871	9,799	76,959	2,600	996,799	372,842	5,200	1,374,841	49,764	1,451,801
West Midlands	112,032	10,857	4,000	126,889	5,700	227,660	76,298	2,174	306,132	250	433,022
North West	30,008	7,325	4,020	41,353		294,288	7,549		301,837	23,715	343,190
Yorkshire & the Humber	36,571	5,646		42,218		307,841	39,425		347,266	2,430	389,484
North East	10,240			14,628		176,369	67,187		243,556		258,184
England	**498,136**	**65,426**	**39,766**	**603,329**	**12,923**	**2,881,603**	**666,014**	**8,275**	**3,555,893**	**364,336**	**4,159,221**
(%)	*97%*	*97%*	*100%*	*97%*	*95%*	*86%*	*74%*	*100%*	*83%*	*85%*	*85%*
South Wales	3,028		120	3,148		276,084	223,180		499,264	42,287	502,412
North Wales	12,804	2,352	25	15,181	655	190,730	14,526		205,256	23,680	220,437
Wales	**15,832**	**2,352**	**145**	**18,329**	**655**	**466,814**	**237,706**		**704,520**	**65,967**	**722,849**
(%)	*3%*	*3%*	*0%*	*3%*	*5%*	*14%*	*26%*		*17%*	*15%*	*15%*
England and Wales	**513,968**	**67,778**	**39,911**	**621,658**	**13,578**	**3,348,416**	**903,721**	**8,275**	**4,260,412**	**430,303**	**4,882,070**

1. For aggregate use only.

2. Dormant sites are **not** included in 'Inactive sites worked in the past' or in the totals.

3. In addition, permitted reserves of slate in North Wales were 42.5 million tonnes.

Table 13: **Permitted reserves of land-won primary aggregates in active and inactive sites by environmental designation at 31st December 2005**

Thousand tonnes

	South West	South East	London	East of England	East Midlands	West Midlands	North West	Yorkshire & Humber	North East	England Total	South Wales	North Wales	Wales Total	England & Wales Total
Sand and gravel														
All sites	51,237	80,929	2,866	166,250	76,959	126,889	41,353	42,218	14,628	**603,329**	3,148	15,181	**18,329**	**621,658**
National Park		1,631		65						**1,729**				**1,729**
AONB		6,163		1,668		26,918				**39,609**		16	**16**	**39,625**
SSSI	2,630	5,672		2,610	4,804	13,421	2,800	3,211		**36,147**	2	1,000	**1,002**	**37,149**
Geological SSSI	1,533	3,164		1,650	845	3				**7,194**				**7,194**
Biological SSSI	14,671	1,851		960		13,418	2,800	3,511		**38,211**	2	900	**902**	**39,113**
SPA and SAC	15,871	3,021		960			2,800			**22,652**	2	1,000	**1,002**	**23,654**
Crushed rock														
All sites	920,094	53,908		8,258	1,374,841	306,132	301,837	347,266	243,556	**3,555,893**	499,264	205,256	**704,520**	**4,260,412**
National Park					376,628		53,723	131,906		**612,400**	96,978		**96,978**	**709,377**
AONB	168,962	34,013		63	6,614	42,660	25,640	20,157	35,758	**333,867**	4,885	6,154	**11,040**	**344,907**
SSSI	282,569	4,115		739	407,473	173,566	69,741	141,806		**1,080,009**	31,605	82,257	**113,862**	**1,193,871**
Geological SSSI	241,393	6,883		1,310	175,341	157,517	69,741	52,202		**704,388**	11,605		**11,605**	**715,993**
Biological SSSI	52,829	53		91	232,132	156,071	69,741	91,801		**602,718**	26,100[a]	c	**26,100**	**628,818**
SPA and SAC	15,976				27,382		17,400	91,801		**152,559**	3,800	55,470	**59,270**	**211,829**

a. Also includes North Wales.

1. For aggregate use only.

2. Dormant sites are **not** included.

3. Designations are not mutually exclusive, e.g. SSSIs may overlap with others, such as National Parks and AONBs. SSSIs are designated for their Biological and/or Geological importance. Special Areas of Conservation (SAC) and Special Protection Areas (SPA) are also SSSIs. They are all sub-sets of SSSIs but are not mutually exclusive and cannot be added together. Some designations, notably SSSIs, may only coincide with a small part of an extant planning permission. However, the total sales for the mineral working are recorded even though there may be no extraction within the designation. The degree of overlap, and the actual or potential impacts of mineral extraction on the conservation interest of the site, whether biological or geological, will vary and are not reflected in the figures.

4. To maintain confidentiality some regional figures have been left blank. The totals remain correct.

4. Planning permissions and refusals

Table 14: **Total reserves of primary aggregates granted planning permission between 2002 and 2005**

Thousand tonnes

	Sand and gravel		Crushed rock		Grand total	
Region	**Thousand tonnes**	**No. of sites**	**Thousand tonnes**	**No. of sites**	**Thousand tonnes**	**No. of sites**
South West	6,441	10	34,894	8	41,335	18
South East	18,338	44	7,930	6	26,268	50
London	1,300	1			1,300	1
East of England	37,603	64	110	2	37,713	66
East Midlands	24,543	24	52,211	22	76,754	46
West Midlands	28,975	17	15,620	4	44,595	21
North West	13,481	15	27,648	6	41,129	21
Yorkshire & the Humber	17,952	13	16,247	16	34,199	29
North East	334	4			334	4
England	**148,967**	**192**	**154,660**	**64**	**303,626**	**256**
South Wales	607	2	4,614	12	5,221	14
North Wales	785	4	15,830	2	16,615	6
Wales	**1,392**	**6**	**20,444**	**14**	**21,836**	**20**
England and Wales	**150,359**	**198**	**175,104**	**78**	**325,463**	**276**

1. Crushed rock comprises limestone (including dolomite), igneous rock, sandstone, chalk and ironstone. Sand and gravel also includes sites for sand only.

2. In addition, in North Wales, seven permissions totalled 22.474 million tonnes of slate.

Table 15: **Total quantity of primary aggregates refused planning permission between 2002 and 2005**

Thousand tonnes

	Sand and gravel		Crushed rock		Grand total	
Region	**Thousand tonnes**	**No. of sites**	**Thousand tonnes**	**No. of sites**	**Thousand tonnes**	**No. of sites**
South West	1,304	2			1,304	2
South East	11,446	10	5,650	4	17,096	14
London						
East of England	15,363	10			15,363	10
East Midlands	8,510	3	609	4	9,119	7
West Midlands	1,200	1			1,200	1
North West			750	1	750	1
Yorkshire & the Humber	817	2	585	1	1,402	3
North East			500	1	500	1
England	**38,640**	**28**	**8,094**	**11**	**46,734**	**39**
South Wales						
North Wales			4,470	1	4,470	1
Wales			**4,470**	**1**	**4,470**	**1**
England and Wales	**38,640**	**28**	**12,564**	**12**	**51,204**	**40**

1. Crushed rock comprises limestone (including dolomite), igneous rock, sandstone, chalk and ironstone. Sand and gravel also includes sites for sand only.

2. In addition, in North Wales, one refusal contained 450,000 tonnes of slate.

Table 16: **Number of active land-won quarries and marine wharves in 2005**

	Quarry						Marine wharf	
Region	**Limestone**	**Igneous rock**	**Sandstone**	**Chalk**	**Ironstone**	**Sand & gravel**	**Sand & gravel**	**Crushed rock**
South West	39	13	14	1		45	5	
South East	9		4	5	3	93	28	13
London						6	7	5
East of England	4		4	9		117	2	2
East Midlands	56	4	17	3		46		
West Midlands	6	5	3			48		
North West	17	3	23			33	8	
Yorkshire & the Humber	34		25	5		26	1	1
North East	15	7	3			16	5	
England	**180**	**32**	**93**	**23**	**3**	**430**	**56**	**21**
South Wales	23	6	22			7	10	
North Wales	15	5	1			8	1	
Wales	**38**	**11**	**23**			**15**	**11**	
England and Wales	**218**	**43**	**116**	**23**	**3**	**445**	**67**	**21**

APPENDICES

APPENDIX A – SALES

Table A1: **Sales of land-won sand and gravel by product (end use) in 2005**

Thousand tonnes

Product	South West	South East	London	East of England	East Midlands	West Midlands	North West	Yorkshire & Humber	North East	England Total	South Wales	North Wales	Wales Total	England & Wales Total
Sand														
Sand for asphalt	44	246		375	96	102	94	16	c	972	3	11	14	986
Sand for use in mortar (building sand)	610	1,611	103	1,103	919	1,214	1,144	437	c	7,141	29	160	189	7,330
Sand for concreting	1,957	2,180	172	4,680	3,058	3,704	1,101	1,806	c	18,680	62	444	506	19,166
Gravel														
Gravel for asphalt (on or off site)	55	124		49	62	60	5			357				357
Gravel for concrete aggregate	1,085	3,265	747	3,648	2,061	3,387	93	1,188	196	15,671	34	270	304	15,975
Other screened and graded gravels for other aggregate purposes	421	836		1,008	989	487	86	809	c	4,634	29	195	225	4,859
Sand and gravel														
Sand and gravel for constructional fill	386	719	16	1,680	642	151	409	139	c	4,142	13	112	125	4,267
Undifferentiated aggregate use	45	591		1,178	2,188				1,165	5,167	133		133	5,299
Total for aggregate use	**4,603**	**9,573**	**1,038**	**13,720**	**10,014**	**9,105**	**2,932**	**4,398**	**1,360**	**56,743**	**304**	**1,192**	**1,496**	**58,239**
Total for all non-aggregate use	**c**	**621**		**1,227**	**67**	**356**	**1,608**	**c**	**c**	**3,926**	**53**		**53**	**3,980**
Total for all uses	**c**	**10,195**	**1,038**	**14,948**	**10,081**	**9,460**	**4,540**	**c**	**c**	**60,669**	**357**	**1,192**	**1,549**	**62,218**

