

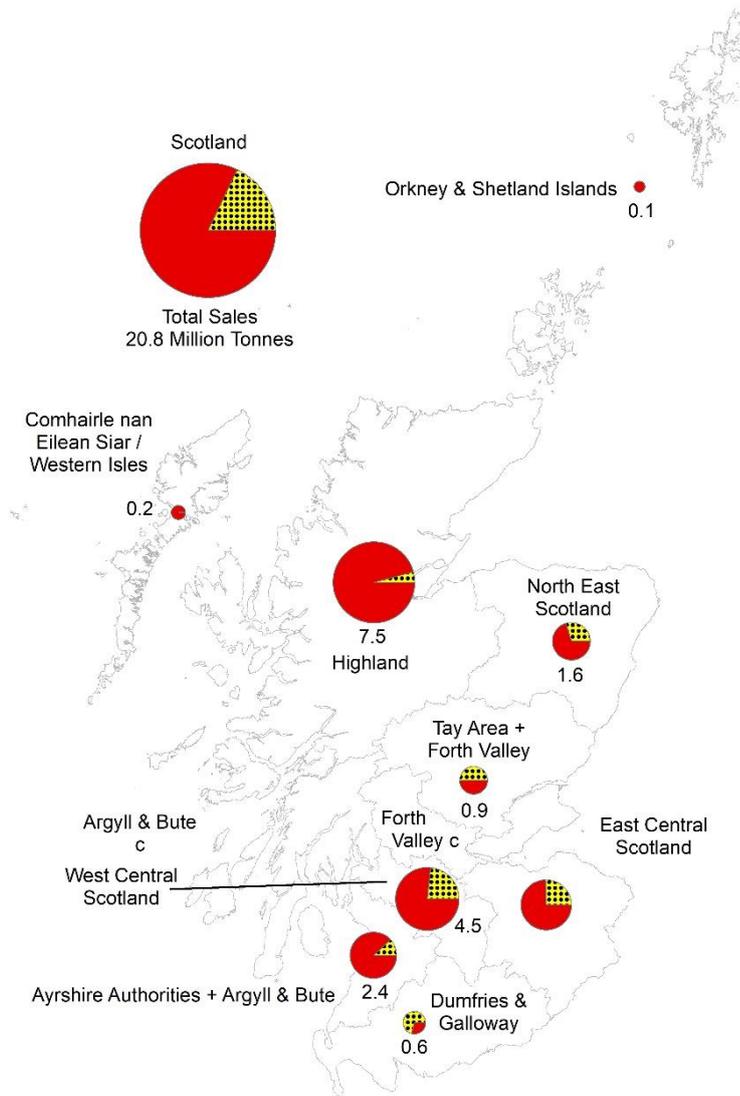
# **Collation of the results of the 2019 Aggregate Minerals Survey for Scotland**

**September 2023**



British Geological Survey

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by the British Geological Survey

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# Introduction

Aggregate Minerals (AM) surveys provide an in-depth and up-to-date understanding of national and regional sales, inter-regional flows, transportation, consumption and permitted reserves of primary aggregates. The AM Survey for Scotland aims to provide comprehensive data for monitoring and facilitating aggregates provision at local, regional and national level. The output is used mainly by Government, Planning Authorities, industry and environmental interest groups. The surveys are used to inform the development of minerals policy in respect to the production, movement and consumption of aggregates.

The last Aggregate Minerals Survey for Scotland was undertaken for the base year 2012<sup>1</sup>. This report is the collation of the data for primary aggregates for 2019, with the survey process occurring during 2022. The choice of gathering survey data for 2019 was deliberately made to avoid the calendar years 2020 and 2021, where quarries and their customers were operating under varying degrees of COVID-19 pandemic restrictions. This approach was agreed with Mineral Products Association (MPA) and the British Aggregates Association (BAA). Choosing either of these years would have arguably distorted the results. The choice of 2019 also provided consistency with the equivalent survey in England and Wales<sup>2</sup>.

In addition to presenting information on sales, consumption, and permitted reserves of primary aggregates, information is also presented on the quantity of aggregate minerals granted and refused planning permission in 2019 (Appendix A).

Information was collected from aggregates producers (reserves, sales and sales by destination) and Planning Authorities (planning permissions) using standard survey forms (Appendix B). The information submitted via these forms was collated by the British Geological Survey (BGS) on behalf of the Scottish Government.

The BGS (Appendix C) was commissioned in December 2021 by the Scottish Government to implement the survey and to collate and report the results. The survey was overseen by a steering group, which included representatives of the Scottish Government and the aggregates industry (Appendix D). A glossary of terms and abbreviations is provided as Appendix E.

New geographical areas for collating returns were put in place for the current survey (Appendix F). These areas aim to support development planning policy while also recognising the difficulties of defining market areas in a country like Scotland with considerable variation in population density and geology. The intention is to provide the statistics necessary to inform the planning process without breaching commercial confidentiality. The unavoidable changes to the market areas used for the 2019 AM Survey for Scotland prevent direct comparison of regional information with previous surveys.

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<sup>1</sup> Collation of the results of the 2012 Aggregate Minerals Survey for Scotland accessed via the website of the Scottish Government.

<sup>2</sup> Collation of the results of the 2019 Aggregate Minerals Survey for England and Wales accessed via the website of the UK Government.

## Policy background

Aggregates are needed for the construction of transport and renewable energy infrastructure, housing and other buildings that are a vital part of the Scottish Government's infrastructure investment plans for the future. Adopted in February 2023, the National Planning Framework 4 (NPF4) details the long term planning strategy for Scotland to 2045. In terms of minerals, NPF4 sets out planning policies which ensure that a steady supply of construction aggregates is maintained to meet the needs of society and the economy in an acceptable and sustainable manner<sup>3</sup>.

NPF4 requires those preparing local development plans to adopt a landbank approach to planning for the supply of construction aggregates. This approach is intended to ensure that a stock of reserves, with planning permission, is maintained to ensure adequate supplies of construction aggregates. Those preparing local development plans are required through NPF4 to maintain a landbank of permitted reserves equivalent to a minimum of 10 years supply at all times.

The most important sources for primary aggregates in Scotland are crushed rock (from igneous rock, sandstone and limestone) and sand and gravel. The British Geological Survey's Mineral Planning Factsheet: Construction Aggregates, provides further information on the supply and demand of aggregates in the UK<sup>4</sup>.

The results of the 2019 AM Survey for Scotland will be used:

- to inform all stakeholders of the current state of aggregates supply;
- by Planning Authorities to monitor the supply of aggregates in the local area;
- as a source of contextual data with respect to planning applications for the extraction of aggregates; and
- to support the evidence base for the development of a Scottish Aggregates Levy<sup>5</sup>.

## The 2019 Aggregate Minerals Survey

The results were collected using two standard inquiry forms, Form A for quarry operators and Form B for Planning Authorities (Appendix A). Form A was prepared in consultation with the Mineral Products Association and the British Aggregates Association. Quarry operators were, however, also provided with the option of submitting data via an Excel version of the survey form. This option was generally utilised by multi-site operators as it simplified the process of submitting survey returns.

Form A sought information on sales by end use, sales by destination (region) and transport method, and permitted reserves of primary aggregates. It was forwarded to the following sites for completion by operators/owners:

- all active quarries producing land-won primary aggregates at some time during 2019, either as a principal activity or as a subsidiary activity, such as a by-product of building stone or ancillary to silica sand extraction;

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<sup>3</sup> National Planning Framework 4 for Scotland accessed via the website of the Scottish Government.

<sup>4</sup> The BGS Construction Aggregates Mineral Planning Factsheet accessed via the National Environment Research Council Open Research Archive.

<sup>5</sup> Breaking New Ground? Developing a Scottish tax to replace the UK Aggregates Levy consultation document accessed via the website of the Scottish Government.

- inactive sites, either worked in the past prior to 2019 or yet to be worked (greenfield), that contain permitted reserves of aggregates.

The survey results present data for 131 quarries, of which 22 were inactive in 2019, although worked in the past, and two sites which had yet to be worked. Of the 107 active quarries surveyed, 66 were for crushed rock and 41 for sand and gravel. According to BGS records, there were 237 active aggregates quarries in Scotland in 2019. Therefore the response rate for the survey by active quarries was 45%.

Sales and distribution data relate to 2019 and the permitted reserves were estimated at 31 December 2019. The information is presented by market areas defined by the Scottish Government for the survey using Planning Authority (PA) boundaries that were applicable as at 31 December 2019. The PAs comprising the market areas are shown on Map 1 and are also listed in Appendix E.

For the first time, an attempt was made to collect systematic information on aggregates sales and reserves in statutorily designated areas. The relatively small number of sites involved has created difficulties in publishing data because of commercial confidentiality considerations. Therefore, totals for all aggregates (sand and gravel and crushed rock combined) for Scotland by relevant designations are presented in the commentary only.

Apart from National Parks and National Scenic Areas, designated areas are not mutually exclusive. For example, Special Areas of Conservation (SACs) and Special Protection Areas (SACs) are also Sites of Special Scientific Interest (SSSIs) and all may occur in National Parks, National Scenic Areas and Green Belts. Consequently the different categories cannot be totalled. Further, some designations, notably SSSIs, may only coincide with a small part of an extant planning permission. However, the total sales and reserve 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 will vary and are not reflected in the figures. Care should be taken, therefore, in interpreting the information.

Also for the first time, the survey collected the current planning permission end-date for all sites.

Form B sought information on the numbers of aggregate mineral planning applications granted or refused planning permission in 2019 and the quantity of mineral contained within these permissions or applications. Form B was completed by individual PAs. This survey provides valuable information on the extent that permitted reserves of primary aggregates are being supplemented by new permissions and, in combination with the sales data, the extent that reserves are being depleted.

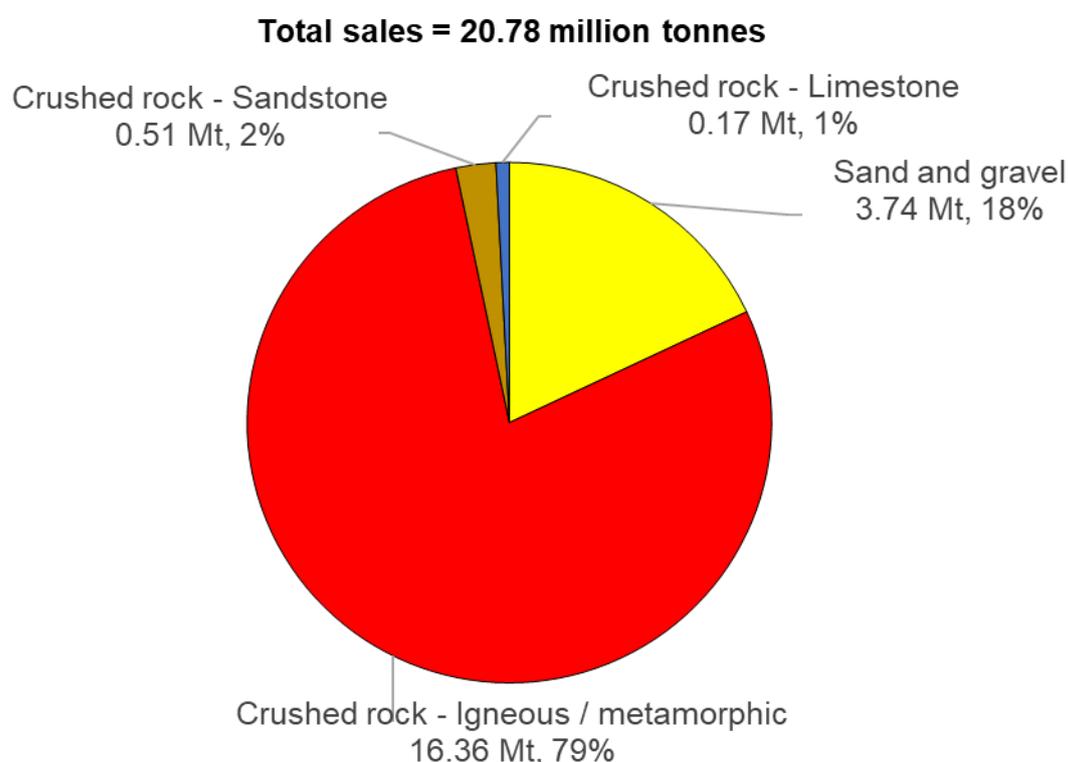
While every effort has been made to ensure the accuracy of the figures presented in this report, neither the Scottish Government or the BGS can be held responsible for any errors contained in the raw data from which this collation is derived.

## National overview

Sales, consumption, and inter-regional flows of primary aggregates in Scotland are summarised in Tables 1 to 11. Permitted reserves of aggregates at 31 December 2019 by region are summarised in Tables 12 to 15. The numbers of planning applications for sites granted and refused permission to supply wholly, or in part, aggregate minerals, and the amount of mineral that these contained are summarised in Tables 16 to 26.

### Sales

**Total sales of primary aggregates** produced in Scotland (Table 2, Table 3 and Map 2) were **20.78 Mt** in 2019 comprising **3.74 Mt (18%)** of sand and gravel and **17.04 Mt (82%)** of crushed rock. Igneous rock<sup>6</sup> is by far the most important source of primary aggregates in Scotland, it accounted for 79% of total sales in 2019 (Figure 1).



**Figure 1 Sales of primary aggregates in 2019 by mineral**

Following the cessation of the Annual Minerals Raised Inquiry (AMRI) in 2015 (after publication of the 2014 results), other independently reported figures on the sales of aggregates in Scotland are unavailable. By undertaking an annual survey of its members and then taking account of likely proportion of the aggregates market its members represent and trends in aggregates sales since 2014, the Mineral Products Association (MPA) reports estimated sales in Scotland in 2019 of 5.5 Mt of sand and gravel and 23.8 Mt of crushed rock. When comparing with the MPA, the return rate for the 2019 Aggregate Minerals Survey for Scotland, based on sales tonnage, was 67%

<sup>6</sup> For the purposes of the Aggregate Minerals Survey, igneous rock includes metamorphic rock.

for sand and gravel and 71% for crushed rock respectively. The discrepancies between the two surveys and the level of non-responses in particular areas could be a significant limiting factor in drawing useful conclusions from the data.

Highland is by far the largest producing region at 7.5 Mt, equivalent to 36% of total primary land-won aggregates sales in Scotland. West Central Scotland (4.5 Mt, 22%) was the second largest source of land-won primary aggregates.

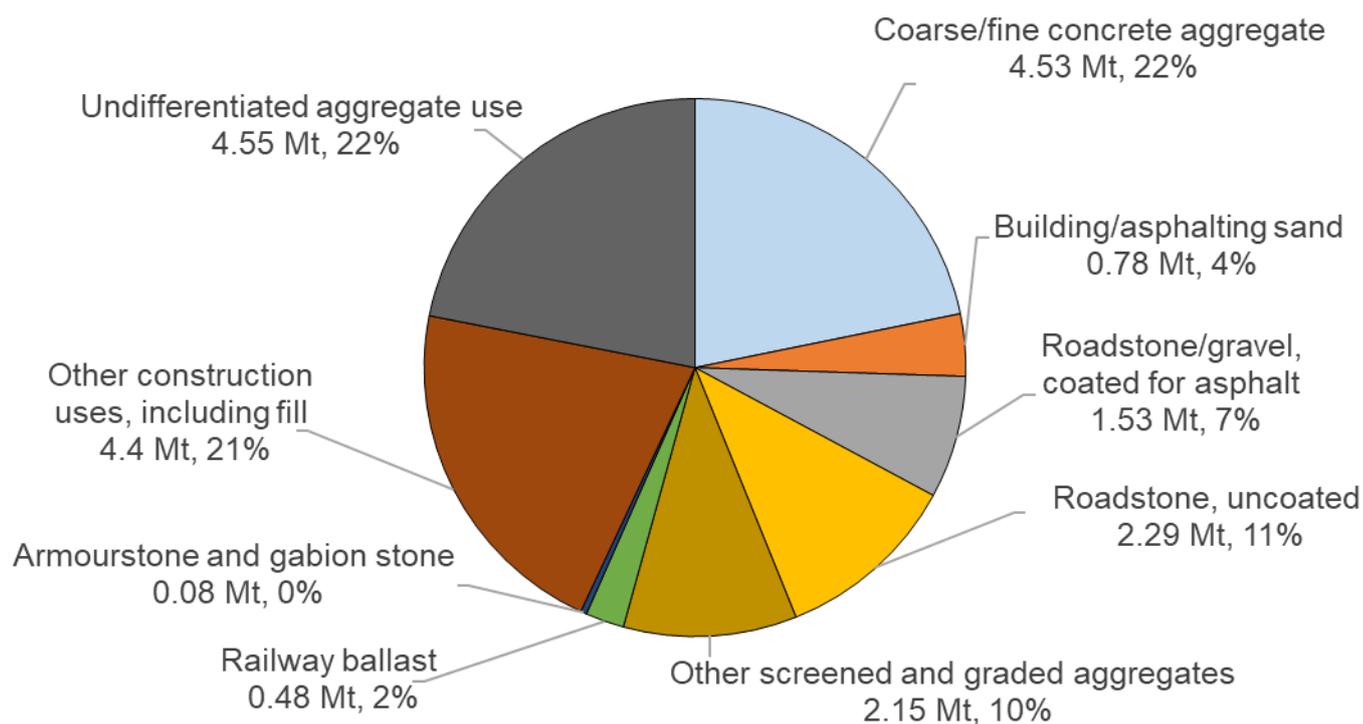
Within these totals, the sand and gravel, and crushed rock balance differs significantly. Highland accounted for the largest volume of crushed rock aggregate sales (7.2 Mt, 42%), followed by West Central Scotland (3.5 Mt, 20%). The large coastal quarry at Glensanda will significantly influence the figures in Highland. Of total sand and gravel sales, West Central Scotland (1.1 Mt, 28%) and East Central Scotland (0.7 Mt, 20%) accounted for the highest proportion.