1. Figures may not add because of rounding.

Table A2: **Sales of marine-dredged sand and gravel by product (end use) in 2005**

Thousand tonnes

Product	South West	South East	London	East of England	East Midlands	West Midlands	North West	Yorkshire & Humber	North East	England Total	South Wales	North Wales	Wales Total	England & Wales Total
Sand														
Sand for asphalt		0					14	38	7	59	1		1	60
Sand for use in mortar (building sand)	98	1	40				238	3	0	380	848	45	893	1,273
Sand for concreting	505	2,817	1,909	101			558	103	667	6,660	348		348	7,007
Gravel														
Gravel for use in asphalt (on or off site)														
Gravel for concrete aggregate	44	2,497	1,651					92	88	4,372	0		0	4,372
Other screened and graded gravels for other aggregate purposes	1	188	119	49			28	60	357	802				802
Sand and gravel														
Other sand and gravel, including for constructional fill	14	125	47	3				1	21	211	41	0	41	252
Undifferentiated aggregate use		325	270							594				594
Total for aggregate use	**661**	**5,952**	**4,035**	**154**			**838**	**298**	**1,140**	**13,078**	**1,238**	**45**	**1,283**	**14,361**
Total for all non-aggregate use														
Total for all uses	**661**	**5,952**	**4,035**	**154**			**838**	**298**	**1,140**	**13,078**	**1,238**	**45**	**1,283**	**14,361**

1. Figures may not add because of rounding.

Table A3: **Sales of crushed rock by product (end use) in 2005**

Thousand tonnes

Product	South West	South East	London	East of England	East Midlands	West Midlands	North West	Yorkshire & Humber	North East	England Total	South Wales	North Wales	Wales Total	England & Wales Total
Crushed rock, coated for asphalt (exc. weight of binder)	2,338				2,237	963	519	586	408	7,051	1,307	605	1,913	8,963
Crushed rock, coated for asphalt off site	1,411			6	2,497	626	543	1,353	c	6,436	1,188	375	1,563	7,999
Crushed rock for uncoated roadstone & foundation work	5,281	142			4,557	1,154	1,356	2,933	1,092	16,516	1,198	505	1,703	18,219
Rock chippings for surface dressing	17				1,286	50	438	228	11	2,029	453	355	808	2,837
Rail ballast	c				1,416		203		c	1,619	142	228	370	1,989
Concrete aggregate	3,135	39			4,801	358	1,783	2,727	355	13,198	1,721	853	2,573	15,771
Other screened and graded aggregates	3,287	216		299	3,370	278	1,648	1,723	938	11,760	1,597	583	2,181	13,940
Armourstone and gabion stone	47				118	7	120	46	87	426	75	15	90	515
Other construction uses, including fill	6,015	220		181	7,327	1,080	1,933	2,368	653	19,777	1,881	1,969	3,850	23,627
Undifferentiated aggregate use	705	620			1,186		100		2,113	3,688	1,311	175	1,486	5,998
Total for aggregate use	**22,238**	**1,238**		**486**	**28,793**	**4,516**	**8,644**	**11,964**	**5,657**	**82,500**	**10,873**	**5,663**	**16,536**	**100,071**
Building stone (exc. reconstituted stone)	214	3		1	135	2	20	163	c	1,574	12	12	24	591
Cement manufacture	2			472	3,585	0		0		4,059	618	501	1,120	5,178
Agricultural use on the land and horticulture	183	33		235	237	65	34	84	307	1,177	111	14	125	1,302
Flux in iron and steel manufacture					1,003		358	218		1,579	595		595	2,174
For all other industrial uses	39			55	4,287	2	82	265		4,731		9	9	4,739
Undifferentiated non-aggregate use					166				35	201				172
Total for all non-aggregate use	**438**	**35**		**762**	**9,413**	**69**	**494**	**731**	**342**	**13,320**	**1,336**	**536**	**1,872**	**14,157**
Total for all uses	**22,675**	**1,273**		**1,249**	**38,206**	**4,585**	**9,138**	**12,695**	**5,999**	**95,820**	**12,209**	**6,199**	**18,408**	**114,228**

1. Figures may not add because of rounding.

2. Excludes limestone and chalk for cement manufacture in the South East and North West.

3. Some figures have been combined to preserve confidentiality.

Table A4: **Sales of crushed rock for aggregate use by mineral in 2005**

Thousand tonnes

Region	Limestone / dolomite	Igneous rock	Sandstone	Chalk	Ironstone	Total
South West	18,945	2,345	948			22,238
South East	1,025		33	1	179	1,238
London						
East of England	328		158			486
East Midlands	14,545	13,913	233	102		28,793
West Midlands	1,690	1,470	1,356			4,516
North West	5,059	841	2,744			8,644
Yorkshire & the Humber	9,798		1,776	390		11,964
North East	4,204	1,451				5,657
England	**55,595**	**20,018**	**7,250**	**494**	**179**	**83,535**
South Wales	6,137	1,238	3,498			10,873
North Wales	4,641	1,022				5,663
Wales	**10,778**	**2,260**	**3,498**			**16,536**
England and Wales	**66,372**	**22,278**	**10,748**	**494**	**179**	**100,071**

1. For aggregate use only.
2. Figures may not add because of rounding.
3. Sales of slate for aggregate use were only collected for Wales as figures for England were included in the survey of 'alternative aggregates'. Total sales of slate for aggregate use in Wales were 549,000 tonnes, all from North Wales. In England sales were 150,000 tonnes in 2005, all from the North West.

Table A5: **Sales of crushed rock for non-aggregate use by mineral in 2005**

Thousand tonnes

Region	Limestone / dolomite	Igneous rock	Sandstone	Chalk	Ironstone	Total
South West	402	0	36	c		438
South East	13		1	21		35
London						
East of England			1	761		762
East Midlands	9,281	12	105	15		9,413
West Midlands	67	0	2			69
North West	476		18			494
Yorkshire & the Humber	547		160	23		731
North East	313	29	c			342
England	**11,100**	**41**	**323**	**820**		**12,285**
South Wales	1,328	1	8			1,336
North Wales	536	0				536
Wales	**1,863**	**1**	**8**			**1,872**
England and Wales	**12,963**	**42**	**331**	**820**		**14,157**

1. Excludes limestone and chalk for cement manufacture in the South East and North West.

2. Sandstone in the South West includes small amounts of chalk to maintain confidentiality.

3. Igneous rock in the North East includes small quantities of sandstone to maintain confidentiality.

APPENDIX B – PERMITTED RESERVES

Table B1: **Permitted reserves of land-won primary aggregates at 31st December 2005 by mineral**

Thousand tonnes

	South West	South East	London	East of England	East Midlands	West Midlands	North West	Yorkshire & Humber	North East	England Total	South Wales	North Wales	Wales Total	England & Wales Total
Sand and gravel														
Concreting sand	5,960	12,218		7,874	20	3,723	5,886	8,487	2,774	46,944	1,000	1,700	2,700	**49,644**
Other sand (Inc. building & asphalting sand)	3,743	19,926	500	26,429	7,441	2,404	8,307	13,296	4,829	86,875	2,000	250	2,250	**89,125**
Undifferentiated sand	13	40		463	4,522				5,618	10,656				**10,656**
Total sand[a]	9,716	32,184	500	34,766	11,983	6,128	14,194	21,784	13,221	144,475	3,000	1,950	4,950	**149,425**
Total gravel	3,867	16,840		7,395	206	2,702	2,556	9,110	1,727	44,404	500	1,200	1,700	**46,104**
Undifferentiated sand & gravel[b]	37,659	37,271	2,366	136,782	65,963	119,375	28,053	11,563		439,033	262	12,031	12,293	**451,326**
Total sand & gravel – for aggregate	**51,237**	**80,929**	**2,866**	**166,250**	**76,959**	**126,889**	**41,353**	**42,218**	**14,628**	**603,329**	**3,148**	**15,181**	**18,329**	**621,658**
Sand & gravel – for non–aggregate use	c	5,366		12,693	1,193	1,316	3,450	c	c	24,582	614		614	**25,196**
Crushed rock														
Limestone/dolomite – for aggregate	691,362	43,923		3,400	991,287	208,363	148,738	294,210	158,323	2,539,606	305,101	145,601	450,702	**2,990,308**
– for non-aggregate use	15,508	1,263			379,331		23,526	25,323	2,786	447,738	69,077	45,008	114,085	**561,823**
Igneous rock – for aggregate	193,444				371,143	66,444	54,352		84,915	770,299	44,557	54,405	98,962	**869,261**
– for non-aggregate use							616			616				**616**
Sandstone – for aggregate	25,009	2,824		3,372	4,799	31,325	98,746	49,307		215,701	149,606	5,250	154,856	**370,557**
– for non-aggregate use		87			6,672		583	2,904		10,496	111		111	**10,607**
Chalk – for aggregate	10,279	2,855		1,486	7,612			3,749		25,981				**25,981**
– for non-aggregate use		1,760		30,911				727		33,398				**33,398**
Ironstone – for aggregate		4,306								4,306				**4,306**
– for non-aggregate use		58								58				**58**
Total crushed rock – for aggregate	**920,094**	**53,908**		**8,258**	**1,374,841**	**306,132**	**301,837**	**347,266**	**243,556**	**3,555,893**	**499,264**	**205,256**	**704,520**	**4,260,412**
– for non-aggregate use	15,510	3,168		30,911	386,003		24,725	28,953	3,034	492,306	69,188	45,008	114,196	**606,502**

1. Figures include reserves in Active and Inactive sites, but not Dormant sites.
2. Total sand (a) also includes undifferentiated sand.
3. Undifferentiated sand and gravel (b) is not included elsewhere.
4. Reserves for aggregate use exclude material for non–aggregate use.

Table B2: **Permitted reserves of land-won primary aggregates at 31st December 2005 by environmental designation – aggregate use**

Thousand tonnes

	South West	South East	London	East of England	East Midlands	West Midlands	North West	Yorkshire & Humber	North East	England Total	South Wales	North Wales	Wales Total	England & Wales Total
Sand and gravel														
All sites	51,237	80,929	2,866	166,250	76,959	126,889	41,353	42,218	14,628	**603,329**	3,148	15,181	**18,329**	**621,658**
National Park		1,631		65						**1,729**				**1,729**
AONB		6,163		1,668		26,918				**39,609**		16	**16**	**39,625**
SSSI	2,630	5,672		2,610	4,804	13,421	2,800	3,211		**36,147**	2	1,000	**1,002**	**37,149**
Geological SSSI	1,533	3,164		1,650	845	3				**7,194**				**7,194**
Biological SSSI	14,671	1,851		960		13,418	2,800	3,511		**38,211**	2	900	**902**	**39,113**
SPA and SAC	15,871	3,021		960			2,800			**22,652**	2	1,000	**1,002**	**23,654**
Crushed rock														
All sites	920,094	53,908		8,258	1,374,841	306,132	301,837	347,266	243,556	**3,555,893**	499,264	205,256	**704,520**	**4,260,412**
National Park					376,628		53,723	131,906		**612,400**	96,978		**96,978**	**709,377**
AONB	168,962	34,013		63	6,614	42,660	25,640	20,157	35,758	**333,867**	4,885	6,154	**11,040**	**344,907**
SSSI	282,569	4,115		739	407,473	173,566	69,741	141,806		**1,080,009**	31,605	82,257	**113,862**	**1,193,871**
Geological SSSI	241,393	6,883		1,310	175,341	157,517	69,741	52,202		**704,388**	11,605		**11,605**	**715,993**
Biological SSSI	52,829	53		91	232,132	156,071	69,741	91,801		**602,718**	26,100[a]	c	**26,100**	**628,818**
SPA and SAC	15,976				27,382		17,400	91,801		**152,559**	3,800	55,470	**59,270**	**211,829**

1. For aggregate use only.

2. Including Active and Inactive sites, but not Dormant sites.

3. Designations are not mutually exclusive, e.g. SSSIs may overlap with others, such as National Parks and AONBs. SSSIs are designated for their Biological and/or Geological importance. Special Areas of Conservation (SAC) and Special Protection Areas (SPA) are also SSSIs. They are all sub-sets of SSSIs but are not mutually exclusive and figures cannot be added together. Some designations, notably SSSIs, may only coincide with a small part of an extant planning permission. However, the total sales for the mineral working are recorded even though there may be no extraction within the designation. The degree of overlap, and the actual or potential impacts of mineral extraction on the conservation interest of the site, whether biological or geological, will vary and are not reflected in the figures.

5. To maintain confidentiality some regional figures have been left blank. The totals remain correct.

a. Also includes North Wales.

Table B3: **Permitted reserves of primary aggregate minerals at 31st December 2005 by environmental designation – non-aggregate use**

Thousand tonnes

	South West	South East	London	East of England	East Midlands	West Midlands	North West	Yorkshire & Humber	North East	England Total	South Wales	North Wales	Wales Total	England & Wales Total
Sand and gravel														
All sites	5	5,366		12,693	1,193	1,316	3,450	240	320	**24,582**	614		**614**	**25,196**
National Park														
AONB		2,179							320	**2,499**				**2,499**
SSSI		150		180						**330**				**330**
Geological SSSI		150								**150**				**150**
Biological SSSI														
SPA and SAC														
Crushed rock														
All sites	15,510	3,168		30,911	386,003		24,725	28,953	3,034	**492,306**	69,188	45,008	**114,196**	**606,502**
National Park					208,706		7,593			**216,299**		0	**0**	**216,299**
AONB	2,018	2,872					105	603	8	**5,606**		8	**8**	**5,614**
SSSI	33			160	23,045		7,536	19,397		**50,172**	2,025	45,000	**47,025**	**97,197**
Geological SSSI	33	87		29,133	23,045		7,536	19,397		**79,232**	2,025	0	**2,025**	**81,257**
Biological SSSI							7,536			**7,536**		0	**0**	**7,536**
SPA and SAC							6,920			**6,920**		45,000	**45,000**	**51,920**

1. Including Active and Inactive sites, but not Dormant sites.

2. Designations are not mutually exclusive, e.g. SSSIs may overlap with others, such as National Parks and AONBs. SSSIs are designated for their Biological and/or Geological importance. Special Areas of Conservation (SAC) and Special Protection Areas (SPA) are also SSSIs. They are all sub-sets of SSSIs but are not mutually exclusive and cannot be added together. Some designations, notably SSSIs, may only coincide with a small part of an extant planning permission. However, the total sales for the mineral working are recorded even though there may be no extraction within the designation. The degree of overlap, and the actual or potential impacts of mineral extraction on the conservation interest of the site, whether biological or geological, will vary and are not reflected in the figures.

APPENDIX C – PLANNING PERMISSIONS AND REFUSALS

Table C1: **Total reserves of sand and gravel granted planning permission between 2002 and 2005 by site type**

Thousand tonnes

	New quarries		Extensions		Borrow pits	
Region	**Reserves**	**Permissions**	**Reserves**	**Permissions**	**Reserves**	**Permissions**
South West	3,000	2	3,441	8		
South East	6,357	13	11,796	30	185	1
London			1,300	1		
East of England	11,133	11	22,304	40	4,166	13
East Midlands	3,880	4	20,578	16	85	4
West Midlands	2,000	1	25,865	10	1,110	6
North West	3,910	3	9,571	12		
Yorkshire & the Humber	3,200	1	14,746	11	6	1
North East			230	2	104	2
England	**33,480**	**35**	**109,831**	**130**	**5,656**	**27**
South Wales			607	2		
North Wales			785	4		
Wales			**1,392**	**6**		
England and Wales	**33,480**	**35**	**111,223**	**136**	**5,656**	**27**

1. New quarries excludes borrow pits.

2. Extensions include lateral and vertical.

Table C2: **Total quantity of sand and gravel refused planning permission between 2002 and 2005 by site type**

Thousand tonnes

	New quarries		Extensions		Borrow pits	
Region	**Reserves**	**Permissions**	**Reserves**	**Permissions**	**Reserves**	**Permissions**
South West	1,304	2				
South East	7,845	5	3,386	4	215	1
London						
East of England	13,570	5	1,794	5		
East Midlands	6,700	1	1,800	1	10	1
West Midlands	1,200	1				
North West						
Yorkshire & the Humber			720	1	97	1
North East						
England	**30,619**	**14**	**7,700**	**11**	**322**	**3**
South Wales						
North Wales						
Wales						
England and Wales	**30,619**	**14**	**7,700**	**11**	**322**	**3**

1. New quarries excludes borrow pits.

2. Extensions include lateral and vertical.

Table C3: **Total reserves of crushed rock granted planning permission between 2002 and 2005 by site type**

Thousand tonnes

	New quarries		Extensions		Borrow pits	
Region	**Reserves**	**Permissions**	**Reserves**	**Permissions**	**Reserves**	**Permissions**
South West			34,874	7	20	1
South East			7,930	6		
London						
East of England			110	2		
East Midlands	25	3	52,186	19		
West Midlands			14,620	3	1,000	1
North West	90	1	27,558	5		
Yorkshire & the Humber	63	1	16,184	15		
North East						
England	**178**	**5**	**153,462**	**57**	**1,020**	**2**
South Wales	1,415	7	3,199	5		
North Wales			15,830	2		
Wales	**1,415**	**7**	**19,029**	**7**		
England and Wales	**1,593**	**12**	**172,491**	**64**	**1,020**	**2**

1. New quarries excludes borrow pits.

2. Extensions include lateral and vertical.

Table C4: **Total quantity of crushed rock refused planning permission between 2002 and 2005 by site type**

Thousand tonnes

	New quarries		Extensions		Borrow pits	
Region	**Reserves**	**Permissions**	**Reserves**	**Permissions**	**Reserves**	**Permissions**
South West						
South East			5,650	4		
London						
East of England						
East Midlands			609	4		
West Midlands						
North West			750	1		
Yorkshire & the Humber			585	1		
North East			500	1		
England			**8,094**	**11**		
South Wales						
North Wales			4,470	1		
Wales			**4,470**	**1**		
England and Wales			**12,564**	**12**		

1. New quarries excludes borrow pits.

2. Extensions include lateral and vertical.

Table C5: **Total reserves of sand and gravel granted planning permission between 2002 and 2005 by designation**

Thousand tonnes

	National Park		AONB		SPA / SAC		SSSI	
Region	**Reserves**	**Permissions**	**Reserves**	**Permissions**	**Reserves**	**Permissions**	**Reserves**	**Permissions**
South West			2,930	3				
South East			1,855	4	1,995	1	2,895	2
London								
East of England			762	2	277	2	488	3
East Midlands								
West Midlands			11,000	1				
North West					3,000	1	3,000	1
Yorkshire & the Humber								
North East								
England			**16,547**	**10**	**5,272**	**4**	**6,383**	**6**
South Wales	557	1						
North Wales								
Wales	**557**	**1**						
England and Wales	**557**	**1**	**16,547**	**10**	**5,272**	**4**	**6,383**	**6**

1. SPA / SAC are a subset of SSSI.

Table C6: **Total quantity of sand and gravel refused planning permission between 2002 and 2005 by designation**

Thousand tonnes

	National Park		AONB		SPA / SAC		SSSI	
Region	**Reserves**	**Permissions**	**Reserves**	**Permissions**	**Reserves**	**Permissions**	**Reserves**	**Permissions**
South West								
South East			850	1				
London								
East of England								
East Midlands								
West Midlands								
North West								
Yorkshire & the Humber								
North East								
England			**850**	**1**				
South Wales								
North Wales								
Wales								
England and Wales			**850**	**1**				