### **Sales by end use**

For the first time in an Aggregate Minerals Survey for Scotland, aggregates end use data were collected. These categories distinguish between aggregates uses and non-aggregates or 'industrial' uses, where the latter are associated with aggregates extraction. The 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 surveyed. The rationale for collecting some information on non-aggregates uses is that in certain circumstances the associated permitted reserves could alternatively be deployed to meet demand for aggregates.

Table 4 shows sales of primary aggregates (sand and gravel and crushed rock) grouped into broad end use product categories. Table 5 and Table 6 provide sales by product for land-won 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. In addition, not all operators provided a sales breakdown by end use, instead providing just a sales total. Such sales have been allocated to undifferentiated aggregate use. Care should, therefore, be taken in drawing conclusions from the data.

Of total sales of aggregate minerals in 2019, at least 22% were used as concreting aggregate and 18% as roadstone (coated as asphalt and uncoated), 21% were used for other construction uses, including fill, and 10% were used as other screened and graded aggregates. The remainder is split between building/asphalting sand, railway ballast and armourstone (e.g. for coastal defence) along with 22% of total sales which were not allocated to a specific end use (Figure 2).

**Total sales = 20.78 million tonnes****Figure 2 Sales of primary aggregates in 2019 by end use**

For sand and gravel, concreting aggregate proved to be the largest product. It accounted for some 30% of sales for aggregates use. The other main products were other screened and graded gravels, sand suitable for use in mortar and sand and gravel for construction fill.

Crushed rock has a wider range of uses including as a source of both coarse and fine concrete aggregate (18%), and for other construction uses, including fill (23%). 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 3.8 Mt or 22% of total crushed rock sales. Of this total 1.5 Mt was used as coated roadstone. Other smaller specialist uses, include railway track ballast and armourstone.

**Sales from National Parks and other designated areas**

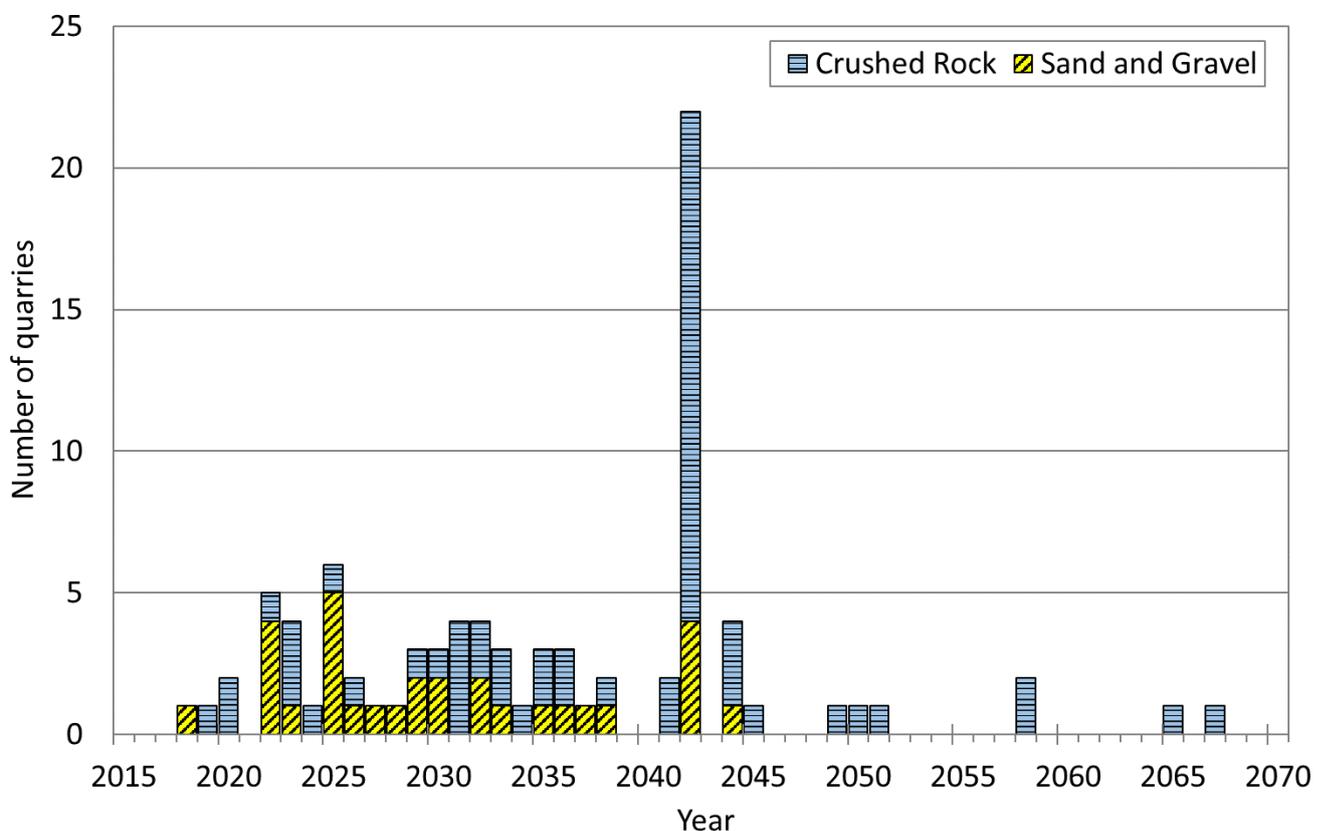
National Parks and National Scenic Area cover 21% of the land area of Scotland. Of total sales of aggregates (sand and gravel and crushed rock) in Scotland, 1.7% (0.36 Mt) was from these areas (Table 7). Total sales of aggregates from quarries associated with Sites of Special Scientific Interest were 0.39 Mt. Sales from sites associated with Green Belt were 1.1 Mt.

**Sales from sites with an end date of 2042**

As noted previously, for the first time in an AM Survey for Scotland, the current end date of planning permissions for quarries contributing to the survey was collected. The Town

and Country Planning (Minerals) Act 1981, re-enacted in the Town and Country Planning (Scotland) Act 1997, made provision to impose an end-date on all planning permissions for mineral working which did not have a specified end-date. This was set at February 2042, sixty years after the power came into effect, by which time all investment in a minerals operation would have been recouped. As a result, a number of mineral permissions will all expire on the same day in 2042 (Figure 3). Many sites will by then have been worked out or nearly so, though some may still have reserves available. This will provide an opportunity to reconsider the future of working at these sites, judging them against the policies prevailing at that time.

While the end dates of planning permissions for quarries were collected as part of the survey, not all operators indicated the exact date planning permissions expired (instead indicating a year). Sales of aggregates from quarries with planning permissions due to expire in 2042 comprised 13% (0.5 Mt) of total sand and gravel sales and 20% (3.4 Mt) of total crushed rock sales respectively.



**Figure 3 Planning permission expiry dates for active quarries in 2019**

### Inter-regional flows

The AM surveys are the only published source of information on sales of aggregates by destination. The regions used are listed in Appendix E and shown on Map 1. Map 4 and Map 5 illustrate the pattern of inter-regional flows for sand and gravel, and crushed rock aggregates, respectively. The statistical results of the destination survey are presented in Table 8 and Table 9. Quarry operators cannot always be sure of where their products will be sold, particularly for instances where customers ‘collect’ sales directly from the quarry. Consequently, it has not been possible to allocate all sales of primary

aggregates to definite destinations. 'Unallocated' sales of unknown destination were 0.85 Mt (4% of total sales). The inter-regional flow information is used to calculate consumption data and unallocated sales thus have the effect of reducing total consumption.

Two of the largest crushed rock producing regions in Scotland, Highland and the Ayrshire Authorities<sup>7</sup>, have the largest exports representing 85% (6.1 Mt) and 55% (1.2 Mt) of their respective total crushed rock sales. Again, the Highland figures will be strongly influenced by Glensanda which dominates exports. The main importing region was West Central Scotland (1.0 Mt), mainly from the Ayrshire Authorities.

Flows of sand and gravel were around one fifth the level of crushed rock. The leading exporter of sand and gravel was East Central Scotland (0.35 Mt), principally to the Forth Valley.

Total exports of land-won primary aggregates from Scotland were 6.3 Mt in 2019. Overall, exports to England from Scottish quarries were nearly 2.5 Mt. These exports were predominately crushed rock from Highland with smaller contributions from sites in other regions. At 61%, the largest proportion of the 6.1 Mt crushed rock exports from Highland was to Mainland Europe (3.7 Mt) followed by England at 39% (2.4 Mt).

Table 10 shows the principal mode of transport employed for the distribution of aggregates sales (for the majority of the journey) from quarries and wharves. Overall, road accounted for 68% of all aggregates moved.

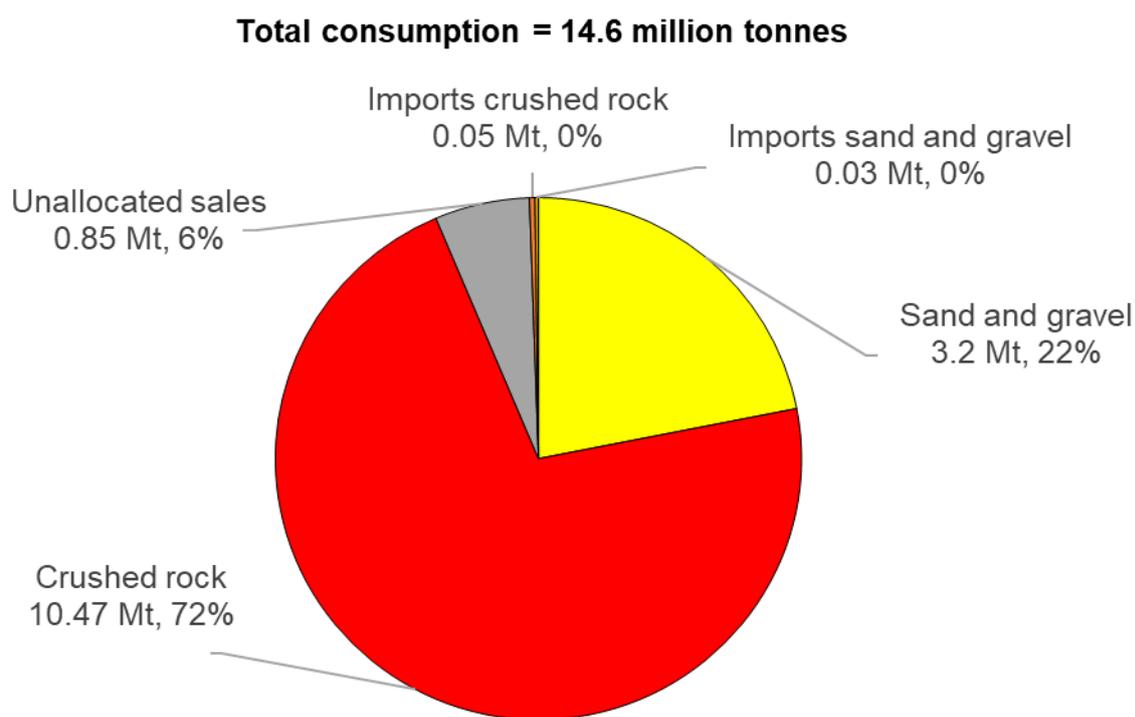
## Consumption

Aggregate Mineral surveys are the only comprehensive measurement of apparent consumption of primary aggregates by region. Apparent consumption figures (Table 11 and Map 3) are calculated from data on sales within each home region, plus imports from other regions. The difference between the data for total sales and consumption is because Scotland is a net exporter of aggregates. Unallocated sales also have the effect of reducing consumption. Some caution should be used in interpreting consumption figures as they are calculated from the principal destination of aggregates flows. Final sales may be to other regions if the product is then distributed further.

**Total apparent consumption** of primary aggregates was **13.7 Mt** in 2019. Total **unallocated sales** of unknown destination (and therefore not able to be included in the calculation of apparent consumption) were **0.85 Mt in 2019**. Total consumption would also be higher because it includes imports from outside Scotland (e.g. minor amounts from England and Wales as reported by the corresponding survey (see footnote 2 on page 1) totalling 0.08 Mt). Taking into account unallocated sales and imports from England and Wales, the total consumption of primary aggregates in Scotland was about **14.6 Mt** in 2019. West Central Scotland at 5.1 Mt was the largest consuming region, followed by East Central Scotland (2.6 Mt).

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<sup>7</sup> For confidentiality reasons, Ayrshire Authorities also includes crushed rock sales from Argyll and Bute.

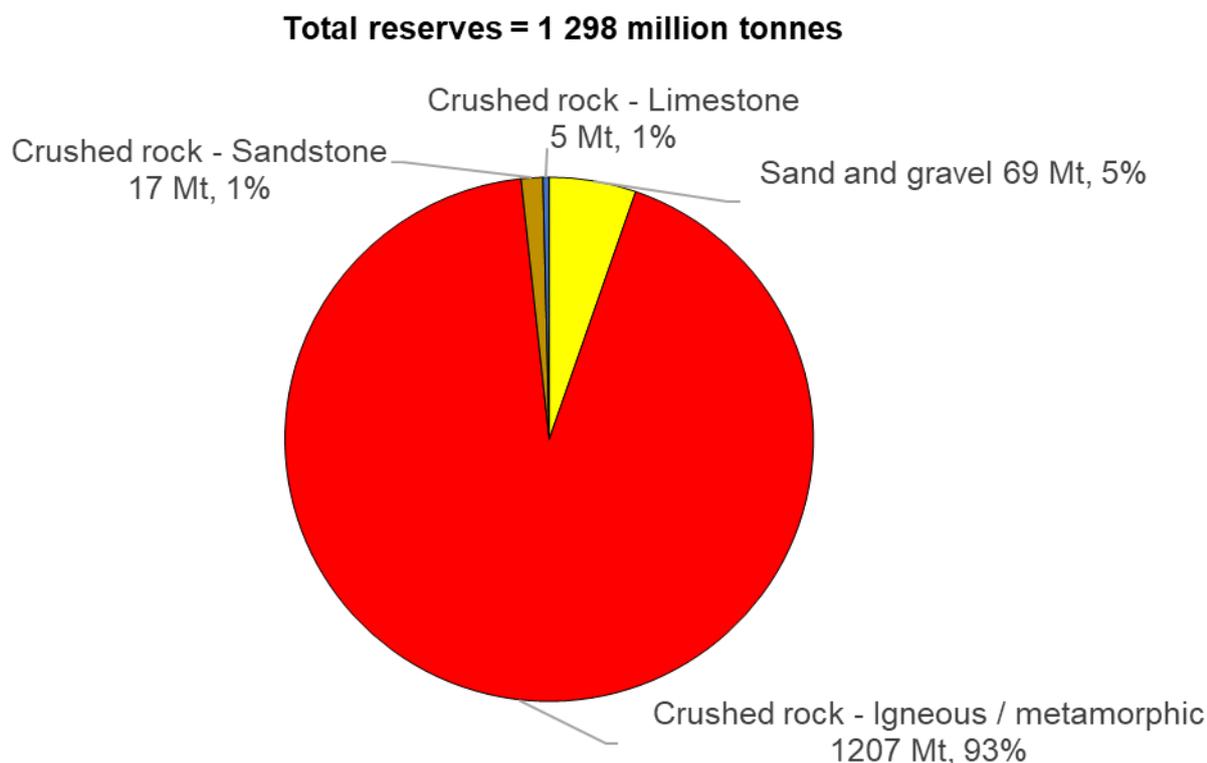


**Figure 4 Consumption of primary aggregates in 2019 by mineral**

### Reserves

Table 12 and Map 6 summarise reserves of primary aggregates with valid planning permissions at 31 December 2019 in active and inactive sites (otherwise known as 'permitted reserves'). Data for inactive sites distinguishes between sites worked in the past (prior to 2019), but still containing permitted reserves, and sites where planning permission has been granted but extraction has not yet begun. As with previous surveys, reserves in sites classified as 'Dormant' under the terms of the Environment Act 1995 re-enacted in the Town and Country Planning (Scotland) Act 1997 were excluded from the survey. Dormant sites cannot be worked until new schemes of conditions have been determined and, therefore, do not contain 'permitted reserves'.

At the end of 2019, **total permitted reserves in active and inactive sites** in Scotland for aggregates use were **1 298 Mt** of which crushed rock accounted for **95% (1 229 Mt)**; sand and gravel accounted for the remaining **5% (69 Mt)** (Figure 5).



**Figure 5 Reserves of primary aggregates in 2019 by mineral**

Sand and gravel reserves are much smaller in relation to average annual land-won sales (equivalent to about 18 years output in 2019) than crushed rock reserves, which are usually measured in terms of several decades (72 years in 2019). Of total permitted reserves, 96% (1 243 Mt) were in active sites. Crushed rock accounted for 96% and sand and gravel the remaining 4% of reserves in active sites.

**Total permitted reserves in inactive sites were 56 Mt**, of which 53 Mt were in sites worked in the past and only 3 Mt in sites yet to be worked (greenfield sites).

Some 58% of all permitted reserves were located in Highland (compared with 36% of total sales), 12% in West Central Scotland (compared with 22% of total sales), and 11% in North East Scotland (compared with 8% of total sales). These three regions also accounted for a significant proportion of total crushed rock reserves (750 Mt or 61%, 137 Mt or 11%, and 140 Mt or 11% respectively).

East Central Scotland was the region with the highest level of sand and gravel reserves (31.6 Mt) equivalent to 46% of the sand and gravel total. With 15.8 Mt, equivalent to 23% of the sand and gravel total, West Central Scotland also accounted for a significant proportion of sand and gravel reserves. Between them, these two regions accounted for 69% of all sand and gravel reserves.

#### **Reserves in National Parks and other designated areas**

Reserves of aggregates in active and inactive sites within National Parks and National Scenic Areas amounted to 4% (5.2 Mt) of total reserves. Reserves of aggregates in quarries associated with Sites of Special Scientific Interest were 13.3 Mt while reserves in quarries associated with Green Belt were 39.7 Mt.

## Reserves in sites with an end date of 2042

Of total permitted reserves of sand and gravel, 9% (5.9 Mt) were in quarries with a planning permission end date falling in 2042. Approximately 24% (291.5 Mt) of total crushed rock reserves were held in sites with planning permissions that are currently due to expire in 2042.

## Planning permissions and refusals

Information has been collected on the numbers of planning applications granted and refused permission in 2019 to supply wholly, or in part, aggregate minerals, and the amounts of mineral that these contained (Tables 15 to 26). Information was supplied by Planning Authorities. Data are presented by site type, e.g. new quarry, borrow pit or extension.

'Permissions' granted 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 not included. This is because in these cases the permission did not provide additional reserves. In addition, refusals of the above applications are not included since the loss of the reserves, and also any reduction in reserves flowing from any modification of permission granted, are already accounted for in the reserves figure supplied by quarry operators in their survey return.

Table 16 shows the total number of planning applications granted permission during 2019 by region, and the amounts of mineral they contained. **Total reserves of sand and gravel granted planning permission in 2019 were 6.7 Mt located in 11 sites. Total reserves of crushed rock granted planning permission in 2019 were 17.7 Mt located in 18 sites.**

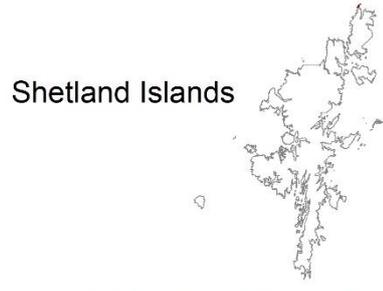
Reserves of sand and gravel and crushed rock for aggregates granted permission is shown by site type and designated area in Tables 22 to 25. The majority of planning permissions granted were extensions to existing sites (six for sand and gravel and ten for crushed rock). No reserves of sand and gravel or crushed rock were granted permission in National Parks in 2019. Total reserves granted in National Scenic Areas were 2.7 Mt all of which were sand and gravel.

Planning permission information on aggregates sites located within areas of land allocated for mineral extraction (allocated site, preferred area, area of search) in the PAs development plan is shown in Table 26. Total reserves of aggregate mineral granted permission during 2019 in sites located within areas allocated for mineral extraction in the relevant PA development plan were 1.6 Mt for sand and gravel (24% of total sand and gravel reserves permitted) and 2.3 Mt for crushed rock (13% of total crushed rock reserves permitted).

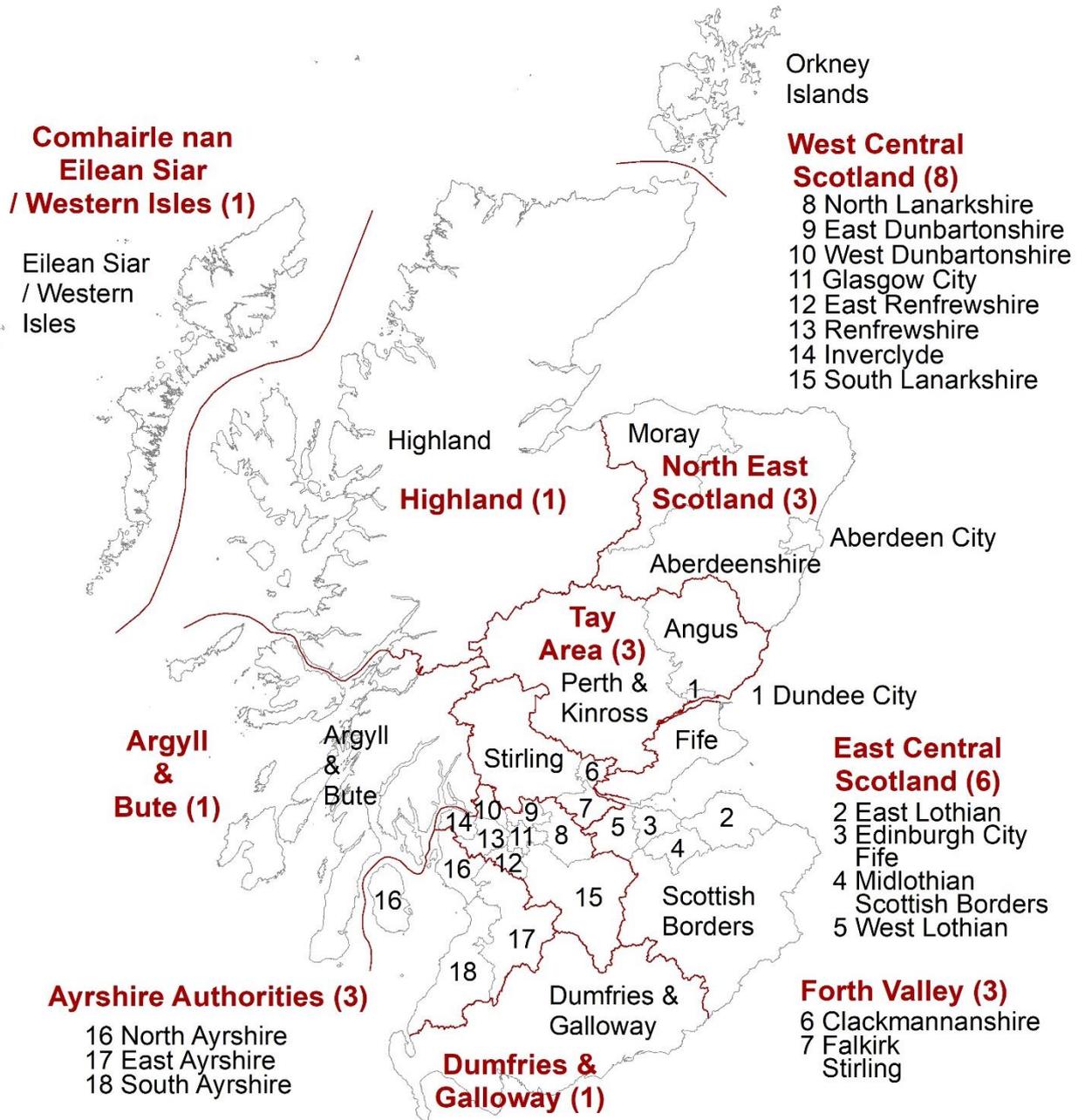
Map 1 Planning Authorities and the AM2019 regions

**Legend**

- Distribution Area Boundaries
- Local Authority Boundaries

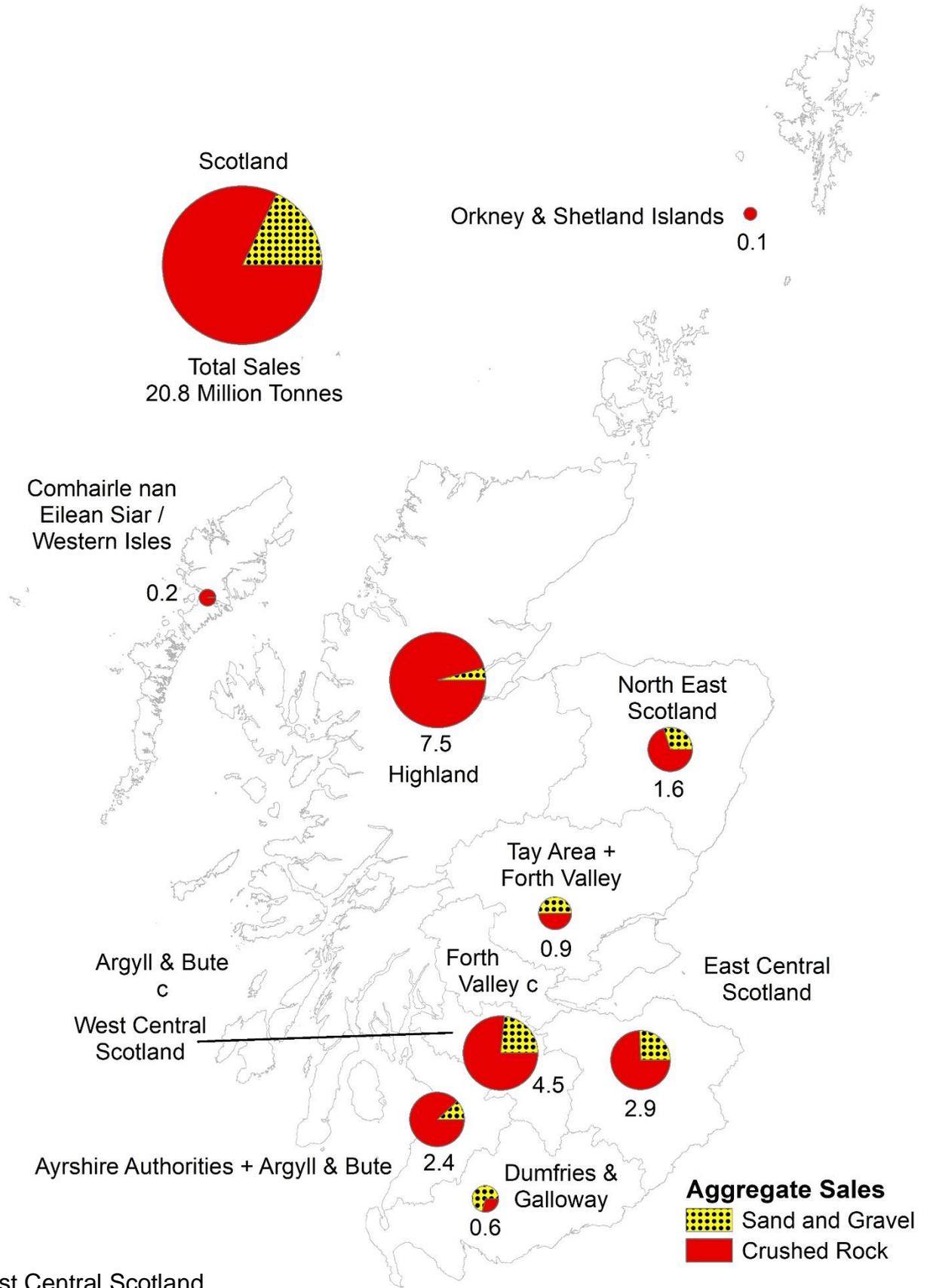


**Orkney and Shetland Islands (2)**



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Map 2 Sales of sand and gravel and crushed rock for primary aggregates, 2019



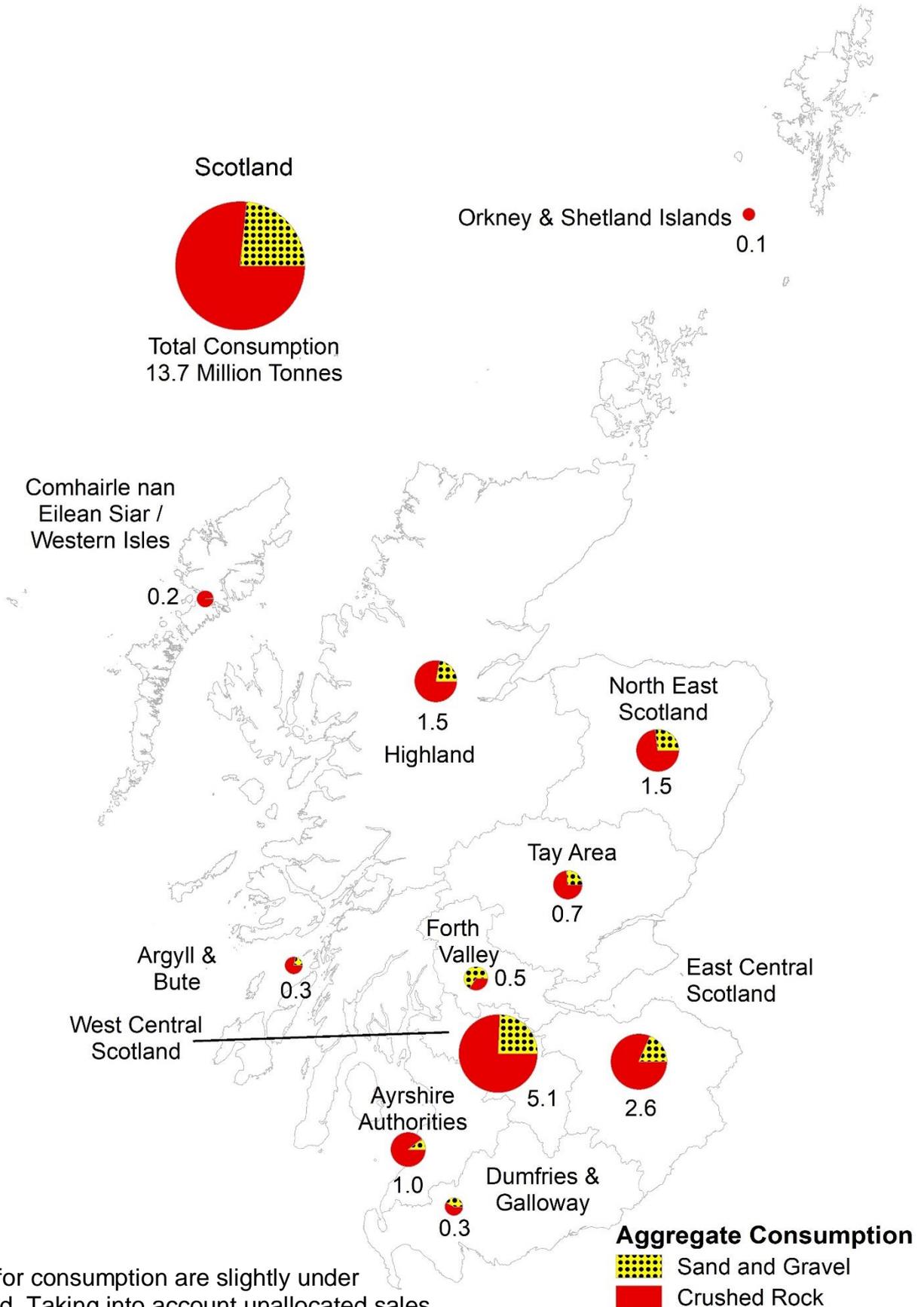
WCS – West Central Scotland

c – Confidential

1. Ayrshire Authorities also includes Argyll & Bute.
2. Tay Area also includes Forth Valley sand and gravel.

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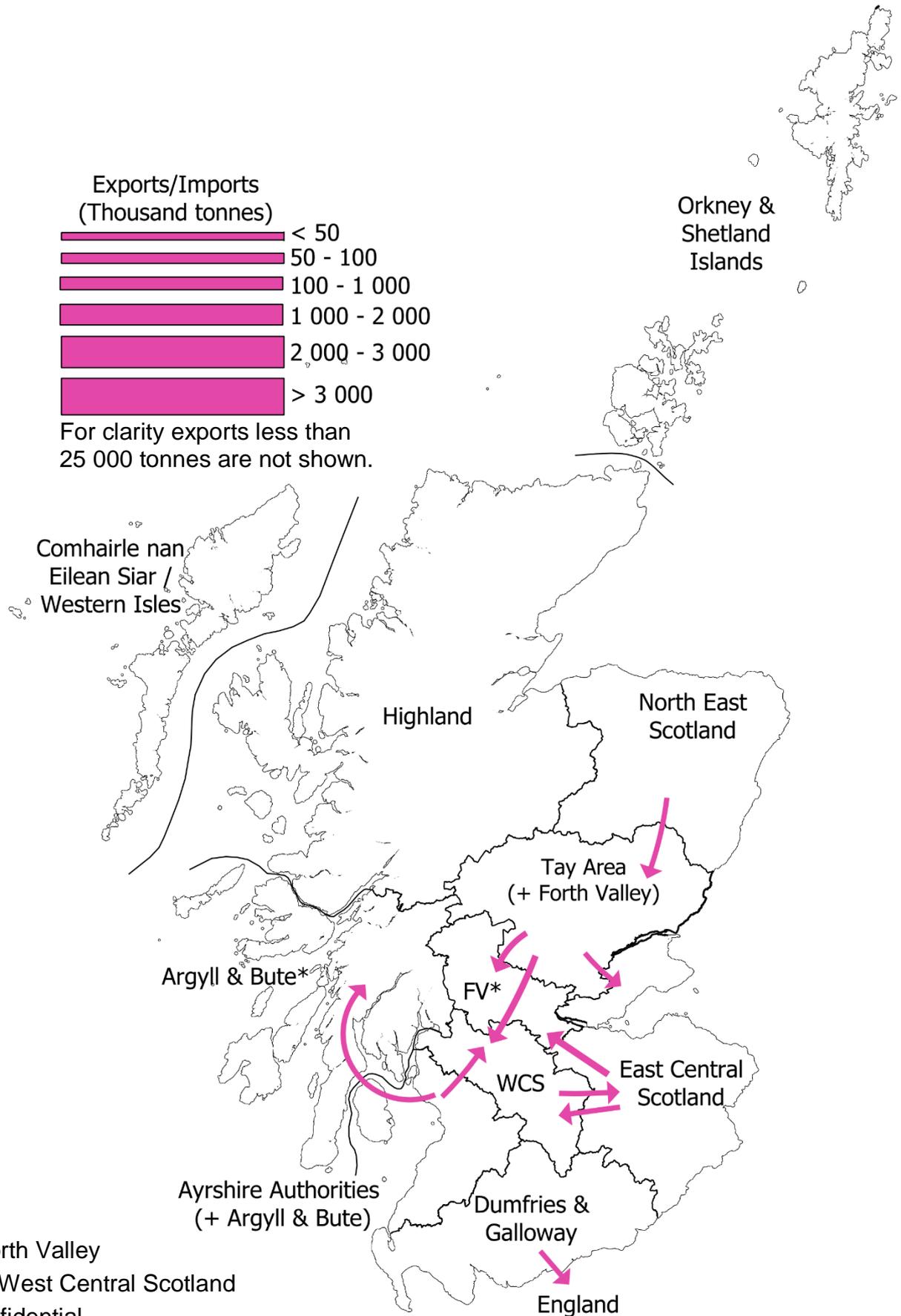
**Map 3 Consumption of sand and gravel and crushed rock for primary aggregates, 2019**



1. Figures for consumption are slightly under estimated. Taking into account unallocated sales (c. 0.85 Mt) and imports from England and Wales (0.08 Mt), total consumption of primary aggregates in Scotland was about 14.6 Mt.