Table C7: **Total reserves of crushed rock granted planning permission between 2002 and 2005 by designation**

Thousand tonnes

	National Park		AONB		SPA / SAC		SSSI	
Region	**Reserves**	**Permissions**	**Reserves**	**Permissions**	**Reserves**	**Permissions**	**Reserves**	**Permissions**
South West			20	1				
South East			45	1				
London								
East of England							110	2
East Midlands	1,894	5			1,500	1	1,500	1
West Midlands								
North West			58	1				
Yorkshire & the Humber	1,900	1			1,900	1	1,900	1
North East								
England	**3,794**	**6**	**123**	**3**	**3,400**	**2**	**3,510**	**4**
South Wales								
North Wales			1,030	1				
Wales			**1,030**	**1**				
England and Wales	**3,794**	**6**	**1,153**	**4**	**3,400**	**2**	**3,510**	**4**

1. SPA / SAC are a subset of SSSI.

Table C8: **Total quantity of crushed rock refused planning permission between 2002 and 2005 by designation**

Thousand tonnes

	National Park		AONB		SPA / SAC		SSSI	
Region	**Reserves**	**Permissions**	**Reserves**	**Permissions**	**Reserves**	**Permissions**	**Reserves**	**Permissions**
South West								
South East			600	1				
London								
East of England								
East Midlands	459	3			6	1	156	2
West Midlands								
North West								
Yorkshire & the Humber								
North East								
England	**459**	**3**	**600**	**1**	**6**	**1**	**156**	**2**
South Wales								
North Wales			4,470	1				
Wales			**4,470**	**1**				
England and Wales	**459**	**3**	**5,070**	**2**	**6**	**1**	**156**	**2**

1. SPA / SAC are a subset of SSSI.

APPENDIX D – COMPARISON WITH PREVIOUS AM SURVEYS

Table D1: **Comparison of sales of primary aggregates, 1973, 1977, 1985, 1989, 1993, 1997, 2001 and 2005**

Thousand tonnes

	Sand and Gravel – Land-Won and Marine Dredged							
Region	**1973**	**1977**	**1985**	**1989**	**1993**	**1997**	**2001**	**2005**
South West	8,662	5,509	6,380	7,703	4,605	5,092	5,791	5,264
South East, London, East of England	60,660	46,731	49,305	62,345	38,648	36,175	40,643	34,474
East Midlands	14,184	10,539	10,959	15,961	13,278	11,314	10,046	10,014
West Midlands	13,511	10,020	10,853	13,830	10,849	9,936	9,932	9,105
Yorkshire & the Humber	6,780	4,991	4,324	6,175	4,706	4,958	5,211	4,695
North East & North West	10,638	7,880	6,690	8,791	7,202	7,977	5,705	6,270
England	**114,435**	**85,670**	**88,511**	**114,805**	**79,288**	**75,452**	**77,328**	**69,821**
South Wales	2,413	1,794	1,529	2,524	1,818	2,008	1,289	1,542
North Wales	2,536	1,860	1,576	1,909	1,725	1,392	1,387	1,237
Wales	**4,949**	**3,654**	**3,105**	**4,433**	**3,543**	**3,400**	**2,676**	**2,779**
England and Wales	**119,384**	**89,324**	**91,616**	**119,238**	**82,831**	**78,852**	**80,004**	**72,599**

	Crushed Rock							
Region	**1973**	**1977**	**1985**	**1989**	**1993**	**1997**	**2001**	**2005**
South West	30,195	19,990	25,850	38,213	29,193	22,945	26,518	22,238
South East, London, East of England	1,961	1,611	2,126	3,820	1,759	2,299	3,053	1,724
East Midlands	21,569	16,451	21,508	33,651	31,741	31,475	31,254	28,793
West Midlands	10,428	7,960	8,317	12,804	8,402	6,456	5,497	4,516
Yorkshire & the Humber	12,033	10,066	9,610	16,936	13,867	13,157	12,701	11,964
North East & North West	17,151	15,274	15,717	21,345	21,110	19,523	16,630	14,301
England	**93,337**	**71,352**	**83,128**	**126,769**	**106,072**	**95,855**	**95,652**	**83,535**
South Wales	10,182	10,306	9,532	13,137	14,739	12,912	10,021	10,873
North Wales	6,247	4,110	6,959	10,497	8,044	7,549	7,198	5,663
Wales	**16,429**	**14,416**	**16,491**	**23,634**	**22,783**	**20,461**	**17,219**	**16,536**
England and Wales	**109,766**	**85,768**	**99,619**	**150,403**	**128,855**	**116,316**	**112,872**	**100,071**

	Total Primary Aggregates							
Region	**1973**	**1977**	**1985**	**1989**	**1993**	**1997**	**2001**	**2005**
South West	38,857	25,499	32,230	45,916	33,798	28,037	32,309	27,501
South East, London, East of England	62,621	48,342	51,431	66,165	40,407	38,474	43,696	36,197
East Midlands	35,753	26,990	32,467	49,612	45,019	42,789	41,300	38,807
West Midlands	23,939	17,980	19,170	26,634	19,251	16,392	15,429	13,621
Yorkshire & the Humber	18,813	15,057	13,934	23,111	18,573	18,115	17,912	16,659
North East & North West	27,789	23,154	22,407	30,136	28,312	27,500	22,335	20,570
England	**207,772**	**157,022**	**171,639**	**241,574**	**185,360**	**171,307**	**172,981**	**153,356**
South Wales	12,595	12,100	11,061	15,661	16,557	14,920	11,310	12,416
North Wales	8,783	5,970	8,535	12,406	9,769	8,941	8,585	6,899
Wales	**21,378**	**18,070**	**19,596**	**28,067**	**26,326**	**23,861**	**19,895**	**19,315**
England and Wales	**229,150**	**175,092**	**191,235**	**269,641**	**211,686**	**195,168**	**192,876**	**172,671**

Table D2: **Comparison of consumption of primary aggregates, 1973, 1977, 1985, 1989, 1993, 1997, 2001 and 2005**

Thousand tonnes

	Sand and Gravel – Land-Won and Marine Dredged							
Region	**1973**	**1977**	**1985**	**1989**	**1993**	**1997**	**2001**	**2005**
South West	8,796	6,330	7,304	8,994	5,415	5,498	6,263	5,803
South East, London, East of England	61,447	46,330	48,488	62,211	38,597	32,272	40,191	32,858
East Midlands	11,115	7,973	8,889	13,145	9,944	8,559	8,703	9,275
West Midlands	11,507	8,854	9,820	12,527	10,519	9,015	9,564	8,149
Yorkshire & the Humber	7,697	6,279	5,327	7,938	6,646	6,458	5,614	6,238
North East & North West	13,409	9,951	7,551	10,328	8,444	8,691	6,889	6,247
England	**113,971**	**85,717**	**87,379**	**115,143**	**79,565**	**70,493**	**77,225**	**68,571**
South Wales	2,755	1,890	1,689	2,636	1,934	1,963	1,198	1,628
North Wales	n.a.	1,254	957	1,450	1,226	900	977	811
Wales	**n.a.**	**3,144**	**2,646**	**4,086**	**3,160**	**2,863**	**2,175**	**2,439**
England and Wales	**n.a.**	**88,861**	**90,025**	**119,229**	**82,725**	**73,356**	**79,399**	**71,010**

	Crushed Rock							
Region	**1973**	**1977**	**1985**	**1989**	**1993**	**1997**	**2001**	**2005**
South West	22,156	13,537	16,775	25,821	21,697	14,763	19,140	17,197
South East, London, East of England	12,406	9,193	13,335	24,608	15,294	14,579	22,736	17,404
East Midlands	10,979	9,456	12,538	18,598	17,232	15,568	14,448	13,002
West Midlands	11,406	8,577	10,265	16,376	11,297	8,419	10,475	9,677
Yorkshire & the Humber	12,455	10,292	9,103	16,790	14,311	12,848	12,793	11,511
North East & North West	23,955	21,655	22,891	32,500	29,718	28,221	25,450	22,499
England	**93,357**	**72,710**	**84,907**	**134,693**	**109,549**	**94,398**	**105,042**	**91,289**
South Wales	10,009	9,621	8,401	12,426	13,619	10,103	8,284	8,537
North Wales	n.a.	2,233	4,092	5,660	4,615	2,733	3,663	2,520
Wales	**n.a.**	**11,854**	**12,493**	**18,086**	**18,234**	**12,836**	**11,947**	**11,057**
England and Wales	**n.a.**	**84,564**	**97,400**	**152,779**	**127,783**	**107,234**	**116,990**	**102,346**

	Total Primary Aggregates							
Region	**1973**	**1977**	**1985**	**1989**	**1993**	**1997**	**2001**	**2005**
South West	30,952	19,867	24,079	34,815	27,112	20,261	25,403	22,999
South East, London, East of England	73,853	55,523	61,823	86,819	53,891	46,851	62,927	50,263
East Midlands	22,094	17,429	21,427	31,743	27,176	24,127	23,151	22,277
West Midlands	22,913	17,431	20,085	28,903	21,816	17,434	20,039	17,827
Yorkshire & the Humber	20,152	16,571	14,430	24,728	20,957	19,306	18,407	17,749
North East & North West	37,364	31,606	30,442	42,828	38,162	36,912	32,339	28,746
England	**207,328**	**158,427**	**172,286**	**249,836**	**189,114**	**164,891**	**182,267**	**159,860**
South Wales	12,764	11,511	10,090	15,062	15,553	12,066	9,482	10,165
North Wales	n.a.	3,487	5,049	7,110	5,841	3,633	4,640	3,331
Wales	**n.a.**	**14,998**	**15,139**	**22,172**	**21,394**	**15,699**	**14,122**	**13,496**
England and Wales	**n.a.**	**173,425**	**187,425**	**272,008**	**210,508**	**180,590**	**196,389**	**173,356**

1. n.a. - not available.