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Map 4 Sand and gravel inter-regional flows of primary aggregates, 2019

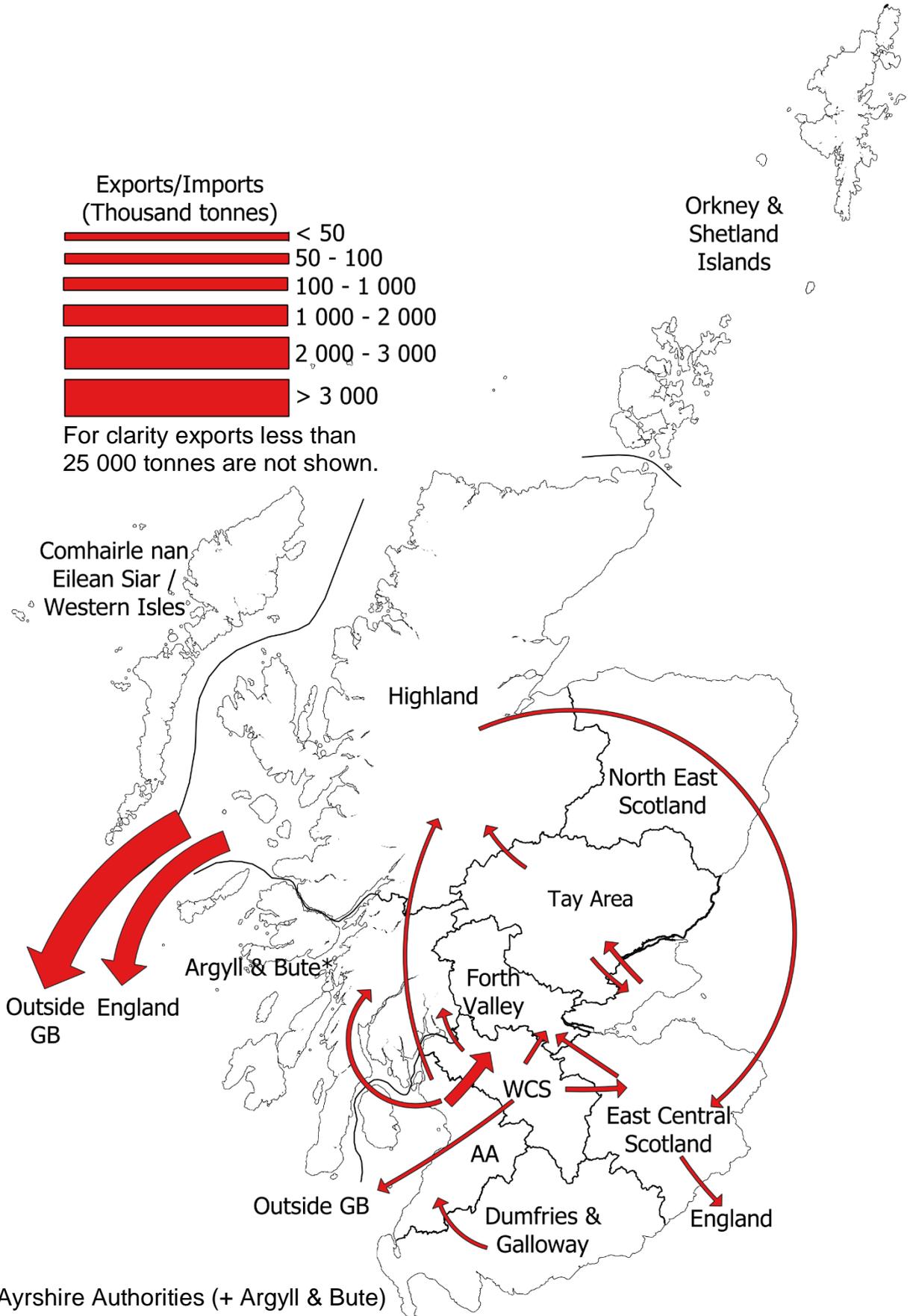


FV – Forth Valley  
 WCS – West Central Scotland  
 \* – Confidential

1. Ayrshire Authorities also includes Argyll & Bute.
2. Tay Area also includes Forth Valley sand and gravel.

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**Map 5 Crushed rock inter-regional flows of primary aggregates, 2019**



AA – Ayrshire Authorities (+ Argyll & Bute)

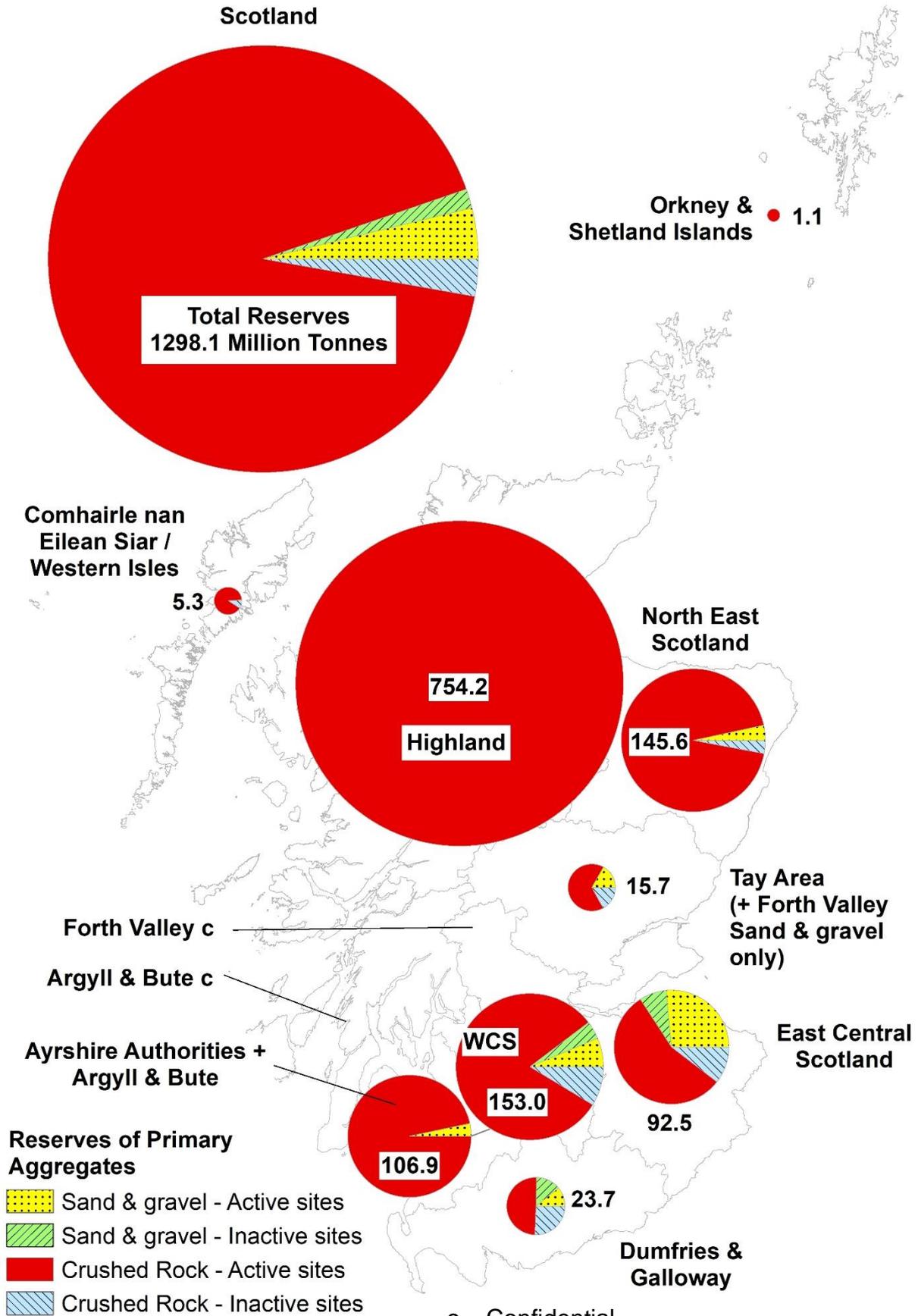
WCS – West Central Scotland

\* – Confidential

1. Ayrshire Authorities also includes Argyll & Bute.

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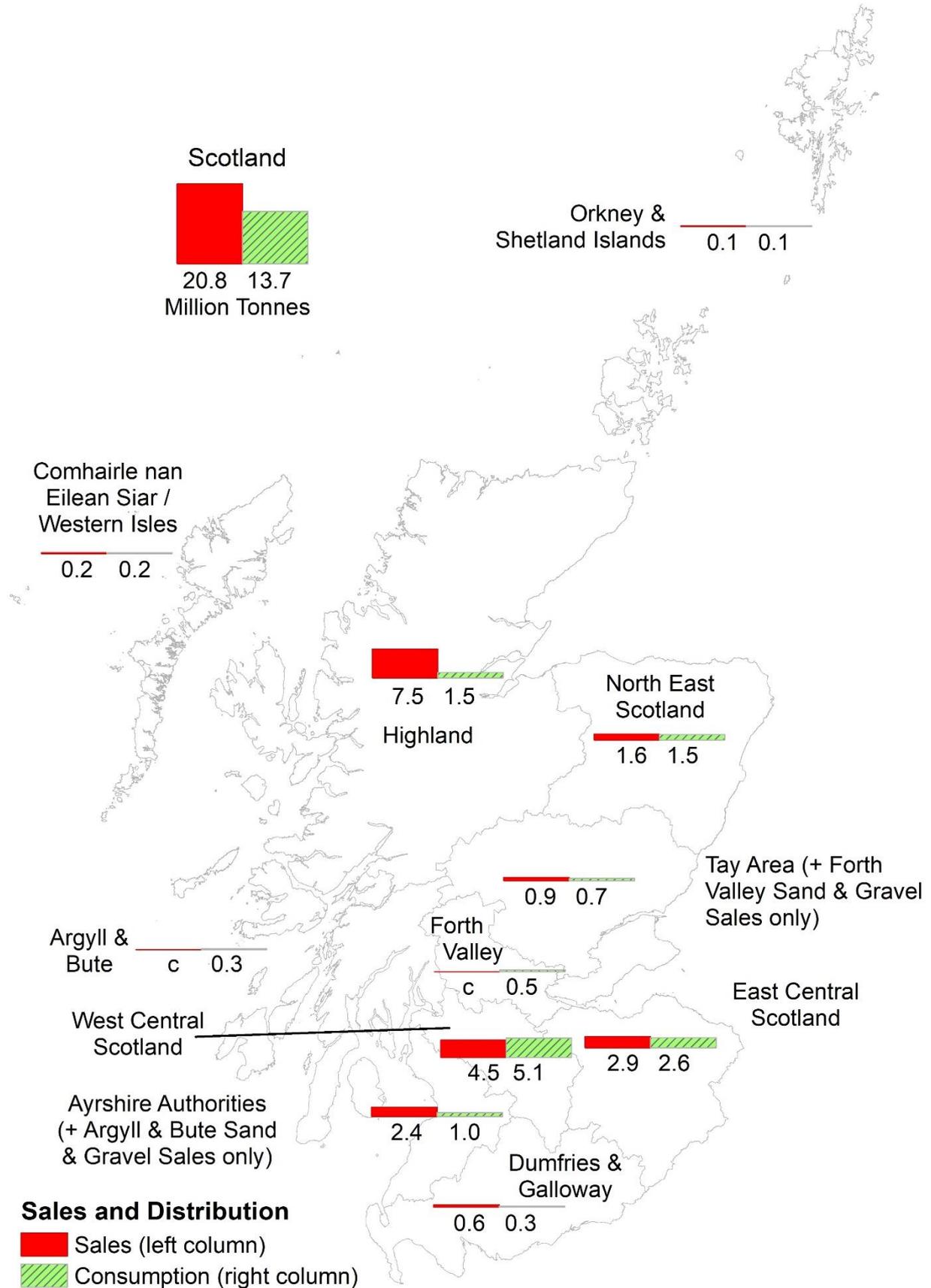
Map 6 Permitted reserves of primary aggregates – active and inactive sites, 2019



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1. Ayrshire Authorities also includes Argyll & Bute.
2. Tay Area also includes Forth Valley sand and gravel.

Map 7 Sales and consumption of primary aggregates, 2019



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Map 7 caption:

WCS – West Central Scotland

c – Confidential

1. Ayrshire Authorities sales also includes Argyll & Bute sales.
2. Tay Area sales also includes Forth Valley sand and gravel sales.
3. Figures for consumption are slightly under estimated. Taking into account unallocated sales (c. 0.85 Mt) and imports from England and Wales (0.08 Mt), total consumption of primary aggregates in Scotland was about 14.6 Mt.

## Appendix A – Data Tables

### General notes on the tables

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.
- '–' Denotes a nil figure. (On rare occasions, such an entry may conceal a confidential figure in order to allow publication of a regional total. Table footnotes indicate where this applies.)
- 'c' Indicates a confidential figure. Totals include concealed confidential figures wherever possible.

Figures in the tables may not fully sum to the row or column total due to rounding.

**Table 1 Geographical spread of sites included in the 2019 Aggregate Minerals Survey**

<b>Region</b>	<b>Sand and gravel</b>	<b>Crushed rock</b>	<b>Total sites</b>
Argyll & Bute	c	c	c
Ayrshire Authorities	3	8	11
Comhairle nan Eilean Siar	3	7	10
Dumfries & Galloway	8	6	14
East Central Scotland	11	17	28
Forth Valley	c	–	c
Highland	7	8	15
North East Scotland	8	12	20
Orkney & Shetland Islands	3	3	6
Tay Area	3	6	9
West Central Scotland	6	12	18
<b>Total</b>	<b>52</b>	<b>79</b>	<b>131</b>

1. Ayrshire Authorities also includes Argyll & Bute.
2. Tay Area also includes Forth Valley sand and gravel.

**Table 2 Comparison of sales and consumption of primary aggregates in 2019**

Thousand tonnes

Region	Sales Total primary aggregates	Consumption Total primary aggregates
Argyll & Bute	c	254
Ayrshire Authorities	2 443	998
Comhairle nan Eilean Siar	231	231
Dumfries & Galloway	572	269
East Central Scotland	2 880	2 585
Forth Valley	c	467
Highland	7 505	1 456
North East Scotland	1 606	1 488
Orkney & Shetland Islands	132	132
Tay Area	875	696
West Central Scotland	4 536	5 090
<b>Total</b>	<b>20 780</b>	<b>13 666</b>

1. Ayrshire Authorities also includes Argyll & Bute.
2. Tay Area also includes Forth Valley sand and gravel.
3. The figure for total consumption slightly under estimates true consumption because for some regions unallocated sales have an unknown destination. Taking into account unallocated sales (c. 0.85 Mt) and imports from England and Wales (0.08 Mt), total consumption of primary aggregates in Scotland was about 14.6 Mt.

**Table 3 Summary of sales of primary aggregates in 2019**

Thousand tonnes

Region	Sand and gravel	% of total sand and gravel	Crushed rock	% of total crushed rock	Total sales	% of total sales
Argyll & Bute	c	c	c	c	c	c
Ayrshire Authorities	290	8%	2 153	13%	2 443	12%
Comhairle nan Eilean Siar	3	0%	229	1%	231	1%
Dumfries & Galloway	407	11%	165	1%	572	3%
East Central Scotland	739	20%	2 142	13%	2 880	14%
Forth Valley	c	c	–	–	c	c
Highland	314	8%	7 191	42%	7 505	36%
North East Scotland	482	13%	1 124	7%	1 606	8%
Orkney & Shetland Islands	0	0%	131	1%	132	1%
Tay Area	441	12%	434	3%	875	4%
West Central Scotland	1 059	28%	3 477	20%	4 536	22%
<b>Total aggregates</b>	<b>3 735</b>	<b>100%</b>	<b>17 045</b>	<b>100%</b>	<b>20 780</b>	<b>100%</b>

1. Ayrshire Authorities also includes Argyll & Bute.
2. Tay Area also includes Forth Valley sand and gravel.

Table 4 Summary of sales of primary aggregates (sand &amp; gravel and crushed rock) by major end use

Aggregates Use	Thousand tonnes												% of total sales
	Argyll & Bute	Ayrshire Authorities	Comhairle nan Eilean Siar	Dumfries & Galloway	East Central Scotland	Forth Valley	Highland	North East Scotland	Orkney & Shetland Islands	Tay Area	West Central Scotland	Total Scotland	
Coarse/fine concrete aggregate	c	136	1	131	443	c	2 412	216	3	222	961	4 526	22%
Building/asphalting sand	c	104	–	124	193	c	0	5	–	2	348	777	4%
Roadstone/gravel, coated for asphalt	c	260	–	22	292	c	281	78	22	51	524	1 530	7%
Roadstone, uncoated	c	241	–	5	554	c	81	67	64	13	1 267	2 292	11%
Other screened and graded aggregates	c	126	–	31	310	c	754	98	18	75	742	2 154	10%
Railway ballast	c	–	–	–	–	–	368	–	–	–	112	480	2%
Armourstone and gabion stone	c	–	–	0	10	–	46	2	0	–	18	75	0%
Other construction uses, including fill	c	265	6	78	299	c	3 039	114	24	9	563	4 396	21%
Undifferentiated aggregate use	c	1 312	224	181	780	c	525	1 026	1	503	–	4 551	22%
<b>Total aggregates</b>	<b>c</b>	<b>2 443</b>	<b>231</b>	<b>572</b>	<b>2 880</b>	<b>c</b>	<b>7 505</b>	<b>1 606</b>	<b>132</b>	<b>875</b>	<b>4 536</b>	<b>20 780</b>	<b>100%</b>

1. Coated roadstone also includes material exported from the quarry site for coating with bituminous binder.
2. Roadstone uncoated includes rock chippings for surfacing dressing.
3. Ayrshire Authorities also includes Argyll & Bute.
4. Tay Area also includes Forth Valley sand and gravel.

Table 5 Sales of land-won sand and gravel by product (end use) in 2019

Thousand tonnes

Product	Argyll & Bute	Ayrshire & Authorities nan Eilean Siar	Comhairle Dumfries & Galloway	East Central Scotland	Forth Valley	Highland	North East Scotland	Orkney & Shetland Islands	Tay Area	West Central Scotland	Total Scotland	% total sales	
<b>Sand</b>													
Sand for asphalt	c	80	–	84	75	–	–	1	–	–	88	328	9%
Sand for use in mortar (building sand)	c	24	–	40	118	c	0	5	–	2	260	449	12%
Sand for concreting	c	95	1	83	273	c	30	110	0	131	405	1 127	30%
<b>Gravel</b>													
Gravel for use in asphalt (on or off site)	–	–	–	3	5	–	–	–	–	–	0	8	0%
Gravel for concrete	c	5	–	48	20	c	21	95	–	91	45	326	9%
Other screened and graded gravels for other aggregate purposes	c	45	–	13	124	c	28	50	0	75	232	567	15%
<b>Sand and gravel</b>													
Sand and gravel for constructional fill	c	10	–	76	124	c	78	73	–	3	29	392	10%
Undifferentiated aggregate use	c	31	1	60	–	c	157	148	–	140	–	537	14%
<b>Total for Aggregate use</b>	<b>c</b>	<b>290</b>	<b>3</b>	<b>407</b>	<b>739</b>	<b>c</b>	<b>314</b>	<b>482</b>	<b>0</b>	<b>441</b>	<b>1059</b>	<b>3 735</b>	<b>100%</b>
Total for Non-aggregate use	–	–	–	–	c	–	c	–	c	–	–	363	
Total for all uses	c	290	3	407	c	c	c	482	c	441	1 059	4 097	

1. Ayrshire Authorities also includes Argyll &amp; Bute.

2. Tay Area also includes Forth Valley sand and gravel.

**Table 6 Sales of crushed rock by product (end use) in 2019**

Product	Thousand tonnes						
	Argyll & Bute	Ayrshire Authorities	Comhairle nan Eilean Siar	Dumfries & Galloway	East Central Scotland	Forth Valley	Highland
Crushed rock, coated for asphalt on site (exc. weight of binder)	c	190	–	–	19	–	18
Crushed rock, coated for asphalt off site	c	70	–	20	268	–	263
Crushed rock for uncoated roadstone & foundation work	c	230	–	5	514	–	79
Rock chippings for surface dressing	c	11	–	–	40	–	2
Railway ballast	–	–	–	–	–	–	368
Concrete aggregate	c	36	–	0	151	–	2 361
Other screened and graded aggregates	c	81	–	18	185	–	726
Armourstone and gabion stone	–	–	–	0	10	–	46
Other construction uses, including fill	c	255	6	1	175	–	2 961
Undifferentiated aggregate use	c	1 281	223	121	780	–	367
<b>Total for Aggregate use</b>	<b>c</b>	<b>2 153</b>	<b>229</b>	<b>165</b>	<b>2 142</b>	<b>–</b>	<b>7 191</b>
Total for Non-aggregate use	–	–	–	–	c	–	–
<b>Total for all uses</b>	<b>c</b>	<b>2 153</b>	<b>229</b>	<b>165</b>	<b>c</b>	<b>–</b>	<b>7 191</b>

1. Ayrshire Authorities also includes Argyll & Bute.

**Table 6 continued - Sales of crushed rock by product (end use) in 2019**

Product	Thousand tonnes					
	North East Scotland	Orkney & Shetland Islands	Tay Area	West Central Scotland	Total Scotland	% of total sales
Crushed rock, coated for asphalt on site (exc. weight of binder)	78	22	–	232	560	3%
Crushed rock, coated for asphalt off site	–	–	51	292	963	6%
Crushed rock for uncoated roadstone & foundation work	35	56	13	1 231	2 163	13%
Rock chippings for surface dressing	32	7	–	37	129	1%
Railway ballast	–	–	–	112	480	3%
Concrete aggregate	10	3	–	511	3 073	18%
Other screened and graded aggregates	48	18	–	510	1 586	9%
Armourstone and gabion stone	2	0	–	18	75	0%
Other construction uses, including fill	41	24	6	534	4 004	23%
Undifferentiated aggregate use	878	1	363	0	4 014	24%
<b>Total for Aggregate use</b>	<b>1 124</b>	<b>131</b>	<b>434</b>	<b>3 477</b>	<b>17 045</b>	<b>100%</b>
Total for Non-aggregate use	c	–	–	–	45	
Total for all uses	c	131	434	3 477	17 091	

**Table 7 Summary of sales of primary aggregates by selected environmental designation in 2019**

Thousand tonnes

	Argyll & Bute	Ayrshire Authorities	Comhairle nan Eilean Siar	Dumfries & Galloway	East Central Scotland	Forth Valley	Highland	North East Scotland	Orkney & Shetland Islands	Tay Area	West Central Scotland	Total Scotland
<b>Sand and Gravel</b>												
All sites	c	290	3	407	739	c	314	482	0	441	1 059	<b>3 735</b>
National Park	—	—	—	—	—	c	—	—	—	—	—	<b>c</b>
NSA	—	—	—	—	—	—	—	—	—	—	—	<b>—</b>
SSSI	—	—	—	—	—	—	c	—	c	—	—	<b>c</b>
NNR	—	—	—	—	—	—	—	—	—	—	—	<b>—</b>
SPA and SAC	—	—	—	—	—	—	—	—	c	—	—	<b>c</b>
Green Belt	—	—	—	—	—	—	—	—	—	—	c	<b>c</b>
<b>Crushed Rock</b>												
All sites	c	2 153	229	165	2 142	—	7 191	1 124	131	434	3 477	<b>17 045</b>
National Park	—	—	—	—	—	—	c	—	—	—	—	<b>c</b>
NSA	—	—	c	—	—	—	c	—	—	—	—	<b>c</b>
SSSI	c	—	—	—	—	—	c	c	—	—	—	<b>c</b>
NNR	—	—	—	—	—	—	—	—	—	—	—	<b>—</b>
SPA and SAC	—	—	—	—	—	—	—	—	—	—	—	<b>—</b>
Green Belt	—	—	—	—	—	—	—	—	—	—	c	<b>c</b>

1. 'All sites' includes sales from all land-based mineral workings producing primary aggregates in 2019.
2. Designations are not mutually exclusive, e.g. Sites of Special Scientific Interest (SSSI) may overlap with others, such as National Parks and National Scenic Areas (NSA). Special Areas of Conservation (SAC) and Special Protection Areas (SPA) are also SSSIs. They are sub-sets of SSSIs.
3. Green Belt is a planning policy designation.
4. Some designations 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 will vary and are not reflected in the figures.
5. Ayrshire Authorities also includes Argyll & Bute.
6. Tay Area also includes Forth Valley sand and gravel.

**Table 8 Summary of exports and imports of primary aggregates in 2019**

Thousand tonnes

Region	Exports		Imports	
	Sand and gravel	Crushed rock	Sand and gravel	Crushed rock
Argyll & Bute	c	c		
Ayrshire Authorities	137	1,192	8	130
Comhairle nan Eilean Siar	–	–	–	–
Dumfries & Galloway	294	32	0	23
East Central Scotland	348	335	89	299
Forth Valley	c	–	–	161
Highland	1	6 130	9	72
North East Scotland	85	52	0	19
Orkney & Shetland Islands	–	–	–	–
Tay Area	194	83	240	164
West Central Scotland	83	658	260	1 034
<b>Scotland</b>	<b>1 142</b>	<b>8 482</b>	<b>608</b>	<b>1 902</b>

1. Exports and imports do not include quantities of unallocated sales to unknown destinations.
2. Exports refers to aggregates exported outside of the region (i.e. to another region of Scotland or to outside of Scotland).
3. Exports include quantities to areas outside Scotland (6.3 million tonnes).
4. Imports exclude aggregates imported from outside Scotland (0.08 million tonnes).
5. Ayrshire Authorities also includes Argyll & Bute exports and imports.
6. Tay Area sand and gravel also includes Forth Valley.

**Table 9a Sales of primary aggregates by region in 2019 – sand and gravel**

Thousand tonnes

(Distribution from)	(Distribution to)				
	Argyll & Bute	Ayrshire Authorities	Comhairle nan Eilean Siar	Dumfries & Galloway	East Central Scotland
Argyll & Bute	c	c	–	–	–
Ayrshire Authorities	54	99	–	–	–
Comhairle nan Eilean Siar	–	–	3	–	–
Dumfries & Galloway	–	–	–	113	–
East Central Scotland	0	1	–	0	391
Forth Valley	–	–	–	–	c
Highland	–	–	–	–	–
North East Scotland	–	–	–	–	–
Orkney & Shetland Islands	–	–	–	–	–
Tay Area	–	–	–	–	37
West Central Scotland	–	7	–	–	52
<b>Total aggregates (consumption)</b>	<b>54</b>	<b>106</b>	<b>3</b>	<b>113</b>	<b>480</b>

1. Ayrshire Authorities also includes Argyll &amp; Bute.

**Table 9a continued - Sales of primary aggregates by region in 2019 – sand and gravel**

Thousand tonnes

(Distribution from)	(Distribution to)				
	Forth Valley	Highland	North East Scotland	Orkney & Shetland Islands	Tay Area
Argyll & Bute	–	c	–	–	–
Ayrshire Authorities	–	9	–	–	–
Comhairle nan Eilean Siar	–	–	–	–	–
Dumfries & Galloway	–	–	–	–	–
East Central Scotland	195	0	0	–	1
Forth Valley	c	–	–	–	c
Highland	–	<b>313</b>	–	–	–
North East Scotland	–	–	<b>396</b>	–	40
Orkney & Shetland Islands	–	–	–	<b>0</b>	–
Tay Area	108	–	–	–	<b>140</b>
West Central Scotland	4	–	–	–	–
<b>Total aggregates (consumption)</b>	<b>306</b>	<b>323</b>	<b>397</b>	<b>0</b>	<b>182</b>

1. Tay Area sales also includes Forth Valley sales.

**Table 9a continued - Sales of primary aggregates by region in 2019 – sand and gravel**

Thousand tonnes

(Distribution from)	(Distribution to)					Total aggregates (sales)
	West Central Scotland	England	Outside GB	Unknown		
Argyll & Bute	c	–	–	–	–	<b>c</b>
Ayrshire Authorities	50	–	–	78	–	<b>290</b>
Comhairle nan Eilean Siar	–	–	–	–	–	<b>3</b>
Dumfries & Galloway	–	28	–	265	–	<b>407</b>
East Central Scotland	54	0	–	96	–	<b>739</b>
Forth Valley	c	–	–	–	–	<b>c</b>
Highland	–	1	–	–	–	<b>314</b>
North East Scotland	–	18	6	21	–	<b>482</b>
Orkney & Shetland Islands	–	–	–	–	–	<b>0</b>
Tay Area	157	–	–	–	–	<b>441</b>
West Central Scotland	<b>976</b>	20	–	–	–	<b>1 059</b>
<b>Total aggregates (consumption)</b>	<b>1 236</b>	<b>68</b>	<b>6</b>	<b>460</b>		

1. No sales to Wales were reported.

2. Outside GB comprises sales to Europe and Northern Ireland. No sales to the Republic of Ireland were reported.

**Table 9b Sales of primary aggregates by region in 2019 – crushed rock**

Thousand tonnes

(Distribution from)	(Distribution to)				
	Argyll & Bute	Ayrshire Authorities	Comhairle nan Eilean Siar	Dumfries & Galloway	East Central Scotland
Argyll & Bute	<b>c</b>	–	–	–	–
Ayrshire Authorities	159	<b>858</b>	–	–	14
Comhairle nan Eilean Siar	–	–	<b>229</b>	–	–
Dumfries & Galloway	–	32	–	<b>133</b>	–
East Central Scotland	–	–	–	–	<b>1 806</b>
Forth Valley	–	–	–	–	–
Highland	9	–	–	–	51
North East Scotland	–	–	–	–	–
Orkney & Shetland Islands	–	–	–	–	–
Tay Area	–	–	–	–	50
West Central Scotland	31	2	–	23	184
<b>Total aggregates (consumption)</b>	<b>199</b>	<b>892</b>	<b>229</b>	<b>156</b>	<b>2 105</b>

1. Ayrshire Authorities also includes Argyll &amp; Bute.

**Table 9b continued - Sales of primary aggregates by region in 2019 – crushed rock**

Thousand tonnes

(Distribution from)	(Distribution to)				
	Forth Valley	Highland	North East Scotland	Orkney & Shetland Islands	Tay Area
Argyll & Bute	–	c	–	–	–
Ayrshire Authorities	–	29	12	–	–
Comhairle nan Eilean Siar	–	–	–	–	–
Dumfries & Galloway	–	–	–	–	–
East Central Scotland	71	–	–	–	164
Forth Valley	–	–	–	–	–
Highland	–	<b>1 062</b>	–	–	–
North East Scotland	–	17	<b>1 072</b>	–	–
Orkney & Shetland Islands	–	–	–	<b>131</b>	–
Tay Area	–	26	7	–	<b>350</b>
West Central Scotland	89	–	–	–	–
<b>Total aggregates (consumption)</b>	<b>161</b>	<b>1 134</b>	<b>1 091</b>	<b>131</b>	<b>514</b>

**Table 9b continued - Sales of primary aggregates by region in 2019 – crushed rock**

Thousand tonnes

(Distribution from)	(Distribution to)				Total aggregates (sales)
	West Central Scotland	England	Outside GB	Unknown	
Argyll & Bute	–	–	–	–	<b>c</b>
Ayrshire Authorities	1 014	–	–	67	<b>2 153</b>
Comhairle nan Eilean Siar	–	–	–	–	<b>229</b>
Dumfries & Galloway	–	–	–	–	<b>165</b>
East Central Scotland	20	40	–	40	<b>2 142</b>
Forth Valley	–	–	–	–	–
Highland	–	2 353	3 716	–	<b>7 191</b>
North East Scotland	–	17	–	18	<b>1 124</b>
Orkney & Shetland Islands	–	–	–	–	<b>131</b>
Tay Area	–	–	–	–	<b>434</b>
West Central Scotland	<b>2 819</b>	9	56	264	<b>3 477</b>
<b>Total aggregates (consumption)</b>	<b>3 853</b>	<b>2 419</b>	<b>3 772</b>	<b>388</b>	