Table D3: **Comparison of permitted reserves of primary aggregates, 1973, 1977, 1985, 1989, 1993, 1997, 2001 and 2005**

Million tonnes

					Sand and Gravel			
Region	**1973**	**1977**	**1985**	**1989**	**1993**	**1997**	**2001**	**2005**
South West	153	171	72	72	83	74	50	51
South East, London, East of England	442	n.a.	377	363	405	359	330	250
East Midlands	175	147	143	149	130	126	99	77
West Midlands	188	156	140	132	140	166	144	127
Yorkshire & the Humber	66	43	42	54	37	58	51	42
North East & North West	101	66	74	74	100	98	79	56
England	**1,125**	**n.a.**	**848**	**844**	**895**	**881**	**752**	**603**
South Wales	9	n.a.	2	0	10	14	8	3
North Wales	28	n.a.	20	16	20	26	23	15
Wales	**37**	**n.a.**	**22**	**16**	**30**	**40**	**31**	**18**
England and Wales	**1,162**	**n.a.**	**870**	**860**	**925**	**921**	**783**	**622**

					Crushed Rock			
Region	**1973**	**1977**	**1985**	**1989**	**1993**	**1997**	**2001**	**2005**
South West	1,788	1,842	1,089	1,393	1,310	1,435	1,386	920
South East, London, East of England	n.a.[1]	n.a.	31	42	71	57	88	62
East Midlands	1,733	1,543	1,773	1,896	1,957	2,091	2,166	1,375
West Midlands	228	267	241	235	216	465	309	306
Yorkshire & the Humber	522	n.a.	257	413	531	550	471	347
North East & North West	1,162	1,011	809	717	1,002	705	605	545
England	**5,433**	**n.a.**	**4,200**	**4,696**	**5,087**	**5,303**	**5,023**	**3,556**
South Wales	656	n.a.	492	419	581	651	648	499
North Wales	619	n.a.	1,117	772	433	399	505	205
Wales	**1,275**	**n.a.**	**1,609**	**1,191**	**1,014**	**1,050**	**1,153**	**705**
England and Wales	**6,708**	**n.a.**	**5,809**	**5,887**	**6,101**	**6,353**	**6,176**	**4,260**

					Total Primary Aggregates			
Region	**1973**	**1977**	**1985**	**1989**	**1993**	**1997**	**2001**	**2005**
South West	1,941	2,013	1,161	1,465	1,393	1,509	1,436	971
South East, London, East of England	n.a.	n.a.	408	405	476	416	418	312
East Midlands	1,908	1,690	1,916	2,045	2,087	2,217	2,265	1,452
West Midlands	416	423	381	367	356	631	453	433
Yorkshire & the Humber	588	n.a.	299	467	568	608	522	389
North East & North West	1,263	1,077	883	791	1,102	803	684	601
England	**n.a.**	**n.a.**	**5,048**	**5,540**	**5,982**	**6,184**	**5,776**	**4,159**
South Wales	665	n.a.	494	419	591	665	655	502
North Wales	647	n.a.	1,137	788	453	425	528	220
Wales	**1,312**	**n.a.**	**1,631**	**1,207**	**1,044**	**1,090**	**1,184**	**723**
England and Wales	**n.a.**	**n.a.**	**6,679**	**6,747**	**7,026**	**7,274**	**6,960**	**4,882**

1 n.a. - not available.

2. n.a.[1] - not available but assumed to be negligible.

3. Reserve figures for 2005 are not directly comparable to earlier years. In 2005 'reserves' in dormant sites and for non-aggregate uses were excluded.

APPENDIX E – SURVEY FORMS A AND B

Form A: **Page 1**

Communities and Local Government

Aggregate Minerals Survey 2005 for England and Wales

Llywodraeth Cynulliad Cymru Welsh Assembly Government

FORM A: Quarries producing land-won natural aggregates [1], and Marine Wharves for sand and gravel and crushed rock during 2005

BACKGROUND INFORMATION

The Aggregate Minerals (AM) surveys, based at four-yearly intervals since 1973, provide an in-depth and up-to-date understanding of regional and national sales, consumption, distribution and permitted reserves of natural aggregates. The information is collected from aggregates producers for collation at Mineral Planning Authority (MPA), regional and national levels. The most recent survey was for the base year 2001 (AM2001) and the collated results can be viewed and downloaded free from www.mineralsUK.com This questionnaire relates to aggregates sales, distribution and reserves between January 1 and December 31, 2005. The national collation of this Survey is being undertaken by the British Geological Survey for the Department for Communities and Local Government (DCLG) (formerly Office of the Deputy Prime Minister) and the Welsh Assembly Government. To simplify the Survey the questions have been harmonised with the statutory Annual Minerals Raised Inquiry (AMRI) undertaken on behalf of DCLG by the Office for National Statistics.

The results of the AM 2005 Survey will be used to monitor policies for the supply of aggregates

CONFIDENTIALITY

All sales and reserves information provided by respondents will be treated as strictly confidential and will not pass beyond the officer who the Chief Planning Officer of the Authority designates to receive and process it. This includes Regional Aggregates Working Party (RAWP) Secretaries. It will not be used unless it is first collated by the officer in such a way that individual company figures cannot be identified or unless consent of the company concerned is first obtained. The collated information may then be used for the purposes of the work of the RAWPs or for mineral planning purposes by the Authority.

Completed forms should be returned in envelopes marked 'Confidential' to:

MPA contact and address:

Please return the completed form no later than 17th July 2006

[1] Aggregates – Granular material used in construction. Aggregates can be natural, recycled or manufactured. This form relates to natural aggregates excavated and sold for the first time.

BGS HELPLINE: If you have any queries regarding this form please call

Miss Sue Hobbs 0115 936 3579

Form A: **Page 2**

NON-CONFIDENTIAL

SITE DETAILS

SD1	Company	
SD2	Quarry / wharf name	
SD3	Address	
SD4		
SD5	Town	
SD6	County	
SD7	Postcode	
SD8	Telephone	
SD9	Fax	
SD10	Email	
	Name of person responsible for filling in form	
	Date	Tel:

GUIDANCE NOTES - please read these notes before completing the form. This form applies to:

(1) Quarries producing land-won natural aggregates either as a principal activity or as a subsidiary activity, such as a by-product of building stone or silica sand extraction.

(2) Marine wharves at which marine-dredged sand and gravel are landed and processed.

(3) Marine wharves at which crushed rock is landed.

(4) Dormant site - A distinction is made between 'inactive' sites and 'dormant' sites. The latter is defined in the Environment Act 1995 as a mineral site where no mineral development has taken place to any substantial extent in, on, or under the site at any time in the period 22nd February 1982 and 6th June 1995.

TM1	Type of mineral working (please tick box)	Quarry (1)	☐
		Marine wharf sand and gravel (2)	☐
		Marine wharf crushed rock (3)	☐
TM2	Association status: *(please tick box(es))*	QPA member	☐
		BAA member	☐
		Both	☐
		Neither	☐
TM3	Status of quarry / wharf: *(please tick relevent box(es))*	**Active:** In production, including from stockpiles, for some time during 2005	☐
		Inactive: Worked in the past and still containing permitted reserves [Complete only Question 1 for permitted reserves]	☐
		Inactive: Planning permission received, but yet to be worked [Complete only Question 1 for permitted reserves]	☐
		Dormant: As identified under the Environment Act 1995 (4)	☐
		Closed and containing no workable permitted reserves [Complete only site details]	☐

Form A: **Page 3**

NON-CONFIDENTIAL

To be completed by MPA:

MPA1	MPA name	
MPA2	RAWP region	

NGR1	National Grid Reference (of centre of working, e.g. NG 456 789)			
		Code	Easting	Northing

INFORMATION ABOUT THE SITE

DS1	Please tick here if the site is a borrow pit	☐
DS2	Please tick here if the site has received planning permission for an extension in 2005	☐
DS3	Please tick here if this is a new quarry or wharf granted planning permission in 2005	☐

Please tick as appropriate if the area for extraction within the planning permission is wholly or partly within any of the following environmental designations.
The site may fall within more than one designation:

DS4	National Park (including The Broads and The New Forest)	☐				
DS5	AONB	☐				
DS6	SSSI/NNR	☐	DS7 Geological SSSI	☐	DS8 Biological SSSI	☐
DS9	SAC/SPA	☐				

Form A: **Page 4**

CONFIDENTIAL

1. PERMITTED RESERVES (AT QUARRIES ONLY)

DEFINITIONS

Permitted Reserves - Estimated reserves of aggregate minerals, including stockpiles, with planning permission that are saleable for aggregates and non-aggregate purposes at 31st December 2005. The figure should estimate **net saleable** reserves, taking account of likely losses during extraction and processing.

Active / Inactive - Sites are described as active where material was produced at any time during 2005 and as inactive when the site was not in production during that period. (Complete appropriate column).

Dormant site - A distinction is made between 'inactive' sites and 'dormant' sites. The latter is defined in the Environment Act 1995 as a mineral site where no mineral development has taken place to any substantial extent in, on, or under the site at any time in the period 22nd February 1982 and 6th June 1995. **MPA to complete this column.**

GUIDANCE NOTES - please read these notes before completing the form.

(1) Where possible estimate the amount of sand or gravel.

(2) Where not known this can be estimated on the basis of typical proportions of sales of aggregate to non-aggregate.

			Tonnes		
Sand and Gravel Reserves			**Reserves at active sites**	**Reserves at inactive sites**	**Dormant sites *(please tick)***
1.1	Sand suitable for concreting	a			
1.2	Other sand (including building and asphalting sand)	b			
1.3	Total sand (a+b)[1]				☐
1.4	Total gravel[1]				
1.5	Total sand and gravel undifferentiated, where not included above				
1.6	*Estimated % of total reserves allocated for non-aggregate use*[2]				
Crushed Rock Reserves					
1.7	Limestone / Dolomite				☐
1.8	Igneous and metamorphic rock				☐
1.9	Sandstone (including gritstone, greywacke & quartzite)				☐
1.10	Chalk				☐
1.11	Ironstone				☐
1.12	*Estimated % of total reserves allocated for non-aggregate use*[2]				☐

Form A: **Page 5**

CONFIDENTIAL

2. SALES BY PRODUCT

2.1 Sand and Gravel (Land won and marine-dredged)

INSTRUCTIONS

The term sand and gravel includes 'solid' sandstones and conglomerates that are loosely consolidated or weakly cemented and that are processed to produce sand and gravel, e.g. 'Sherwood Sandstone / Bunter' type sandstones and pebble beds. For sales of sand (fine aggregate) derived from crushing hard rocks, e.g. Carboniferous type sandstones, please return under question 2.2.7.

GUIDANCE NOTES - please read these notes before completing the form (Section 2.1).

2.1	Questions 2.1 should be filled in for sales of sand and gravel excavated from a quarry, or sales only of marine dredged sand and gravel landed at a wharf. For quarries **exclude** minerals produced elsewhere in England and Wales and brought to the site for processing. Where aggregate is taken to another site for processing please estimate the sales attributable to the actual excavated site.
2.1.3	Including sand used in ready-mixed concrete, precast concrete products e.g. concrete bricks, blocks, tiles, pavers and pipes.
2.1.5	Including gravel used in ready-mixed concrete, precast concrete products e.g. concrete bricks, blocks, tiles, pavers and pipes.
2.1.6	Other aggregate uses include pipebedding, drainage media/layers.
2.1.7	Including 'as dug' material (hoggin).
2.1.9	Other industrial uses for sand (and gravel) include for glassmaking, foundry use, chemicals, ceramics, water filtration, brickmaking (body / facing sand and calcium silicate bricks), sports and horticultural uses.

Sand for aggregate use

		Tonnes
2.1.1	Sand for asphalt	
2.1.2	Sand for use in mortar (building or soft sand)	
2.1.3	Sand for concreting or sharp sand	

Gravel for aggregate use

		Tonnes
2.1.4	Gravel for asphalt	
2.1.5	Gravel for concrete aggregate	
2.1.6	Other screened and graded gravels	

Sand and Gravel for aggregate use

		Tonnes
2.1.7	Other sand and gravel e.g. for constructional fill	
2.1.8	**Total for all aggregate use [T1]**	

Sand and Gravel for non-aggregate uses

		Tonnes
2.1.9	**Total for all non-aggregate uses**	

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2. SALES BY PRODUCT

2.2 Crushed Rock **(Quarries in England and Wales and Wharves at which hard rock from outside England and Wales is landed)**

Select mineral type: *(please tick box)*
☐ Igneous rock (including metamorphic) ☐ Limestone / Dolomite ☐ Sandstone ☐ Chalk ☐ Ironstone

If more than one mineral type, please print an extra copy of Questions 2.2 and 3, for each, and attach onto back of form

DEFINITIONS

Limestone / Dolomite includes high magnesium limestone but not chalk.
Igneous rock includes andesite, basalt, diorite, dolerite, gabbro, gneiss, granite, granulite, hornfels, microgranite, rhyolite, schist, syenite, trachyte and tuff.
Sandstone includes greywacke, gritstone and quartzite.
Ironstone formerly of interest as a source of iron.

GUIDANCE NOTES - please read these notes before completing the form (Section 2.2).

2.2 Questions 2.2 should be filled in for sales of crushed rocks excavated from the quarry or landed at the wharf. **Exclude** material produced elsewhere within England and Wales and brought to the site for processing. Where aggregate is taken to another site for processing please estimate the sales attributable to the actual excavated site.
2.2.3 Includes granular sub-base (Types 1 and 2) for foundation work.
2.2.6 Including coarse and fine aggregate used in ready-mixed concrete, precast concrete products e.g. concrete bricks, blocks, tiles, pavers and pipes.
2.2.7 Including pipebedding, drainage layers.
2.2.9 Crushed and / or 'as dug' material; excluding Type 1 and 2 sub-base.
2.2.11 Building stone includes dimension, ornamental, monumental and garden stone.
2.2.13/ 2.2.14 Where the product is calcined limestone or dolomite (lime / dolime) please report figure expressed as tonnage o original material used. Tonnage of lime, dolime and hydrated lime can be recalculated to carbonate by multiplying by 1.78, 2.16 and 1.35 respectively.
2.2.14 Including lime/dolime production (other than for steel manufacture), chemicals, fillers, FGD, powders, glassmaking and animal feed.

		Tonnes
2.2.1	Crushed rock for manufacturing asphalt on site i.e. coated (excluding weight of binder)	
2.2.2	Crushed rock for manufacturing asphalt off site (including third party operations)	
2.2.3	Uncoated roadstone (Type 1 and 2 materials)	
2.2.4	Uncoated roadstone (surface dressing chippings)	
2.2.5	Rail ballast	
2.2.6	For concrete aggregate including third party operations on or off site	
2.2.7	Other screened and graded aggregates	
2.2.8	Armourstone and gabion stone	
2.2.9	Other constructional uses, including fill	
2.2.10	**Total for aggregate use [T2]**	

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2.2 Crushed Rock continued

Non-aggregate uses

		Tonnes
2.2.11	Building stone (excluding reconstituted stone)	
2.2.12	Cement manufacture	
2.2.13	Flux in iron and steel manufacture	
2.2.14	All other industrial uses	
2.2.15	Agricultural use on the land and horticulture	
2.2.16	**Total for all non-aggregate uses**	

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3. SALES BY DESTINATION **From quarries; marine dredged landings; and aggregates landed from outside England and Wales**

Sales by Destination for **Aggregate Use only**

GUIDANCE NOTES

This information is very important for calculating inter-regional / sub-regional flows and consumption of aggregates. It is appreciated that sales destination will not always be known particularly for **collected** sales. **Please make estimates wherever possible.**

Estimate **for aggregate sales only** the quantities delivered to initial destinations, including those value-added sites (such as asphalt, ready mix and precast concrete plants), during 2005 by **transport method** and **area** for aggregates excavated and/or sold from the site.

Aggregate sales should equal totals in questions 2.1 [T1] & 2.2

The areas are shown on the map.

Principal Mode(s) of Transport - An estimate by % (which totals to 100% across road, rail and water) is acceptable if precise sales are no known. Please indicate whether **tonnes or percent**. Include only the principal mode of transport.

(1) Where all deliveries are by road just tick

For a map of the Sub-Regions please see map on page 12

		Tonnes		Tonnes or Percent (delete as appropriate)		
		Sales of Aggregate		Modes of transport		
Sub-Region		Sand and gravel	Crushed rock	Road[1]	Rail	Water
3.1 EEN1	Norfolk, Suffolk and Cambridgeshire					
3.2 EEN2	Essex					
3.3 EEN3	Bedfordshire and Hertfordshire					
3.4 EEN4	Unknown but somewhere in the East of England					
3.5 EMD1	Derbyshire and Peak District National Park					
3.6 EMD2	Nottinghamshire and Lincolnshire					
3.7 EMD3	Leicestershire and Rutland					
3.8 EMD4	Northamptonshire					
3.9 EMD5	Unknown but somewhere in the East Midlands					
3.10 LON1	East London					
3.11 LON2	West London					
3.12 LON3	Unknown but somewhere in Greater London					
3.13 NEA1	Tyne & Wear, Northumberland and the National Park					
3.14 NEA2	Tees Valley and Durham					
3.15 NEA3	Unknown but somewhere in the North East					
3.16 NWE1	Cumbria					
3.17 NWE2	Greater Manchester and Lancashire					
3.18 NWE3	Cheshire and Merseyside					
3.19 NWE4	Unknown but somewhere in the North West					

Continued overleaf

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3. SALES BY DESTINATION (continued…)

Sub-Region		Tonnes		Tonnes or Percent (delete as appropriate)		
		Sales of Aggregate		Modes of transport		
		Sand and gravel	Crushed rock	Road[1]	Rail	Water
3.20 SEA1	Kent and Medway					
3.21 SEA2	West Sussex, East Sussex and Surrey					
3.22 SEA3	Berkshire, Oxfordshire, Buckinghamshire					
3.23 SEA4	Hampshire and the Isle of Wight					
3.24 SEA5	Unknown but somewhere in the South East					
3.25 SWE1	Cornwall, Devon					
3.26 SWE2	Dorset and Wiltshire					
3.27 SWE3	Somerset and Avon					
3.28 SWE4	Gloucestershire					
3.29 SWE5	Unknown but somewhere in the South West					
3.30 WMD1	Shropshire and Staffordshire					
3.31 WMD2	Herefordshire, Worcestershire					
3.32 WMD3	Solihull, Coventry and Warwickshire					
3.33 WMD4	Remainder of West Midlands					
3.34 WMD5	Unknown but somewhere in the West Midlands					
3.35 YHU1	North Yorks, Yorkshire Dales and North York Moors National Parks					
3.36 YHU2	West Yorkshire					
3.37 YHU3	South Yorkshire					
3.38 YHU4	East Riding, North Lincolnshire and North East Lincolnshire					
3.39 YHU5	Unknown but somewhere in Yorks & the Humber					
3.40 WLS1	North East Wales					
3.41 WLS2	North West Wales					
3.42 WLS3	South East Wales					
3.43 WLS4	Remainder of South Wales					
3.44 WLS5	Unknown but somewhere in Wales					

PLEASE PROVIDE TOTALS OVERLEAF….

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3. SALES BY DESTINATION (continued...)