1. No sales to Wales were reported.

2. Outside GB comprises sales to Europe and Northern Ireland. No sales to the Republic of Ireland were reported.

**Table 10 Sales of primary aggregates by principal transport method in 2019**

Thousand tonnes

Region	Road			Water			Total
	Sand and gravel	Crushed rock	Total	Sand and gravel	Crushed rock	Total	
Argyll & Bute	c	c	c	–	–	–	<b>c</b>
Ayrshire Authorities	290	2 153	2 443	–	–	–	<b>2 443</b>
Comhairle nan Eilean Siar	3	229	231	–	–	–	<b>231</b>
Dumfries & Galloway	407	165	572	–	–	–	<b>572</b>
East Central Scotland	739	2 142	2 880	–	–	–	<b>2 880</b>
Forth Valley	c		c	–	–	–	<b>c</b>
Highland	313	544	858	1	6 647	6 648	<b>7 505</b>
North East Scotland	475	1 124	1 599	6	–	6	<b>1 606</b>
Orkney & Shetland Islands	0	131	132	–	–	–	<b>132</b>
Tay Area	441	434	875	–	–	–	<b>875</b>
West Central Scotland	1 059	3 422	4 481	–	55	55	<b>4 536</b>
<b>Scotland</b>	<b>3 727</b>	<b>10 343</b>	<b>14 071</b>	<b>7</b>	<b>6 702</b>	<b>6 709</b>	<b>20 780</b>

1. Ayrshire Authorities also includes Argyll & Bute.
2. Tay Area also includes Forth Valley sand and gravel.

**Table 11a Comparison of sales and consumption of primary aggregates in 2019 – sand and gravel**

Thousand tonnes

<b>Sand and gravel</b>	<b>Total sales</b>	<b>Sales retained within region</b>	<b>Imports to region</b>	<b>Total consumption (retained + imports)</b>	<b>Exports to England</b>	<b>Exports to outside GB</b>	<b>% sales retained in region</b>	<b>% consumption imported</b>
Argyll & Bute	c	c	–	c	–	–	c	c
Ayrshire Authorities	290	153	8	161	–	–	53%	5%
Comhairle nan Eilean Siar	3	3	–	3	–	–	100%	0%
Dumfries & Galloway	407	113	0	113	28	–	28%	0%
East Central Scotland	739	391	89	480	0	–	53%	19%
Forth Valley	c	c	–	c	–	–	c	c
Highland	314	313	9	323	–	–	100%	3%
North East Scotland	482	396	0	397	18	6	82%	0%
Orkney & Shetland Islands	0	0	–	0	–	–	100%	0%
Tay Area	441	248	240	488	–	–	56%	49%
West Central Scotland	1 059	976	260	1 236	20	–	92%	21%
<b>Total aggregates</b>	<b>3 735</b>	<b>2 593</b>	<b>608</b>	<b>3 200</b>	<b>68</b>	<b>6</b>	<b>92%</b>	<b>21%</b>

1. Consumption includes sales within the home region and imports from other regions in Scotland but not imports from outside Scotland. The figure for total consumption slightly underestimates true consumption because for some regions unallocated sales have an unknown destination.
2. Total unallocated sales of sand and gravel were 0.46 million tonnes.
3. Ayrshire Authorities also includes Argyll & Bute.
4. Tay Area also includes Forth Valley.

**Table 11b Comparison of sales and consumption of primary aggregates in 2019 – crushed rock**

Thousand tonnes

<b>Sand and gravel</b>	<b>Total sales</b>	<b>Sales retained within region</b>	<b>Imports to region</b>	<b>Total consumption (retained + imports)</b>	<b>Exports to England</b>	<b>Exports to outside GB</b>	<b>% sales retained in region</b>	<b>% consumption imported</b>
Argyll & Bute	c	c	c	c	–	–	c	c
Ayrshire Authorities	2 153	961	130	1 091	–	–	45%	12%
Comhairle nan Eilean Siar	229	229	–	229	–	–	100%	0%
Dumfries & Galloway	165	133	23	156	0	–	81%	15%
East Central Scotland	2 142	1 806	299	2 105	40	–	84%	14%
Forth Valley	–	–	161	161	–	–	–	100%
Highland	7 191	1 062	72	1 134	2 353	3 716	15%	6%
North East Scotland	1 124	1 072	19	1 091	17	–	95%	2%
Orkney & Shetland Islands	131	131	–	131	–	–	100%	0%
Tay Area	434	350	164	514	–	–	81%	32%
West Central Scotland	3 477	2 819	1 034	3 853	9	56	81%	27%
<b>Total aggregates</b>	<b>17 045</b>	<b>8 563</b>	<b>1 902</b>	<b>10 466</b>	<b>2 419</b>	<b>3 772</b>	<b>81%</b>	<b>27%</b>

1. Consumption includes sales within the home region and imports from other regions in Scotland but not imports from outside Scotland. The figure for total consumption slightly underestimates true consumption because for some regions unallocated sales have an unknown destination.
2. Total unallocated sales of crushed rock were 0.39 million tonnes.
3. Ayrshire Authorities also includes Argyll & Bute.

**Table 12 Permitted reserves of primary aggregates in active and inactive sites at 31 December 2019**

Thousand tonnes

Region	Sand and Gravel			Total	Crushed Rock			Total	Grand total
	Active sites	Inactive: worked in past	Inactive: yet to be worked		Active sites	Inactive: worked in past	Inactive: yet to be worked		
Argyll & Bute	c	–	–	c	c	–	–	c	c
Ayrshire Authorities	3 560	–	–	3 560	103 387	–	–	103 387	106 947
Comhairle nan Eilean Siar	58	–	–	58	4 764	490	–	5 254	5 312
Dumfries & Galloway	2 564	1 690	1 598	5 852	11 823	6 055	–	17 878	23 730
East Central Scotland	24 534	7 051	–	31 585	51 218	9 672	–	60 890	92 475
Forth Valley	c	–	–	c	–	–	–	–	c
Highland	1 879	1 280	1 200	4 359	749 855	–	–	749 855	754 214
North East Scotland	4 950	121	–	5 071	136 156	4 340	–	140 496	145 567
Orkney & Shetland Islands	1	–	–	1	1 145	–	–	1 145	1 146
Tay area	2 650	–	–	2 650	10 360	2 679	–	13 039	15 689
West Central Scotland	9 751	6 070	–	15 821	123 886	13 333	–	137 219	153 040
<b>Scotland</b>	<b>49 946</b>	<b>16 212</b>	<b>2 798</b>	<b>68 956</b>	<b>1 192 594</b>	<b>36 569</b>	<b>–</b>	<b>1 229 163</b>	<b>1 298 119</b>

1. Ayrshire Authorities also includes Argyll & Bute.
2. Tay Area also includes Forth Valley sand and gravel.

**Table 13 Permitted reserves of primary aggregates in active and inactive sites at 31 December 2019 by mineral**

Product	Thousand tonnes											
	Argyll & Bute	Ayrshire Authorities	Comhairle nan Eilean Siar	Dumfries & Galloway	East Central Scotland	Forth Valley	Highland	North East Scotland	Orkney & Shetland Islands	Tay Area	West Central Scotland	Total Scotland
<b>Sand and gravel</b>												
Concreting sand	c	2	25	–	1 100	–	10	220	–	–	–	1 357
Other sand (inc. building & asphaltting sand)	c	1	–	1	20 124	–	70	240	–	–	–	20 436
Total sand	c	3	25	1	21 224	–	80	460	–	–	–	21 792
Total gravel	c	15	34	1	200	–	–	240	1	–	–	490
Undifferentiated sand & gravel <sup>(a)</sup>	c	3 542	–	5 850	10 161	c	4 279	4 371	–	2 650	15 821	46 674
<b>Total sand &amp; gravel - for aggregate</b>	<b>c</b>	<b>3 560</b>	<b>58</b>	<b>5 852</b>	<b>31 585</b>	<b>–</b>	<b>4 359</b>	<b>5 071</b>	<b>1</b>	<b>2 650</b>	<b>15 821</b>	<b>68 956</b>
Sand & gravel - for non-aggregate use	–	–	–	–	c	–	c	–	–	–	–	23 016
<b>Crushed rock</b>												
<b>Total crushed rock – for aggregate</b>	<b>c</b>	<b>103 387</b>	<b>5 254</b>	<b>17 878</b>	<b>60 890</b>	<b>–</b>	<b>749 855</b>	<b>140 496</b>	<b>1 145</b>	<b>13 039</b>	<b>137 219</b>	<b>1 229 163</b>
- for non-aggregate use	–	–	–	–	–	–	–	c	–	c	–	3 068

1. Undifferentiated sand and gravel (a) is not included elsewhere.
2. Total reserves for aggregate use exclude material for non-aggregate use.
3. Ayrshire Authorities also includes Argyll & Bute.
4. Tay Area also includes Forth Valley sand and gravel.

**Table 14 Permitted reserves of primary aggregates in active and inactive sites by environmental designation at 31 December 2019**

Thousand tonnes

	Argyll & Bute	Ayrshire Authorities	Comhairle nan Eilean Siar	Dumfries & Galloway	East Central Scotland	Forth Valley	Highland	North East Scotland	Orkney & Shetland Islands	Tay Area	West Central Scotland	Total Scotland
<b>Sand and Gravel</b>												
All sites	c	3 560	58	5 852	31 585	c	4 359	5 071	1	2 650	15 821	<b>68 956</b>
National Park	—	—	—	—	—	c	c	—	—	—	—	<b>c</b>
NSA	—	—	—	—	—	—	—	—	—	—	—	<b>—</b>
SSSI	—	—	—	—	—	—	c	—	c	—	—	<b>c</b>
NNR	—	—	—	—	—	—	—	—	—	—	—	<b>—</b>
SPA and SAC	—	—	—	—	—	—	—	—	c	—	—	<b>c</b>
Green Belt	—	—	—	—	—	—	—	—	—	—	c	<b>c</b>
<b>Crushed Rock</b>												
All sites	c	103 387	5 254	17 878	60 890	—	749 855	140 496	1 145	13 039	137 219	<b>1 229 163</b>
National Park	—	—	—	—	—	—	c	—	—	—	—	<b>c</b>
NSA	—	—	c	—	—	—	c	—	—	—	—	<b>c</b>
SSSI	—	c	—	—	c	—	c	c	—	—	—	<b>c</b>
NNR	—	—	—	—	—	—	—	—	—	—	—	<b>—</b>
SPA and SAC	—	—	—	—	—	—	—	—	c	—	—	<b>c</b>
Green Belt	—	—	—	—	—	—	—	—	—	—	c	<b>c</b>

1. 'All sites' includes sales from all land-based mineral workings producing primary aggregates in 2019.
2. Designations are not mutually exclusive, e.g. Sites of Special Scientific Interest (SSSI) may overlap with others, such as National Parks and National Scenic Areas (NSA). Special Areas of Conservation (SAC) and Special Protection Areas (SPA) are also SSSIs. They are sub-sets of SSSIs.
3. Green Belt is a planning policy designation.
4. Some designations 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 will vary and are not reflected in the figures.
5. Ayrshire Authorities also includes Argyll & Bute.
6. Tay Area also includes Forth Valley sand and gravel.

**Table 15a Sales, reserves and years supply of primary aggregates at 31 December 2019 – sand and gravel**

Thousand tonnes

	<b>Sales</b>	<b>Estimated consented reserves</b>	<b>Maximum supply at 2019 sales levels in years</b>	<b>Estimated consented reserves in active sites at end 2019</b>	<b>Maximum supply from active sites at 2019 sales levels in years</b>
Argyll & Bute	c	c	c	c	c
Ayrshire Authorities	290	3 560	12	3 560	12
Comhairle nan Eilean Siar	3	58	23	58	23
Dumfries & Galloway	407	5 852	14	2 564	6
East Central Scotland	739	31 585	43	24 534	33
Forth Valley	c	c	c	c	c
Highland	314	4 359	14	1 879	6
North East Scotland	482	5 071	11	4 950	10
Orkney & Shetland Islands	0	1	2	1	2
Tay Area	441	2 650	9	2 650	9
West Central Scotland	1 059	15 821	15	9 751	9
<b>Total aggregates</b>	<b>3 735</b>	<b>68 956</b>	<b>18</b>	<b>49 946</b>	<b>13</b>

1. Ayrshire Authorities also includes Argyll & Bute.
2. Tay Area also includes Forth Valley sand and gravel.

**Table 15b Sales, reserves and years supply of primary aggregates at 31 December 2019 – crushed rock**

Thousand tonnes

	<b>Sales</b>	<b>Estimated consented reserves</b>	<b>Maximum supply at 2019 sales levels in years</b>	<b>Estimated consented reserves in active sites at end 2019</b>	<b>Maximum supply from active sites at 2019 sales levels in years</b>
Argyll & Bute	c	c	c	c	c
Ayrshire Authorities	2 153	103 387	48	103 387	48
Comhairle nan Eilean Siar	229	5 254	23	4 764	21
Dumfries & Galloway	165	17 878	109	11 823	72
East Central Scotland	2 142	60 890	28	51 218	24
Forth Valley	–	–	–	–	–
Highland	7 191	749 855	104	749 855	104
North East Scotland	1 124	140 496	125	136 156	121
Orkney & Shetland Islands	131	1 145	9	1 145	9
Tay Area	434	13 039	30	10 360	24
West Central Scotland	3 477	137 219	39	123 886	36
<b>Total aggregates</b>	<b>17 045</b>	<b>1 229 163</b>	<b>72</b>	<b>1 192 594</b>	<b>70</b>

1. Ayrshire Authorities also includes Argyll &amp; Bute.

**Table 16 Total reserves of primary aggregates granted planning permission in 2019**

Thousand tonnes

Region	Sand and gravel		Crushed rock		Grand total	
	Thousand tonnes	Permissions	Thousand tonnes	Permissions	Thousand tonnes	Permissions
Argyll & Bute	–	–	–	–	–	–
Ayrshire Authorities	–	–	159	2	159	2
Comhairle nan Eilean Siar	n/a	3	–	–	n/a	3
Dumfries & Galloway	–	–	718	1	718	1
East Central Scotland	–	–	n/a	5	n/a	5
Forth Valley	–	–	–	–	–	–
Highland	4 290	4	8 204	4	12 494	8
North East Scotland	801	2	7 000	3	7 801	5
Orkney & Shetland Islands	–	–	1 598	3	1 598	3
Tay Area	1 569	2	–	–	1 569	2
West Central Scotland	–	–	–	–	–	–
<b>Scotland</b>	<b>6 660</b>	<b>11</b>	<b>17 679</b>	<b>18</b>	<b>24 339</b>	<b>29</b>

1. Sand and gravel also includes sites for sand only.

2. n/a – tonnage not reported.

**Table 17 Total quantity of primary aggregates refused planning permission in 2019**

Thousand tonnes

Region	Sand and gravel		Crushed rock		Grand total	
	Thousand tonnes	Permissions	Thousand tonnes	Permissions	Thousand tonnes	Permissions
Argyll & Bute	–	–	–	–	–	–
Ayrshire Authorities	–	–	–	–	–	–
Comhairle nan Eilean Siar	–	–	–	–	–	–
Dumfries & Galloway	–	–	–	–	–	–
East Central Scotland	–	–	–	–	–	–
Forth Valley	–	–	–	–	–	–
Highland	–	–	–	–	–	–
North East Scotland	–	–	–	–	–	–
Orkney & Shetland Islands	–	–	–	–	–	–
Tay Area	–	–	–	–	–	–
West Central Scotland	–	–	–	–	–	–
<b>Scotland</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

1. This table is intentionally blank due to non-occurrence of the data combination.

Table 18 Total reserves of sand and gravel granted planning permission in 2019 by site type

Thousand tonnes

Region	New quarries		Extensions		Borrow pits	
	Thousand tonnes	Permissions	Thousand tonnes	Permissions	Thousand tonnes	Permissions
Argyll & Bute	–	–	–	–	–	–
Ayrshire Authorities	–	–	–	–	–	–
Comhairle nan Eilean Siar	–	–	–	–	n/a	3
Dumfries & Galloway	–	–	–	–	–	–
East Central Scotland	–	–	–	–	–	–
Forth Valley	–	–	–	–	–	–
Highland	–	–	4 210	3	80	1
North East Scotland	631	1	170	1	–	–
Orkney & Shetland Islands	–	–	–	–	–	–
Tay Area	–	–	1 569	2	–	–
<b>Scotland</b>	<b>631</b>	<b>1</b>	<b>5 949</b>	<b>6</b>	<b>80</b>	<b>4</b>

1. New quarries excludes borrow pits.
2. Extensions include lateral and vertical.
3. n/a – tonnage not reported.

**Table 19 Total quantity of sand and gravel refused planning permission in 2019 by site type**

Thousand tonnes

Region	New quarries		Extensions		Borrow pits	
	Thousand tonnes	Permissions	Thousand tonnes	Permissions	Thousand tonnes	Permissions
Argyll & Bute	–	–	–	–	–	–
Ayrshire Authorities	–	–	–	–	–	–
Comhairle nan Eilean Siar	–	–	–	–	–	–
Dumfries & Galloway	–	–	–	–	–	–
East Central Scotland	–	–	–	–	–	–
Forth Valley	–	–	–	–	–	–
Highland	–	–	–	–	–	–
North East Scotland	–	–	–	–	–	–
Orkney & Shetland Islands	–	–	–	–	–	–
Tay Area	–	–	–	–	–	–
<b>Scotland</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

1. New quarries excludes borrow pits.
2. Extensions include lateral and vertical.
3. This table is intentionally blank due to non-occurrence of the data combination.

**Table 20 Total reserves of crushed rock granted planning permission in 2019 by site type**

Thousand tonnes

Region	New quarries		Extensions		Borrow pits	
	Thousand tonnes	Permissions	Thousand tonnes	Permissions	Thousand tonnes	Permissions
Argyll & Bute	–	–	–	–	–	–
Ayrshire Authorities	–	–	–	–	159	2
Comhairle nan Eilean Siar	–	–	–	–	–	–
Dumfries & Galloway	–	–	718	1	–	–
East Central Scotland	–	–	–	–	n/a	5
Forth Valley	–	–	–	–	–	–
Highland	–	–	8 204	4	–	–
North East Scotland	410	1	6 590	2	–	–
Orkney & Shetland Islands	–	–	1 598	3	–	–
Tay Area	–	–	–	–	–	–
<b>Scotland</b>	<b>410</b>	<b>1</b>	<b>17 110</b>	<b>10</b>	<b>159</b>	<b>7</b>

1. New quarries excludes borrow pits.
2. Extensions include lateral and vertical.
3. n/a – tonnage not reported.

**Table 21 Total quantity of crushed rock refused planning permission in 2019 by site type**

Thousand tonnes

Region	New quarries		Extensions		Borrow pits	
	Thousand tonnes	Permissions	Thousand tonnes	Permissions	Thousand tonnes	Permissions
Argyll & Bute	–	–	–	–	–	–
Ayrshire Authorities	–	–	–	–	–	–
Comhairle nan Eilean Siar	–	–	–	–	–	–
Dumfries & Galloway	–	–	–	–	–	–
East Central Scotland	–	–	–	–	–	–
Forth Valley	–	–	–	–	–	–
Highland	–	–	–	–	–	–
North East Scotland	–	–	–	–	–	–
Orkney & Shetland Islands	–	–	–	–	–	–
Tay Area	–	–	–	–	–	–
<b>Scotland</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

1. New quarries excludes borrow pits.
2. Extensions include lateral and vertical.
3. This table is intentionally blank due to non-occurrence of the data combination.

**Table 22 Total reserves of sand and gravel granted planning permission in 2019 by environmental designation**

Thousand tonnes

Region	National Park		NSA		SPA / SAC	
	Thousand tonnes	Permissions	Thousand tonnes	Permissions	Thousand tonnes	Permissions
Argyll & Bute	–	–	–	–	–	–
Ayrshire Authorities	–	–	–	–	–	–
Comhairle nan Eilean Siar	–	–	n/a	3	–	–
Dumfries & Galloway	–	–	–	–	–	–
East Central Scotland	–	–	–	–	–	–
Forth Valley	–	–	–	–	–	–
Highland	–	–	2 720	1	–	–
North East Scotland	–	–	–	–	–	–
Orkney & Shetland Islands	–	–	–	–	–	–
Tay Area	–	–	–	–	–	–
<b>Scotland</b>	<b>–</b>	<b>–</b>	<b>2 720</b>	<b>4</b>	<b>–</b>	<b>–</b>

1. SPA / SAC are a subset of SSSI.

2. n/a – tonnage not reported.

Table 22 continued - Total reserves of sand and gravel granted planning permission in 2019 by environmental designation

Thousand tonnes

Region	SSSI		NNR		Green Belt	
	Thousand tonnes	Permissions	Thousand tonnes	Permissions	Thousand tonnes	Permissions
Argyll & Bute	–	–	–	–	–	–
Ayrshire Authorities	–	–	–	–	–	–
Comhairle nan Eilean Siar	–	–	–	–	–	–
Dumfries & Galloway	–	–	–	–	–	–
East Central Scotland	–	–	–	–	–	–
Forth Valley	–	–	–	–	–	–
Highland	–	–	–	–	–	–
North East Scotland	–	–	–	–	–	–
Orkney & Shetland Islands	–	–	–	–	–	–
Tay Area	–	–	–	–	–	–
<b>Scotland</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

1. Green Belt is a planning policy designation.

**Table 23 Total quantity of sand and gravel refused planning permission in 2019 by environmental designation**

Thousand tonnes

Region	National Park		NSA		SPA / SAC	
	Thousand tonnes	Permissions	Thousand tonnes	Permissions	Thousand tonnes	Permissions
Argyll & Bute	–	–	–	–	–	–
Ayrshire Authorities	–	–	–	–	–	–
Comhairle nan Eilean Siar	–	–	–	–	–	–
Dumfries & Galloway	–	–	–	–	–	–
East Central Scotland	–	–	–	–	–	–
Forth Valley	–	–	–	–	–	–
Highland	–	–	–	–	–	–
North East Scotland	–	–	–	–	–	–
Orkney & Shetland Islands	–	–	–	–	–	–
Tay Area	–	–	–	–	–	–
<b>Scotland</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

1. SPA / SAC are a subset of SSSI.
2. This table is intentionally blank due to non-occurrence of the data combination.

Table 23 continued - Total quantity of sand and gravel refused planning permission in 2019 by environmental designation

Thousand tonnes

Region	SSSI		NNR		Green Belt	
	Thousand tonnes	Permissions	Thousand tonnes	Permissions	Thousand tonnes	Permissions
Argyll & Bute	–	–	–	–	–	–
Ayrshire Authorities	–	–	–	–	–	–
Comhairle nan Eilean Siar	–	–	–	–	–	–
Dumfries & Galloway	–	–	–	–	–	–
East Central Scotland	–	–	–	–	–	–
Forth Valley	–	–	–	–	–	–
Highland	–	–	–	–	–	–
North East Scotland	–	–	–	–	–	–
Orkney & Shetland Islands	–	–	–	–	–	–
Tay Area	–	–	–	–	–	–
<b>Scotland</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

1. Green Belt is a planning policy designation.
2. This table is intentionally blank due to non-occurrence of the data combination.

**Table 24 Total reserves of crushed rock granted planning permission in 2019 by environmental designation**

Thousand tonnes

Region	National Park		NSA		SPA / SAC	
	Thousand tonnes	Permissions	Thousand tonnes	Permissions	Thousand tonnes	Permissions
Argyll & Bute	–	–	–	–	–	–
Ayrshire Authorities	–	–	–	–	–	–
Comhairle nan Eilean Siar	–	–	–	–	–	–
Dumfries & Galloway	–	–	–	–	–	–
East Central Scotland	–	–	–	–	–	–
Forth Valley	–	–	–	–	–	–
Highland	–	–	–	–	–	–
North East Scotland	–	–	–	–	–	–
Orkney & Shetland Islands	–	–	–	–	–	–
Tay Area	–	–	–	–	–	–
<b>Scotland</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

1. SPA / SAC are a subset of SSSI.
2. This table is intentionally blank due to non-occurrence of the data combination.

**Table 24 continued - Total reserves of crushed rock granted planning permission in 2019 by environmental designation**

Thousand tonnes

Region	SSSI		NNR		Green Belt	
	Thousand tonnes	Permissions	Thousand tonnes	Permissions	Thousand tonnes	Permissions
Argyll & Bute	–	–	–	–	–	–
Ayrshire Authorities	–	–	–	–	–	–
Comhairle nan Eilean Siar	–	–	–	–	–	–
Dumfries & Galloway	–	–	–	–	–	–
East Central Scotland	–	–	–	–	–	–
Forth Valley	–	–	–	–	–	–
Highland	–	–	–	–	–	–
North East Scotland	–	–	–	–	–	–
Orkney & Shetland Islands	–	–	–	–	–	–
Tay Area	–	–	–	–	–	–
<b>Scotland</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

1. Green Belt is a planning policy designation.
2. This table is intentionally blank due to non-occurrence of the data combination.

**Table 25 Total quantity of crushed rock refused planning permission in 2019 by environmental designation**

Thousand tonnes

Region	National Park		NSA		SPA / SAC	
	Thousand tonnes	Permissions	Thousand tonnes	Permissions	Thousand tonnes	Permissions
Argyll & Bute	–	–	–	–	–	–
Ayrshire Authorities	–	–	–	–	–	–
Comhairle nan Eilean Siar	–	–	–	–	–	–
Dumfries & Galloway	–	–	–	–	–	–
East Central Scotland	–	–	–	–	–	–
Forth Valley	–	–	–	–	–	–
Highland	–	–	–	–	–	–
North East Scotland	–	–	–	–	–	–
Orkney & Shetland Islands	–	–	–	–	–	–
Tay Area	–	–	–	–	–	–
<b>Scotland</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

1. SPA / SAC are a subset of SSSI.
2. This table is intentionally blank due to non-occurrence of the data combination.

**Table 25 continued - Total quantity of crushed rock refused planning permission in 2019 by environmental designation**

Thousand tonnes

Region	SSSI		NNR		Green Belt	
	Thousand tonnes	Permissions	Thousand tonnes	Permissions	Thousand tonnes	Permissions
Argyll & Bute	–	–	–	–	–	–
Ayrshire Authorities	–	–	–	–	–	–
Comhairle nan Eilean Siar	–	–	–	–	–	–
Dumfries & Galloway	–	–	–	–	–	–
East Central Scotland	–	–	–	–	–	–
Forth Valley	–	–	–	–	–	–
Highland	–	–	–	–	–	–
North East Scotland	–	–	–	–	–	–
Orkney & Shetland Islands	–	–	–	–	–	–
Tay Area	–	–	–	–	–	–
<b>Scotland</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

1. Green Belt is a planning policy designation.
2. This table is intentionally blank due to non-occurrence of the data combination.

**Table 26 Total quantity of primary aggregates granted or refused permission in 2019 for sites within a development plan allocated area**

Thousand tonnes

Region	Sand and gravel				Crushed rock			
	Granted		Refused		Granted		Refused	
	Thousand tonnes	Permissions	Thousand tonnes	Permissions	Thousand tonnes	Permissions	Thousand tonnes	Permissions
Argyll & Bute	–	–	–	–	–	–	–	–
Ayrshire Authorities	–	–	–	–	–	–	–	–
Comhairle nan Eilean Siar	–	–	–	–	–	–	–	–
Dumfries & Galloway	–	–	–	–	718	1	–	–
East Central Scotland	–	–	–	–	–	–	–	–
Forth Valley	–	–	–	–	–	–	–	–
Highland	–	–	–	–	–	–	–	–
North East Scotland	–	–	–	–	–	–	–	–
Orkney & Shetland Islands	–	–	–	–	1 598	3	–	–
Tay Area	1 569	2	–	–	–	–	–	–
<b>Scotland</b>	<b>1 569</b>	<b>2</b>	<b>–</b>	<b>–</b>	<b>2 316</b>	<b>4</b>	<b>–</b>	<b>–</b>

1. Applies to allocated sites preferred areas and areas of search.

# Appendix B – Survey Forms A and B

## Form A – Sales by end use, sales by destination (region) and transport method, and permitted reserves of primary aggregates

Page 1 of 9



### Aggregate Minerals Survey 2019 for Scotland

#### FORM A: Quarries producing land-won natural aggregates<sup>1</sup>, and Marine Wharves for sand and gravel and crushed rock during 2019

##### BACKGROUND INFORMATION

The Aggregate Minerals Survey provides 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 in Scotland.

The results of the surveys are used to inform the development of minerals policy at a national and local level to help plan for the steady and adequate supply of construction minerals. Results of the surveys also allow the aggregates industry to understand current national and regional supply.

This survey relates to aggregate sales, distribution, and reserves from 01 January to 31 December 2019.

The results of the AM2019 Survey will be used to monitor policies relevant to the supply of aggregates

##### ABOUT THIS DATA COLLECTION

The national collation of this survey is being undertaken by the British Geological Survey for the Scottish Government.

The data collection for the Aggregate Minerals Survey includes both commercially confidential information and personal data. The personal information you provide will not be included in the Aggregate Minerals Survey Report 2019. The level of disaggregation of data included in the results tables published in the Aggregate Minerals Survey will be subject to respecting commercial confidentiality restrictions.

Collated data may also be used for the purposes of mineral policy work by the Scottish Government and Local Planning Authorities.

For more information about the use of the data that you provide, together with your personal data, please refer to the Personal Data Privacy Notice accompanying this form.

Completed forms should be returned either by email or in envelopes marked 'Confidential' to:

Mr Don Cameron  
British Geological Survey  
Keyworth  
Nottingham  
NG12 5GG

AMsurvey@bgs.ac.uk

Please return the completed form **no later than 30 June 2022**. Thank you.

<sup>1</sup> Aggregates – Granular material used in construction. Aggregates can be natural, recycled or manufactured. This form relates to natural aggregates, both primary and secondary (or by-product) aggregates, excavated and sold for the first time.

**BGS HELPLINE: If you have any queries regarding this form please contact Don Cameron at the British Geological Survey by e-mail (AMsurvey@bgs.ac.uk) or alternatively by telephone on 0115 936 3489 (Tues - Thurs)**

Collation of the AM2019 Survey for Scotland

NON-CONFIDENTIAL

**SITE DETAILS**

Please tick the box to indicate that you have read and accepted the privacy notice:

Your name	
Your email address	
Your telephone number	
What is the name of the quarry or wharf at this site?	
Site address (line 1)	
Site address (line 2)	
City/Town	
County	
Postal Code	
Country	Scotland
Site telephone number	
What is the name of the operating company at this site?	
Which Planning Authority does this site fall under?	
Is this site closed with no workable permitted reserves? If yes, return only site details.	

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

<sup>(1)</sup> Quarries / other sites producing land-won natural aggregates either as a principal activity or as a subsidiary activity, such as a by-product of building stone, silica sand, slate, clay, shale and coal extraction.

<sup>(2)</sup> Marine wharves at which marine-dredged sand and gravel and / or crushed rock are landed.

<sup>(3)</sup> A distinction is made between 'Inactive' sites and 'Dormant' sites. The latter is defined in the Environment Act 1995, reenacted in the Town and Country Planning (Scotland) Act 1997, 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. **Such statutorily 'Dormant' sites are not included in the survey.** <https://www.legislation.gov.uk/ukpga/1997/8/contents>

<sup>(4)</sup> Complete only Question 2 and Question 3 for these materials.

Type of mineral working  Quarry <sup>(1)</sup>  
 (please click / tick relevant box)  Marine wharf <sup>(2)</sup>

Association status:  Mineral Products Association member  
 (please click / tick relevant box(es))  British Aggregates Association member  
 None of the above

Status of quarry / wharf:  **Active during 2019:** In production, including from stockpiles, for some time during 2019  
 (please click / tick relevant box)  **Inactive during 2019:** Worked in the past and still containing permitted reserves. [Complete only Question 1 for permitted reserves]<sup>(3)</sup>  
 **Inactive during 2019:** Planning permission received, but yet to be worked [Complete only Question 1 for permitted reserves]<sup>(3)</sup>  
 **Closed** and containing no workable permitted reserves [Complete only site details]

Mineral type: (please click / tick relevant box(es))

<b>Primary aggregates</b>	<b>Secondary aggregates</b>
<input type="checkbox"/> Sand (only)	<input type="checkbox"/> Slate waste sold as aggregate <sup>(4)</sup>
<input type="checkbox"/> Sand and Gravel	<input type="checkbox"/> Colliery spoil (minestone) sold as aggregate <sup>(4)</sup>
<input type="checkbox"/> Igneous rock (including Metamorphic)	<input type="checkbox"/> 'Clay' and 'shale' sold as aggregate <sup>(4)</sup>
<input type="checkbox"/> Limestone / Dolomite	
<input type="checkbox"/> Sandstone (includes greywacke, gritstone and quartzite)	

NON-CONFIDENTIAL

**SITE STATUS DETAILS CONTINUED...**

Please click / tick here if the site is a borrow pit (a temporary mineral working to supply aggregate for a specific construction project)

Please click / tick here if the site has received planning permission for an extension in 2019

Please tick here if this is a new quarry or wharf granted planning permission in 2019

Date current planning permission for extraction expires (if stated)  
(dd/mm/yyyy)

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:

- National Park
  - National Scenic Area
  - Site of Special Scientific Interest
  - National Nature Reserve
  - Special Area of Conservation / Special Protection Area
  - Green Belt
-

## Collation of the AM2019 Survey for Scotland

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COMMERCIAL IN CONFIDENCE

### 1. PERMITTED RESERVES (AT QUARRIES ONLY)

**DEFINITIONS**

**Permitted Reserves** - Estimated reserves of aggregate minerals, including stockpiles, with planning permission that are saleable for aggregate and non-aggregate purposes at 31st December 2019. The figure should estimate **net saleable** reserves, taking account of likely losses during quarry design, extraction and processing.

Also **include** reserves at Inactive sites.

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

<sup>(1)</sup> Where possible estimate the amount of sand and / or gravel.