		Tonnes		Tonnes or Percent (delete as appropriate)		
		Sales of Aggregate		Modes of transport		
Sub-Region		**Sand and gravel**	**Crushed rock**	**Road[1]**	**Rail**	**Water**
3.45 SCT1	Scotland					
3.46 NIR1	N. Ireland					
3.47 RPI1	Repubic of Ireland					
3.48 EUR1	Mainland Europe					
3.49 UNK1	Unknown destination					
3.50	**Total tonnage** (totals should equal totals in questions 2.1 [T1] and 2.2 [T2])					

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4. LANDINGS OF SAND AND GRAVEL AND CRUSHED ROCK AGGREGATE FROM OUTSIDE ENGLAND AND WALES (WHARVES ONLY)

GUIDANCE NOTES

4.8	Some landings of crushed rock and sand and gravel are transhipped into smaller vessels for onward movement to smaller wharves. Where this is the case please tick the box.

		Landings of Aggregate	
		Tonnes	
Country of origin		**Crushed rock**	**Sand and Gravel**
4.1	Scotland		
4.2	Northern Ireland		
4.3	Ireland (Republic of)		
4.4	France		
4.5	Norway		
4.6	Other countries		
4.7	**Total tonnage**		

4.8	Please tick if any crushed rock or sand and gravel is transhipped to other wharves (and complete Q4.9)	☐
4.9	Please provide % of crushed rock or sand and gravel transhipped to other wharves	

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MAP OF AM2005 SUB-REGIONS

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Communities and Local Government

Aggregate Minerals Survey 2005 for England and Wales

Llywodraeth Cynulliad Cymru
Welsh Assembly Government

FORM B: Mineral Sites Granted[1] and Refused[2] Planning Permission, 2002-2005

To be completed by Mineral Planning Authority (MPA)

MPA name					
Completed by					
Date		Email:		Tel:	
RAWP					

Please read Guidance Notes at the bottom before completing the form.

Completed forms should be returned (preferably by email) to Sue Hobbs (sfh@bgs.ac.uk), British Geological Survey, Keyworth, NG12 5GG (and copied to the relevant RAWP Secretary) for collation.

Sites Granted[1] Planning Permission for aggregates extraction, 2002-200

Year		Site Name	Mineral (3)	NGR (4)	Site Type (5)	Tonnes	Nat. Park (6)	AONB (6)	SSSI (6)	SPA/SAC (6)
2002	1									
	2									
	3									
	4									
	5									
	6									
	7									
	8									
2003	1									
	2									
	3									
	4									
	5									
	6									
	7									
	8									
2004	1									
	2									
	3									
	4									
	5									
	6									
	7									
	8									
2005	1									
	2									
	3									
	4									
	5									
	6									
	7									
	8									

Please enter 1 in appropriate box(es)

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Sites Refused[2] Planning Permission for aggregates extraction, 2002-200

Year		Site Name	Mineral (3)	NGR (4)	Site Type (5)	Tonnes	Nat. Park (6)	AONB (6)	SSSI (6)	SPA/SAC (6)
2002	1									
	2									
	3									
	4									
	5									
	6									
	7									
	8									
2003	1									
	2									
	3									
	4									
	5									
	6									
	7									
	8									
2004	1									
	2									
	3									
	4									
	5									
	6									
	7									
	8									
2005	1									
	2									
	3									
	4									
	5									
	6									
	7									
	8									

Please enter 1 in appropriate box(es)

GUIDANCE NOTES - please read these notes before completing the form

1. Subject to all legal agreements being made. For the calendar year periods 1/1/2002 to 31/12/2005 (inclusive)
2. If a refusal (e.g. in 2002) goes to appeal and is rejected (e.g. in 2004) only enter for the final rejection
3. Mineral. Please choose from the following list:
   - Limestone (including dolomite)
   - Chalk
   - Igneous rock (including metamorphic rock)
   - Sandstone (includes greywacke, gritstone and quartzite)
   - Ironstone
   - Sand
   - Sand and gravel
   - Slate
   - Shale (for construction use only)
4. National Grid Reference (NGR) - of centre of site e.g. NG 456 789
5. Site type. Choose from:
   - Extension - lateral/vertical
   - Borrow pit
   - New quarry (excluding borrow pit)

   Excludes changes in permission for an increase in output and / or extension of time where these do not lead to an increase / decrease in reserves.
6. Please enter 1 if the area for extraction within the planning permission (or refusal) is **wholly or partly** within the listed designation. A site may fall within more than one designation e.g. AONB and SSSI, and SSSI and SPA/SAC. National Parks includes The Broads and The New Forest.
7. If required insert extra rows. To do this select an entire row by clicking on the row number below where you wish to insert the new row. Then click on Insert (on the menu bar) followed by Rows.
8. Questions can be directed to Sue Hobbs at the British Geological Survey.
   Tel: 0115 936 3579 Email: sfh@bgs.ac.uk

APPENDIX F – GLOSSARY OF TERMS AND CONDITIONS

Active/Inactive	Sites are described as active where material was produced at any time during 2005 and as inactive when the site was not in production during that period. Inactive sites include those that have been worked in the past and those that have yet to begin. The term 'inactive' now replaces the term 'dormant' used in previous surveys as the term 'dormant' has acquired a more specific meaning under the terms of the Planning & Compensation Act 1991 and the Environment Act 1995.
Aggregate	Granular or particulate material which is suitable for use (on its own or with the addition of cement, lime or bituminous binder) in construction as concrete, mortar, roadstone, asphalt or drainage courses, or for use as constructional fill or railway ballast (also referred to as 'construction aggregates').
Aggregate mineral	Naturally-occurring material suitable for aggregate uses.
Primary aggregates	Aggregate produced from naturally-occurring mineral deposits and used for the first time.
Secondary aggregates	This term is becoming increasingly unclear and requires more rigorous definition. Aggregate which originates as a waste of other quarrying and mining operations, or from industrial processes (e.g. colliery waste or minestone, blast furnace slag, power station ash, china clay waste, slate waste), but excluding chalk and clay/shale worked primarily for aggregate purposes.
All sites	All land-won mineral workings for the production of aggregates.
AONB	Area of Outstanding Natural Beauty designated under the National Parks and Access to the Countryside Act 1949 for the purposes of preserving and enhancing their natural beauty.
BAA	British Aggregates Association, the trade body for independent quarry companies.
Borrow pit	A site for the extraction of aggregate minerals over a limited period, for exclusive use in a specific construction project, which will usually be close to or contiguous with the site.
Brownfield site	Land previously developed for urban, industrial, military or infrastructure purposes or which has been damaged by previous use.
Construction fill	Fill material that will bear loads (e.g. in suitably designed embankments) as distinct from landfill to occupy voids and not specially intended to bear loads.

Dormant site	Dormant sites may be defined in accordance with the Planning & Compensation Act 1991 (PCA 1991) or the Environment Act 1995 (EA 1995). In respect of the PCA 1991 the term defines a site where mineral planning permission was granted after 21 July 1943 and before 1 July 1948 and where no working has been carried out to any substantial extent in, on or under the land to which the permission relates between 1 May 1989 and 30 April 1991 inclusive. In respect of the EA 1995 the term defines a site where the predominant mineral permission(s) was granted after 30 June 1948 and before 22 February 1982, and where no mineral development has been carried out to any substantial extent in, on or under the site between 22 February 1982 and 6 June 1995 inclusive. The term "substantial extent" is not defined in statute and, in the absence of case law, the words have their common or everyday meaning. It is unlawful to carry out mineral working on a dormant site until full modern planning conditions have been approved by the relevant MPA. There is no time limit for the submission to the relevant MPA of an application for the determination of such conditions. Dormant sites do not contain permitted reserves.
Extension	A site granted permission for the extraction of aggregate minerals for which there has been a change in the size (laterally or vertically) of the lopment from the original planning consent.
Green Belt	An area of land designated in development plans within which the fundamental aim is to prevent urban sprawl by keeping that land permanently open.
Greenfield site	Land previously in agriculture or non-urban/industrial use or which has not been damaged by a previous use.
Hoggin	A term mainly applied in southern England for 'as raised' clayey sand and gravel, used as dug for constructional fill for low-grade purposes, paths etc. ('A natural deposit of stony sand and gravel containing a small admixture of clay which is sufficient to hold the mass together without affecting the interlocking properties of the coarser particles.' Mineral Dossier on Sand and Gravel. Mineral Resources Consultative Committee, 1970).
New quarries	A totally new mineral operation which may be sited on a greenfield or brownfield site, or a combination of the two.
Landbank	A stock of planning permissions to which valid conditions are attached for the winning and working of minerals. It is composed of the sum of all permitted reserves at active and inactive sites (but not dormant sites) at a given point in time, and for a given area.
Marine wharves	Points at which marine-dredged sand and gravel are landed and processed. Some marine wharves are used for landing crushed rock.

MPA	Mineral Planning Authority, responsible for planning control over mineral working within its area.
Mt	Million tonnes (i.e. Megatonne).
National Park	National Parks are designated under the National Parks and Access to the Countryside Act 1949. Their aims are to conserve and enhance the natural beauty, wildlife and cultural heritage they contain, and to promote opportunities and enjoyment by the public of the areas they cover. An independent National Park Authority administers each Park. The Norfolk and Suffolk Broads are also administered by their own independent authority and enjoy protection equivalent to that of a National Park. The New Forest obtained its status as a National Park in April 2006.
Non-aggregate uses	Use of material suitable for aggregate purposes (see Aggregate above) for uses other than constructional and normal aggregate applications. Such uses could include ingredients in industrial processes, e.g. the manufacture of cement, chemicals, refractories, iron/steel, glass, ceramics, sugar, plastics, rubber, paper and sealants. It would not cover the use of finely crushed material used to manufacture concrete bricks, blocks, pipes and tiles (this is classed as aggregate). However, it would, for example, include lime use in bricks or blocks. The term also covers building, dimension, memorial, paving, walling and armourstone (e.g. for sea/river defenses) (i.e. in all cases where not crushed) and ground limestone or dolomite use in agricultural fertilizers and feedstuffs. The term 'industrial uses' is sometimes used synonymously with 'non-aggregate uses' but this term could imply the exclusion of building stone and material for agricultural use.
Permitted reserve	The tonnage of mineral in a site (including stockpiles) for which full planning consent (planning permission with determined conditions attached) for extraction exists. Such sites may be operational or inactive. Inactive sites include those where extraction has been undertaken in the past and where permitted reserves still remain and those where planning permission has been granted but extraction has yet to begin. Dormant sites, as defined by the Planning & Compensation Act 1991 and the Environment Act 1995, cannot be worked until new schemes of conditions have been determined and therefore do not contain permitted reserves. See also landbank.
QPA	Quarry Products Association, the trade association which represents some 120 quarry operators, who together account for more then 90% of the quarried aggregate materials in Great Britain.
RAWP	Regional Aggregate Working Party.
SAC	Special Areas of Conservation designated in accordance with European Directive 92/43/EEC, adopted 21st May 1992, to provide measures to conserve natural habitats and associated wild fauna

	and flora. The directive is commonly known as the 'Habitats Directive.' SACs, together with SPAs (see below), will form part of 'Natura 2000,' a European wide network of areas of special nature conservation interest. SACs are also SSSIs.
SPA	Special Protection Areas designated in accordance with European Directive 79/409/EEC, adopted 2nd April 1979, to provide measures to conserve wild birds, their eggs and their habitats. This directive is commonly known as the 'Birds Directive.' SPAs are also SSSIs.
SSSI	Site of Special Scientific Interest designated by English Nature (now part of Natural England) or the Countryside Council for Wales in accordance with the Wildlife and Countryside Act 1981 so as to conserve areas of special interest for their flora, fauna, geological or geomorphological interest.

APPENDIX G – BIBLIOGRAPHY

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Each Regional Aggregate Working Party produces Annual Survey reports. The results of the AM2005 Survey will also appear in the RAWP Annual Reports for 2005. These are available from the RAWP Technical Secretaries (see Appendix H).

APPENDIX H – REGIONAL AGGREGATE WORKING PARTIES: SECRETARIES

1. South West

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& Convener of RAWPs Secretaries
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10. South Wales

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12. Communities and Local Government

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Department for Communities and Local Government
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Bressenden Place
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Planning: Resources and Environment Policy Division

William MacKenzie
Planning: Resources and Environment Policy Division

Andrew Lipiński
Planning: Resources and Environment Policy Division

James Caddick
Housing, Market & Planning Analysis Division

WELSH ASSEMBLY GOVERNMENT

Susan Martin
Environmental Planning Branch

RAWPS

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Ian Thomas
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Chris Waite
Secretary, South East RAWP

RAWPS AND PLANNING OFFICERS' SOCIETY

John Kilford
Chairman, South East RAWP

Lonek Wojtulewicz
Chairman, East Midlands RAWP

QUARRY PRODUCTS ASSOCIATION

Jerry McLaughlin
Quarry Products Association

BRITISH AGGREGATES ASSOCIATION

Peter Huxtable
British Aggregates Association

ENVIRONMENTAL ORGANISATIONS

Natalie Bennett
Natural England

APPENDIX J – AM2005 PROJECT TEAM

British Geological Survey
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Keyworth,
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Tel. 0115 9363494

Dr Joseph Mankelow - Project Leader

David Highley - Principal Economic Geologist

Marcus Sen - Database Design and Development

Sue Hobbs - Data Analysis and Quality Assurance

Christina Edwards - Report Design, Data Entry and Administration.

Paul Lusty - Quality Assurance

APPENDIX K – MINERAL PLANNING AUTHORITIES WITHIN RAWP REGIONS IN 2005

REGION	MPA
SOUTH WEST RAWP	Bath and North East Somerset Council
	Bournemouth Borough Council
	Bristol City Council
	Cornwall County Council
	Dartmoor National Park
	Devon County Council
	Dorset County Council
	Exmoor National Park
	Gloucestershire County Council
	Isles of Scilly
	North Somerset Council
	Plymouth City Council
	Poole Borough Council
	Somerset County Council
	South Gloucestershire Council
	Swindon Borough Council
	Torbay Council
	Wiltshire County Council
SOUTH EAST RAWP	Bracknell Forest District Council
	Brighton and Hove Council
	Buckinghamshire County Council
	East Sussex County Council
	Hampshire County Council
	Isle of Wight Council
	Kent County Council
	Medway Council
	Milton Keynes Council
	New Forest National Park
	Oxfordshire County Council
	Portsmouth City Council
	Reading Borough Council
	Slough Borough Council
	Southampton City Council
	Surrey County Council
	West Berkshire District Council (Newbury District Council)
	West Sussex County Council
	Windsor & Maidenhead District Council
	Wokingham District Council
LONDON RAWP	London Borough of Barking & Dagenham
	London Borough of Barnet
	London Borough of Bexley
	London Borough of Brent
	London Borough of Bromley
	London Borough of Camden
	London Borough of Croydon
	London Borough of Ealing

Continued

REGION	MPA
LONDON RAWP continued	London Borough of Enfield
	London Borough of Greenwich
	London Borough of Hackney
	London Borough of Hammersmith and Fulham
	London Borough of Haringey
	London Borough of Harrow
	London Borough of Havering
	London Borough of Hillingdon
	London Borough of Hounslow
	London Borough of Islington
	London Borough of Kensington and Chelsea
	London Borough of Lambeth
	London Borough of Lewisham
	London Borough of Merton
	London Borough of Newham
	London Borough of Redbridge
	London Borough of Richmond
	London Borough of Southwark
	London Borough of Sutton
	London Borough of Tower Hamlets
	London Borough of Waltham Forest
	London Borough of Wandsworth
	London Borough of Westminster
	London, City of
	Royal Borough of Kingston
EAST OF ENGLAND RAWP	Bedfordshire County Council
	Cambridgeshire County Council
	Essex County Council
	Hertfordshire County Council
	Luton Borough Council
	Norfolk Broads National Park
	Norfolk County Council
	Peterborough
	Southend-on-Sea Borough Council
	Suffolk County Council
	Thurrock Borough Council
EAST MIDLANDS RAWP	Derby City Council
	Derbyshire County Council
	Leicester City Council
	Leicestershire County Council
	Lincolnshire County Council
	Northamptonshire County Council
	Nottingham City Council
	Nottinghamshire County Council
	Peak District National Park
	Rutland CC DC

Continued

REGION	MPA
WEST MIDLANDS RAWP	Birmingham City Council
	Coventry City Council
	Dudley Metropolitan Borough Council
	Herefordshire Council
	Sandwell Metropolitan Borough Council
	Shropshire County Council
	Solihull Metropolitan Borough Council
	Staffordshire County Council
	Stoke-on-Trent City Council
	Telford and Wrekin Council
	Walsall Metropolitan Borough Council
	Warwickshire County Council
	Wolverhampton Metropolitan Borough Council
	Worcestershire County Council
NORTH WEST RAWP	Blackburn & Darwen Borough Council
	Blackpool Borough Council
	Bolton Metropolitan Borough Council
	Bury Metropolitan Borough Council
	Cheshire County Council
	Cumbria County Council
	Halton Borough Council
	Knowsley Metropolitan Borough Council
	Lake District National Park
	Lancashire County Council
	Liverpool City Council
	Manchester (City of)
	Oldham Metropolitan Borough Council
	Rochdale Metropolitan Borough Council
	Salford City Council
	Sefton Metropolitan Borough Council
	St. Helens Metropolitan Borough Council
	Stockport Metropolitan Borough Council
	Tameside Metropolitan Borough Council
	Trafford Metropolitan Borough Council
	Warrington Borough Council
	Wigan Metropolitan Borough Council
	Wirral Metropolitan Borough Council
YORKSHIRE & THE HUMBER RAWP	Barnsley Metropolitan Borough Council
	Bradford Metropolitan Borough Council
	Calderdale Metropolitan Borough Council
	City of York Council
	Doncaster Metropolitan Borough Council
	East Riding of Yorkshire Council
	Kingston upon Hull City Council
	Kirklees Metropolitan Borough Council

Continued

REGION	MPA
YORKSHIRE & THE HUMBER RAWP continued	Leeds City Council
	North East Lincolnshire Council
	North Lincolnshire Council
	North York Moors National Park
	North Yorkshire County Council
	Rotherham Metropolitan Borough Council
	Sheffield City Council
	Wakefield Metropolitan Borough Council
	Yorkshire Dales National Park
NORTH EAST RAWP	City of Sunderland Council
	Darlington Borough Council
	Durham County Council
	Gateshead Metropolitan Borough Council
	Hartlepool Borough Council
	Middlesbrough Borough Council
	Newcastle City Council
	North Tyneside Council
	Northumberland County Council
	Northumberland National Park
	Redcar and Cleveland BC
	South Tyneside Metropolitan Borough Council
	Stockton-on-Tees Metropolitan Borough Council
SOUTH WALES RAWP	Blaenau Gwent
	Brecon Beacons National Park
	Bridgend
	Caerphilly
	Cardiff (City of)
	Carmarthenshire
	Ceredigion
	Merthyr Tydfil
	Monmouthshire
	Neath Port Talbot
	Newport
	Pembrokeshire
	Pembrokeshire Coast National Park
	Powys
	Rhondda, Cynon, Taf (Taff)
	Swansea (City of)
	Torfaen
	Vale of Glamorgan
NORTH WALES RAWP	Conwy (Aberconwy & Colwyn)
	Denbighshire
	Flintshire
	Gwynedd
	Isle of Anglesey
	Snowdonia National Park
	Wrexham

The Aggregate Minerals (AM) surveys, based at four yearly intervals, provide in-depth and up to date information of regional and national sales, inter-regional flows, transportation, consumption and permitted reserves of primary aggregates. This report is the collation of the data for primary aggregates in England and Wales from the survey undertaken for 2005. The report also, for the first time, presents data on the movement and consumption of primary aggregates by sub-region.

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