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

Sand and Gravel Reserves	Tonnes	
1.1 Sand suitable for concreting <sup>(1)</sup>		
1.2 Other sand (including building and asphaltting sand) <sup>(1)</sup>		
1.3 Total sand (a+b) <sup>(1)</sup>	0	
1.4 Gravel <sup>(1)</sup>		
1.5 Sand and gravel undifferentiated, where not included above <sup>(1)</sup>		
1.6 <i>Estimated % of total reserves allocated for non-aggregate use<sup>2</sup></i>		%

Crushed Rock Reserves	Tonnes	1.10 Estimated % of total reserves allocated for non-aggregate use <sup>2</sup>
1.7 Limestone / Dolomite		%
1.8 Igneous and metamorphic rock		%
1.9 Sandstone (including gritstone, greywacke & quartzite)		%

COMMERCIAL IN CONFIDENCE

**2. SALES BY PRODUCT**

**2.1 Sand and Gravel**

**INSTRUCTIONS**  
 The term sand and gravel includes 'solid' sandstones and conglomerates that are loosely consolidated or weakly cemented which are processed to produce sand and gravel, e.g. sandstones of the Passage Formation. For sales of sand (fine aggregate) derived from crushing hard rocks, please return under question 2.2.7.

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

2.1 Questions 2.1.1 - 2.1.9 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 Scotland 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.

2.1.1 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 non-aggregate / 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.

2.1.10 For wharves landing sand and gravel originating from outside Scottish waters only.

**Sand for aggregate use**

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

**Gravel for aggregate use**

	<b>Tonnes</b>
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**

	<b>Tonnes</b>
2.1.7 Other sand and gravel e.g. for constructional fill, where not included above	

2.1.8 <b>Total for all aggregate use</b>	<b>0</b>
--	----------

**Sand and Gravel for non-aggregate uses**

	<b>Tonnes</b>
2.1.9 <b>Total for all non-aggregate uses</b>	

2.1.10 **Landings of sand and gravel from OUTSIDE Scotland / Scottish waters (wharves only)**

**GUIDANCE NOTES**  
 Please provide the tonnage of total sales for **aggregate use** originating from each country.

Country of origin	Landings of aggregate (tonnes)
England	
Wales	
Northern Ireland	
Republic of Ireland	
France	
The Netherlands	
Belgium	
Denmark	
Norway	
Other countries (not listed above)	
Unknown	
<b>Total tonnage</b>	<b>0</b>

COMMERCIAL IN CONFIDENCE

2. SALES BY PRODUCT

2.2 Crushed Rock

(Quarries in Scotland and Wharves at which hard rock from outside Scotland is landed)

Select mineral type:  
(please tick box)

- Igneous rock (including Metamorphic)
- Limestone / Dolomite
- Sandstone
- Slate waste sold as aggregate
- Colliery spoil (minestone) sold as aggregate
- Clay' and 'shale' for construction

Please complete a separate survey form for each crushed rock mineral type sold from the site.

DEFINITIONS	
<b>Limestone / Dolomite</b>	includes high magnesium limestone, but not chalk.
<b>Igneous rock</b>	includes andesite, basalt, diorite, dolerite, gabbro, gneiss, granite, granulite, hornfels, microgranite, rhyolite, schist, syenite, trachyte and tuff.
<b>Sandstone</b>	includes greywacke, gritstone and quartzite.
<b>Slate waste</b>	sold as aggregate (i.e. in construction / fill).
<b>Colliery spoil</b>	(minestone) sold as aggregate (i.e. in construction / fill).
<b>'Clay' and 'shale'</b>	sold as aggregate (i.e. in construction / fill).

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. <b>Exclude</b> material produced elsewhere within Scotland 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	Where the product is calcined limestone or dolomite (lime / dolime) please report figure expressed as tonnage of 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	<b>Total for aggregate use</b>	<b>0</b>

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COMMERCIAL IN CONFIDENCE

**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	<b>Total for all non-aggregate uses</b>	<b>0</b>

**2.2.17 Landings of crushed rock aggregate from OUTSIDE Scotland (wharves only)**

**GUIDANCE NOTES**

Please provide the tonnage of total sales for aggregate use originating from each country.

Country of origin	Landings of aggregate (tonnes)
England	
Wales	
Northern Ireland	
Republic of Ireland	
France	
The Netherlands	
Belgium	
Denmark	
Norway	
Other countries (not listed above)	
Unknown	
	<b>0</b>

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COMMERCIAL IN CONFIDENCE

3. SALES BY DESTINATION

From quarries; marine dredged landings; and aggregates landed from outside Scotland

Sales by Destination for **Aggregate Use only**

Please complete a separate survey form for each mineral type sold from the site.

**GUIDANCE NOTES**

This information is **very** important for calculating consumption of aggregates.

Please 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 2019 by Distribution Area and by transport method for aggregates sold from the site.

**Do not include sales of non-aggregates**

It is appreciated that sales destination will not always be known particularly for collected sales. For collect sales where the destination is not known please allocate to the distribution area where the quarry / wharf is located.

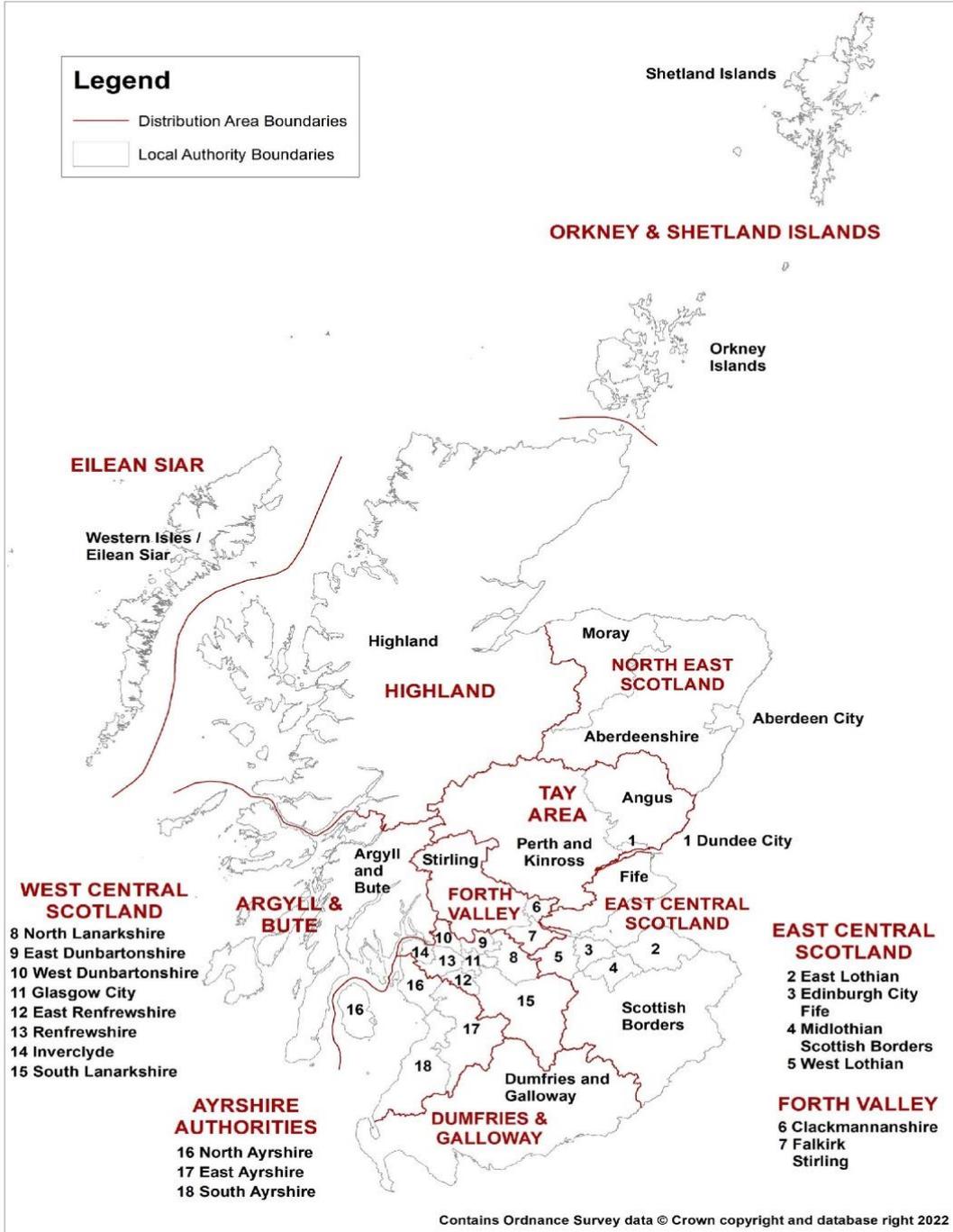
**Principal Mode(s) of Transport** - An estimate by % (which totals to 100% across road, rail and water) is acceptable if precise sales are not known. Please indicate whether **tonnes or percent**. Include only the principal mode of transport.

<sup>(1)</sup> Where all deliveries are by road just tick

A map of the Distribution Areas is included at the end of the survey form.



Distribution area (see map)	Tonnes		Tonnes or percent (delete as appropriate)		
	Sales of aggregate		Modes of transport		
	Sand and gravel	Crushed rock	Road <sup>(1)</sup>	Rail	Water
Dumfries & Galloway					
West Central Scotland - comprises East and West Dunbartonshire, East Renfrewshire, Glasgow, Inverclyde, North and South Lanarkshire and Renfrewshire					
Ayrshire Authorities - comprises East, North and South Ayrshire					
Argyll & Bute					
East Central Scotland - comprises East, West and Midlothian, Edinburgh, Fife and Scottish Borders					
Tay Area - comprises Angus, Dundee and Perth & Kinross					
Forth Valley - Stirling, Clackmannanshire and Falkirk					
North East Scotland - comprises Aberdeen City, Aberdeenshire and Moray					
Highland					
Comhairle nan Eilean Siar (Western Isles)					
Orkney & Shetland Islands					
England					
Wales					
Northern Ireland					
Republic of Ireland					
Mainland Europe					
Unknown destination					
<b>3.50</b> Total tonnage (mineral totals should equal those in either question 2.1.8 or 2.2.10)	0	0			



## Form B – Aggregate mineral sites granted or refused planning permission during 2019



### Aggregate Minerals Survey 2019 for Scotland

#### FORM B: Mineral Sites Granted<sup>1</sup> or Refused<sup>2</sup> Planning Permission, 2019

Please tick the box to indicate that you have read and accepted the privacy notice:

**To be completed by local planning authority**

Planning authority name

Name of person completing the form

Date  Email  Tel

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

Completed forms should be returned by email to Don Cameron (British Geological Survey) - AMsurvey@bgs.ac.uk

Please return the completed form **no later than 30 June 2022**.

**Sites granted<sup>(1)</sup> planning permission for aggregates extraction, 2019**

Year	Site Name	Mineral <sup>(3)</sup>	NGR <sup>(4)</sup>	Site Type <sup>(5)</sup>	Reserves (tonnes) <sup>(6)</sup>	National Park <sup>(7)</sup>	National Scenic Area <sup>(7)</sup>	SSSI <sup>(7)</sup>	National Nature Reserve <sup>(7)</sup>	SPA / SAC <sup>(7)</sup>	Green Belt <sup>(7)</sup>	Site lies inside area allocated for mineral extraction in the Plan <sup>(8)</sup>	Proposed annual level of production from the site (tonnes)
2019	1												
	2												
	3												
	4												
	5												
	6												
	7												
	8												

If required insert extra rows.

**Sites refused<sup>(2)</sup> planning permission for aggregates extraction, 2019**

Year	Site Name	Mineral <sup>(3)</sup>	NGR <sup>(4)</sup>	Site Type <sup>(5)</sup>	Reserves (tonnes) <sup>(6)</sup>	National Park <sup>(7)</sup>	National Scenic Area <sup>(7)</sup>	SSSI <sup>(7)</sup>	National Nature Reserve <sup>(7)</sup>	SPA / SAC <sup>(7)</sup>	Green Belt <sup>(7)</sup>	Site lies inside area allocated for mineral extraction in the Plan <sup>(8)</sup>	Proposed annual level of production from the site (tonnes)
2019	1												
	2												
	3												
	4												
	5												
	6												
	7												
	8												

If required insert extra rows.

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

1. Subject to all legal (including Section 75 (S75)) agreements being made. For the calendar year 2019.
2. If a refusal goes to appeal and is rejected only enter details for the final rejection.
3. Mineral. Please choose from the following list:
  - Igneous rock (including Metamorphic rock)
  - Limestone / Dolomite
  - Sandstone (includes greywacke, gritstone and quartzite)
  - 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. Tonnage of reserves. If the site type is a lateral / vertical extension, only include the tonnage of reserves contained within the extension area.
7. Please enter 1 if the area for extraction within the planning application 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.
8. Please enter a 1 if the area of extraction within the planning application is **wholly or partly** within an area allocated for mineral extraction (area of search) in the LPA's development plan.
9. **Questions can be directed to Don Cameron at the British Geological Survey. Email: [AMsurvey@bgs.ac.uk](mailto:AMsurvey@bgs.ac.uk). Telephone: 0115 936 3489 (Tues - Thurs)**

## Appendix C – AM2019 Scotland project team

**British Geological Survey,**

Keyworth,

Nottingham, NG12 5GG

Tel. 0115 9363100

Email: Minerals@bgs.ac.uk

Dr Joseph Mankelow – Project Leader, Data Analysis, Enquiry Desk

Don Cameron – Data Collection, Quality Assurance, Enquiry Desk

Marcus Sen – Database Design and Development

Ellie Evans – Data Collection

# Appendix D – Members of the AM2019 Scotland steering group

## **Scottish Government**

William Carlin

Local Government and Housing Directorate

Jamie Hamilton, AM2019 contract manager

Tax and Revenues Directorate

Robert Souter

Tax and Revenues Directorate

Craig Stevenson (until June 2022), AM2019 contract manager

Tax and Revenues Directorate

## **Mineral Products Association**

Steven Cowan

Tarmac

## **British Aggregates Association**

Mike Phillips

## Appendix E – Glossary of terms and abbreviations

Active/Inactive	Sites are described as <i>active</i> where material was produced at any time during 2019 and as <i>inactive</i> 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.
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.
Aggregate sales	The tonnage of mineral leaving a quarry as measured at a weighbridge.
Aggregate consumption	Apparent consumption is calculated from data on known sales within each home region, plus known imports from other regions and, where appropriate, known imports from outside Scotland. It is less than total consumption due to unallocated sales of unknown destination which, therefore, cannot be attributed to any consuming region. Further, some caution should be used in interpreting the consumption figures as they are calculated from the principal destination of aggregate flows. Final sales, may be to other regions.
All sites	All land-won mineral workings for the production of aggregates.
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.
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) as re-enacted in the Town and Country Planning (Scotland) Act 1997. 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 Planning Authority (PA). There is no time limit for the submission to the relevant PA 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 development 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	For the purposes of the Aggregate Minerals Survey, land previously in agriculture or non-urban/industrial use which becomes the location for a new mineral operation. Analogous to new quarries.
New quarries	A totally new mineral operation.
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.
PA	Planning Authority, responsible for planning control over mineral working within its 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 Products Association, the trade association which represents quarry operators, who together account for more than 90% of the quarried aggregate materials in Great Britain.
Mt	Million tonnes (i.e. Megatonne).
NNR	National Nature Reserves designated to protect important habitats, species and geology, and to provide ‘outdoor laboratories’ for research.

National Park	National Parks are designated 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.
NSA	Legislation defines a National Scenic Area as an area “of outstanding scenic value in a national context”. The designation’s purpose is both to identify our finest scenery and to ensure its protection from inappropriate development.
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 armour stone (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, as re-enacted in the Town and Country Planning (Scotland) Act 1997, cannot be worked until new schemes of conditions have been determined and therefore do not contain permitted reserves. See also landbank.
SAC	Special Areas of Conservation designated in accordance with regulation 3 of the Conservation of Habitats and Species Regulations 2017 have been given special protection as important conservation sites. SACs are also SSSIs.
SPA	Special Protection Areas designated in accordance with regulation 15 of the Conservation of Habitats and Species Regulations 2017 have been identified as being of international importance for the breeding, feeding, wintering or the migration of rare and vulnerable species of birds. SPAs are also SSSIs.

SSSI

Site of Special Scientific Interest designated by NatureScot so as to conserve areas of special interest for their flora, fauna, geological or geomorphological interest.

## Appendix F – Planning Authorities within AM2019 Scotland market regions

<b>Region</b>	<b>Planning Authority</b>
<b>Argyll &amp; Bute</b>	Argyll and Bute Council
<b>Ayrshire Authorities</b>	East Ayrshire Council North Ayrshire Council South Ayrshire Council
<b>Dumfries &amp; Galloway</b>	Dumfries and Galloway Council
<b>East Central Scotland</b>	City of Edinburgh Council East Lothian Council Fife Council Midlothian Council Scottish Borders Council West Lothian Council
<b>Forth Valley</b>	Clackmannanshire Council Falkirk Council Stirling Council
<b>Highland</b>	Highland Council
<b>North East Scotland</b>	Aberdeen City Council Aberdeenshire Council Moray Council
<b>Orkney &amp; Shetland Islands</b>	Orkney Islands Council Shetland Islands Council
<b>Tay Area</b>	Angus Council Dundee City Council Perth and Kinross Council
<b>West Central Scotland</b>	East Dunbartonshire Council East Renfrewshire Council Glasgow City Council Inverclyde Council North Lanarkshire Council Renfrewshire Council South Lanarkshire Council West Dunbartonshire Council
<b>Western Isles</b>	Comhairle nan Eilean Siar



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